



AGENDA MEMORANDUM

Natural Resources Department

City Council Regular Meeting Date: November 4, 2025

To: City Council
From: Holly Milbrandt, Natural Resources Director
Date: November 2, 2025

SUBJECT: Northern Sanibel Beach Renourishment Project

BACKGROUND: Hurricanes in 2022 and 2024 caused extensive damage to the island's beaches and the beach dune system. Ongoing beach recovery efforts by the City have been facilitated by funding from the Florida Department of Environmental Protection (FDEP) and FEMA and have included the emergency berm/gully & beach recovery project from Bowman's Beach Park to the Sanibel Lighthouse, the Historic Sanibel Lighthouse Protection Project, and the Clam Bayou Sand Recovery Project.

To date, City-led beach recovery work on northern Sanibel has been limited due to several factors. With funding from FDEP, Lee County placed ~85,000 cubic yards (cy) of sand in the area of northern Sanibel (between Blind Pass and Bowman's Beach Park) in August/September 2023. Although this project was severely impacted when the sand was displaced by a strong low-pressure system in November 2023 shortly after it was completed, the County was also continuing to evaluate the need and timing for maintenance dredging of Blind Pass in accordance with the 2019 Blind Pass Inlet Management Plan (BPIMP). Under the BPIMP, material dredged from Blind Pass is required to be placed on northern Sanibel to mitigate for the erosional impact of the inlet on the downdrift beach. However, with no immediate plans for the dredging of Blind Pass and FDEP funding remaining, the City began exploring the feasibility of placing sand on north Sanibel (from R110.5- to R118) to address the significant sand loss in this region since Hurricane Ian. The 2025 Sanibel Island Beach Survey Report prepared by Humiston & Moore Engineers documents that the entire reach (from R-108 to R-123) encompassing Blind Pass (located between R-109 and R-110), lost on average almost 50 feet from Pre-Hurricane Ian to June 2024, 30 feet since June 2024 (additional losses due to Hurricanes Helene & Milton), and a cumulative average of almost 80 feet since prior to Hurricane Ian. The full annual beach monitoring report is attached to the agenda for reference.

Aware that the Captiva Erosion Prevention District (CEPD) was currently engaged in the Captiva Beach Renourishment Project, the City contacted CEPD and their contractor Great Lakes Dock and Dredge (GLDD) to determine if an opportunity might exist to undertake beach renourishment work on Sanibel following the completion of the Captiva project while GLDD was currently mobilized and in the area. With a positive response, the City, CEPD, and GLDD are coordinating extensively to finalize the necessary details and agreements required to proceed with the proposed work.

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Proposed Scope of Work

The North Sanibel Beach Renourishment Project proposes to place approximately 300,000 cy of sand fill on northern Sanibel between FDEP reference monuments R-110.5 and R-118 (roughly from the former Mad Hatter to the western boundary of Bowman's Beach Park). Fill placement will be accomplished by hopper dredge utilizing FDEP permitted borrow area VI-E, located approximately 8.3 nautical miles west of Captiva Island. Draft plans prepared by Humiston & Moore Engineers are attached to the agenda for reference. Revisions to the draft plans are underway in order to enhance the area of sand fill in the northern portion of the template (near the former Castaways, Sanibel-Captiva seawall, and the Clam Bayou breach area) to focus the sand fill on the areas of greatest vulnerability. Fill placement will occur both above and below mean high water (MHW) with a landward beach/dune height of approximately 6.5 feet NAVD. Appropriate dune vegetation will be installed immediately after placement of sand fill.

Project Costs

Unit prices are based on the current contract between CEPD and GLDD for the Captiva Beach Renourishment Project. The contract and supporting documents are attached to the agenda for reference. In accordance with the City's purchasing policy and procedures, in order for the City to "piggyback" off the current contract between CEPD and GLDD, the contract must be valid while the work for the City is underway. City Attorney John Agnew is drafting the necessary contract amendments for review and execution by CEPD.

	Item	QTY	Unit	Unit Price	Amount
A.	Mobilization and Demobilization	1	LS	\$2,500,000.00	\$2,500,000.00
B.	Beach Tilling and Scarp Leveling	8,750	LF	\$1.50	\$13,125.00
C.	Turbidity Monitoring - Sanibel	1	LS	\$45,000.00	\$45,000.00
D.	Dredging and Placement	300,000	CY	\$19.16	\$5,748,000.00
	Total				\$8,306,125.00

Revisions to the cost proposal are underway to incorporate dune plantings (estimated 46,000 plants @ \$1.00/each; +\$46,000) and possible minor adjustments to the sand volume (Item D) in accordance with the final plans.

Additional costs to be incurred include construction oversight/coastal engineering services by Humiston & Moore (~\$50,000), post-construction sea turtle monitoring (~\$150,000), and cost-share of eligible CEPD pre-construction expenses detailed in the section below.

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The estimated total project costs are as follows:

Item	Estimated Cost
GLDD North Sanibel Beach Renourishment Proposal	\$8,306,125
Add Dune Plantings	\$46,000
Construction Oversight/Coastal Engineering	\$50,000
Post-Construction Sea Turtle Monitoring	\$150,000
CEPD Cost-Share Pre-Construction Expenses	\$142,046
Estimated Total	\$8,694,171

Agency Permits

In November 2015, the City and CEPD entered into interlocal agreement 15-115 in which CEPD granted authority to the City to “piggyback” or conduct emergency beach renourishment in the area of northern Sanibel under the authority of, and in accordance with current CEPD state and federal permits. A copy of the interlocal agreement (ILA) is attached to the agenda for reference. State and federal permits currently issued to the CEPD for dredging/beach renourishment on Captiva also include a beach fill template on northern Sanibel from DEP reference monuments R-110.5 to R-118. This corresponds to the approximate area from the former Mad Hatter restaurant to the northern boundary of Bowmans Beach Park. The agreement was negotiated in order for the City to address critical erosion along Sanibel-Captiva Road that threatened the integrity of the roadway and the sole evacuation route for residents of northern Sanibel and Captiva. ILA 15-115 is valid through the current expiration date of the CEPD’s FDEP permit which is December 11, 2029. The ILA has been reviewed by both the City & CEPD legal counsel and found to be applicable to the current northern Sanibel renourishment project proposed by the City.

Section 9 of the ILA details the City’s agreement to pay CEPD for certain costs and expenses paid by CEPD to include professional services deemed necessary by CEPD to review or evaluate any beach renourishment project proposed to the City (up to a maximum of \$10,000 per City project) as well as attorney’s fees incurred by CEPD directly related to the preparation or review of the ILA (up to a maximum of \$5,000). Section 9.c. requires CEPD to notify the City in writing if any costs will exceed the maximum amounts described above, after which the City shall decide whether or not to proceed with or continue any proposed City beach renourishment project. The CEPD is requesting that the City cost-share in the pre-construction expenses detailed below, with each entity’s contribution based on the percentage of the total amount of sand dredged. Based on current estimates, the total quantity of dredged sand is 1,300,000 cy; 1,000,000 cy placed on Captiva (77%) and 300,000 cy to be placed on Sanibel (23%). This equates to a pro-rated cost for the City in the amount of \$142,046.

Task	Total Cost	Captiva Cost	Sanibel Cost
Borrow Area Investigation	\$ 324,500		
Borrow Area Design Survey	\$ 27,137		
Borrow Area Hardbottom Survey	\$ 40,124		
Permitting	\$ 98,793		
Pre-construction Services	\$ 127,036		
		(77%)	(23%)
Total	\$ 617,590	\$475,544	\$142,046

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Anticipated Construction Schedule & Construction Hours

Beach renourishment operations on Captiva are currently underway 24-hours per day, 7-days per week. By contract, “once commencement of dredging takes place, the Work shall be continuous and completed, accepted, and ready for use by completion date”. Overnight work is a standard practice for dredging/beach renourishment operations to expedite project completion and minimize the length of time beaches are subject to construction activities. With a current production rate of 25,000 cy per day, GLDD may complete work on Captiva as soon as November 20, 2025, provided there are no weather or equipment delays. GLDD estimates that it will take 5-7 days to transfer operations and equipment to Sanibel with construction beginning the week of November 24, 2025, and project completion by the end December 2025.

Section 30-63 of the Sanibel code establishes construction hours of 7:00AM-5:00PM, Monday through Saturday. To allow for continuous operations, City Council will need to approve expanded work hours.

Staging Area

The City is executing an agreement with the owner of 6451/6455/6459 Sanibel Captiva Road (formerly Castaways) for use as the primary project staging area. Additional staging may be needed in the Blind Pass Beach Park parking lot and may require the closure of the parking lot for the duration of the project. The City will provide as much public notice as possible should a closure be necessary and direct beachgoers to alternate parking locations. The Turner Beach parking lot reopened as of 10/30/2025.

Temporary Beach Management and Access Easements

While most of the work will occur seaward of City-owned lands, a small number of parcels that abut the project area are privately owned. The City will request temporary easements from the four property owners of these parcels prior to the beginning of construction.

FUNDING SOURCE:

The proposed project will be fully funded by FDEP Grant Agreement 23LE5 for the City of Sanibel 2022 Hurricane Ian and Nicole Beach Recovery Project. The grant agreement was approved by City Council on 11/7/2023. At the City’s request, the grant deadline was recently extended from December 31, 2025 to December 31, 2026. Staff has also confirmed with FDEP that remaining funding may be allocated to either task as needed.

	Task 1.1	Task 1.2	
	North Sanibel	Sanibel	Total
FDEP Funding	\$3,180,000	\$23,793,000	\$26,973,000
Expenses through 9/30/2025	\$148,860	\$17,403,705*	\$17,552,565
Remaining FDEP funds	\$3,031,140	\$6,389,295	\$9,420,435

*Additional expenses in the amount of \$5,311,270 for Task 1.2 were reimbursed by FEMA

In addition to funding all expenses related to the proposed North Sanibel Beach Renourishment Project including dune planting, sufficient funding remains for additional dune planting along privately owned areas of the beach previously nourished in 2023/2024. This work was previously

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planned but was delayed due to additional beach impacts from Hurricanes Helene and Milton in September/October 2024. The estimated cost of the work is \$400,000 for the installation of approximately 200,000 plants along nearly 10 miles of beach and will be completed in FY2026.

Funding Summary	Amount
Current FDEP Funds	\$9,420,435
Total Estimated Cost: North Sanibel Beach Renourishment	\$8,694,171
Remaining FDEP Funds for Island-Wide Dune Planting	\$726,264

Section 2-332 of the City's Code of Ordinances authorizes the City Manager to make an emergency procurement to avoid injury, loss or damage to property, or economic waste. The proposed North Sanibel Beach Renourishment Project will provide needed protection for property and infrastructure along this vulnerable portion of the island and limits economic waste through the coordination and shared mobilization with the ongoing CEPD Captiva Beach Renourishment Project.

While it is difficult to do a direct price comparison between the proposed dredging project and a comparable truck haul project, the initial bid for the 2023/2024 truck haul project on Sanibel was \$14,181,208 for 410,100 tons (273,400 cy). The proposed North Sanibel Project will place approximately 300,000 cy (an additional 26,600 cy) for almost \$5.5 million dollars less, plus will be completed much faster with a much more limited impact on traffic.

Section 2-332(c) of the City Code is cited below:

Emergencies. Where it is certified by the city manager that the procurement is required as a result of an emergency or a situation requiring immediate action to avoid injury, loss or damage to property, or economic waste. In such situations, the city manager shall report the procurement to the city council as soon as is practicable and seek ratification of the procurement.

RECOMMENDED ACTION:

1. Authorize the City Manager to execute a piggyback agreement with GLDD for the placement of approximately 300,000 cy of sand fill on north Sanibel consistent with the draft plans and price proposal detailed above and the City's purchasing policy and procedures, subject to the City Attorney's approval. Final costs may vary slightly from the estimates presented in this memorandum. Any agreement by the City will be presented to the City Council for ratification at the next regularly scheduled City Council meeting on December 2, 2025.
2. Approve the cost-share request from CEPD for pre-construction services in the amount of \$142,046 in accordance with ILA 15-115.
3. Approve expanded construction hours, authorizing GLDD to operate 24-hours per day, 7 days per week.

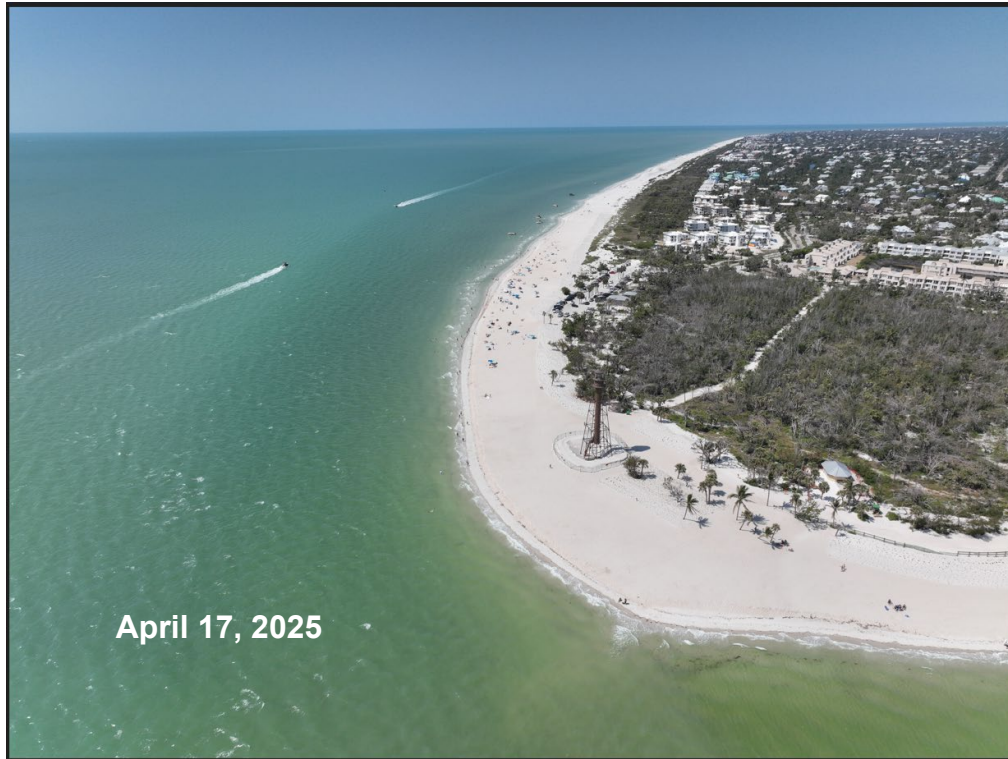
Agenda Attachments:

- 2025 Sanibel Annual Beach Monitoring Report
- Draft Construction Plans: North Sanibel Beach Renourishment Project
- CEPD/GLDD Contract and Attachments for the 2025 Captiva Beach Renourishment Project
- Interlocal Agreement 15-115

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2025 SANIBEL ISLAND SURVEY MONITORING REPORT

**Prepared for:
The City of Sanibel**



April 17, 2025

**Prepared by:
Humiston & Moore Engineers**

HM File No. 27-008

September 2025



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2025 SANIBEL ISLAND SURVEY MONITORING REPORT

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Appendices

Appendix A: June 2025 Post-Construction SDI Survey Certification

Appendix B: March 2025 Beach Profiles

Appendix C: North Sanibel Beach Restoration Project Plans, R-111 to R-118

Appendix D: *Hurricanes Debby, Helene and Milton Recovery Plan for Florida's Beach and Dune System (FDEP, March 11, 2025)*

Appendix E: H&M FEMA Cat B Memorandum

2025 SANIBEL ISLAND SURVEY MONITORING REPORT

Prepared for
The City of Sanibel
September 2025

1. Introduction

As part of Sanibel Island's Beach Management Plan, the City has monitored the island's coastal region through annual beach and hydrographic surveys. The surveys document shoreline and volumetric changes along the island's coastline extending over the past twenty-five years. This report provides a summary of the analysis of the 2025 Sanibel Island beach monitoring survey. Since the 2024 monitoring survey completed in June, there have been three named storms, Debby (August), Helene (September), and Milton (October) which have impacted the shoreline of Sanibel prior to the 2025 survey completed in March.

The monitoring surveys are beneficial in evaluating shoreline changes and trends as well as documenting impacts of tropical storms along the coastline. This information is necessary for technical assessments of impacts and support for requests for state and federal funding assistance to repair storm damage to the coastal system. The data also provides baseline information in developing plans for beach-fill projects to address the storm erosion.

The data and analysis was very effective following the impact from Hurricane Ian in September 2022. Survey assessments were filed with State of Florida Department of Environmental Protection (FDEP) Office of Resilience and Coastal Protection in support of their beach and dune storm recovery plan funded by the Florida Legislature in 2022 and 2023. This was also useful in providing necessary background data in support of a request for funding assistance to the Federal Emergency Management Agency (FEMA). FEMA was able to obligate funds for repairs to the beaches and gullies along designated areas of Sanibel's coastline.

The Sanibel Island beach monitoring survey includes FDEP reference monuments R-108 at the north end of the island at Blind Pass extending east to R-174 along the Gulf of Mexico, and monuments Bay-1 west to Bay-21 along San Carlos Bay. Monument information for the monitoring survey is shown in **Table 1**, including the state plane coordinates in feet referencing the North American Datum of 1983 (NAD83), azimuth in degrees, and representative distance in feet.¹ A corresponding plan view of the physical monitoring area is shown in **Figures 1a and 1b**.

Since the impact of Hurricane Ian in September 2022 and subsequent storms in 2023 and 2024, the City of Sanibel has been involved in a number of projects resulting in sand placement along impacted areas of the coastline. These areas are also noted in **Figures 1a and 1b** for reference. Further descriptions of these beach and dune restoration projects are discussed in the following section.

¹ The FDEP has established a monument system consisting of 'R' Reference Monuments spaced at approximate 1000-foot intervals along the shoreline within the dune system. These monuments provide a baseline for comparing surveys over varying periods of time for assessment of shoreline and volumetric changes along the coastline.

Table 1. Monitoring Survey Scope

Monument	Representative				Monument	Representative			
	Easting (Feet)	Northing (Feet)	Azimuth (°)	Distance (Feet)		Easting (Feet)	Northing (Feet)	Azimuth (°)	Distance (Feet)
R-108	595962	782037	265	126	R-137	617808	763029	205	1014
R-108.25	595978	781786	265	236	R-138	618574	762658	210	975
R-108.50	596042	781575	265	231	R-139	619570	762195	205	1022
R-108.75	596148	781359	265	239	R-140	620460	761876	200	962
R-109	596357	781245	270	119	R-141	621369	761514	200	1015
R-110	596647	780942	250	135	R-142	622311	761046	180	1030
R-110.25	596733	780686	250	267	R-143	623235	760644	200	949
R-110.50	596888	780473	250	255	R-144	624088	760392	205	940
R-110.75	596940	780231	253	245	R-145	625012	760034	200	1008
R-111	597069	780027	255	221	R-146	625996	759745	200	1045
R-111.25	597147	779842	240	219	R-147	627037	759522	185	1039
R-111.50	597359	779737	240	210	R-148	628015	759256	190	1006
R-111.75	597438	779572	240	201	R-149	629013	759272	185	972
R-112	597555	779386	240	260	R-150	629957	759215	185	1026
R-112.25	597784	779191	240	309	R-151	631062	759285	185	961
R-112.50	598215	779075	240	305	R-152	631875	759324	185	983
R-112.75	598132	778688	240	301	R-153	632980	759648	195	1041
R-113	598285	778420	240	379	R-154	633869	759925	170	949
R-113.50	598512	778033	240	403	R-155	634783	760244	160	985
R-114	598740	777759	240	475	R-156	635688	760672	160	991
R-114.50	599153	777333	230	593	R-157	636595	761047	160	975
R-115	599365	776779	225	583	R-158	637465	761474	155	1005
R-115.50	599771	776376	225	574	R-159	638429	761865	155	958
R-116	600134	775930	220	552	R-160	639180	762316	145	955
R-116.50	600527	775575	220	532	R-161	640058	762862	145	1010
R-117	600911	775203	220	533	R-161A	640895	763382	165	897
R-117.50	601390	774974	215	545	R-162	641508	763911	155	1004
R-118	601889	774721	210	535	R-163	642538	764524	170	938
R-118.50	602341	774483	210	530	R-164	643136	764841	152	992
R-119	602829	774233	210	531	R-165	644259	765509	150	1142
R-119.50	603242	773927	210	520	R-166	645058	766071	145	979
R-120	603664	773614	210	524	R-167	645898	766578	155	987
R-120.50	604127	773373	210	525	R-168	646785	767025	155	1038
R-121	604616	773172	205	506	R-169	647694	767610	150	1060
R-121.50	605038	772936	205	487	R-170	648578	768156	160	1069
R-122	605469	772700	205	511	R-171	649243	769031	166	973
R-122.50	605957	772491	205	555	R-172	650081	769155	150	1001
R-123	606485	772253	205	548	R-173	651072	769747	145	894
R-123.50	606812	771853	210	521	R-174	651387	770298	140	317
R-124	607171	771469	215	551	BAY-1	650694	770695	345	229
R-124.50	607671	771183	215	599	BAY-2	650310	770444	345	455
R-125	608211	770872	220	554	BAY-3	649890	770277	345	558
R-125.50	608578	770556	225	500	BAY-4	649230	770217	345	709
R-126	608964	770213	230	528	BAY-5	648476	770185	345	996
R-126.50	609256	769760	230	573	BAY-5A	647246	770046	1	1227
R-127	609794	769481	225	649	BAY-6	646031	770025	9	1096
R-127.50	610220	768935	225	687	BAY-7	645066	770182	25	895
R-128	610729	768480	225	574	BAY-8	644365	770593	25	944
R-128.50	611048	768142	220	469	BAY-9	643414	771094	25	1041
R-129	611374	767798	220	523	BAY-10	642753	771855	38	1029
R-129.50	611769	767384	220	574	BAY-11	642005	772591	38	1011
R-130	612172	766972	220	534	BAY-12	641296	773256	38	1012
R-130.50	612474	766584	225	495	BAY-13	640362	773738	38	1060
R-131	612784	766193	225	495	BAY-14	639470	774328	38	1050
R-131.50	613117	765831	225	500	BAY-15	638649	774951	38	981
R-132	613467	765461	230	487	BAY-16	637874	775467	38	931
R-132.50	613825	765164	220	474	BAY-17	637105	775990	38	874
R-133	614197	764856	210	485	BAY-18	636307	776164	340	986
R-133.50	614613	764603	210	498	BAY-19	635727	775164	290	1116
R-134	615051	764343	215	747	BAY-20	635179	774237	315	809
R-135	615923	763884	215	940	BAY-21	634659	774088	315	270
R-136	616732	763504	205	1035					

R-174 at 0, 45, and 90 degrees added for 6/2024 survey.

Figure 1a. Survey Scope

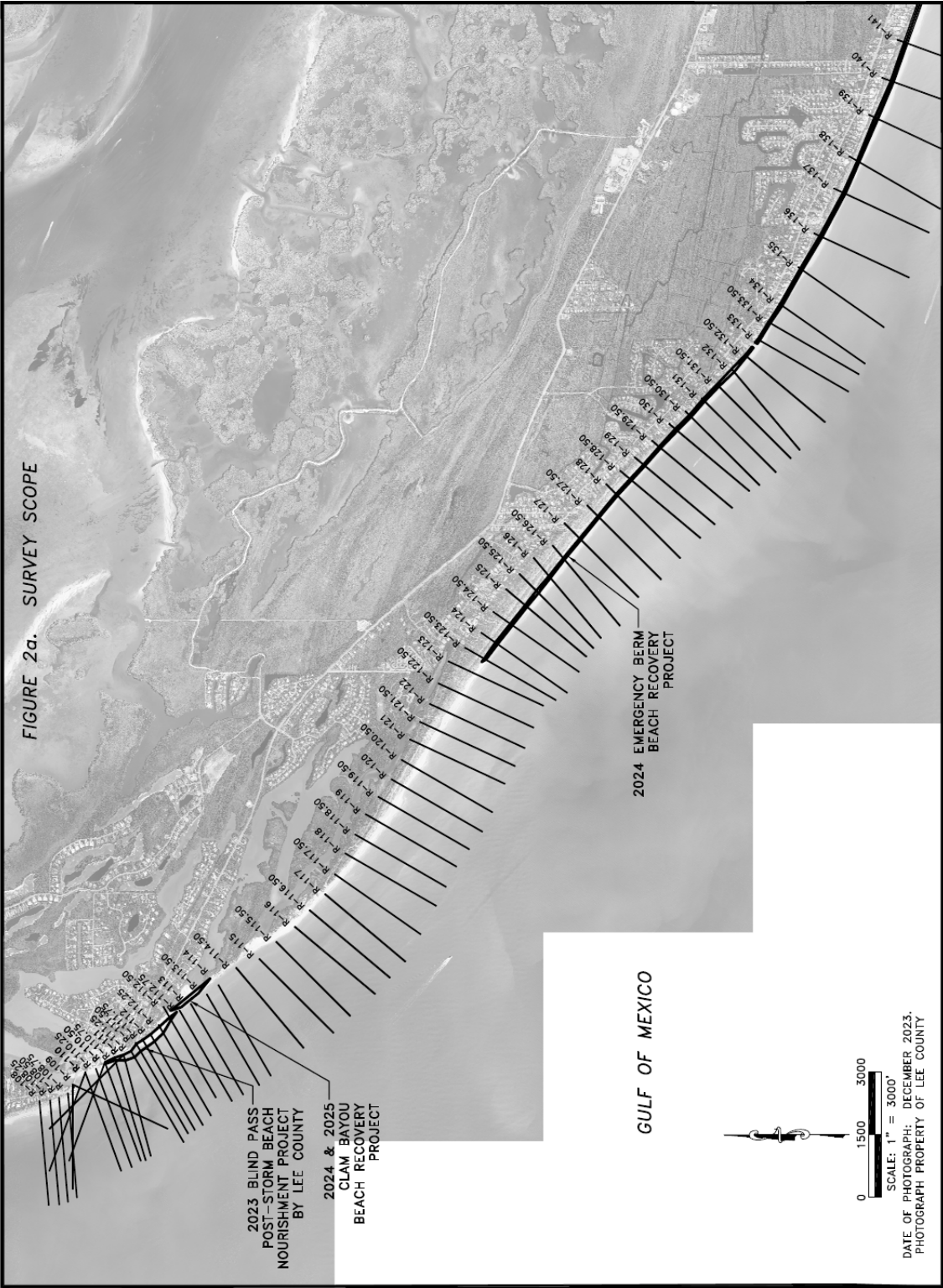
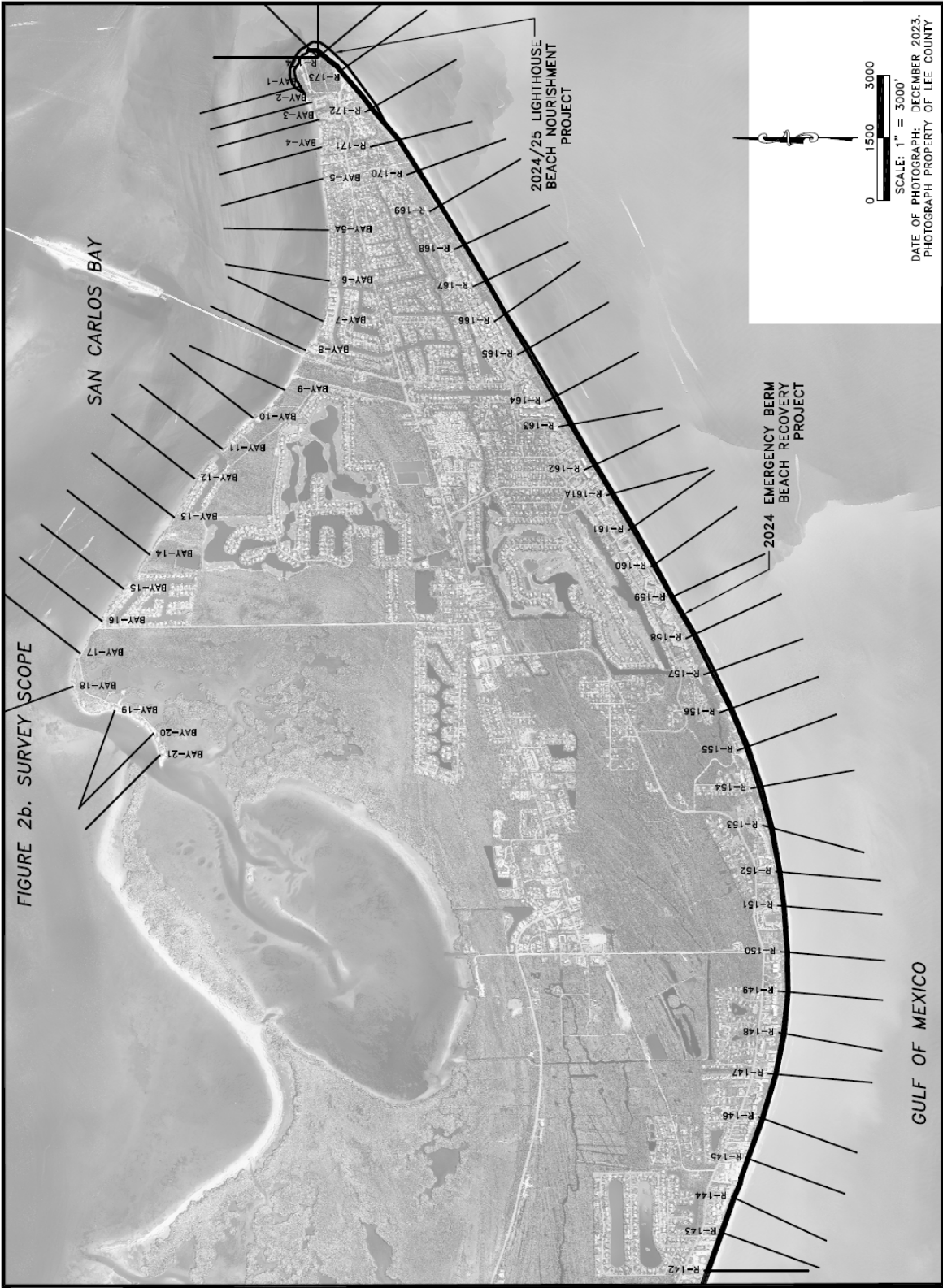


Figure 2b. Survey Scope



Of more recent significance is the documentation and evaluation of impacts to the island's coastal region beginning with the significant impacts from Hurricane Ian on September 10, 2022. Listed below in **Table 2** is a chronological summary of coastal surveys completed along Sanibel's coastline since September 2022. and timing of tropical storm events that have impacted Sanibel's coastline.

Table 2. Monitoring Surveys and Documented Storm Events 2022-2025

Year	Storm Event or Survey	Location	Survey Extent	Surveyor
2022-September	Pre-Ian Monitoring	R-108 to R-174 Bay truncated*	Full Profiles	SDI**
<i>2022-September Hurricane Ian</i>				
2022-December	Post-Ian Monitoring	R-108 to R-174 and Bay	Wading Depth	SDI
2023-July	Beach Berm Design	R-108 to R-174	Wading Depth	SDI
<i>2023-August Hurricane Idalia</i>				
2023-December	Pre-Berm Construction	R-123.5 to R-174	MHWL	OS***
2024-April	Post Berm Construction	R-123.5 to R-174	MHWL	OS
2024-June	Post-Construction Monitoring	R-108 to R-174 and Bay	Full Profiles	SDI
<i>2024-August Hurricane Debby</i>				
<i>2024-September Hurricane Helene</i>				
<i>2024-October Hurricane Milton</i>				
2025-March	Post Milton Monitoring	R-108 to R-174 and Bay	Full Profiles	SDI
<i>Shaded refers to Storm Events</i>				

*Bay-1 through Bay-10 only due to weather.

**SDI refers to Sea Diversified, Inc. Surveyor

***OS refers to Oceanside Surveyors

2. Post-Storm Corrective Action

9/2023: 57,000 cubic yards (85,000 tons) of sand were placed on the beach from monument R-110.5 south to R-112.75 as part of the **Blind Pass Post-Storm Beach Nourishment Project**, managed by Lee County. Sand source was Stewart Materials Mine in Immokalee. The contractor was Dickerson Infrastructure, Inc.

12/2023-4/2024: Sanibel Island Post Hurricane Ian Emergency Berm / Beach Recovery Project (**Emergency Berm Project**) consisting of 259,600 cubic yards or 389,400 tons of sand R-123.5 east to R-174. Sand source was Vulcan Witherspoon Sand Plant located in Moore Haven, Florida. The contractor was Eastman Aggregate Enterprises, LLC (EAE).

4/2024: **Sanibel Lighthouse Beach Phase I**, 15,000 cubic yards (22,420 tons) of truck hauled sand from approximately R-173+100 to R-174+400 from April 22nd to April 30th, 2024. Sand source was Vulcan Witherspoon Sand Plant located in Moore Haven, Florida. The contractor was Eastman Aggregate Enterprises, LLC (EAE).

4/2024: **Clam Bayou** near R-112.75 to R-113.5 to return 4,000 cy (6,000 tons) overwashed sand to the backside of the overwashed compromised dune system. The contractor was Earth Tech Enterprises, Inc.

12/2024-2/2025: **Sanibel Lighthouse Beach Phase II**, 80,000 cubic yards of truck-hauled sand from approximately R-173+100 to R-174+400 from December to February 2025. Sand source was Vulcan Witherspoon Sand Plant located in Moore Haven, Florida. The contractor was Eastman Aggregate Enterprises, LLC (EAE).

4/2025: **Clam Bayou** near R-112.75 to R-113.5 to return 6,000 cy overwashed sand to the backside of the overwashed dune system. The contractor was Earth Tech Enterprises, Inc.

This monitoring report presents an evaluation of the annual changes in the volumetric and shoreline changes along Sanibel's coastline since completion of the June 2024 monitoring survey and cumulative changes since the pre-Hurricane Ian survey completed in September 2022. Following the completion of Sanibel Island's Post Hurricane Ian Emergency Berm / Beach Recovery Project (Emergency Berm Project) project in April 2024, Sanibel's coastal region was impacted by Hurricanes Debby (August 2024), Hermine (September 2024), and Milton (October 2024). The City of Sanibel commissioned a post Hurricane Milton Survey and agency coordination with Humiston & Moore Engineers (H&M) for the documentation and evaluation of storm impacts. A portion of the Sanibel Lighthouse Beach was nourished in April 2024, and the remainder was completed in February 2025 prior to the island-wide survey completed in March 2025.

The survey certification report for the June 2025 post-construction monitoring survey by SDI is provided in **Appendix A**. The analysis in this monitoring report is based on data from the surveys listed in **Table 2** conducted by SDI, along with the immediate pre/post berm-construction surveys extending to the mean high water line (MHWL) by OS under contract with EAE. These surveys are shown graphically on the beach profiles provided in **Appendix B**.

3. Shoreline and Volumetric Change Analysis

Shoreline Change Analysis: Shoreline change was determined at each monument for pre-Hurricane Ian (9/2022), 2024 Annual Monitoring which included the Beach Berm Project (06/2024), and 2025 Annual Monitoring which included the 2024 Hurricane Season (03/2025). The analysis was conducted for the most recent year from 06/2024 to 03/2025 and the cumulative period since pre-Hurricane Ian from 09/2022 to 09/2025. Shoreline change is the distance between the horizontal position of the mean high water level (MHWL)² on the beach face for different surveys. By convention, positive values indicate accretion and negative values indicate erosion.

Table 3 shows the shoreline change for the portion of the beach not receiving truck-hauled sand as part of the Emergency Berm Project from R-108 east to R-123; however, this section did receive sand from R-110.5 south to R-112.75, and the Clam Bayou portion of the project ranging from R-112.75 to R-113.5 was regraded utilizing existing sand. Areas experiencing shoreline losses (10 feet or greater) are shaded in gray. The entire reach (from R-108 to R-123), encompassing Blind Pass (located between R-109 and R-110), lost on average almost 50 feet (-49) from Pre-Hurricane Ian to June 2024, 30 feet (-31) since June 2024, and a cumulative average of almost 80 feet since prior to Hurricane Ian. Note, the northern portion of this reach, north and south of the inlet, are influenced by changes at the pass.

² The MHWL elevation used for this report is +0.28 feet NAVD.

Table 4 shows the shoreline change within the Emergency Berm Project area from R-123.5 east to R-174. This reach also encompasses the project area for Phases I (pre 2024 survey) and II (post 2024 survey) of the Sanibel Lighthouse Beach Nourishment Project located at the east end of the island. The monuments are grouped based on general erosional and accretional trends with shoreline losses (10 feet or greater) shaded in gray. There were relatively significant losses downdrift of Blind Pass at the western end of this section and high losses at the eastern end near the lighthouse. Sand placed at Lighthouse Beach was limited during April 2024. More significant sand placement at Lighthouse Beach was completed in early 2025.

The emergency berm was constructed well landward of the shoreline in most cases from December 2023 to April 2024, restoring sand to the beach berm and foredune area. The final column in **Table 4** shows the cumulative change from the pre-lan survey dated September 2022 to the monitoring survey in June 2024 at +4 feet, and the annual and cumulative change to the most recent monitoring survey dated March 2024 at +1 foot and +5 feet, respectively. Impacts from winter storm fronts and tropical events during the summer can erode upland beach and dune areas and will frequently leave behind a low, flat beach. While the shore change can appear minimal the volumetric change can be more significant.

Table 3. Shoreline and Volumetric Change R-108 to R-123.

TABLE 3: SANIBEL ISLAND SHORELINE AND NEARSHORE VOLUME CHANGE 9/2022 TO 3/2025								
Monument	9/2022 to 6/2024		6/2024 to 3/2025		9/2022 to 3/2025			
	Shoreline	Volume	Shoreline	Volume	Shoreline	Volume	Avg. SL	Total Vol.
	Change	Change	Change	Change	Change	Change	Change	Change
	(Feet)	(CY)	(Feet)	(CY)	(Feet)	(CY)	(Feet)	(CY)
R-108	5	-1,660	-38	-3,340	-33	-5,000	0	-28,000
R-108.25	-8	-4,470	-31	-7,410	-39	-11,880		
R-108.50	7	3,820	-7	-9,350	0	-5,530		
R-108.75	-59	-5,360	107	1,170	49	-4,190		
R-109	-76	-5,030	125	4,130	49	-900		
R-110	144	-7,380	-32	-1,090	112	-8,470	-60	-117,000
R-110.25	-62	-1,250	-69	-16,750	-131	-18,000		
R-110.5	-85	-16,180	-79	-12,810	-164	-28,990		
R-110.75	-56	-11,840	-33	-5,320	-89	-17,160		
R-111	-11	-8,680	-30	-3,200	-41	-11,880		
R-111.25	-23	-8,990	-11	100	-33	-8,890		
R-111.50	-31	-3,460	-47	-5,400	-78	-8,860		
R-111.75	-21	-2,970	-21	-290	-42	-3,250		
R-112	-29	-800	28	2,720	-1	1,920		
R-112.25	-42	780	-17	-8,120	-59	-7,340		
R-112.50	-85	-3,520	-12	-2,430	-97	-5,950		
R-112.75	-97	-6,400	-6	-2,000	-104	-8,400		
R-113	-87	-13,880	-95	-5,750	-183	-19,630		
R-113.50	-117	-34,890	-43	-1,370	-159	-36,260		
R-114	-128	-27,260	-16	4,070	-144	-23,180	-100	-209,000
R-114.50	-61	-12,640	18	2,140	-43	-10,500		
R-115	-22	4,900	-124	-7,680	-146	-2,780		
R-115.50	-35	5,750	-98	-25,810	-133	-20,060		
R-116	-2	15,090	-119	-21,560	-121	-6,470		
R-116.50	-31	5,060	-75	-15,030	-106	-9,970		
R-117	-71	-14,720	-11	-1,030	-82	-15,750		
R-117.50	-84	-17,260	-57	2,290	-141	-14,970		
R-118	-90	-11,460	-58	-5,180	-148	-16,640		
R-118.50	-84	-12,610	-51	-2,850	-135	-15,460		
R-119	-47	-7,990	-57	-6,950	-104	-14,940		
R-119.50	-27	-1,380	-66	-6,080	-94	-7,470		
R-120	-28	-4,250	-61	-5,040	-89	-9,290		
R-120.50	-47	-14,030	-9	8,010	-56	-6,020		
R-121	-60	-10,660	-35	2,060	-96	-8,600		
R-121.50	-58	-12,110	-39	6,150	-97	-5,960		
R-122	-54	-10,240	-20	9,170	-74	-1,070		
R-122.50	-72	-12,480	-5	6,400	-77	-6,080		
R-123	-114	-26,100	22	12,640	-92	-13,460		
Avg. / Total:	-49	-297,000	-31	-121,000	-80	-417,000	(Rounded for Clarity)	
Beach Fill Added:								
R-110 - R-112.75		57,000						

Gray shading indicates a shoreline loss of 10 feet or greater for each monument.

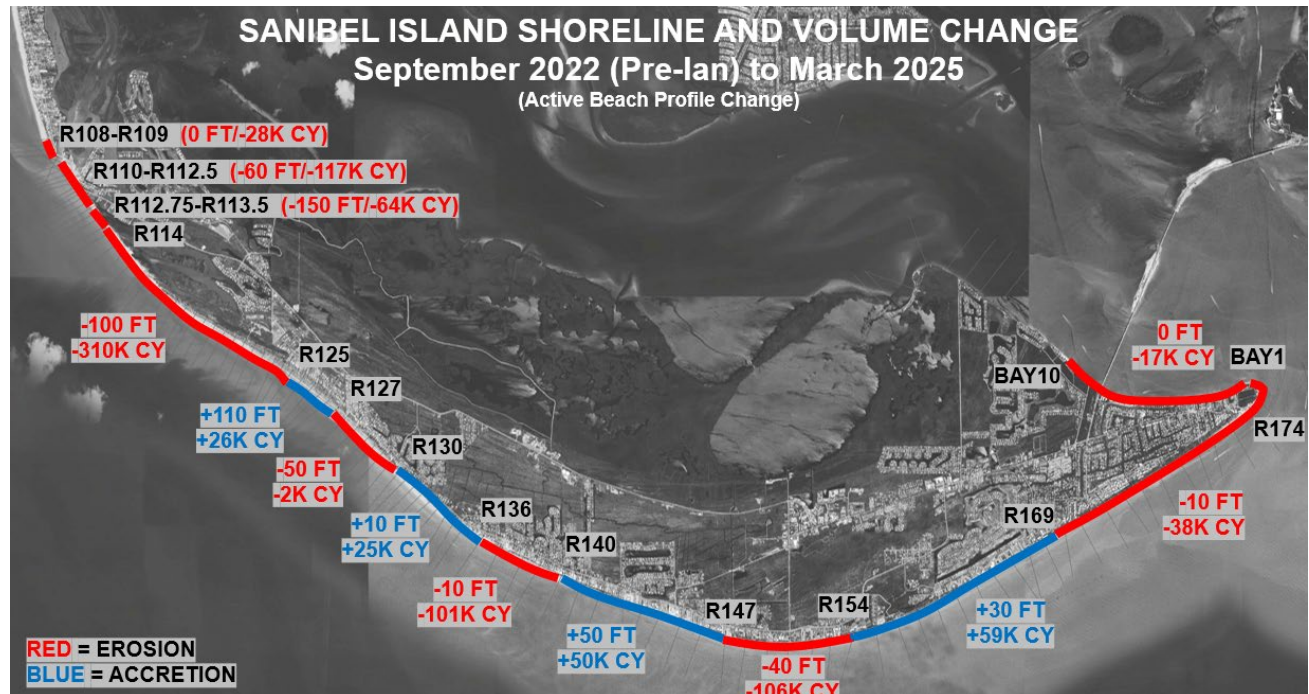
Table 4. Shoreline and Volumetric Change R-123.5 to R-174.

TABLE 4: SANIBEL ISLAND SHORELINE AND NEARSHORE VOLUME CHANGE 9/2022 TO								
Monument	9/2022 to 6/2024		6/2024 to 3/2025		9/2022 to 3/2025			Total Vol. Change (CY)
	Shoreline Change (Feet)	Volume Change (CY)	Shoreline Change (Feet)	Volume Change (CY)	Shoreline Change (Feet)	Volume Change (CY)	Avg. SL Change (Feet)	
R-123.50	-139	-28,850	22	4,990	-117	-23,860	-80	-101,000
R-124	-87	-30,700	-54	-2,820	-141	-33,520		
R-124.50	-35	-18,990	-69	-15,770	-104	-34,750		
R-125	6	-5,400	26	-3,800	32	-9,200		
R-125.50	34	860	49	-250	83	600	110	26,000
R-126	52	2,970	58	3,960	110	6,930		
R-126.50	35	6,670	91	12,070	126	18,740		
R-127	29	3,010	-71	3,940	-42	6,950		
R-127.50	23	-3,920	-67	4,100	-45	180	-50	-2,000
R-128	14	-2,120	-75	-3,350	-61	-5,470		
R-128.50	14	-400	-63	2,100	-50	1,700		
R-129	13	560	-67	-1,760	-54	-1,200		
R-129.50	17	2,560	-81	-4,750	-64	-2,190	10	25,000
R-130	23	2,470	-52	-3,940	-29	-1,470		
R-130.50	33	6,460	-42	-2,830	-8	3,640		
R-131	32	4,230	-37	-2,230	-5	2,000		
R-131.50	39	11,940	-33	-4,390	6	7,550	-10	-101,000
R-132	51	9,930	-10	-260	41	9,670		
R-132.50	20	-70	2	-540	22	-610		
R-133	-1	-1,280	29	570	28	-710		
R-133.50	13	1,410	-19	-4,140	-6	-2,730	50	50,000
R-134	-18	-5,990	32	10,760	15	4,770		
R-135	-25	-1,700	41	3,020	16	1,320		
R-136	-34	-4,490	46	1,390	12	-3,100		
R-137	-100	-65,210	40	6,880	-60	-58,330	-40	-106,000
R-138	-64	-48,340	60	12,850	-5	-35,490		
R-139	11	630	11	-4,660	22	-4,030		
R-140	30	630	-2	2,970	27	3,600		
R-141	56	7,190	14	7,880	70	15,080	30	59,000
R-142	65	12,540	30	-2,660	95	9,880		
R-143	70	-1,850	-16	-4,000	55	-5,850		
R-144	75	10,280	-32	1,660	43	11,940		
R-145	54	11,840	-6	-4,160	48	7,680	-40	-106,000
R-146	21	7,530	12	-330	33	7,210		
R-147	-17	-700	-47	-6,710	-65	-7,430		
R-148	-27	-16,880	-72	-15,460	-99	-32,340		
R-149	-69	-14,130	-20	-7,000	-89	-21,130	30	59,000
R-150	-49	-14,560	-3	1,750	-52	-12,810		
R-151	3	760	-1	-12,330	2	-11,560		
R-152	-16	-3,890	30	-7,950	14	-11,840		
R-153	-59	-13,160	99	4,130	40	-9,030	-10	-38,000
R-154	34	10,450	25	-6,350	59	4,100		
R-155	86	16,960	-61	-13,850	25	3,110		
R-156	31	10,740	-60	-2,610	-30	8,130		
R-157	-9	2,130	-13	2,280	-22	4,410	-10	-38,000
R-158	-7	-1,020	22	520	15	-500		
R-159	-7	-3,740	17	6,790	10	3,050		
R-160	41	4,480	25	-3,460	66	1,020		
R-161	43	8,790	39	190	83	8,980	-10	-38,000
R-161A	19	4,210	26	5,920	46	10,130		
R-162	16	5,190	6	-5,050	22	140		
R-163	45	5,920	-20	-4,560	25	1,360		
R-164	34	11,370	15	-11,470	48	-100	-10	-38,000
R-165	66	16,780	12	-10,550	78	6,240		
R-166	52	5,600	-10	1,770	42	7,370		
R-167	-42	-2,130	104	4,940	62	2,810		
R-168	-65	-11,800	92	10,990	27	-810	-10	-38,000
R-169	-64	-9,940	37	-5,140	-27	-15,090		
R-170	-18	970	-11	2,970	-29	3,940		
R-171	10	-710	-17	920	-8	210		
R-172	11	-7,120	-8	9,240	3	2,120	-10	-38,000
R-173	-66	-27,690	56	5,840	-10	-21,850		
R-174	-49	-9,840	40	2,240	-9	-7,610		
Avg. / Total	4	-149,000	1	-40,000	5	-188,000	Rounded for Clarity	
Beach Fill Added:								
R-171 - R-174		15,000		105,900		120,900		

Gray shading indicates a shoreline loss of 10 feet or greater for each monument.

Shoreline and volume change outlined in **Tables 3 thru 5** are summarized graphically in **Figure 2** showing the location of accretional and erosional trends in the monitoring area overlaid on an aerial image of the island. The alternating segments of sediment gains and losses correspond with areas of protruding and recessed shorelines, whereas Hurricane Ian tended to straighten the shoreline and distribution of sand.

Figure 2. Shoreline and Volume Change Active Beach Profile



Volumetric Change Analysis: Volumetric change, comparing the change in the volume of sand between surveys, was determined at varying times for each monument. Full beach profiles were compared for the September 2022 (pre-Ian), the annual monitoring June 2024, and the most recent March 2025 monitoring surveys. Areas experiencing a volumetric loss of 1,000 cubic yards or greater for each monument are shaded in gray. The limits for the volumetric analysis are shown on the beach profiles provided in **Appendix B**, determined by the landward extent of the survey data and the seaward closure of the active beach zone. Alterations were made as appropriate to account for unusual isolated volumetric changes occurring such as movement of the offshore bar from storm effects etc.

Tables 3 and 4 include the incremental and cumulative volume change alongside the shoreline changes discussed in the previous section. These include the periods from the pre-Ian to the 2024 annual survey and the most recent 2025 monitoring survey for monuments R-108 east to R-174, and at the graphical limits shown on the beach profiles provided in **Appendix B**.

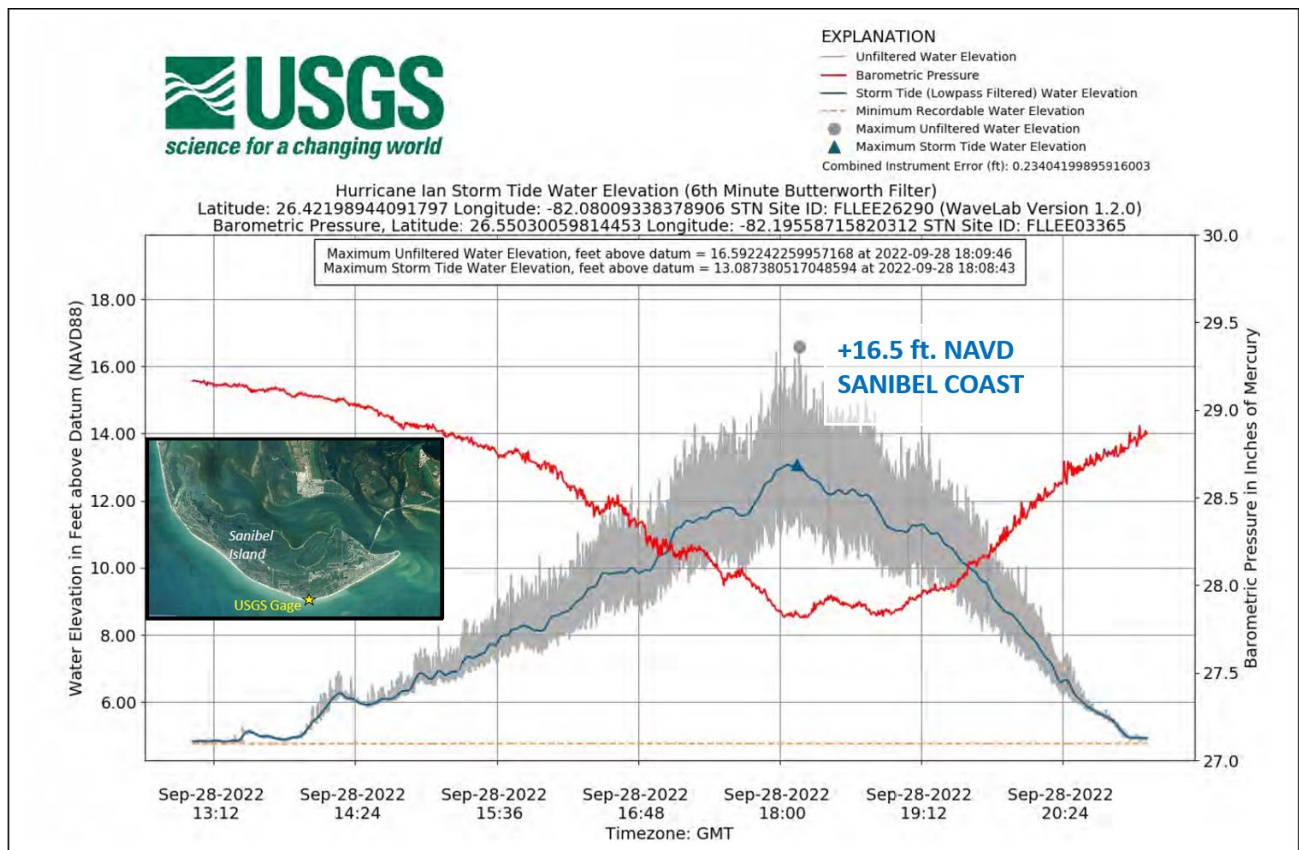
Erosion is evident from monument R-108 east to R-123 as both the shoreline and volume change generally show loss throughout the reach, as shown in **Table 3**, with the trend continuing eastward to monument R-125, as shown in **Table 4**. The dashed lines in **Table 4** are approximate designations of areas of accretional or erosional trends. Refer to **Figure 2**. There is general correlation between the shoreline and volumetric losses in these reaches within the individual time periods. The monitoring area along the Gulf from R-108 east to R-174 lost approximately 417K cubic yards of sand since Hurricane Ian from the active beach zone, measured to just beyond the

offshore sand bar. Gains and losses within this zone typically within 1,000 feet offshore were noticeable and can correlate between changes along the profile. When considering less pronounced changes further offshore, total measured losses can be misleading as they are not considered to be as recoverable as part of the active beach profile and were generated by the passage of extreme wave conditions accompanying a 100-year or higher storm event.

Recall that emergency water level gages deployed by the U.S. Geological Survey (USGS) just prior to the impact of Hurricane Ian had measured water levels as high as +16.5 feet NAVD. Additional data from a Sanibel Captiva Conservation Foundation measured wave heights exceeding 20 feet just 3 miles offshore. This higher energy associated with this significant storm resulted in sand movement along the profile much further offshore and in deeper waters than typically experienced off Sanibel. Refer to **Figure 3**.

The segment of shoreline from R-111 south to R-118 has been nourished in the past as part of the Captiva Beach Restoration project. **Appendix C** shows the changes in the shoreline and beach profiles along this segment since pre-Ian (9/2022 to 03/2025) totaling sand loss of approximately 350,000 cy.

Figure 3. USGS Water Level Gage on Sanibel During Hurricane Ian



These changes are further exemplified by **Figure 4**, a contour change map with volumetric gain shown in darker shades of brown and loss shown in darker shades of blue, from the September 2022 to March 2025 survey. Losses are most evident just west of the emergency berm project area within the downdrift influence of Blind Pass.

Figure 4. Contour Change Map

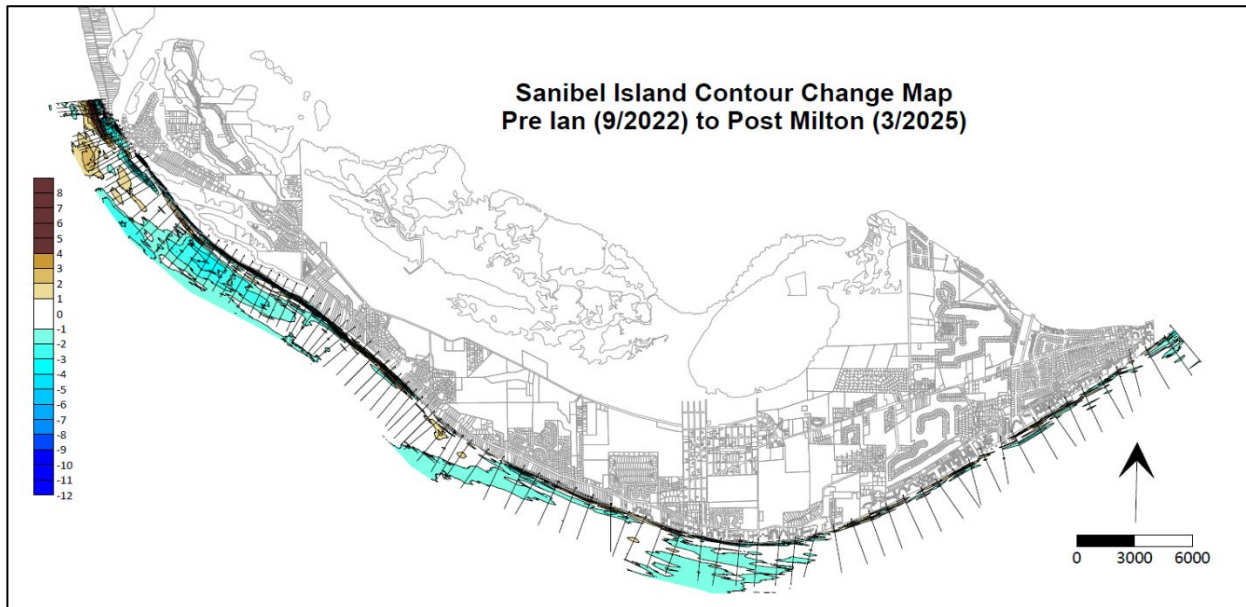


Table 5 shows the shoreline and volume change of the beach profiles acquired along San Carlos Bay from pre-Ian September 2022, to June 2024, and the most recent monitoring survey dated March 2025. The change was not significant relative to the changes along the Gulf beaches. The cumulative changes indicate an average shoreline gain of +2 feet and a total loss of -17K cubic yards of sand. The majority of the beach width prior to June 2024 was lost near the east end of the island, the Lighthouse Beach area, which was subsequently nourished in early 2025.

Table 5. Shoreline and Volume Change Bay-1 to Bay-10 from September 2022 to March 2025.

TABLE 5: SANIBEL ISLAND SHORELINE AND NEARSHORE VOLUME CHANGE 9/2022 TO 3/2025								
Monument	9/2022 to 6/2024		6/2024 to 3/2025		9/2022 to 3/2025			
	Shoreline Change	Volume Change	Shoreline Change	Volume Change	Shoreline Change	Volume Change	Avg. SL Change	Total Vol. Change
	(Feet)	(CY)	(Feet)	(CY)	(Feet)	(CY)	(Feet)	(CY)
BAY-1	-24	-2,050	26	2,110	2	60	0	-17,000
BAY-2	5	120	0	210	5	330		
BAY-3	2	-490	1	-920	3	-1,410		
BAY-4	-12	-1,790	10	-460	-1	-2,250		
BAY-5	-2	-680	10	-640	9	-1,320		
BAY-5A	-3	1,510	-1	960	-5	2,470		
BAY-6	0	2,210	-4	-1,980	-4	230		
BAY-7	1	20	-4	800	-2	820		
BAY-8	3	-15,800	0	770	2	-15,030		
BAY-9	1	2,370	1	490	2	2,860		
BAY-10	8	-6,080	2	2,420	10	-3,650		
Avg. / Total:	-2	-20,700	4	3,800	2	-16,900	(Rounded for Clarity)	

Gray shading indicates shoreline loss of 10 feet or greater, or a volumetric loss of 1,000 cubic yards or greater for each monument.

4. DEP and FEMA Funding Participation

Estimates of sand loss were provided to the FDEP for consideration of potential funding from the Florida Legislature for post storm recovery and for FEMA as part of a Category B funding assistance program. The state FDEP Office of Resilience and Coastal Protection completed their post storm funding request report entitled *Hurricanes Debby, Helene and Milton Recovery Plan for Florida's Beach and Dune System (March 11, 2025)*, and a copy of this report is provided in **Appendix D**. This funding request was not granted.

Additionally, the FEMA Emergency Public Assistance Program for CAT B involves implementation of emergency beach berms for protection against damage to eligible improved public or private property from an immediate threat from a 5-year return storm. FEMA has updated their procedures for determination of eligibility determination, and existing public and private development on Sanibel's coastline did not meet this criterion following impact from the 2024 hurricane season. Refer to H&M Engineers memorandum dated September 3, 2025 in **Appendix E**.

5. Summary and Recommendations

Summary: Sand placement since Hurricane Ian was beneficial in addressing areas of high erosion and restoring the beach system. The following summarizes the sand placement on Sanibel Island since Hurricane Ian.

<u>Area of Fill Placement</u>	<u>Time of Completion</u>	<u>Cubic Yards</u>	<u>Tons</u>
1) North Sanibel R-110.5-112.75	September 2023	57,000	85,000
2) North Sanibel R-112.75 to R-113.5	April 2024	4,000	6,000
3) Sanibel Main R-123.5 to R-174	April 2024	259,600	389,400
4) Lighthouse Phase I	April 2024	15,000	22,420
5) Lighthouse Phase II	February 2025	105,900	158,250
6) North Sanibel R-112.75 to R-113.5	April 2025	6,000	9,000
Total		<u>447,500</u>	<u>670,070</u>

The areas of highest erosion remains downdrift of Blind Pass. If funding remains available from the Post Ian Storm Recovery Program from DEP, then efforts to restore that beach (R-111 to R-118) are recommended to be coordinated when Captiva Erosion Prevention District conducts their nourishment project. Refer to **Appendix C**.

Ongoing Beach Management Efforts & Recommendations: The following efforts are underway by the City to treat chronic erosion problems outside the limits of the Emergency Berm / Beach Recovery Construction Project:

- 1) Sanibel Lighthouse Beach area: The City has obtained long-term 15-year duration permits with the state DEP and the USACE to maintain beach conditions similar to that as existing just prior to Hurricane Ian.

Recommendation: Continue to monitor per permit requirements.

- 2) Clam Bayou: The City is pursuing long-term 15-year duration permits with the state DEP and the USACE to dredge overwashed sand and restore the backside of the primary dune. This is a common area of overwash due to narrow beach conditions.

Recommendation: Continue to pursue the long-term permits. Construct between November 1st and February 15th to remain outside the sea turtle and shorebird nesting seasons and continue to monitor.

- 3) Blind Pass Inlet Maintenance Implementation: In accordance with the state adopted Blind Pass Inlet management Plan, the inlet is dredged on approximate 4-year frequency and the County is obligated to place a minimum of 21,000 cy/per year of sand along the north end of Sanibel Island. Project is managed and monitored by Lee County. Last dredging occurred in 2019.

Recommendation: Continue to coordinate with Lee County staff and provide input on beach disposal based on City needs and beach conditions.

- 4) North Sanibel Beach Restoration: Captiva Erosion Prevention District (CEPD) continues to provide necessary support to conduct beach restoration on Captiva Island on approximate 7-year intervals. Nourishment was last completed in November 2021, placing approximately 750,000 cubic yards along 4.85 miles of shoreline. Next project is planned to commence late September 2025.

Recommendation: Coordinate with CEPD and their contractor on upcoming projects, including plan review and opportunities for sand placement on north Sanibel, and review project monitoring.

- 5) Beach Surveys: The City of Sanibel conducts annual monitoring surveys of the beaches and portions of the Bay front area.

Recommendation: Continue monitoring and review scope of survey to include problem chronic areas.

Appendix A: June 2025 Post-Construction SDI Survey Certification



Sea Diversified, Inc.

160 Congress Park Drive, #114
Delray Beach, Florida 33445
Phone: 561-243-4920
www.seadiversified.com

SURVEYOR'S CERTIFICATION & NOTES

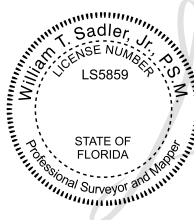
Survey Title: Sanibel Island Annual Monitoring Survey
Topographic & Hydrographic Survey
Date of Report: April 2, 2025 (Updated June 17, 2025)
Prepared for: Humiston & Moore Engineers
Prepared by: Sea Diversified, Inc.
(SDI Project Number 24-3078)
Date of Survey: February 12, 2025 – March 19, 2025
Survey Scope: Beach and Offshore Profiles from FDEP Range Monuments R-108 to R-174, including 37 intermediate R-lines and Bay-1A to Bay-21, Sanibel Island, Lee County, Florida.

Notes:

1. This survey report was prepared to accompany the digital data files (ASCII X,Y,Z) submitted to Humiston and Moore Engineers that were acquired as part of the 2025 Sanibel Island Annual Monitoring Survey. The survey encompassed upland topographic and offshore bathymetric profile data collection from FDEP Range Monuments R-108 to R-174 including 37 intermediate R-lines and Bay-1A to Bay-21, totaling 131 profiles in accordance with the profile control plan provided by Humiston and Moore Engineers.
2. This survey report is not valid without the signature and the original raised seal of a Florida Licensed Surveyor and Mapper.
3. The information depicted herein represents the results of the survey on the dates indicated and can only be considered as indicating the general conditions existing at the time.
4. Horizontal data are in feet and relative to the Florida State Plane Coordinate System based on the Transverse Mercator Projection for Florida, West Zone (0902), North American Datum (NAD) of 1983, 1990 Adjustment. Vertical data are in feet and relative to the North American Vertical Datum of 1988 (NAVD 88).
5. Bathymetric data was collected using a Trimble Real-Time Kinematic (RTK) Global Positioning System (GPS) for positioning and an Odom Echotrac CV100 Echosounder for soundings. Horizontal position accuracy was verified using published profile control points. The sounder was calibrated prior to the start of the survey following manufacturer recommended procedures.
6. RTK tides were applied in real-time during the course of the bathymetric survey. For redundancy, tides were observed at five-minute intervals at tide staff(s) set to 0.0 feet relative to NAVD 88 using a self-recording pressure gauge. The tide staff was attached to a steel pipe located near and relative to profile control monument(s) 'R-156' having a published elevation of 5.06 feet, NAVD 88, 'R-146' having a published elevation of 4.28 feet, NAVD 88, 'R-126' having a published elevation of 5.26 feet, NAVD 88 and 'R-109' having a published elevation of 10.02 feet, NAVD 88.
7. Topographic data was collected using Real-Time Kinematic (RTK) GPS. RTK positioning was calibrated to the following recovered control points:
 - Control Point: A64 RM1
Northing: 770091.06
Easting: 608949.53
Elevation: 5.35-ft NAVD88
 - Control Point: A18
Northing: 764943.60
Easting: 643478.53
Elevation: 2.56-ft NAVD88
 - Control Point: R-109
Northing: 781245.28
Easting: 596357.26
Elevation: 10.02-ft NAVD88



I hereby certify that the Topographic / Hydrographic survey is based on a recent field survey conducted under my personal direction and is true and accurate to the best of my knowledge and belief and meets the Standards of Practice set forth by the Florida Board of Professional Surveyors and Mappers in Chapter 5J-17.050, Florida Administrative Code, pursuant to Section 472.027, Florida Statutes.



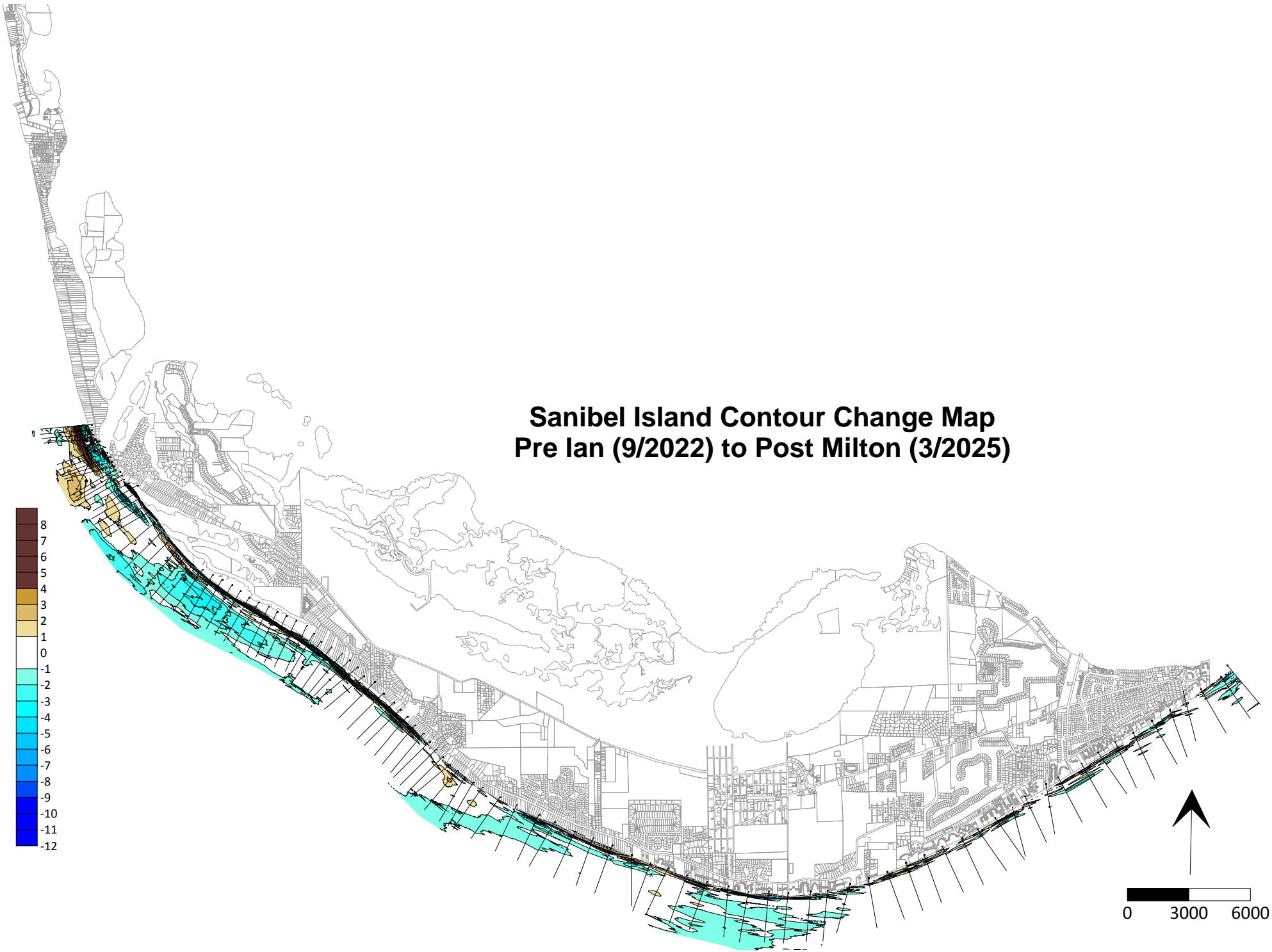
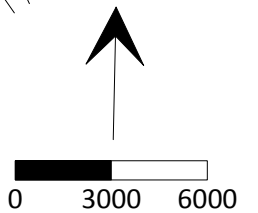
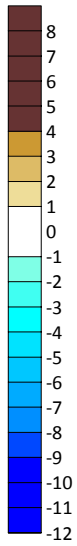
Digitally signed
by William T
Sadler Jr.
Date:
2025.06.17
14:15:07 -04'00'

William T. Sadler Jr., P.E., P.S.M.
Florida Registration Number 5859
Sea Diversified Inc. LB Number 7342

June 17, 2025
Date

Appendix B: March 2025 Beach Profiles

**Sanibel Island Contour Change Map
Pre Ian (9/2022) to Post Milton (3/2025)**



SANIBEL ISLAND SHORELINE AND VOLUME CHANGE

September 2022 (Pre-Ian) to March 2025

(Active Beach Profile Change)

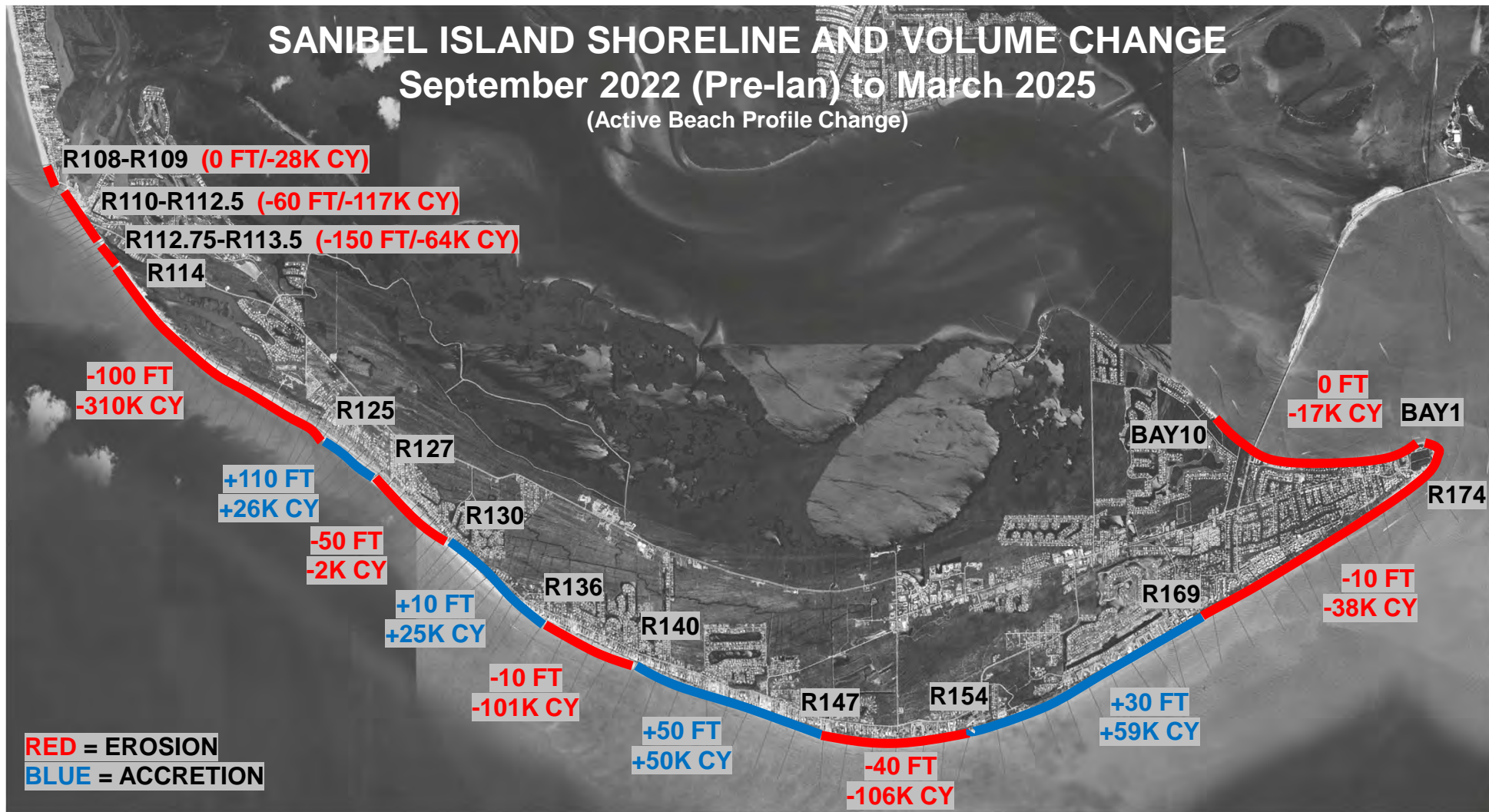


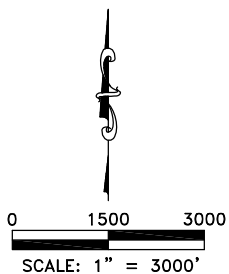
FIGURE 2a. SURVEY SCOPE

2023 BLIND PASS
POST-STORM BEACH
NOURISHMENT PROJECT
BY LEE COUNTY

2024 CLAM BAYOU
BEACH RECOVERY
PROJECT

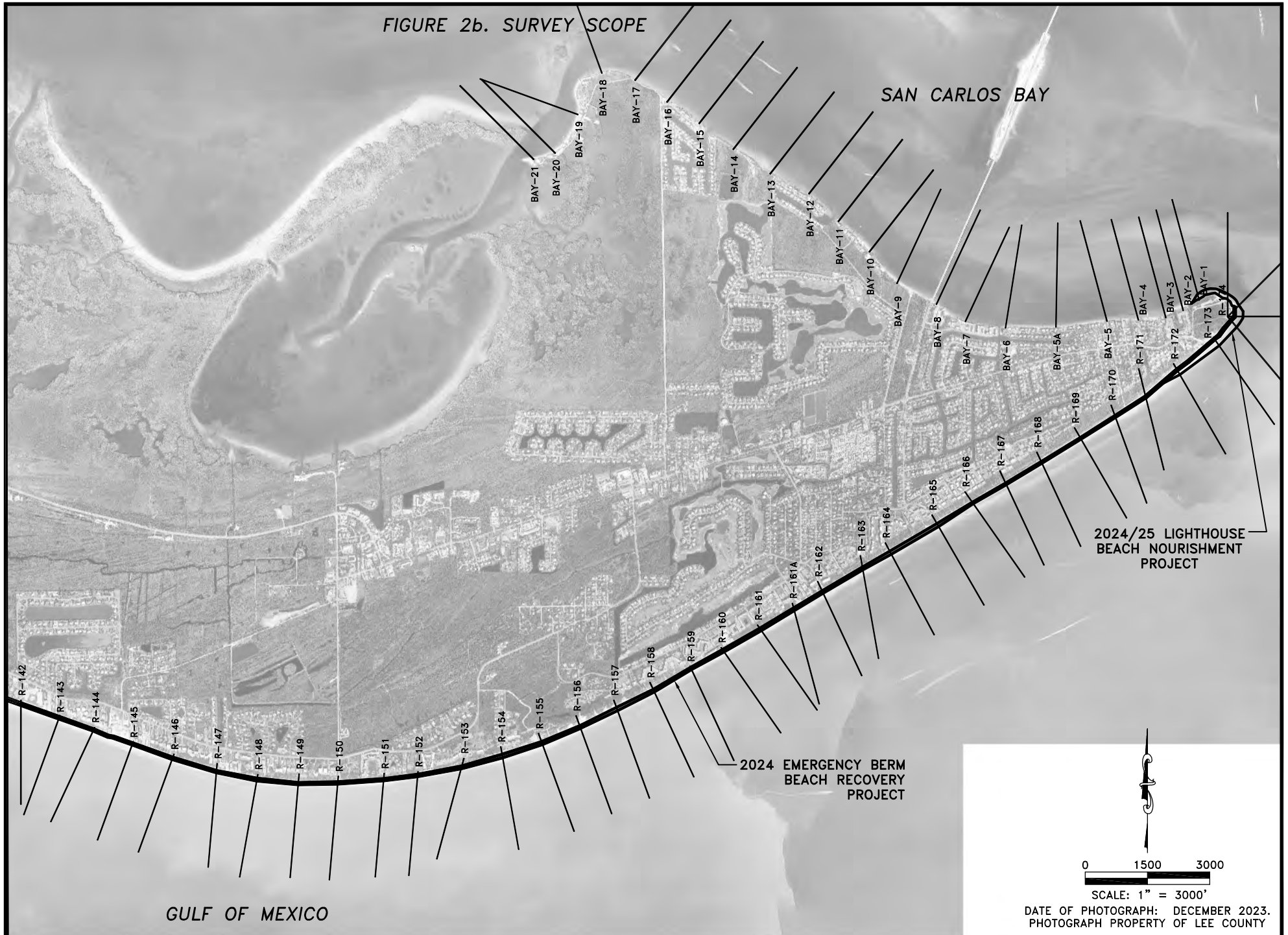
GULF OF MEXICO

2024 EMERGENCY BERM
BEACH RECOVERY
PROJECT



DATE OF PHOTOGRAPH: DECEMBER 2023.
PHOTOGRAPH PROPERTY OF LEE COUNTY

FIGURE 2b. SURVEY SCOPE

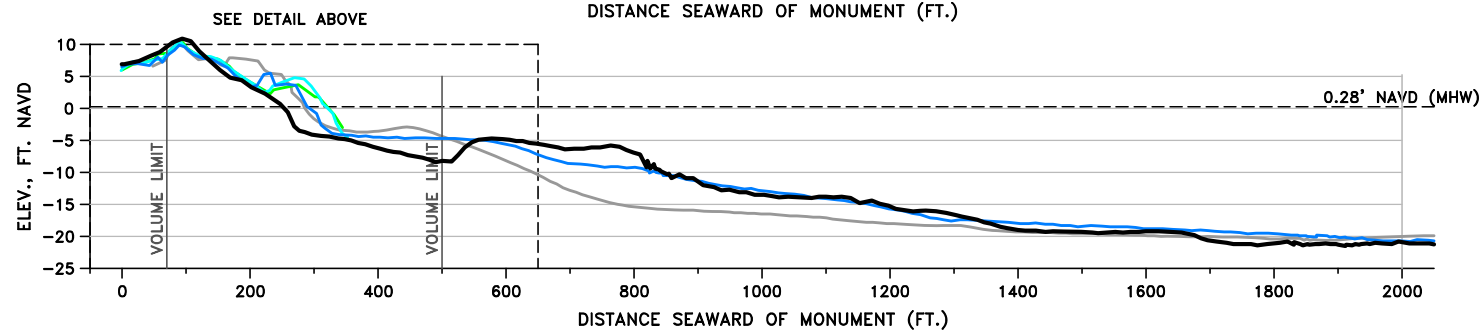
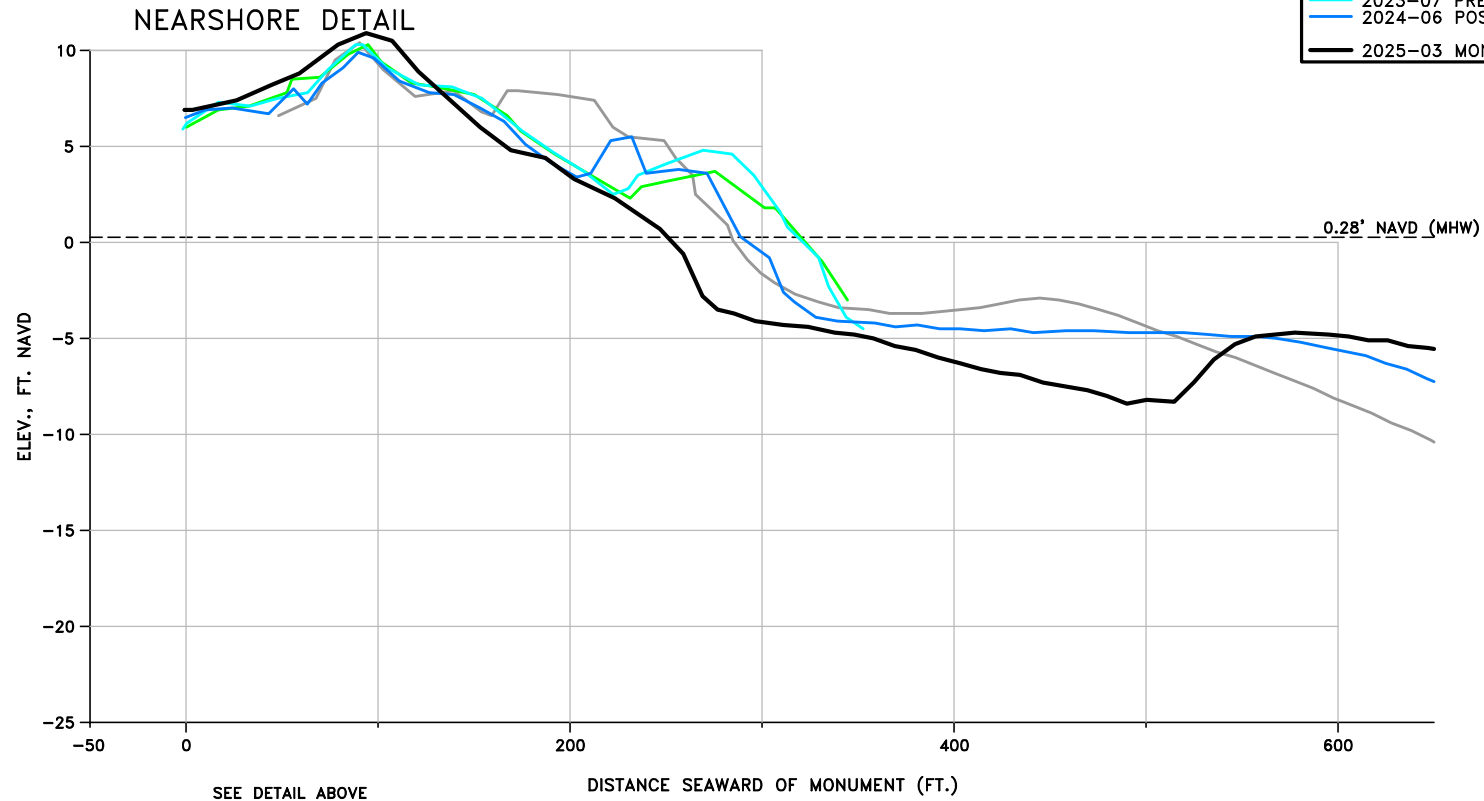


SANIBEL ISLAND SHORELINE AND NEARSHORE VOLUME CHANGE 9/2022 TO 3/2025								
Monument	9/2022 to 6/2024		6/2024 to 3/2025		9/2022 to 3/2025			
	Shoreline Change (Feet)	Volume Change (CY)	Shoreline Change (Feet)	Volume Change (CY)	Shoreline Change (Feet)	Volume Change (CY)	Avg. SL Change (Feet)	Total Vol. Change (CY)
R-108	5	-1,660	-38	-3,340	-33	-5,000	0	-28,000
R-108.25	-8	-4,470	-31	-7,410	-39	-11,880		
R-108.50	7	3,820	-7	-9,350	0	-5,530		
R-108.75	-59	-5,360	107	1,170	49	-4,190		
R-109	-76	-5,030	125	4,130	49	-900		
R-110	144	-7,380	-32	-1,090	112	-8,470	-60	-117,000
R-110.25	-62	-1,250	-69	-16,750	-131	-18,000		
R-110.5	-85	-16,180	-79	-12,810	-164	-28,990		
R-110.75	-56	-11,840	-33	-5,320	-89	-17,160		
R-111	-11	-8,680	-30	-3,200	-41	-11,880		
R-111.25	-23	-8,990	-11	100	-33	-8,890		
R-111.50	-31	-3,460	-47	-5,400	-78	-8,860		
R-111.75	-21	-2,970	-21	-290	-42	-3,250		
R-112	-29	-800	28	2,720	-1	1,920		
R-112.25	-42	780	-17	-8,120	-59	-7,340		
R-112.50	-85	-3,520	-12	-2,430	-97	-5,950	-150	-64,000
R-112.75	-97	-6,400	-6	-2,000	-104	-8,400		
R-113	-87	-13,880	-95	-5,750	-183	-19,630		
R-113.50	-117	-34,890	-43	-1,370	-159	-36,260	-100	-209,000
R-114	-128	-27,260	-16	4,070	-144	-23,180		
R-114.50	-61	-12,640	18	2,140	-43	-10,500		
R-115	-22	4,900	-124	-7,680	-146	-2,780		
R-115.50	-35	5,750	-98	-25,810	-133	-20,060		
R-116	-2	15,090	-119	-21,560	-121	-6,470		
R-116.50	-31	5,060	-75	-15,030	-106	-9,970		
R-117	-71	-14,720	-11	-1,030	-82	-15,750		
R-117.50	-84	-17,260	-57	2,290	-141	-14,970		
R-118	-90	-11,460	-58	-5,180	-148	-16,640		
R-118.50	-84	-12,610	-51	-2,850	-135	-15,460		
R-119	-47	-7,990	-57	-6,950	-104	-14,940		
R-119.50	-27	-1,380	-66	-6,080	-94	-7,470		
R-120	-28	-4,250	-61	-5,040	-89	-9,290		
R-120.50	-47	-14,030	-9	8,010	-56	-6,020		
R-121	-60	-10,660	-35	2,060	-96	-8,600		
R-121.50	-58	-12,110	-39	6,150	-97	-5,960		
R-122	-54	-10,240	-20	9,170	-74	-1,070		
R-122.50	-72	-12,480	-5	6,400	-77	-6,080		
R-123	-114	-26,100	22	12,640	-92	-13,460		
Avg. / Total:	-49	-297,000	-31	-121,000	-80	-417,000	(Rounded for Clarity)	

SANIBEL ISLAND SHORELINE AND NEARSHORE VOLUME CHANGE 9/2022 TO 3/2025								
Monument	9/2022 to 6/2024		6/2024 to 3/2025		9/2022 to 3/2025			Total Vol. Change (CY)
	Shoreline Change (Feet)	Volume Change (CY)	Shoreline Change (Feet)	Volume Change (CY)	Shoreline Change (Feet)	Volume Change (CY)	Avg. SL Change (Feet)	
R-123.50	-139	-28,850	22	4,990	-117	-23,860	-80	-101,000
R-124	-87	-30,700	-54	-2,820	-141	-33,520		
R-124.50	-35	-18,990	-69	-15,770	-104	-34,750		
R-125	6	-5,400	26	-3,800	32	-9,200		
R-125.50	34	860	49	-250	83	600	110	26,000
R-126	52	2,970	58	3,960	110	6,930		
R-126.50	35	6,670	91	12,070	126	18,740		
R-127	29	3,010	-71	3,940	-42	6,950		
R-127.50	23	-3,920	-67	4,100	-45	180	-50	-2,000
R-128	14	-2,120	-75	-3,350	-61	-5,470		
R-128.50	14	-400	-63	2,100	-50	1,700		
R-129	13	560	-67	-1,760	-54	-1,200		
R-129.50	17	2,560	-81	-4,750	-64	-2,190	10	25,000
R-130	23	2,470	-52	-3,940	-29	-1,470		
R-130.50	33	6,460	-42	-2,830	-8	3,640		
R-131	32	4,230	-37	-2,230	-5	2,000		
R-131.50	39	11,940	-33	-4,390	6	7,550	-10	-101,000
R-132	51	9,930	-10	-260	41	9,670		
R-132.50	20	-70	2	-540	22	-610		
R-133	-1	-1,280	29	570	28	-710		
R-133.50	13	1,410	-19	-4,140	-6	-2,730	50	50,000
R-134	-18	-5,990	32	10,760	15	4,770		
R-135	-25	-1,700	41	3,020	16	1,320		
R-136	-34	-4,490	46	1,390	12	-3,100		
R-137	-100	-65,210	40	6,880	-60	-58,330	-40	-106,000
R-138	-64	-48,340	60	12,850	-5	-35,490		
R-139	11	630	11	-4,660	22	-4,030		
R-140	30	630	-2	2,970	27	3,600		
R-141	56	7,190	14	7,880	70	15,080	30	59,000
R-142	65	12,540	30	-2,660	95	9,880		
R-143	70	-1,850	-16	-4,000	55	-5,850		
R-144	75	10,280	-32	1,660	43	11,940		
R-145	54	11,840	-6	-4,160	48	7,680	-10	-38,000
R-146	21	7,530	12	-330	33	7,210		
R-147	-17	-700	-47	-6,710	-65	-7,430		
R-148	-27	-16,880	-72	-15,460	-99	-32,340		
R-149	-69	-14,130	-20	-7,000	-89	-21,130	-10	-38,000
R-150	-49	-14,560	-3	1,750	-52	-12,810		
R-151	3	760	-1	-12,330	2	-11,560		
R-152	-16	-3,890	30	-7,950	14	-11,840		
R-153	-59	-13,160	99	4,130	40	-9,030	-10	-38,000
R-154	34	10,450	25	-6,350	59	4,100		
R-155	86	16,960	-61	-13,850	25	3,110		
R-156	31	10,740	-60	-2,610	-30	8,130		
R-157	-9	2,130	-13	2,280	-22	4,410	30	59,000
R-158	-7	-1,020	22	520	15	-500		
R-159	-7	-3,740	17	6,790	10	3,050		
R-160	41	4,480	25	-3,460	66	1,020		
R-161	43	8,790	39	190	83	8,980	-10	-38,000
R-161A	19	4,210	26	5,920	46	10,130		
R-162	16	5,190	6	-5,050	22	140		
R-163	45	5,920	-20	-4,560	25	1,360		
R-164	34	11,370	15	-11,470	48	-100	-10	-38,000
R-165	66	16,780	12	-10,550	78	6,240		
R-166	52	5,600	-10	1,770	42	7,370		
R-167	-42	-2,130	104	4,940	62	2,810		
R-168	-65	-11,800	92	10,990	27	-810	-10	-38,000
R-169	-64	-9,940	37	-5,140	-27	-15,090		
R-170	-18	970	-11	2,970	-29	3,940		
R-171	10	-710	-17	920	-8	210		
R-172	11	-7,120	-8	9,240	3	2,120	-10	-38,000
R-173	-66	-27,690	56	5,840	-10	-21,850		
R-174	-49	-9,840	40	2,240	-9	-7,610	(Rounded for Clarity)	
Avg. / Total:	4	-149,000	1	-40,000	5	-188,000		

SANIBEL ISLAND SHORELINE AND NEARSHORE VOLUME CHANGE 9/2022 TO 3/2025								
Monument	9/2022 to 6/2024		6/2024 to 3/2025		9/2022 to 3/2025			
	Shoreline Change	Volume Change	Shoreline Change	Volume Change	Shoreline Change	Volume Change	Avg. SL Change	Total Vol. Change
	(Feet)	(CY)	(Feet)	(CY)	(Feet)	(CY)	(Feet)	(CY)
BAY-1	-24	-2,050	26	2,110	2	60	0	-17,000
BAY-2	5	120	0	210	5	330		
BAY-3	2	-490	1	-920	3	-1,410		
BAY-4	-12	-1,790	10	-460	-1	-2,250		
BAY-5	-2	-680	10	-640	9	-1,320		
BAY-5A	-3	1,510	-1	960	-5	2,470		
BAY-6	0	2,210	-4	-1,980	-4	230		
BAY-7	1	20	-4	800	-2	820		
BAY-8	3	-15,800	0	770	2	-15,030		
BAY-9	1	2,370	1	490	2	2,860		
BAY-10	8	-6,080	2	2,420	10	-3,650		
Avg. / Total:	-2	-20,700	4	3,800	2	-16,900	(Rounded for Clarity)	

BEACH PROFILE R-108



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SANIBEL ISLAND BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 3/25/25

JOB: 27008

FILE: SECTION

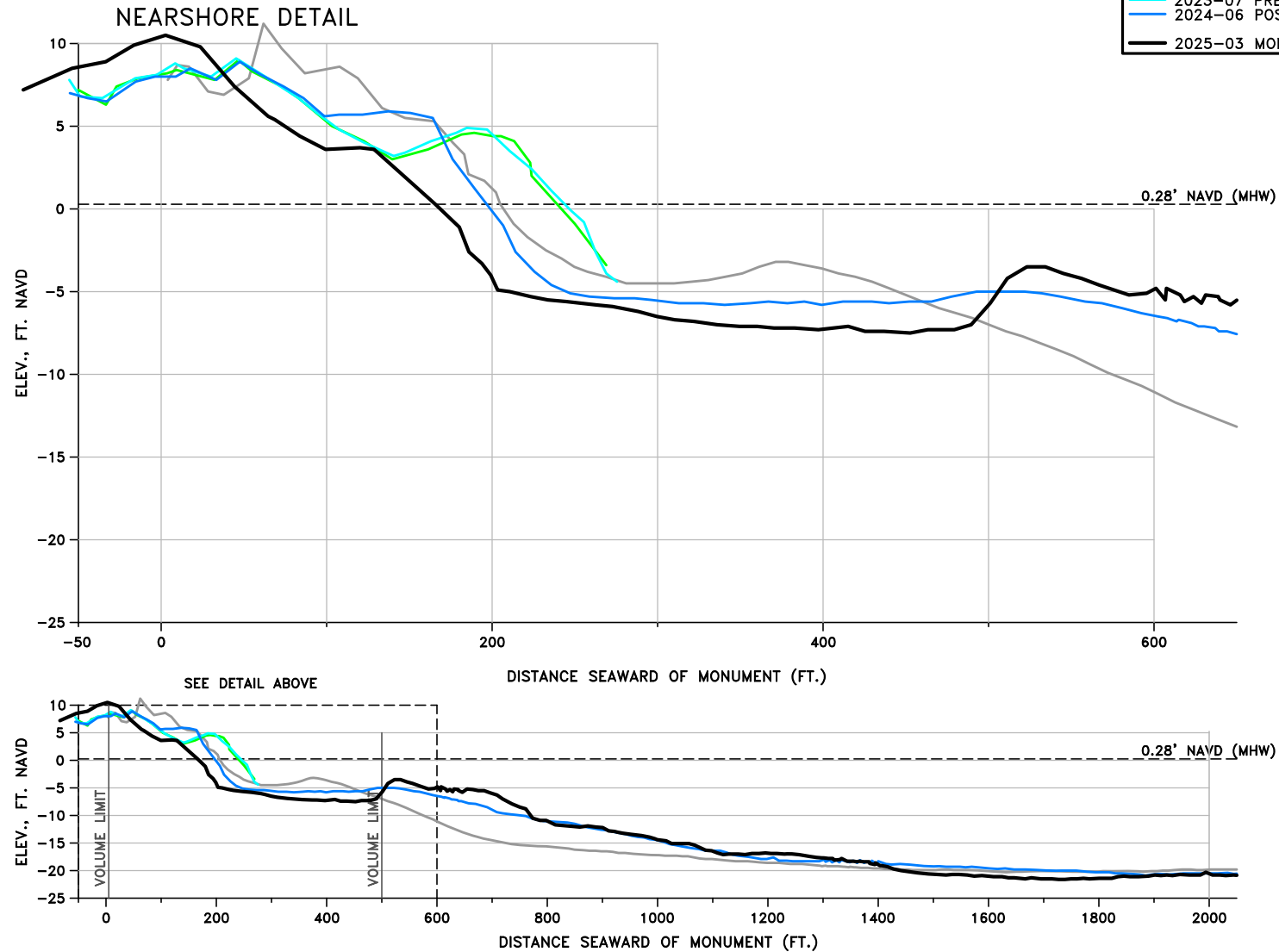
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5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
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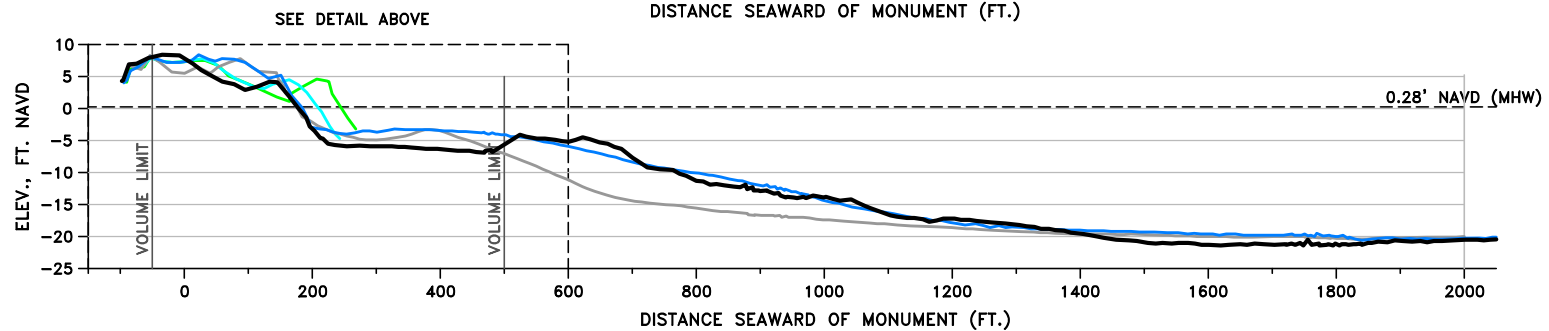
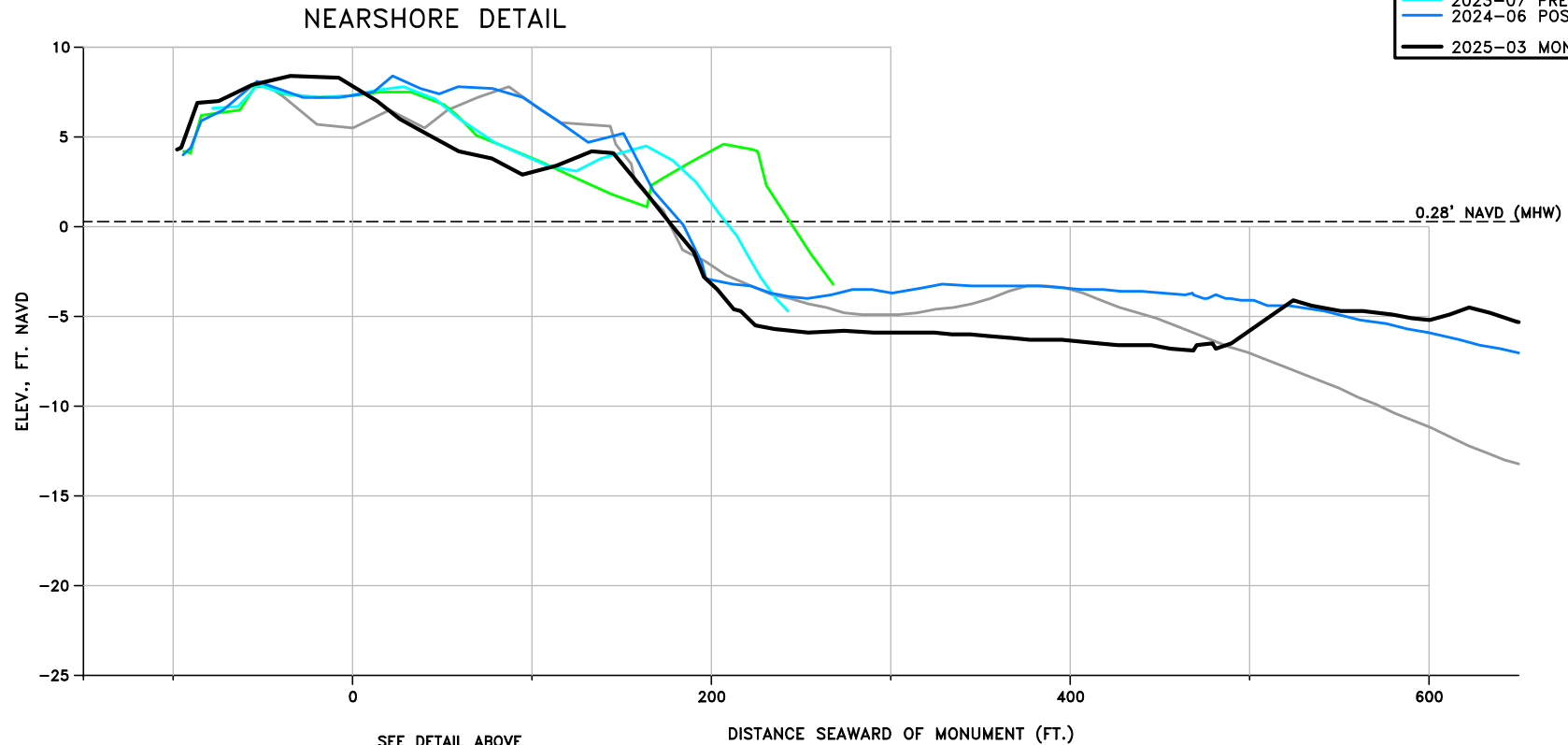
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FOR: CITY OF SANIBEL		
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JOB: 27008	DATUM: NAVD	FIGURE:

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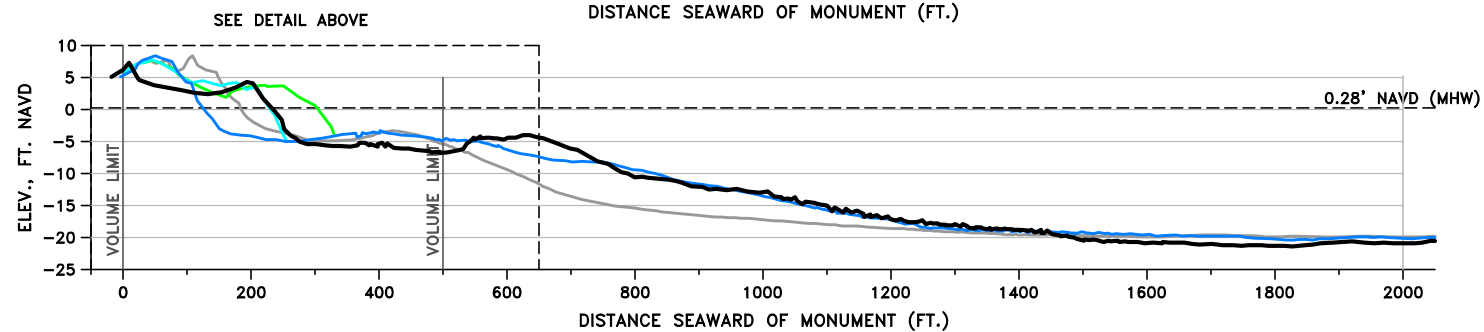
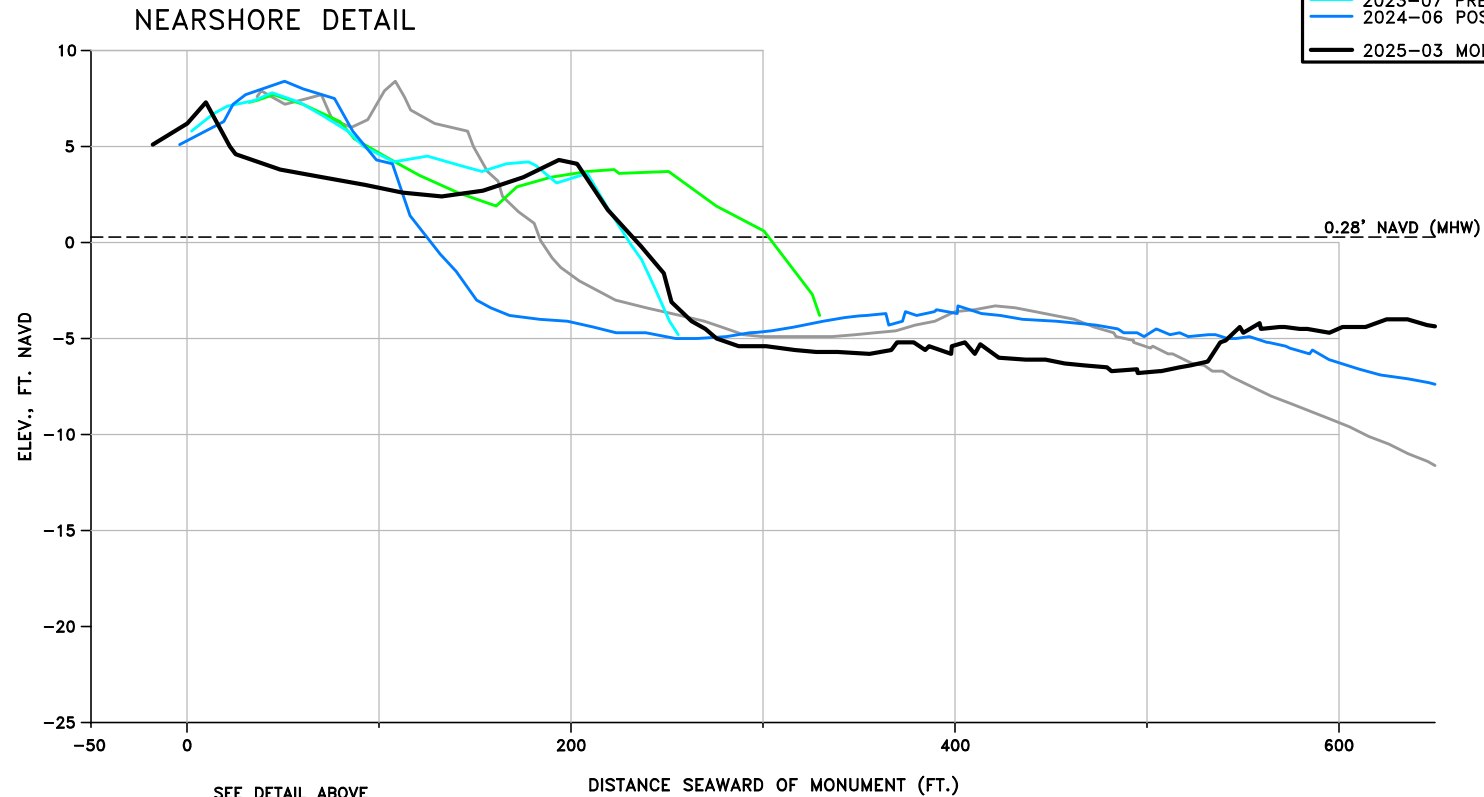
JOB: 27008

DATUM: NAVD

FIGURE:

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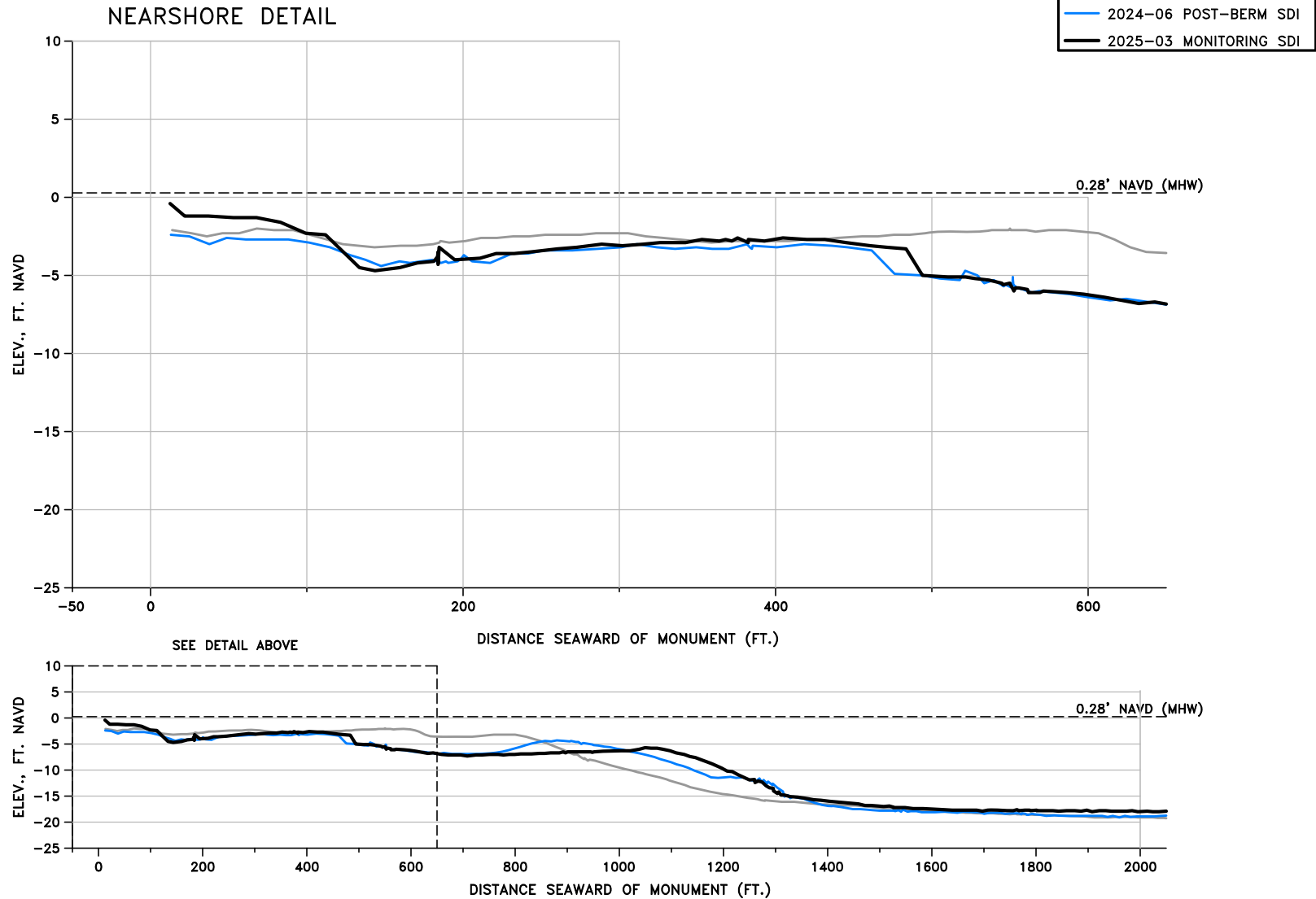
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DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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FILE: SECTION

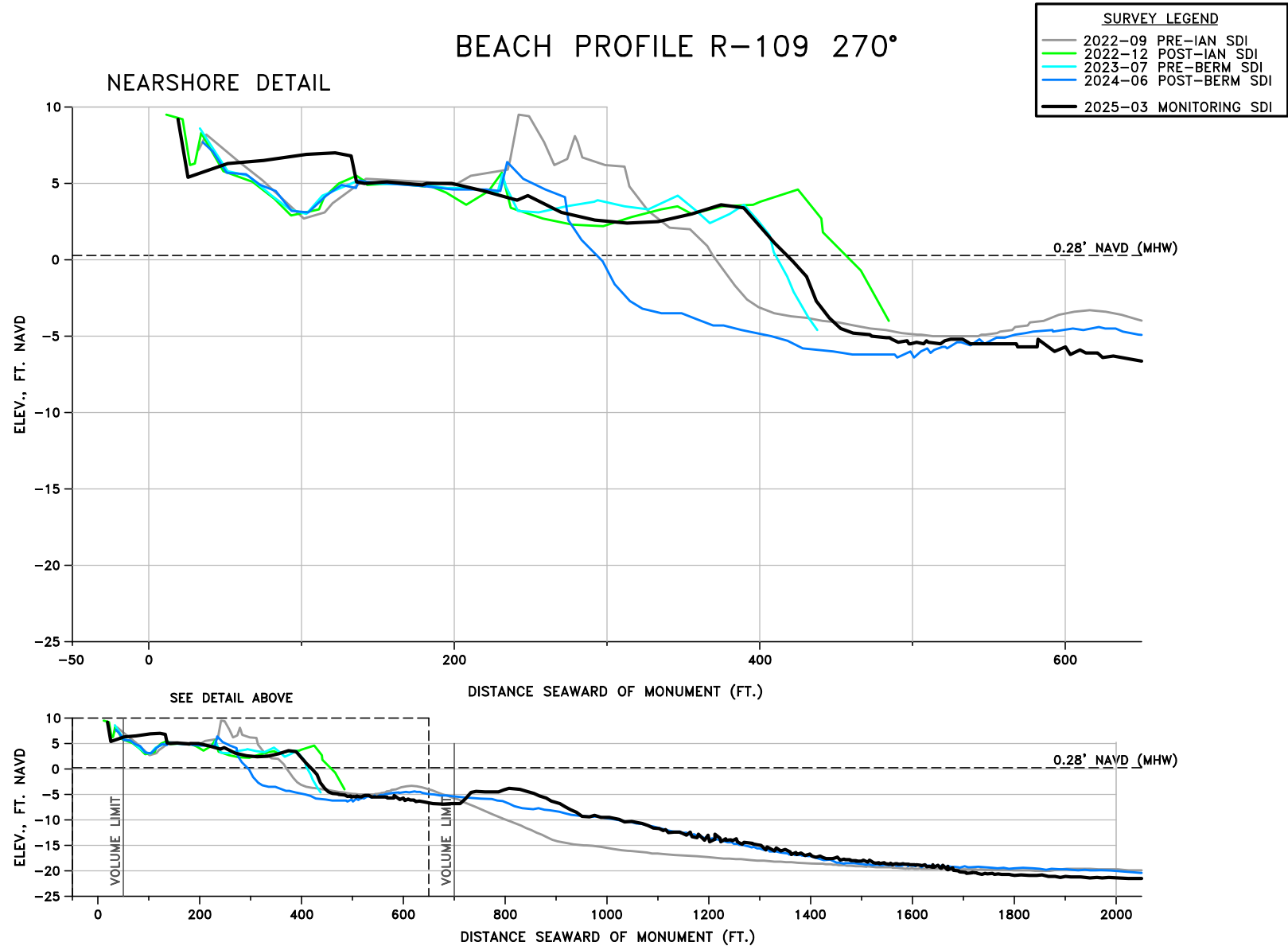
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FIGURE:

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FILE: SECTION

SCALE: SHOWN

JOB: 27008

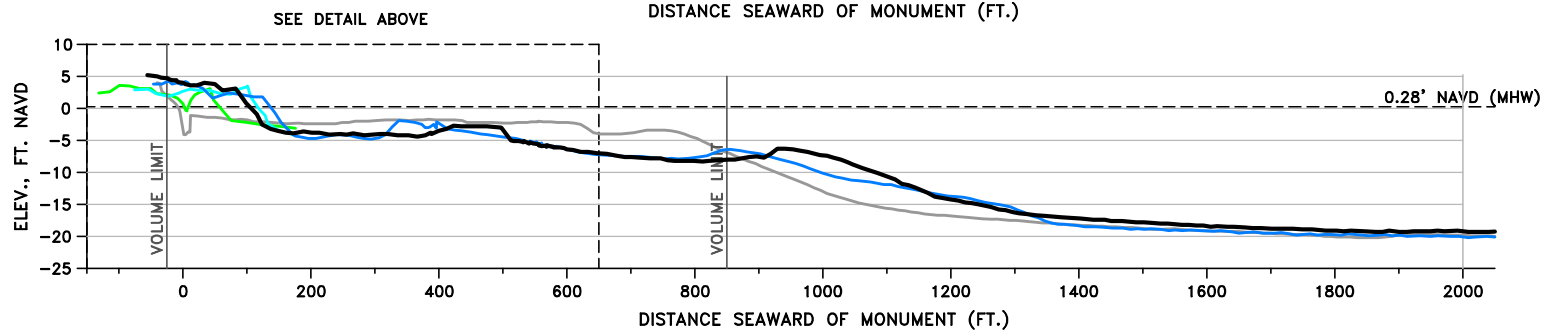
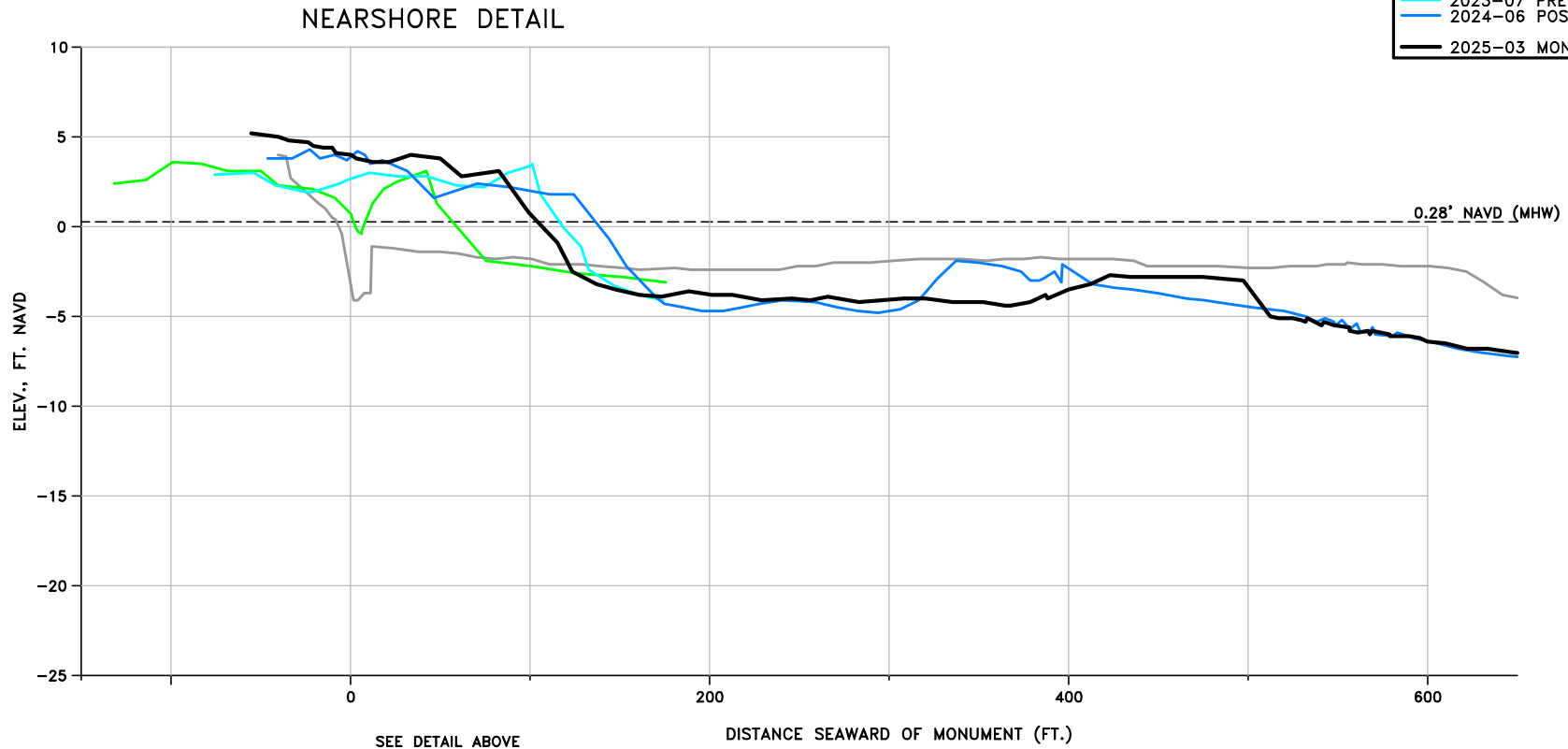
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FIGURE:

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SURVEY LEGEND	
2022-09	PRE-IAN SDI
2022-12	POST-IAN SDI
2023-07	PRE-BERM SDI
2024-06	POST-BERM SDI
2025-03	MONITORING SDI



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SANIBEL ISLAND BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 3/25/25

JOB: 27008

FILE: SECTION

DATUM: NAVD

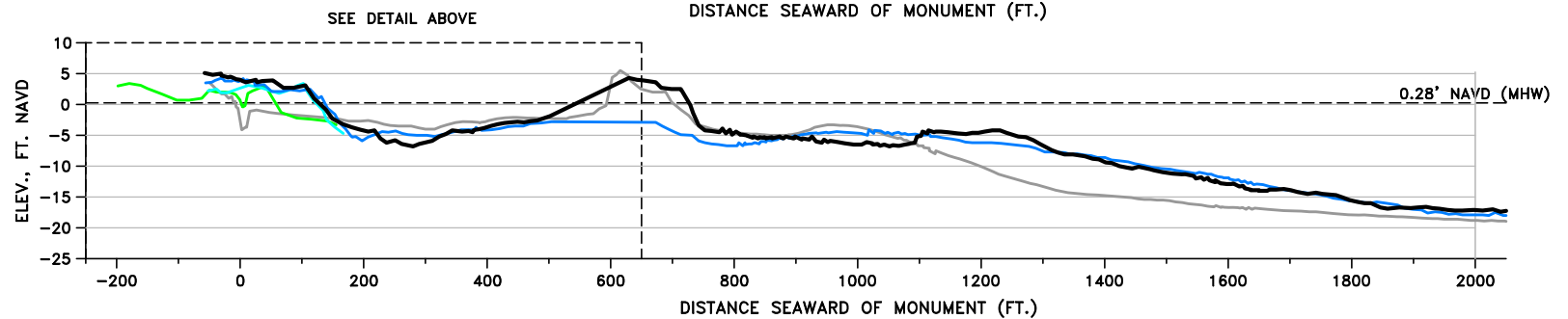
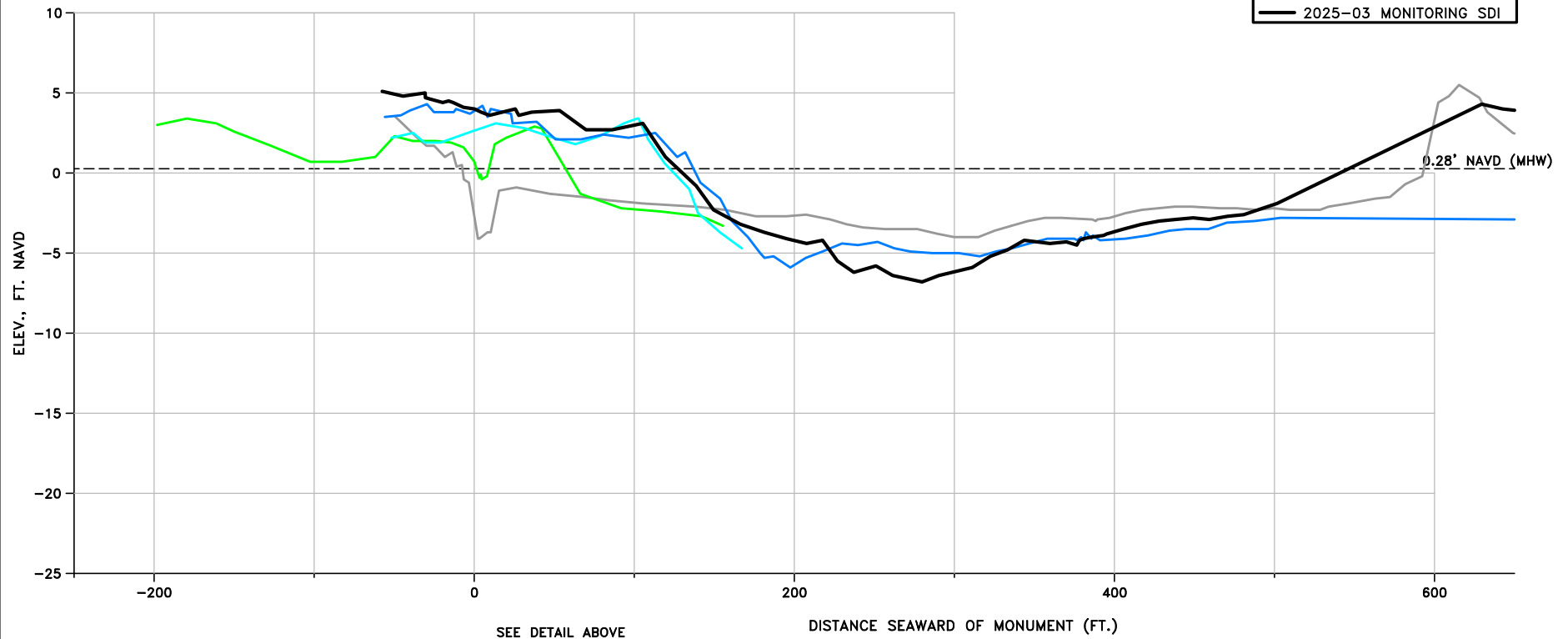
SCALE: SHOWN

FIGURE:

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NEARSHORE DETAIL



SURVEY LEGEND	
2022-09	PRE-IAN SDI
2022-12	POST-IAN SDI
2023-07	PRE-BERM SDI
2024-06	POST-BERM SDI
2025-03	MONITORING SDI



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SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
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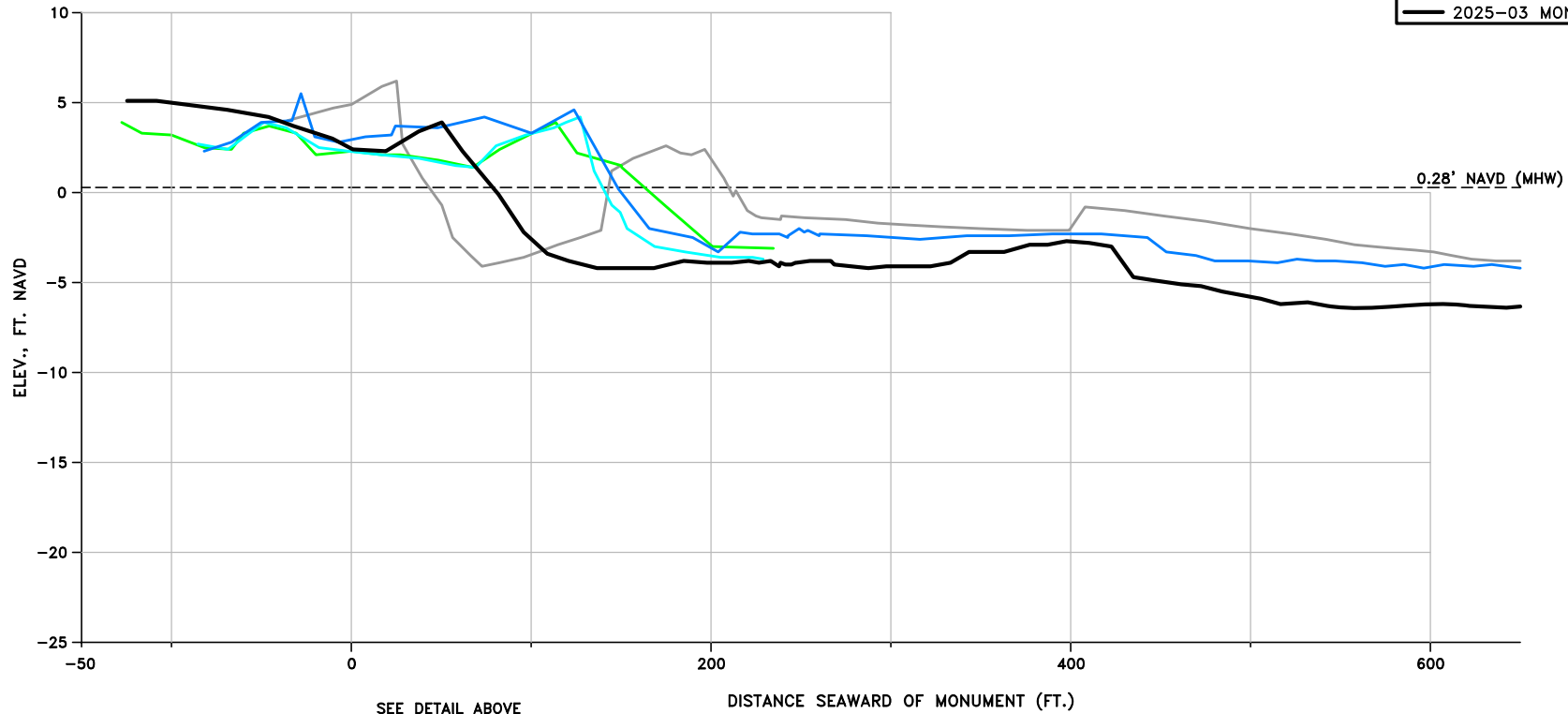
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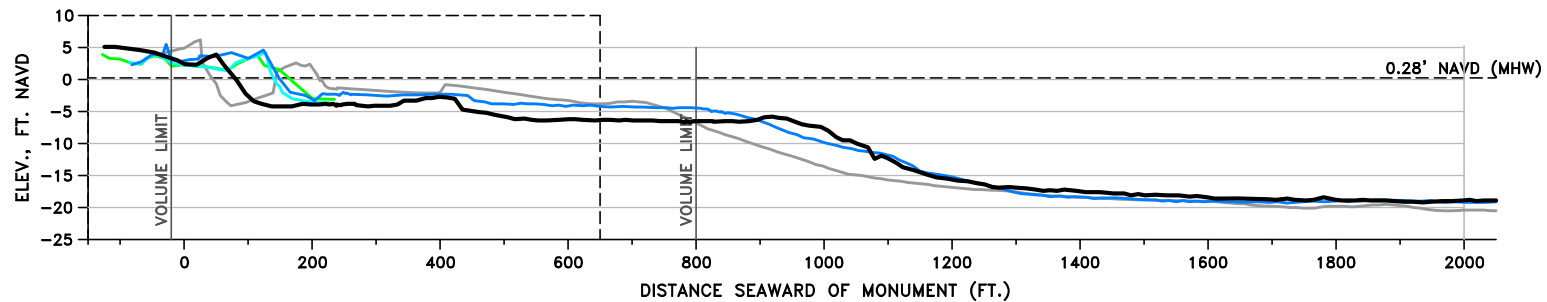
SURVEY LEGEND

- 2022-09 PRE-IAN SDI
- 2022-12 POST-IAN SDI
- 2023-07 PRE-BERM SDI
- 2024-06 POST-BERM SDI
- 2025-03 MONITORING SDI

NEARSHORE DETAIL



SEE DETAIL ABOVE



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SANIBEL ISLAND
BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

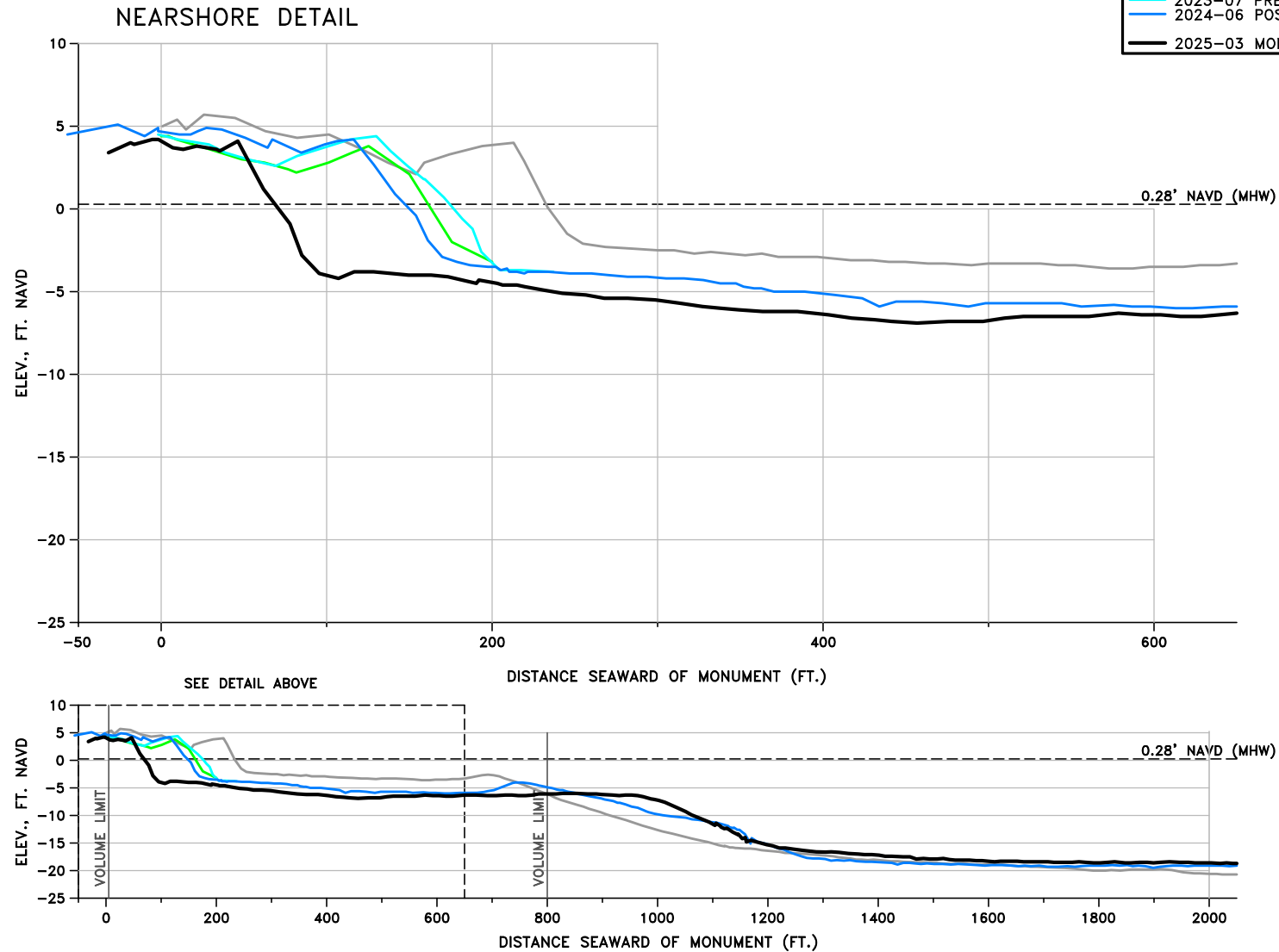
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DATUM: NAVD

FIGURE:

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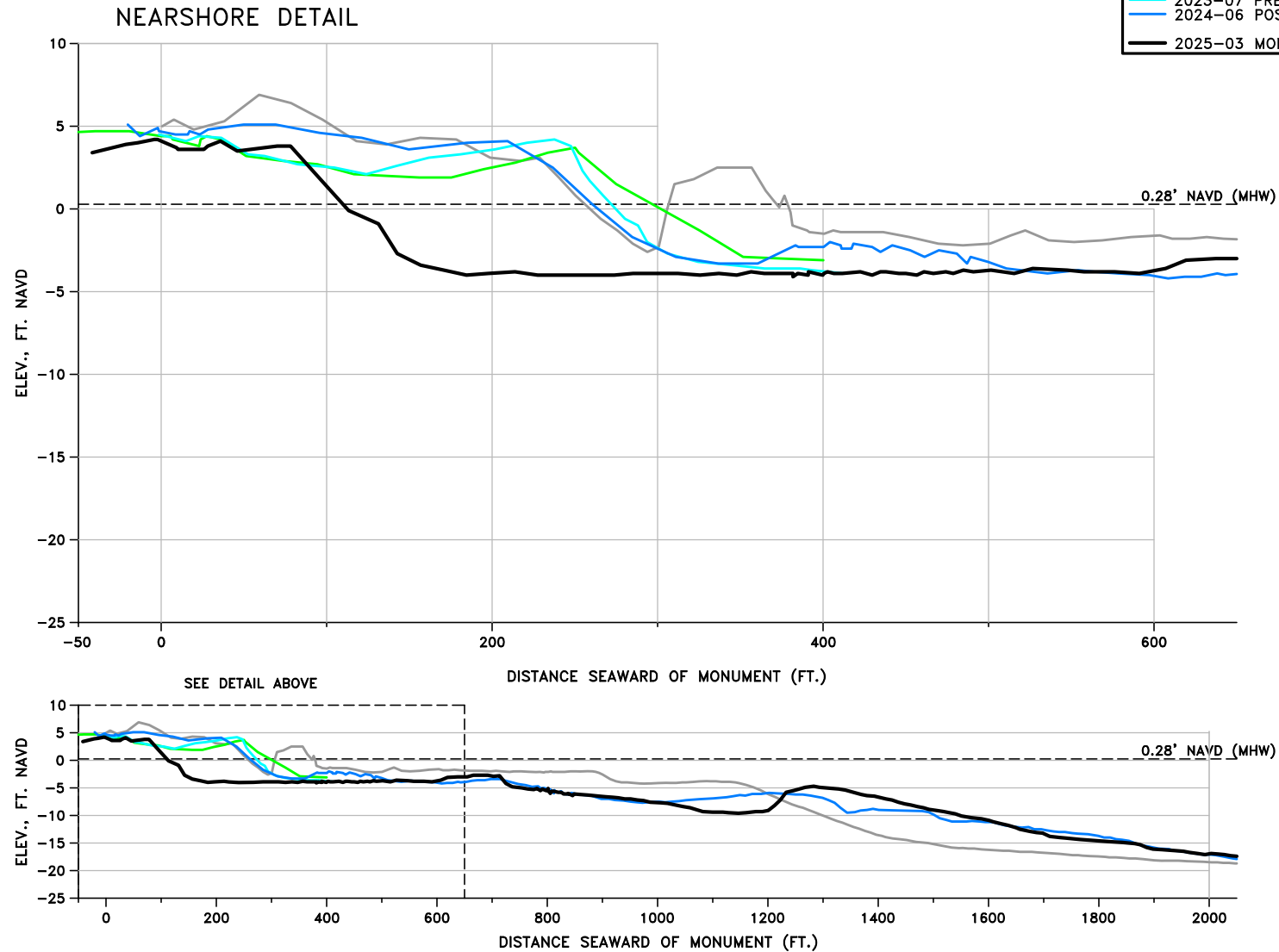
BEACH PROFILE R-110.50 250°



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

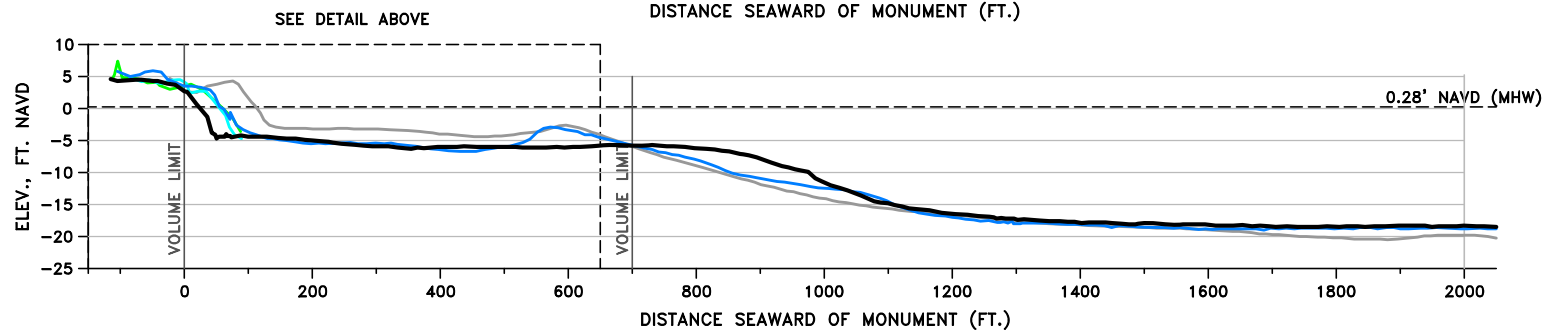
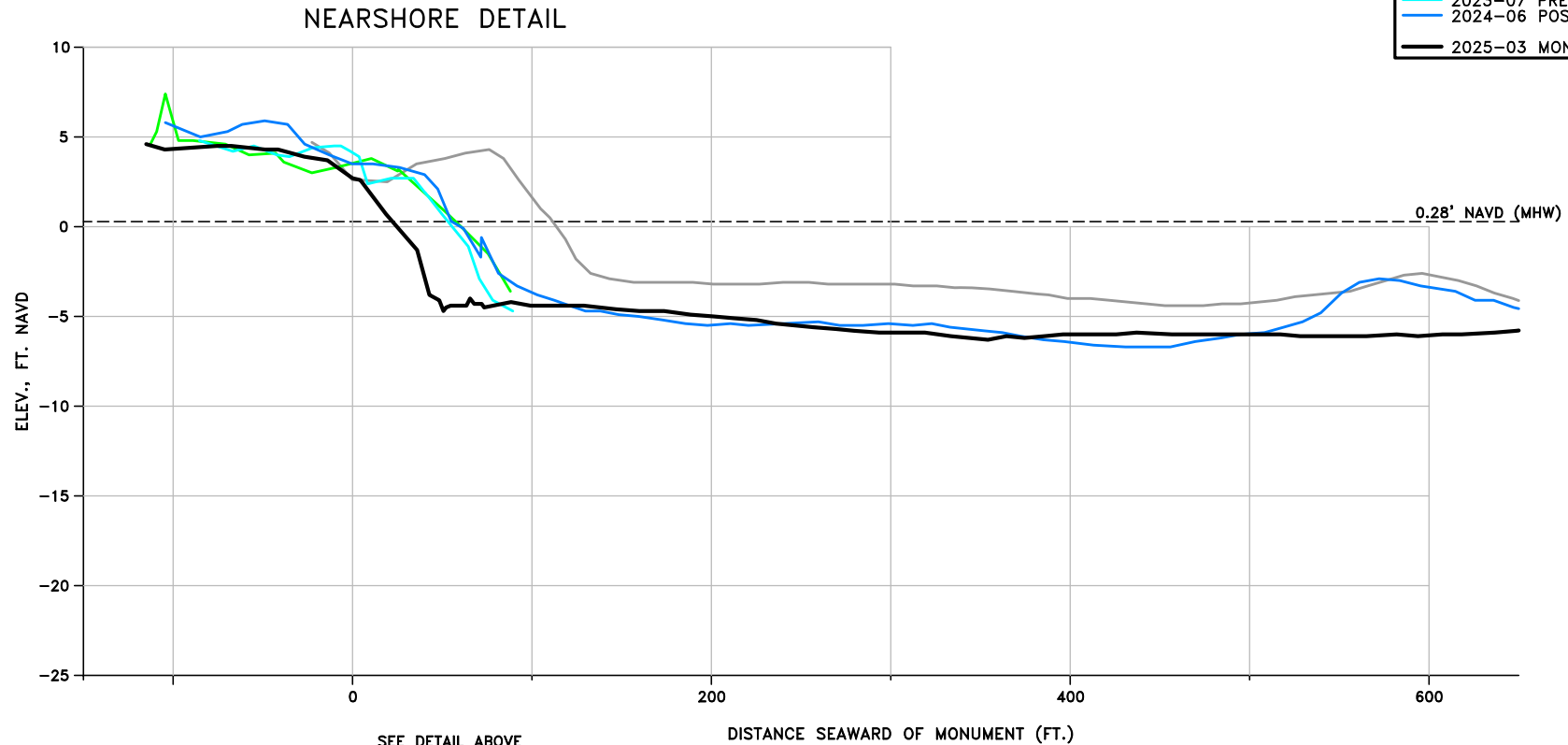
JOB: 27008

DATUM: NAVD

FIGURE:

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BEACH PROFILE R-110.75



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SANIBEL ISLAND BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

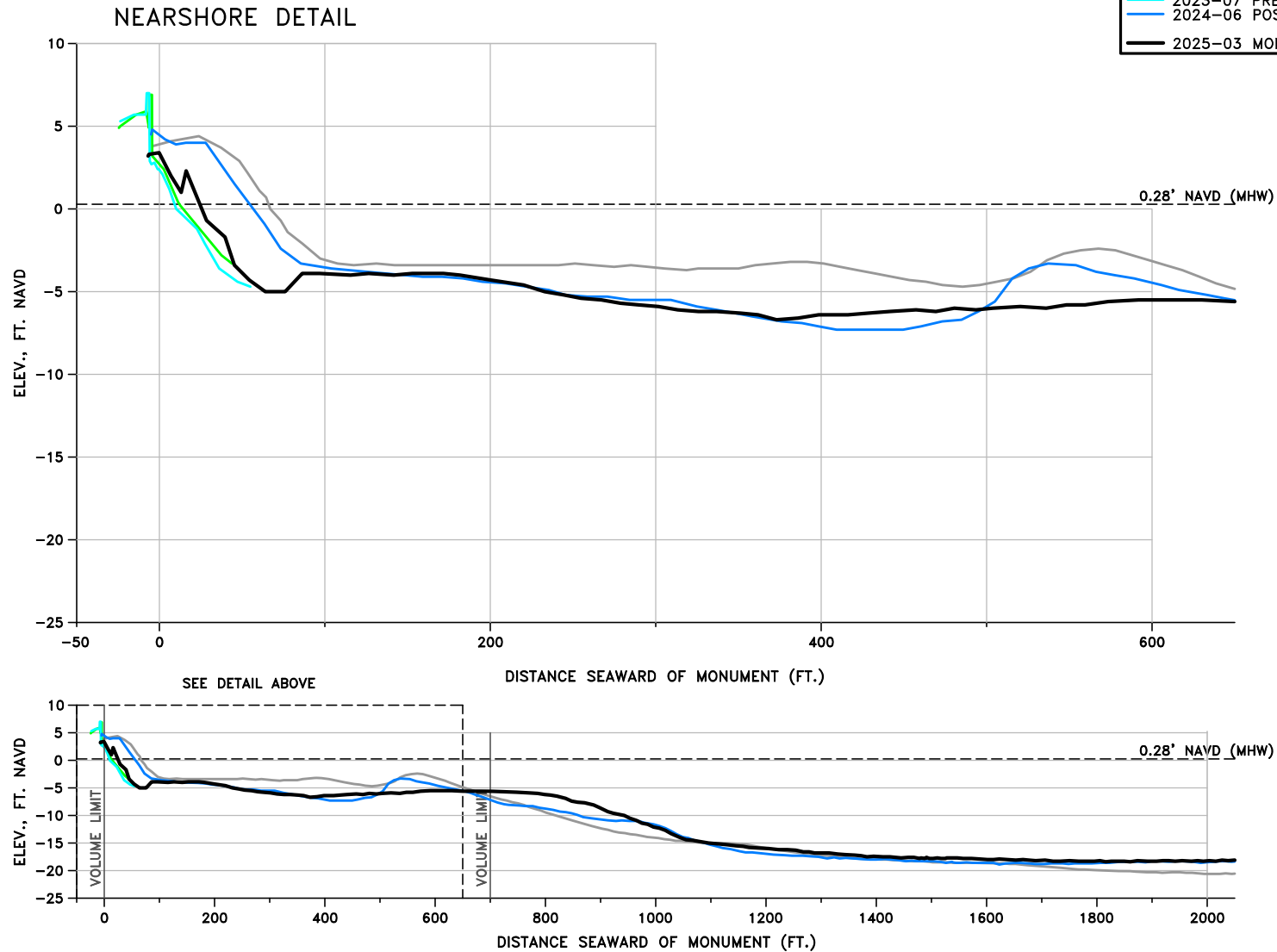
JOB: 27008

DATUM: NAVD

FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
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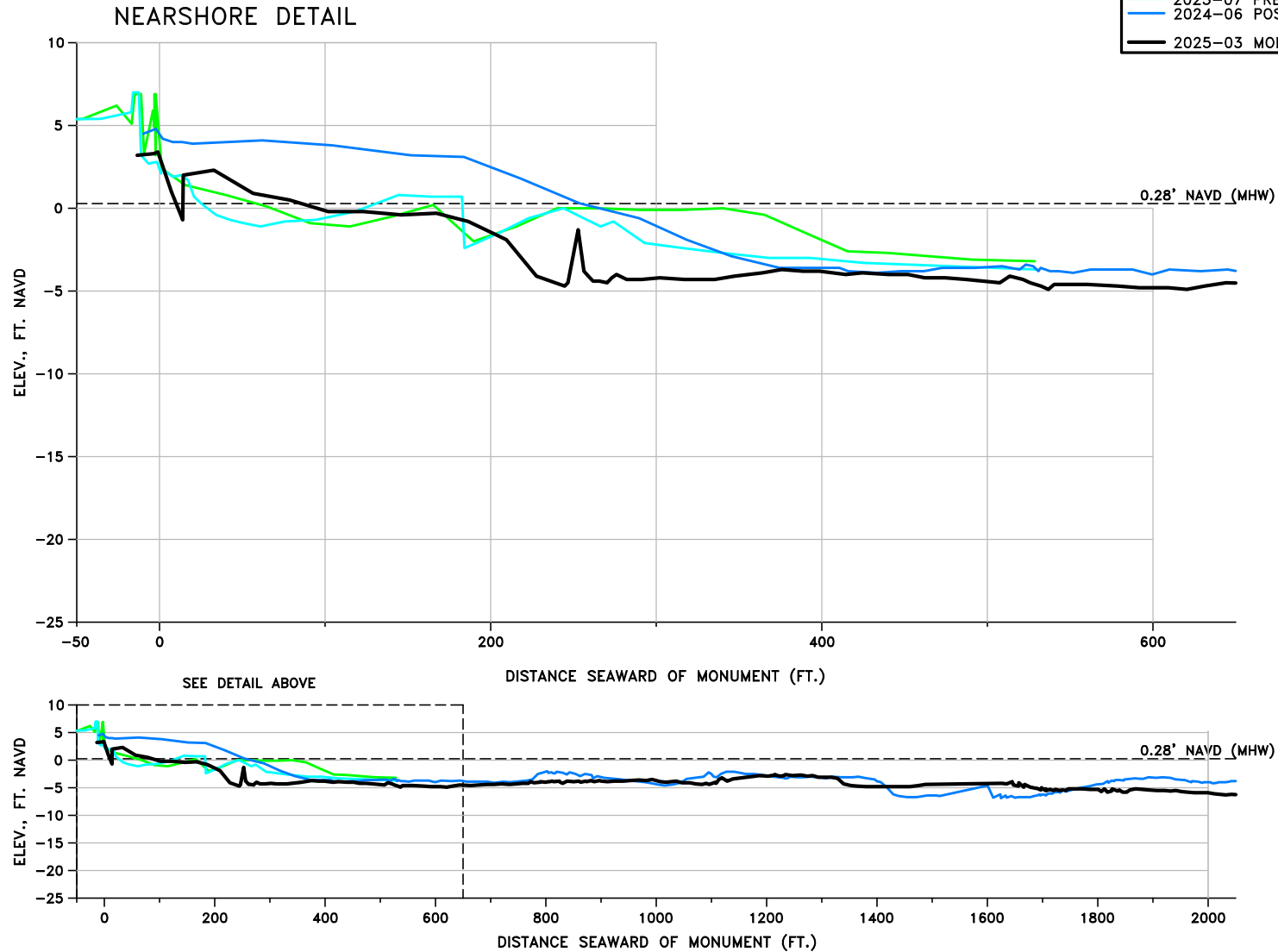
BEACH PROFILE R-111 255°



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
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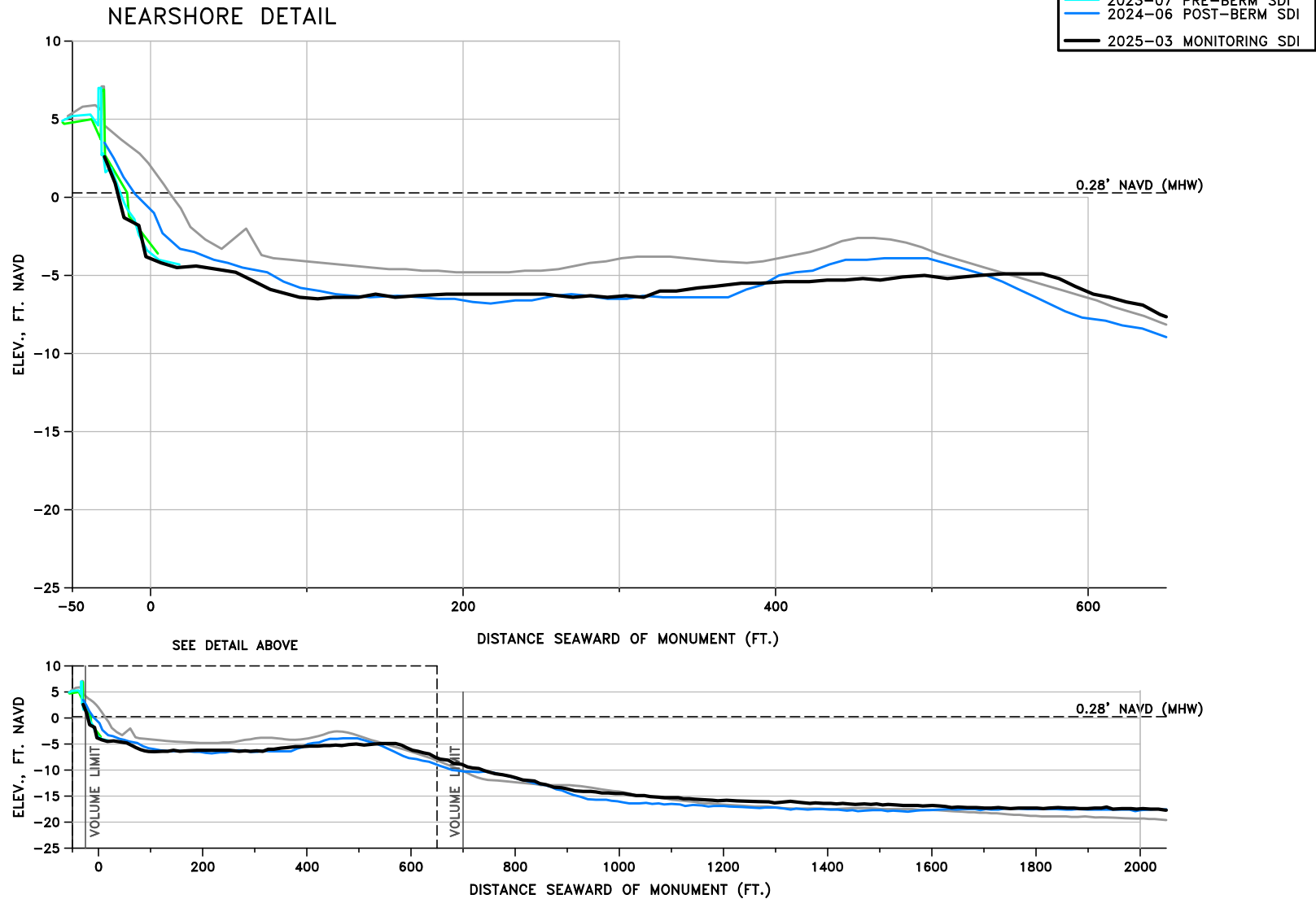
BEACH PROFILE R-111 315°



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
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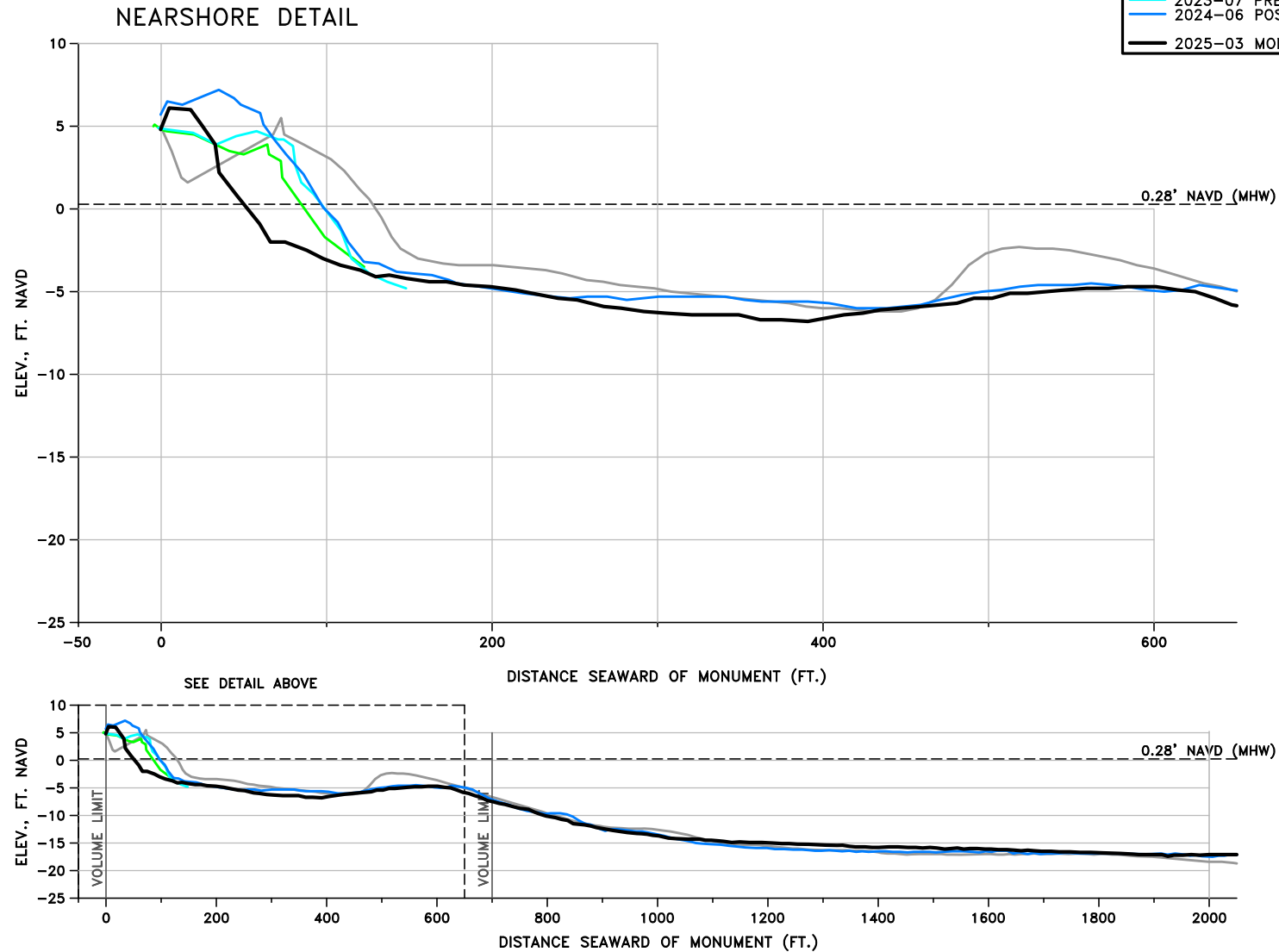
BEACH PROFILE R-111.25



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
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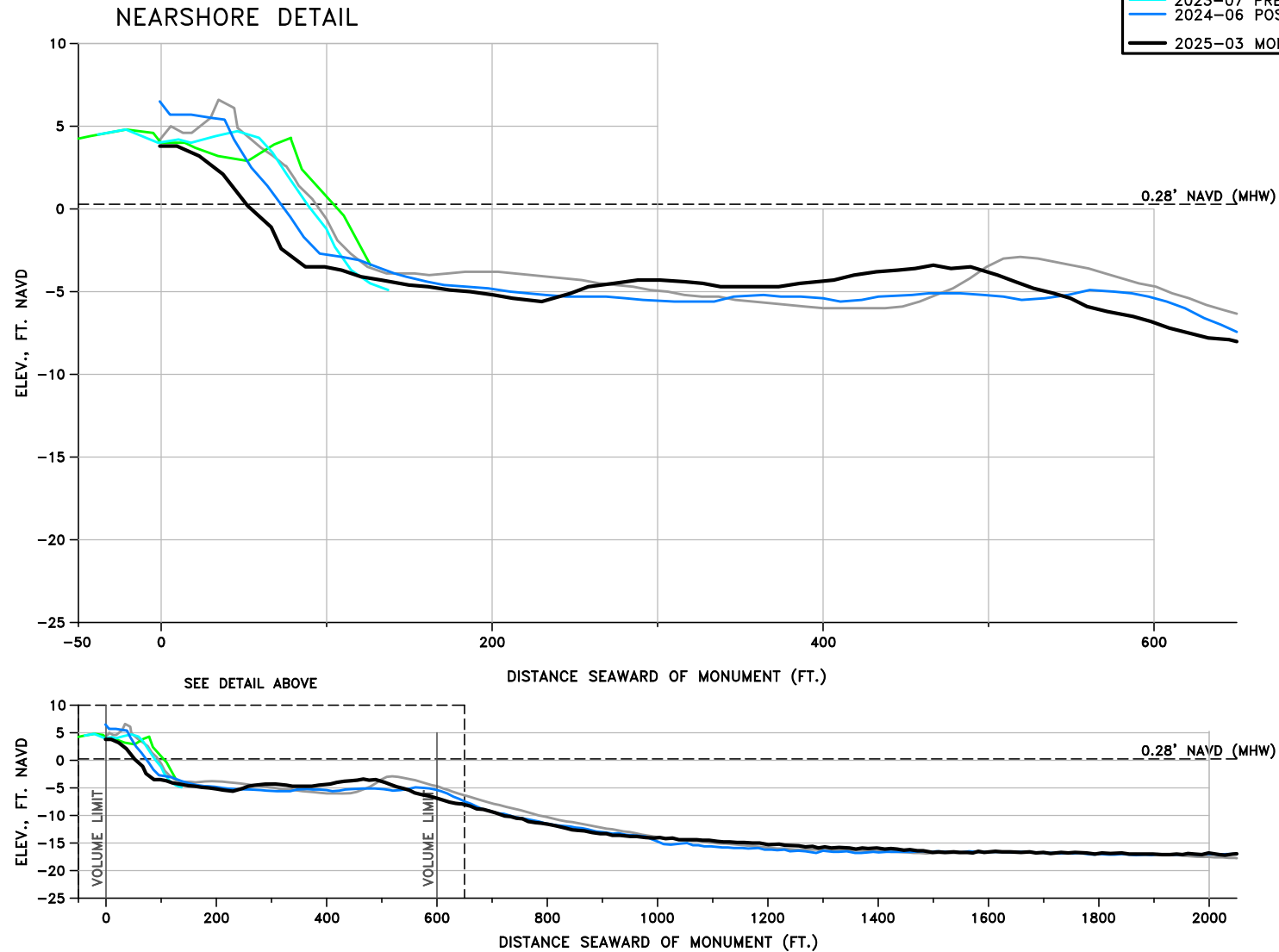
BEACH PROFILE R-111.50



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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BEACH PROFILE R-111.75



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BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

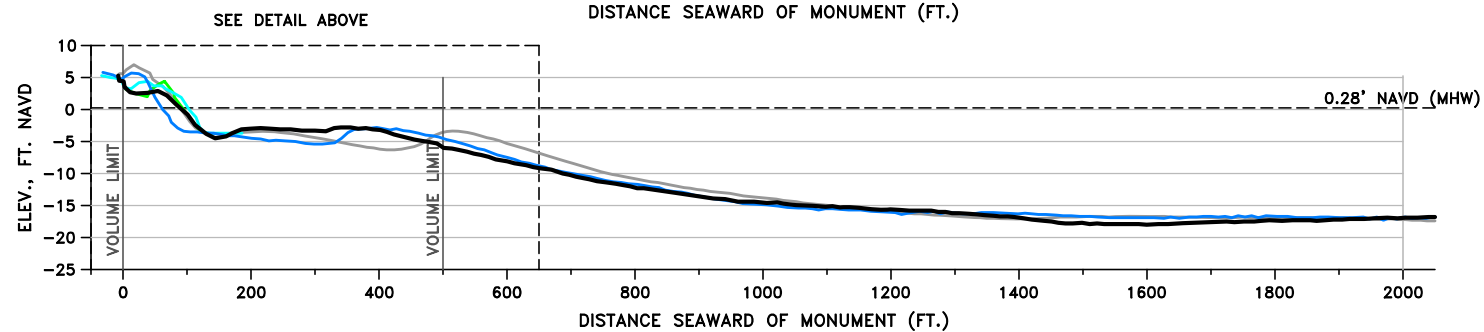
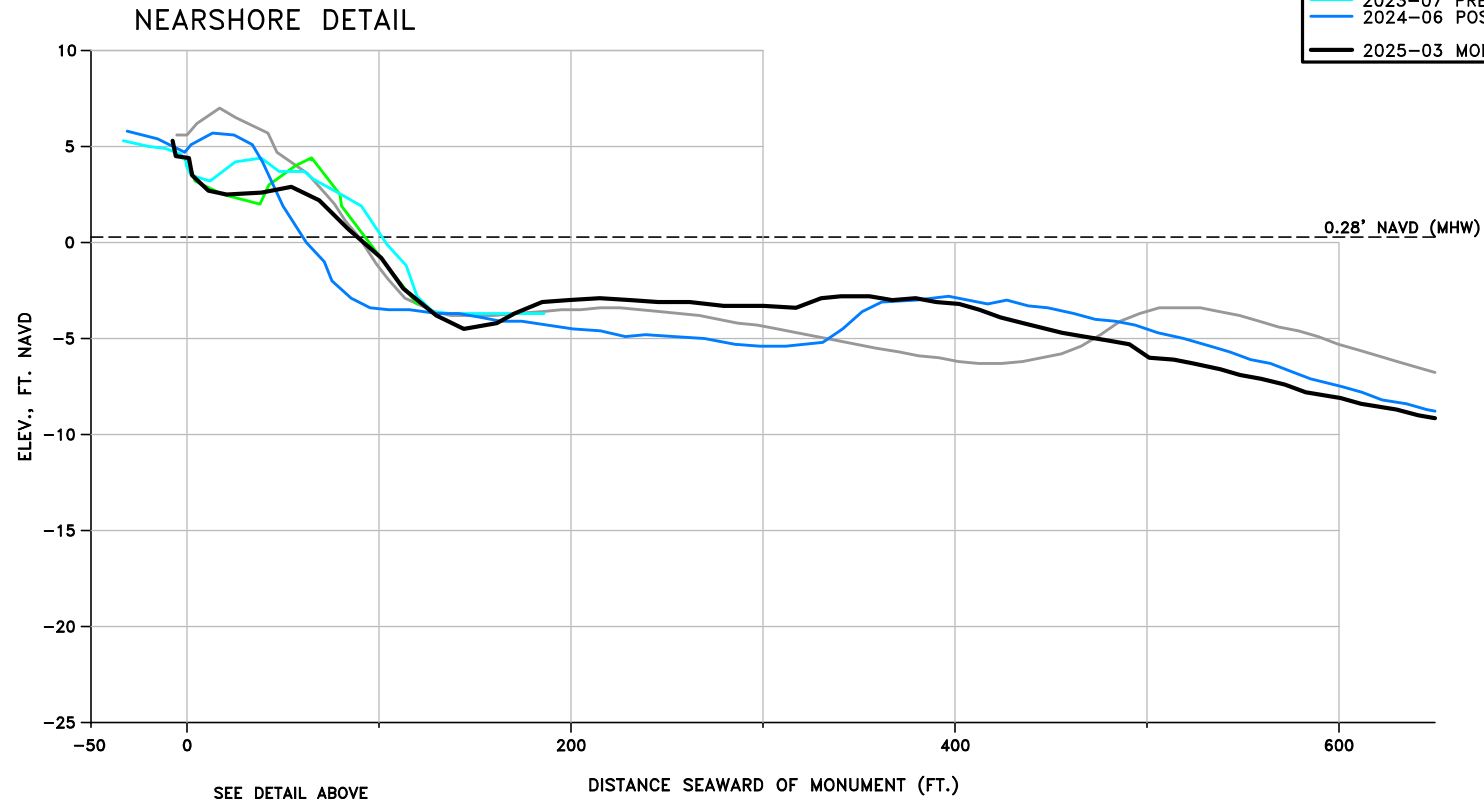
JOB: 27008

DATUM: NAVD

FIGURE:

5679 STRAND COURT
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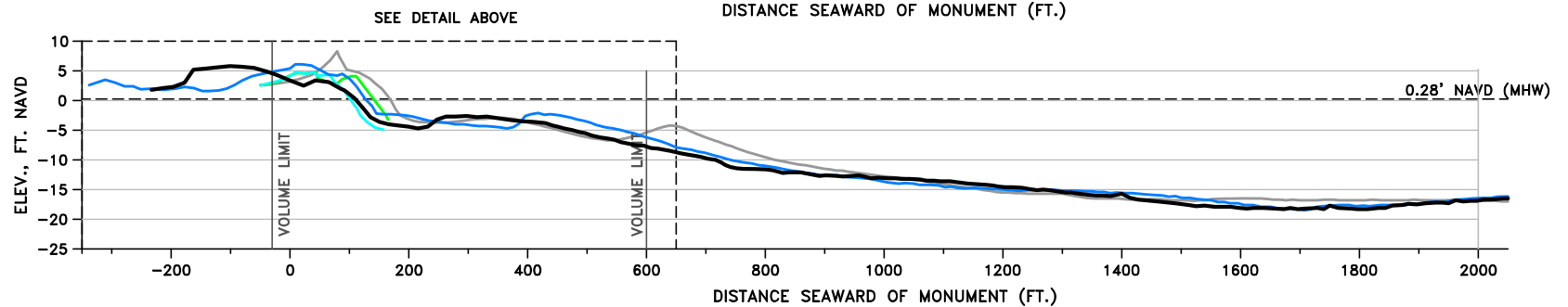
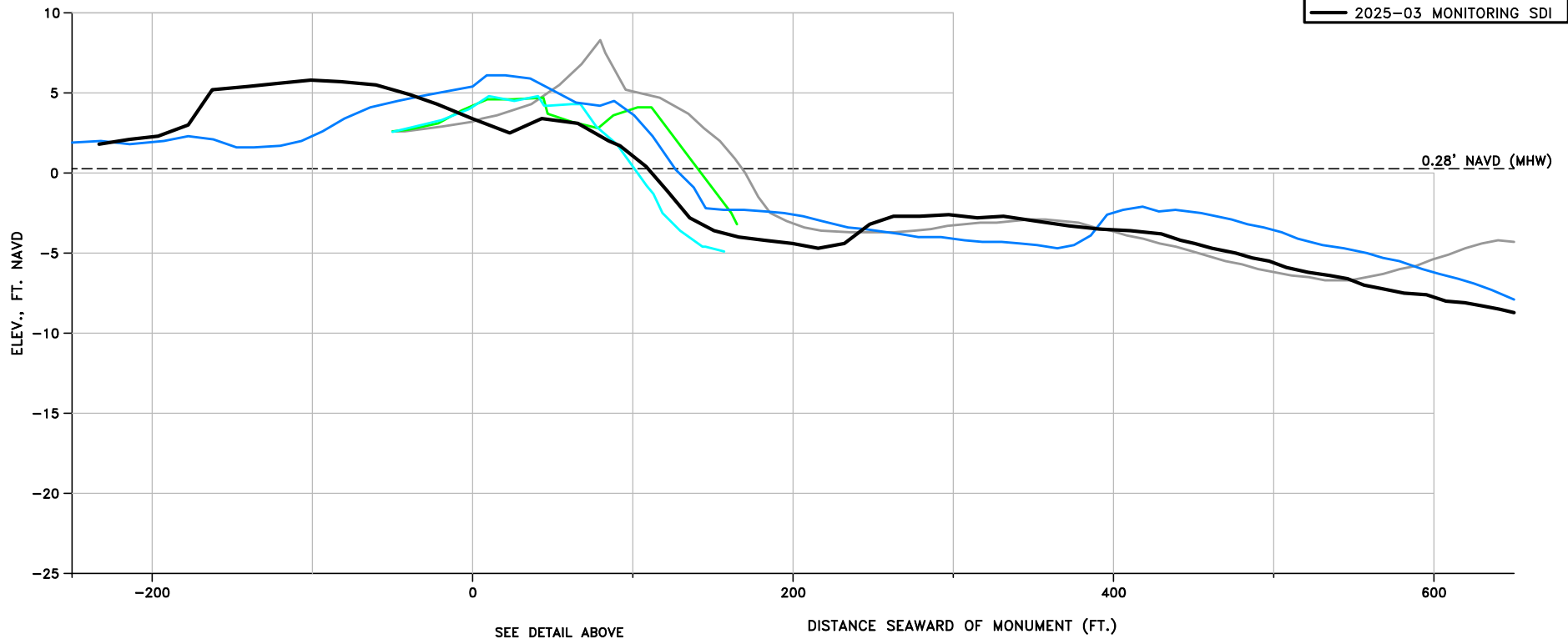
BEACH PROFILE R-112



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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BEACH PROFILE R-112.25 NEARSHORE DETAIL



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JOB: 27008

FILE: SECTION

DATUM: NAVD

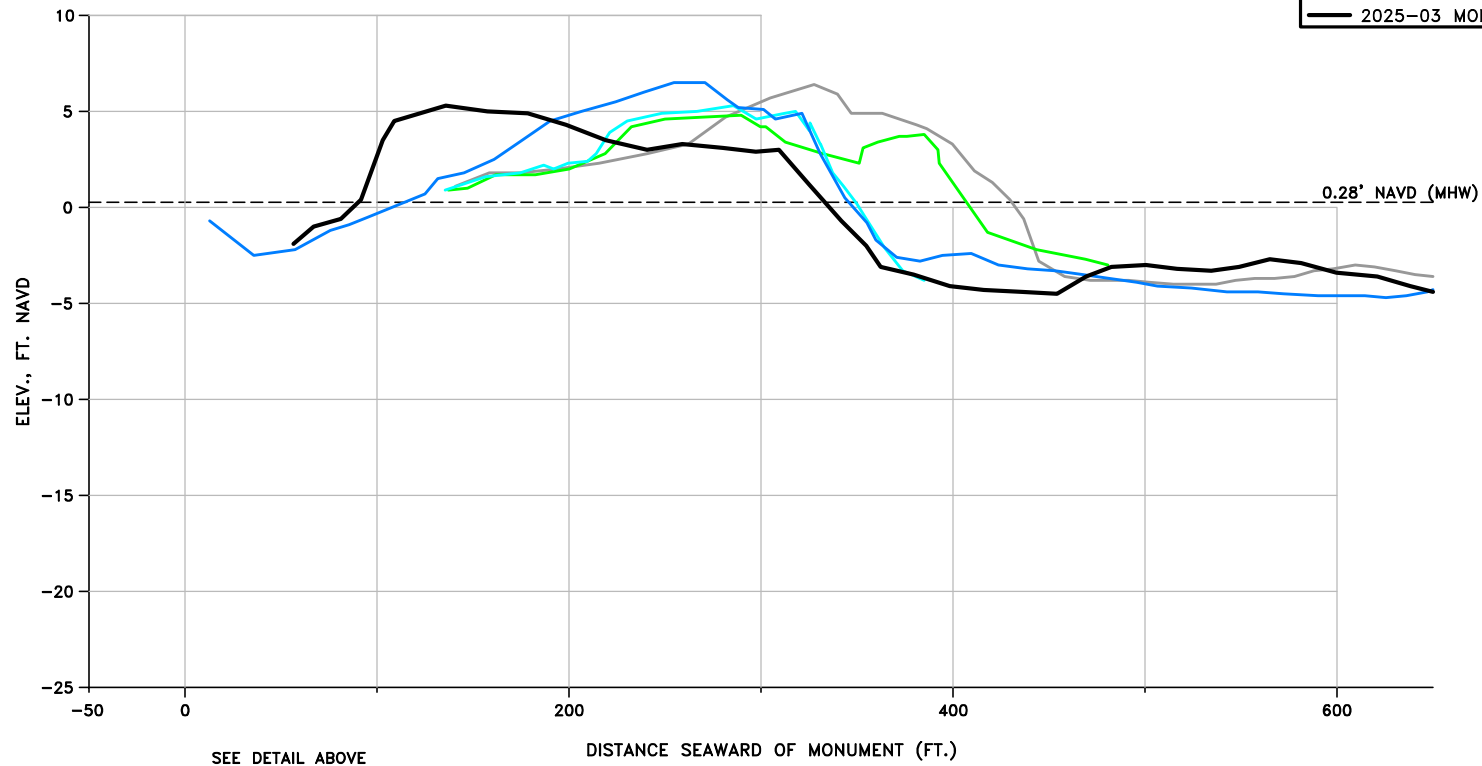
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FIGURE:

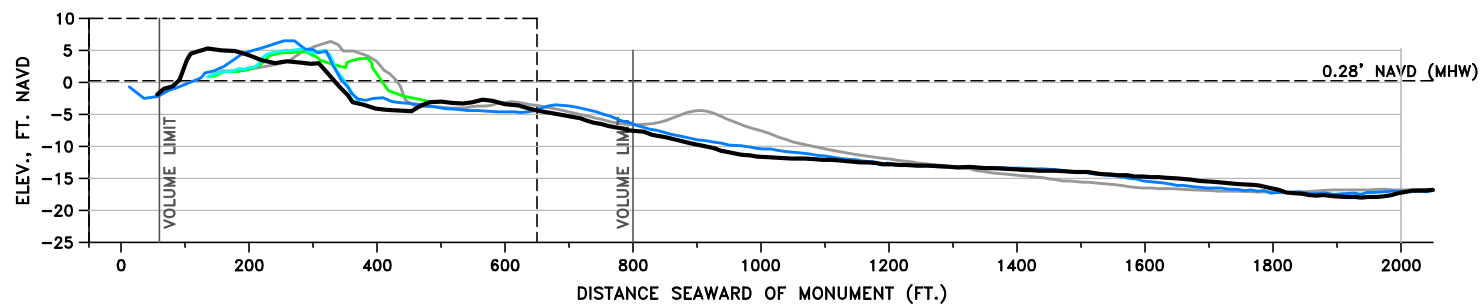
5679 STRAND COURT
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BEACH PROFILE R-112.50

NEARSHORE DETAIL



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FOR: CITY OF SANIBEL

DATE: 3/25/25

JOB: 27008

FILE: SECTION

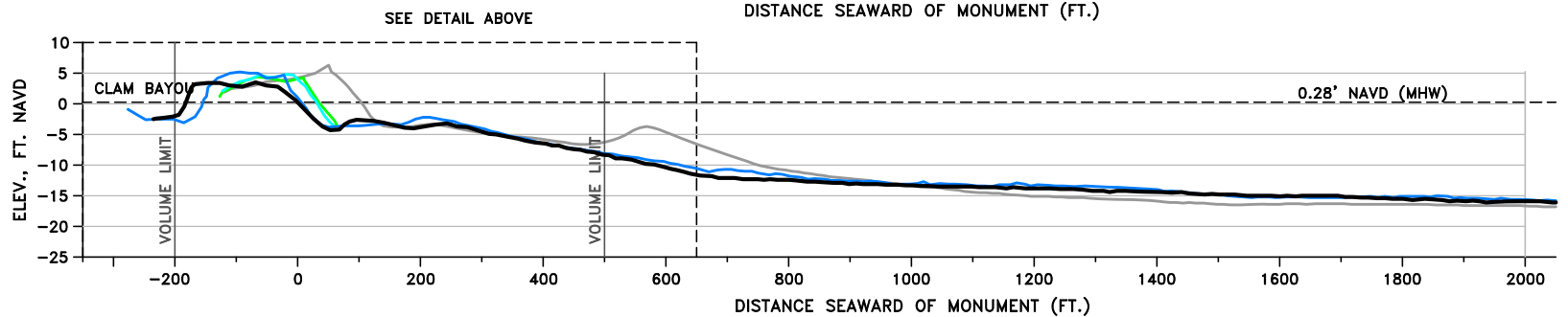
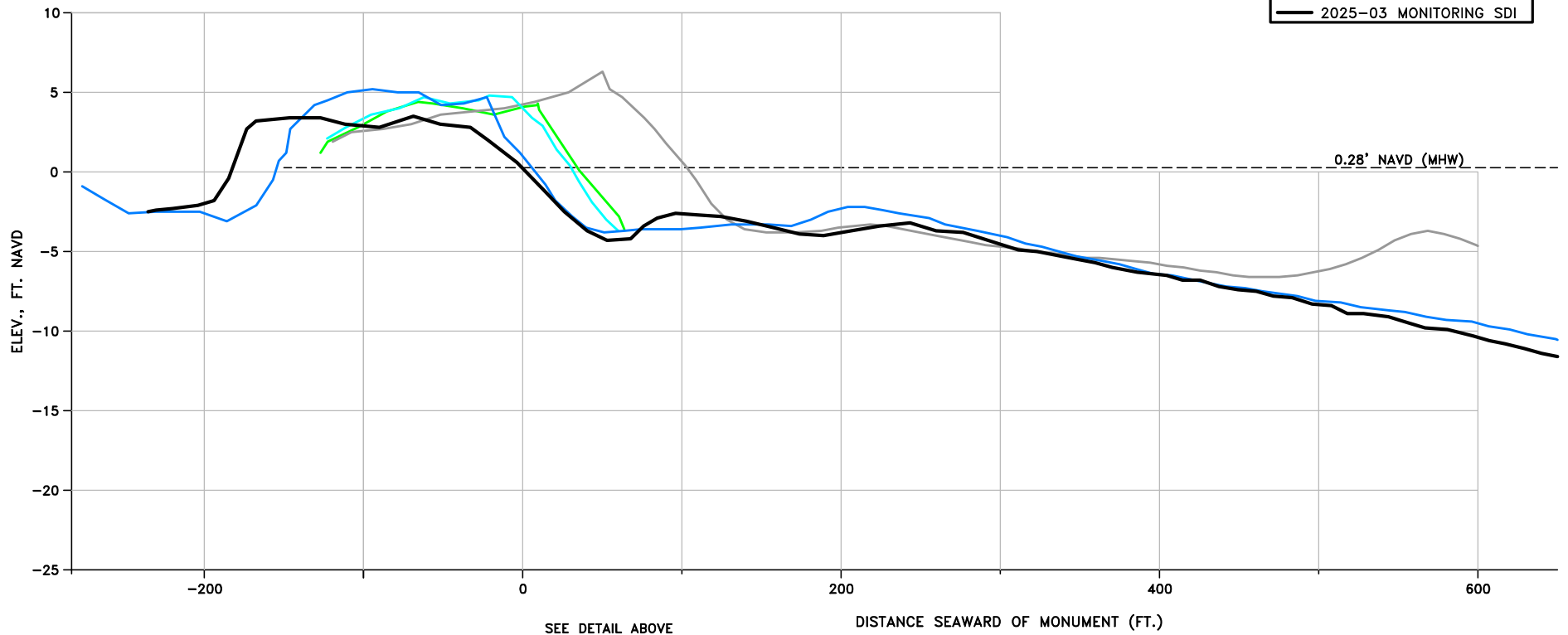
DATUM: NAVD

SCALE: SHOWN

FIGURE:

5679 STRAND COURT
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BEACH PROFILE R-112.75 NEARSHORE DETAIL



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JOB: 27008

FILE: SECTION

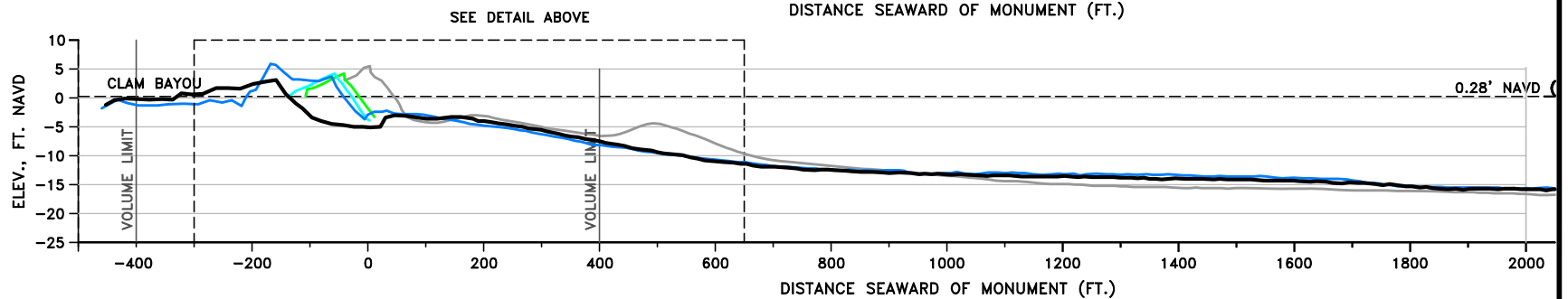
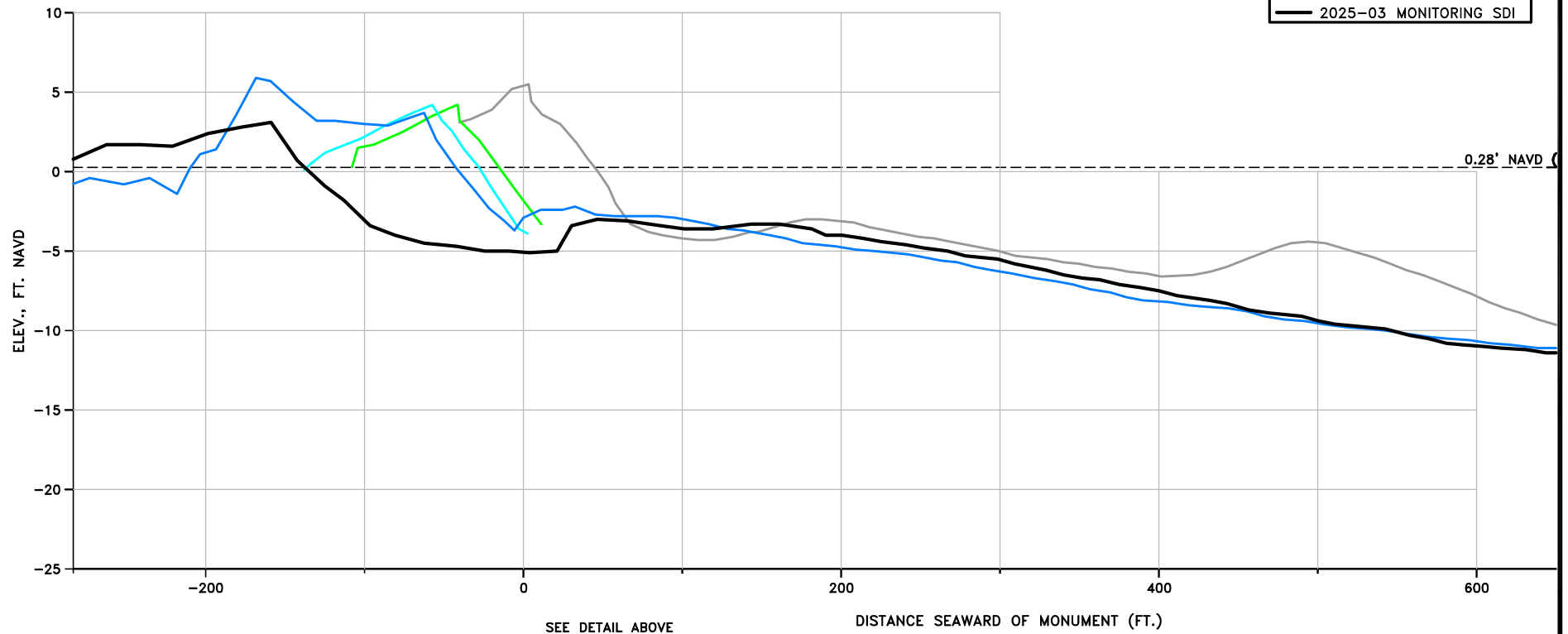
DATUM: NAVD

SCALE: SHOWN

FIGURE:

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BEACH PROFILE R-113 NEARSHORE DETAIL



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FOR: CITY OF SANIBEL

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JOB: 27008

FILE: SECTION

DATUM: NAVD

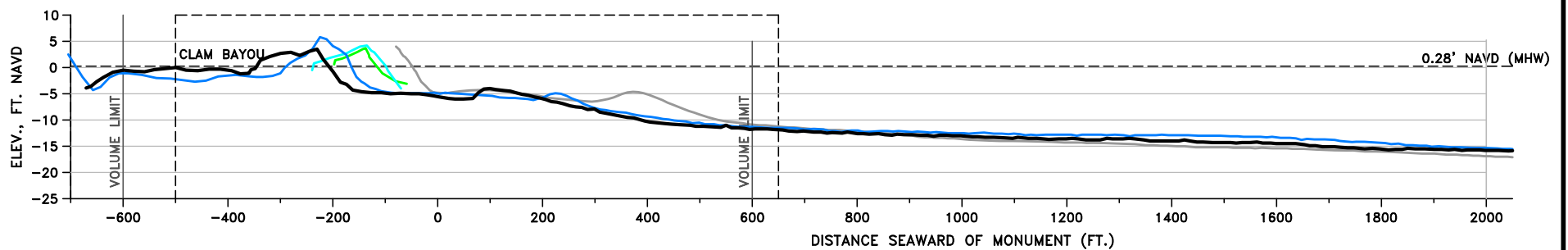
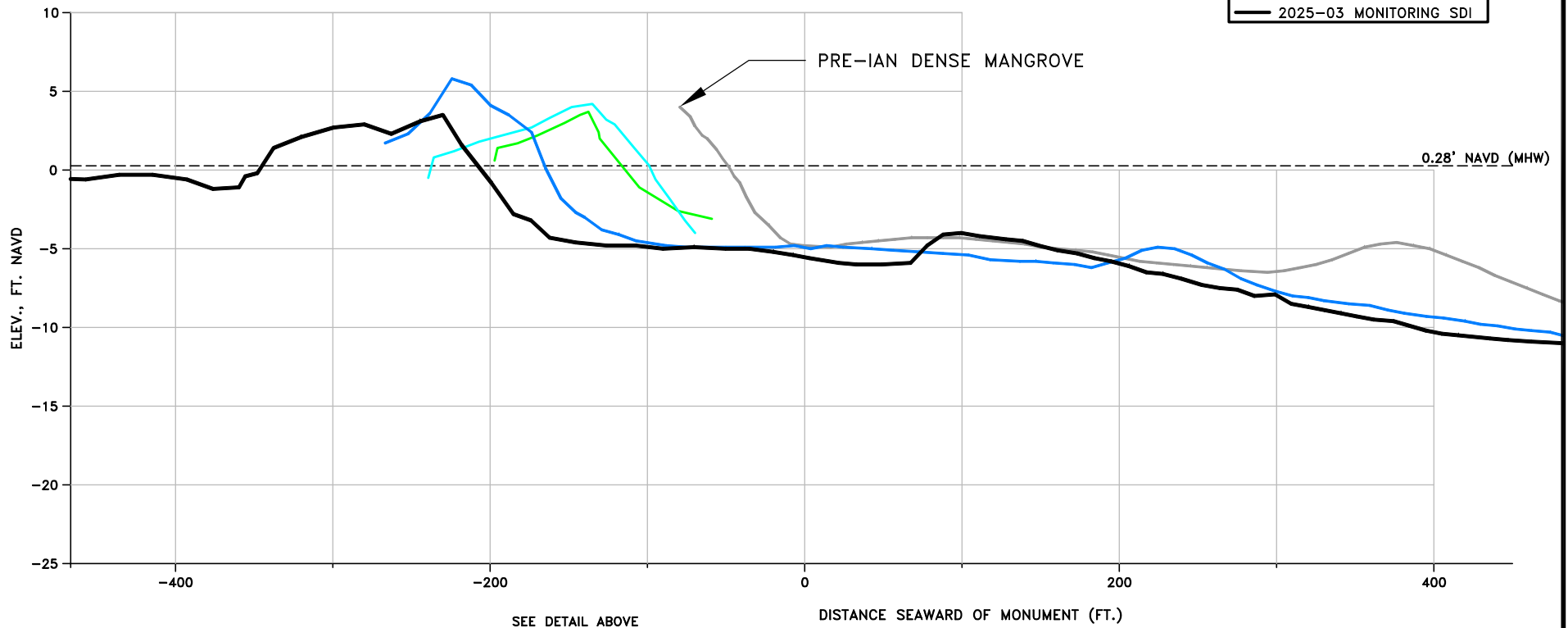
SCALE: SHOWN

FIGURE:

5679 STRAND COURT
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BEACH PROFILE R-113.50 NEARSHORE DETAIL

SURVEY LEGEND	
2022-09	PRE-IAN SDI
2022-12	POST-IAN SDI
2023-07	PRE-BERM SDI
2024-06	POST-BERM SDI
2025-03	MONITORING SDI



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SANIBEL ISLAND BEACH PROFILE

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FILE: SECTION

DATUM: NAVD

SCALE: SHOWN

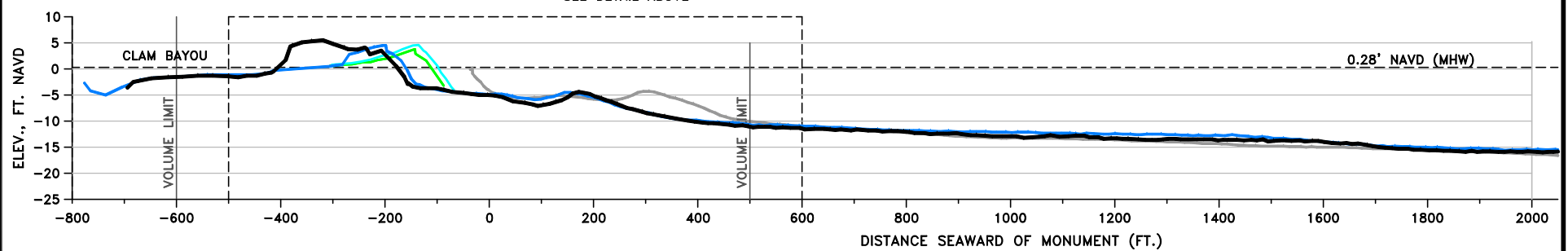
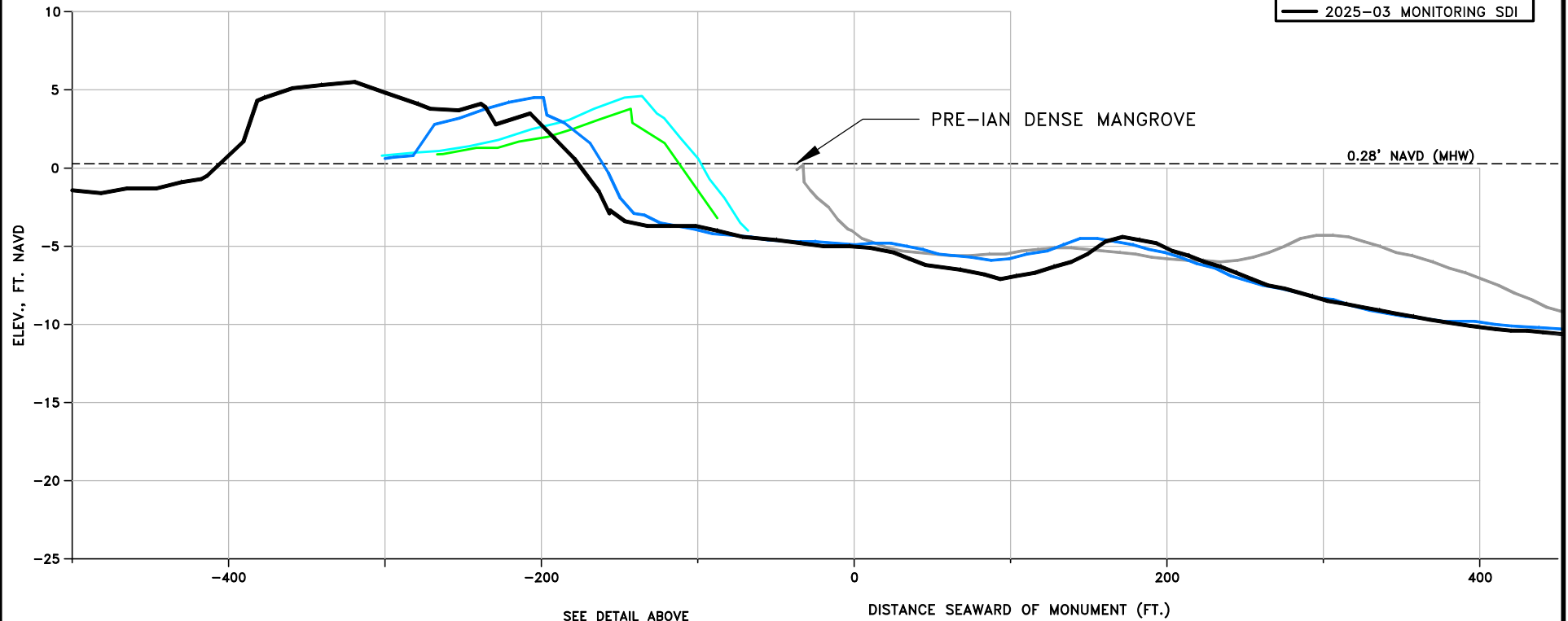
FIGURE:

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BEACH PROFILE R-114

NEARSHORE DETAIL

SURVEY LEGEND	
—	2022-09 PRE-IAN SDI
—	2022-12 POST-IAN SDI
—	2023-07 PRE-BERM SDI
—	2024-06 POST-BERM SDI
—	2025-03 MONITORING SDI



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JOB: 27008

FILE: SECTION

DATUM: NAVD

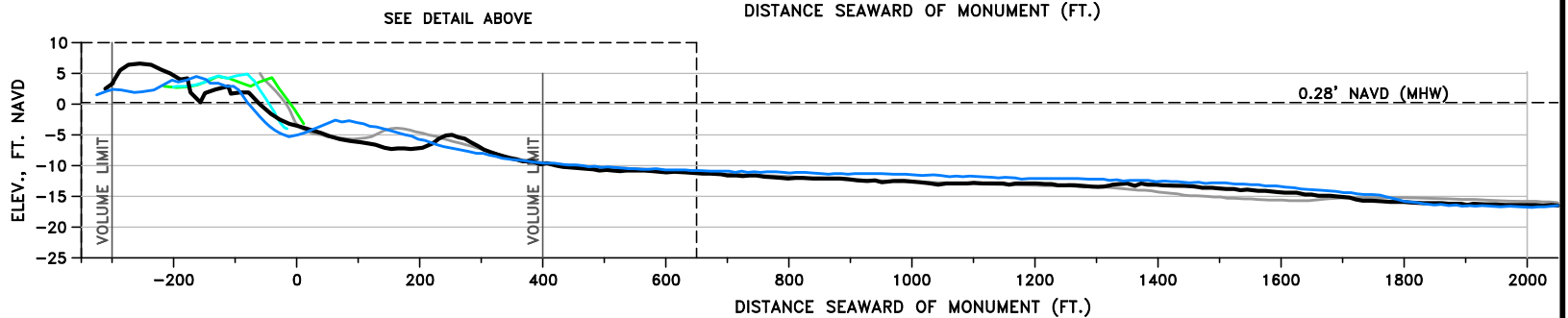
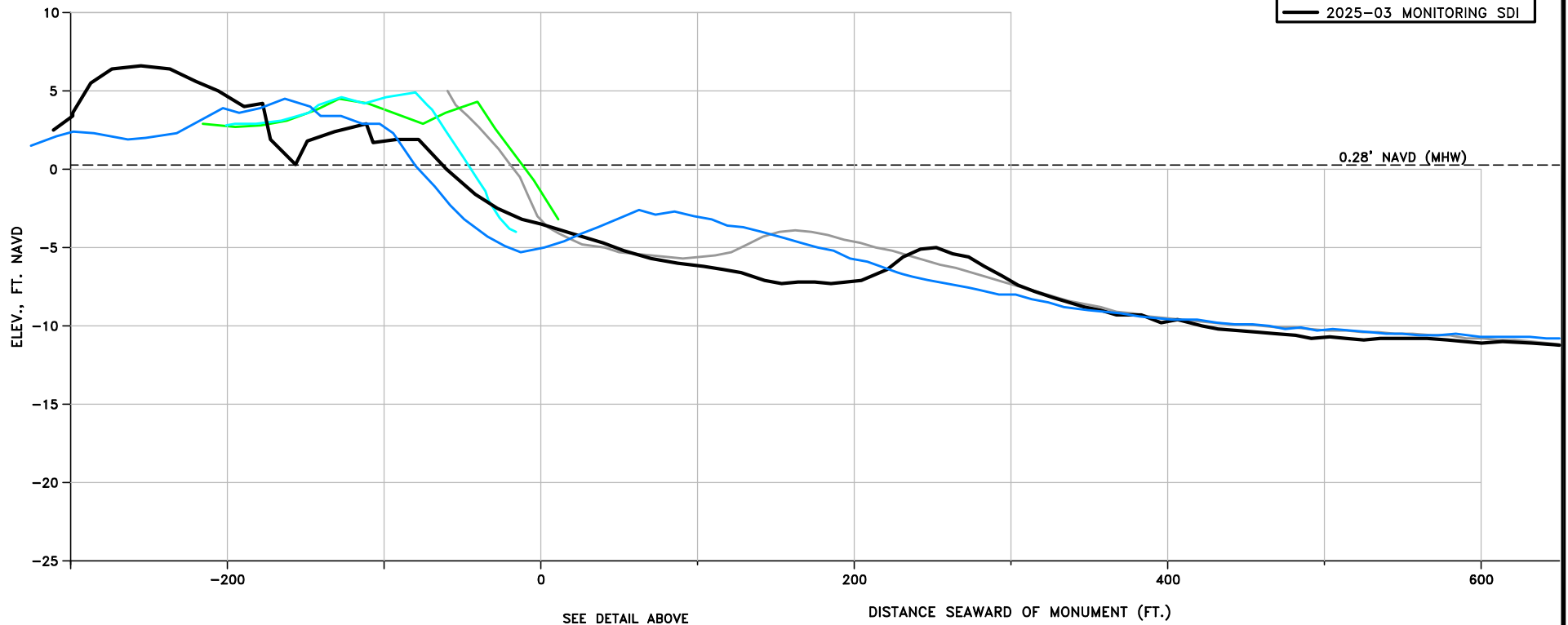
SCALE: SHOWN

FIGURE:

5679 STRAND COURT
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BEACH PROFILE R-114.50 NEARSHORE DETAIL

SURVEY LEGEND	
—	2022-09 PRE-IAN SDI
—	2022-12 POST-IAN SDI
—	2023-07 PRE-BERM SDI
—	2024-06 POST-BERM SDI
—	2025-03 MONITORING SDI



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JOB: 27008

FILE: SECTION

DATUM: NAVD

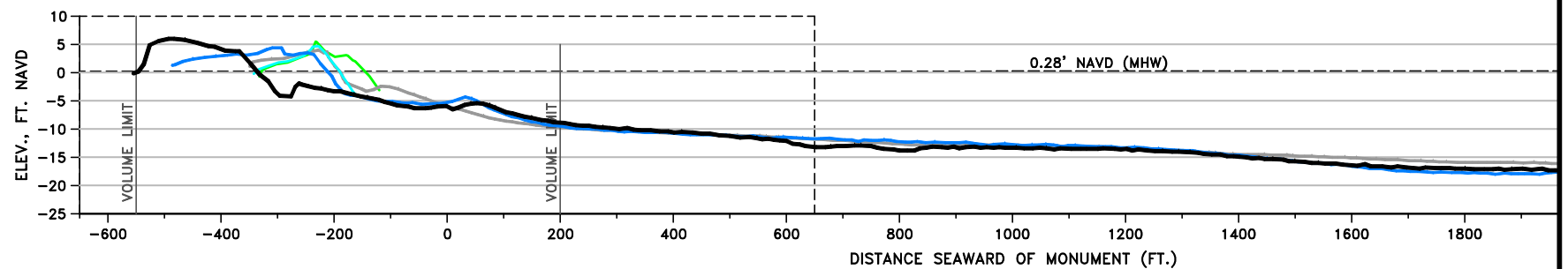
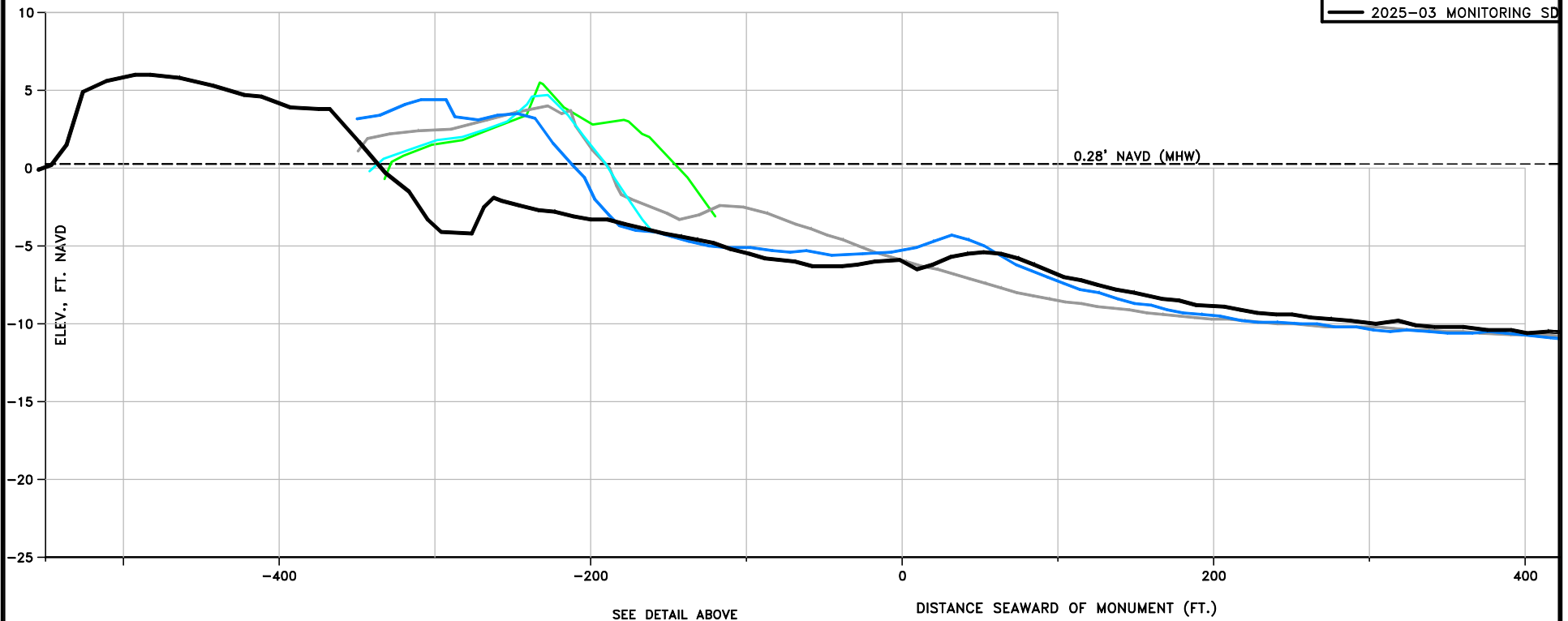
SCALE: SHOWN

FIGURE:

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BEACH PROFILE R-115 NEARSHORE DETAIL

SURVEY LEGEND	
—	2022-09 PRE-IAN SDI
—	2022-12 POST-IAN SDI
—	2023-07 PRE-BERM SDI
—	2024-06 POST-BERM SDI
—	2025-03 MONITORING SDI



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DATE: 3/25/25

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FILE: SECTION

DATUM: NAVD

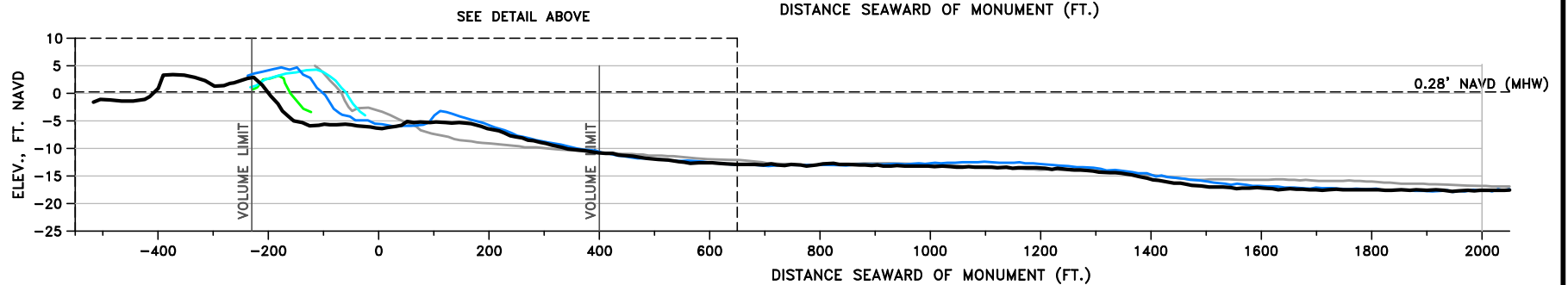
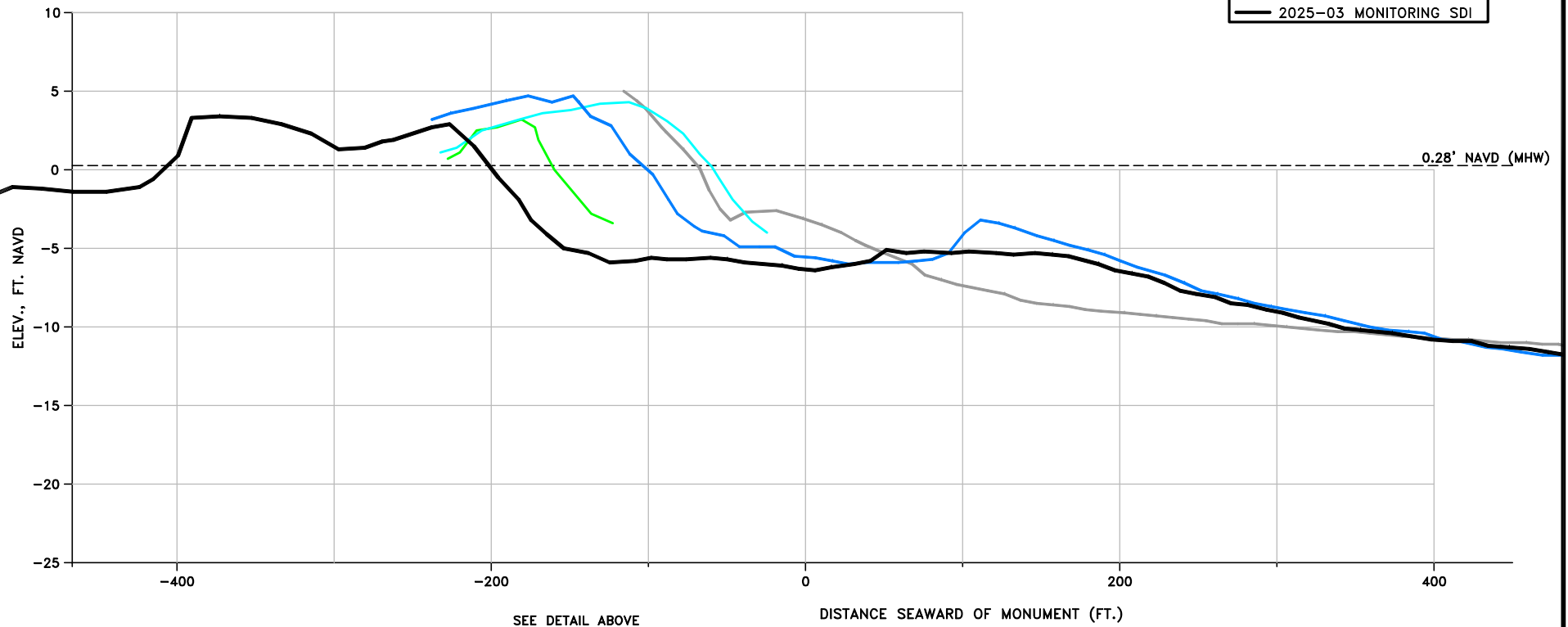
SCALE: SHOWN

FIGURE:

5679 STRAND COURT
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BEACH PROFILE R-115.50 NEARSHORE DETAIL

SURVEY LEGEND	
2022-09 PRE-IAN SDI	
2022-12 POST-IAN SDI	
2023-07 PRE-BERM SDI	
2024-06 POST-BERM SDI	
2025-03 MONITORING SDI	



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FILE: SECTION

SCALE: SHOWN

JOB: 27008

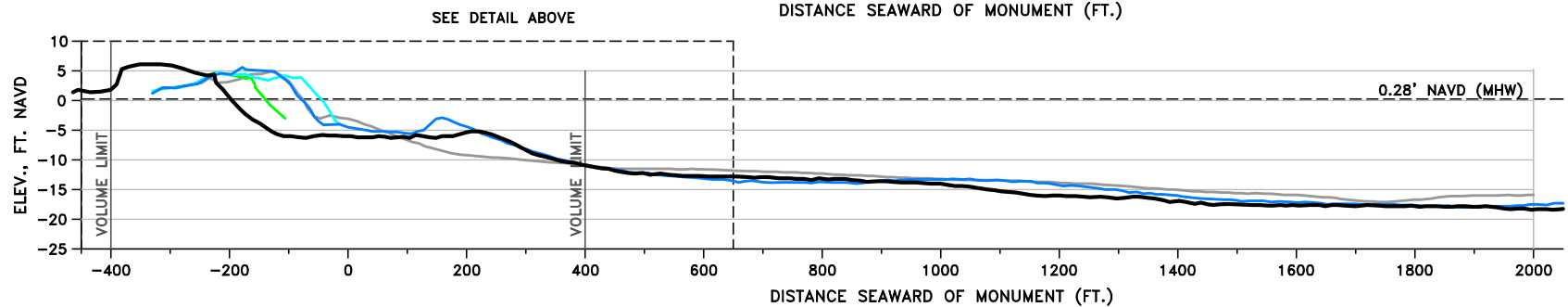
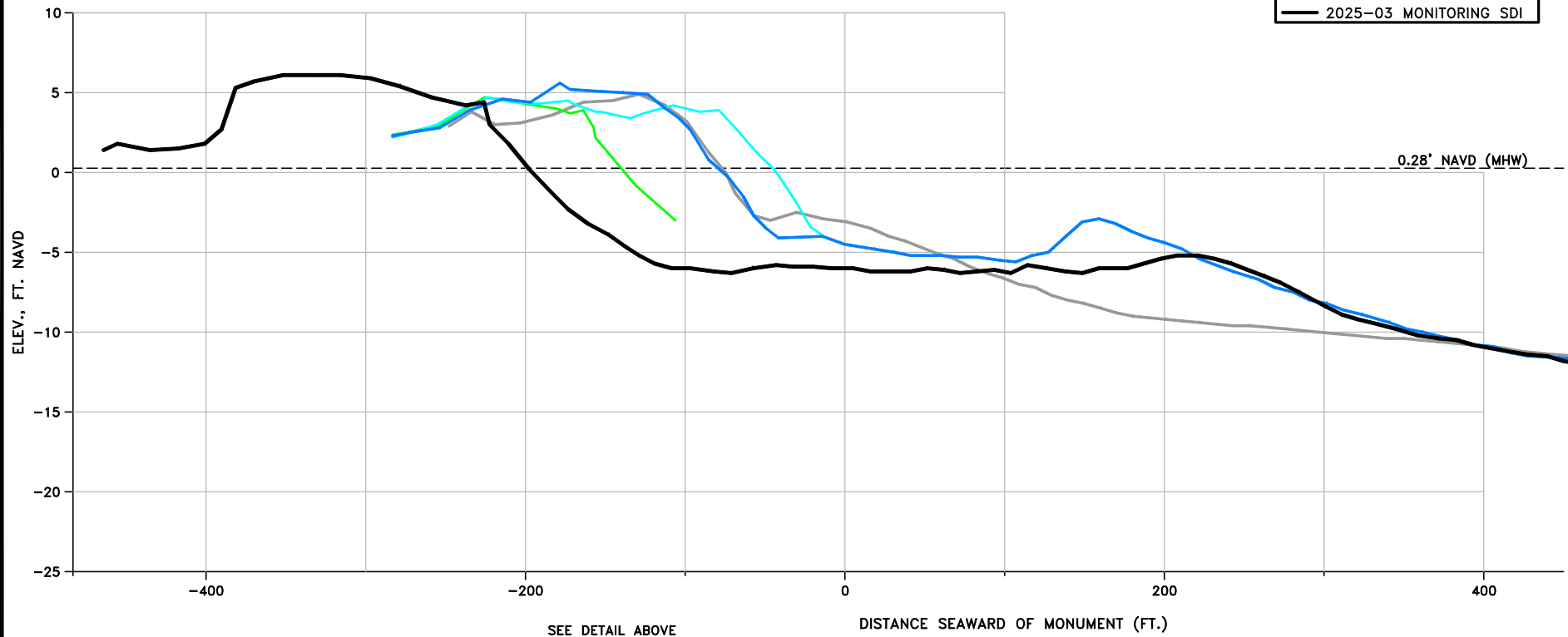
DATUM: NAVD

FIGURE:

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BEACH PROFILE R-116 NEARSHORE DETAIL

SURVEY LEGEND	
—	2022-09 PRE-IAN SDI
—	2022-12 POST-IAN SDI
—	2023-07 PRE-BERM SDI
—	2024-06 POST-BERM SDI
—	2025-03 MONITORING SDI



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FOR: CITY OF SANIBEL

DATE: 3/25/25

JOB: 27008

FILE: SECTION

DATUM: NAVD

SCALE: SHOWN

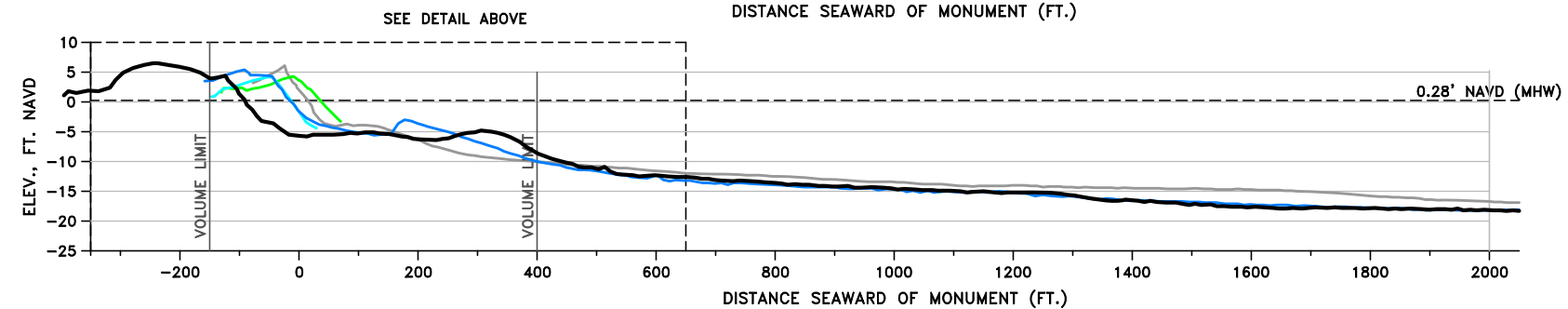
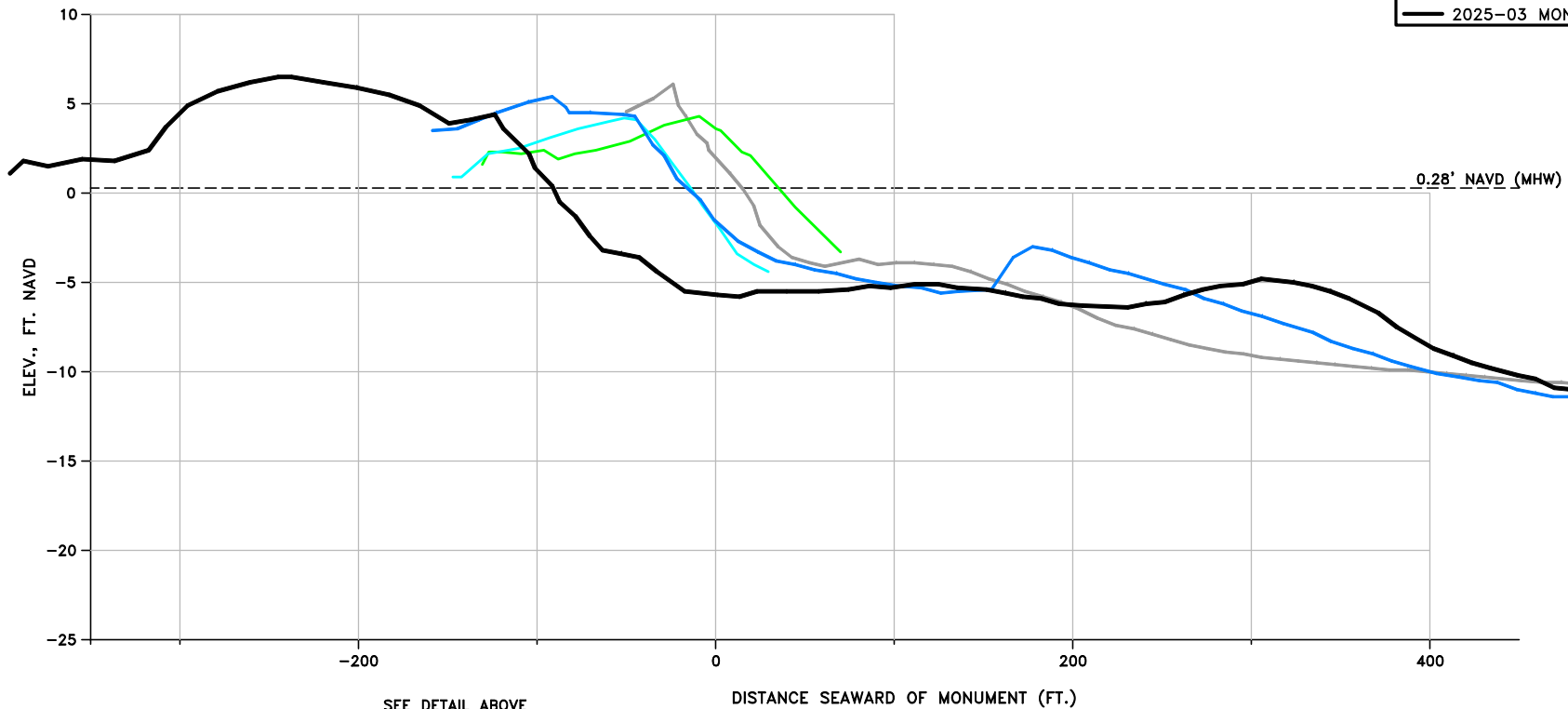
FIGURE:

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BEACH PROFILE R-116.50

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SURVEY LEGEND	
—	2022-09 PRE-IAN SDI
—	2022-12 POST-IAN SDI
—	2023-07 PRE-BERM SDI
—	2024-06 POST-BERM SDI
—	2025-03 MONITORING SDI



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SCALE: SHOWN

JOB: 27008

DATUM: NAVD

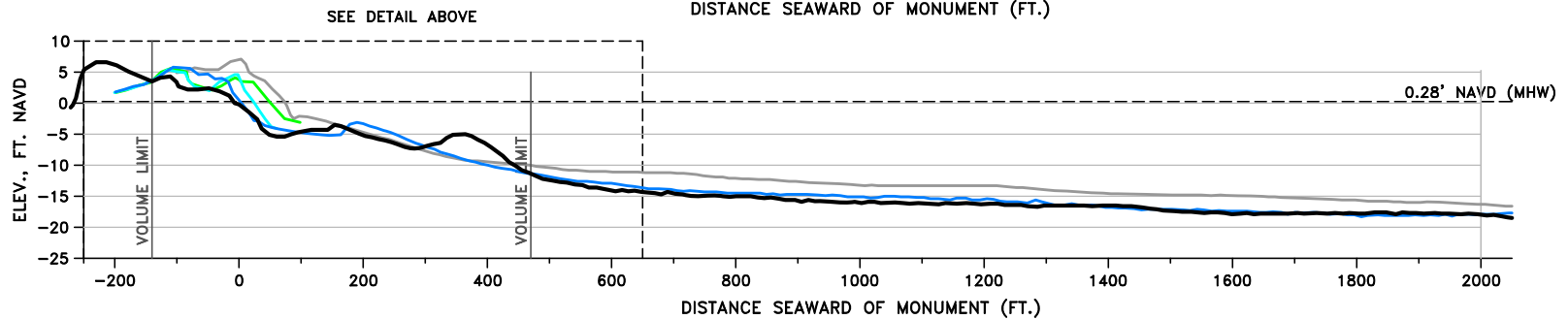
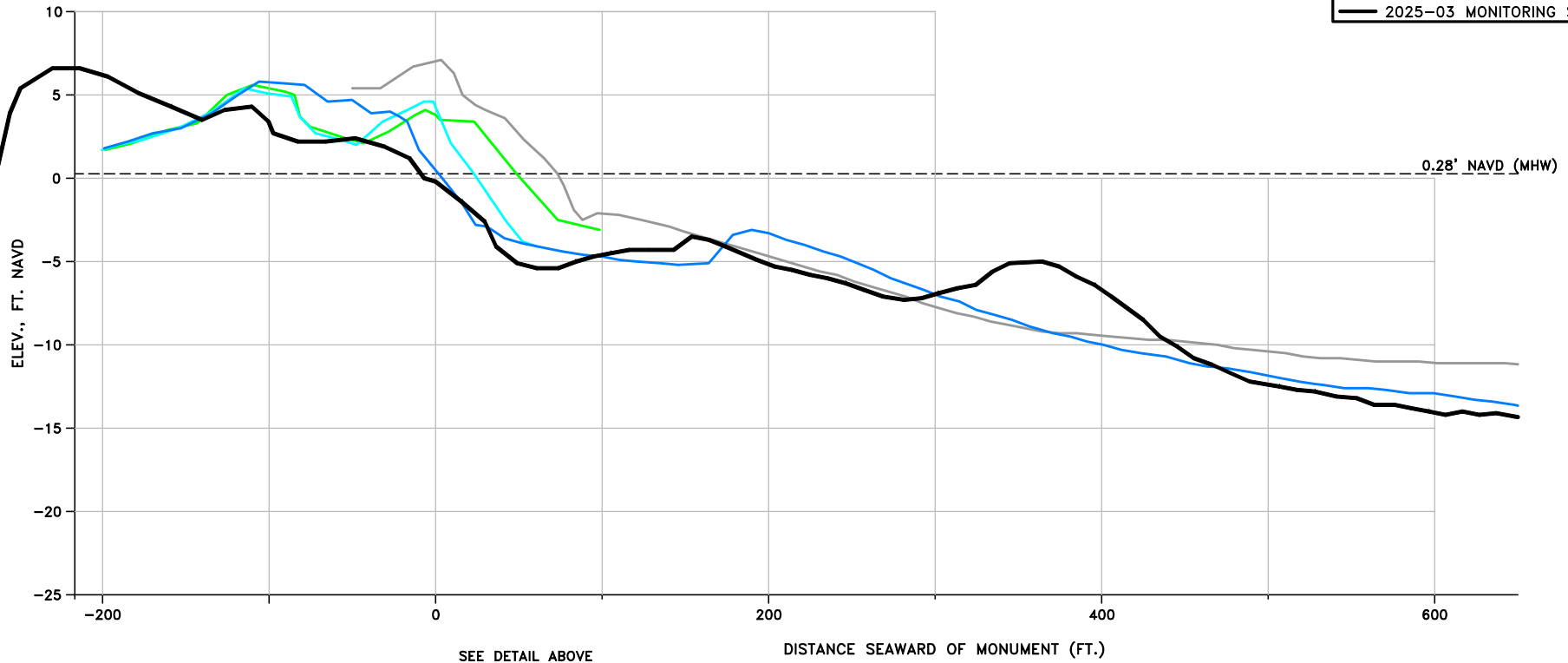
FIGURE:

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BEACH PROFILE R-117

NEARSHORE DETAIL

SURVEY LEGEND	
2022-09 PRE-IAN SDI	
2022-12 POST-IAN SDI	
2023-07 PRE-BERM SDI	
2024-06 POST-BERM SDI	
2025-03 MONITORING SDI	



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DATE: 3/25/25

JOB: 27008

FILE: SECTION

DATUM: NAVD

SCALE: SHOWN

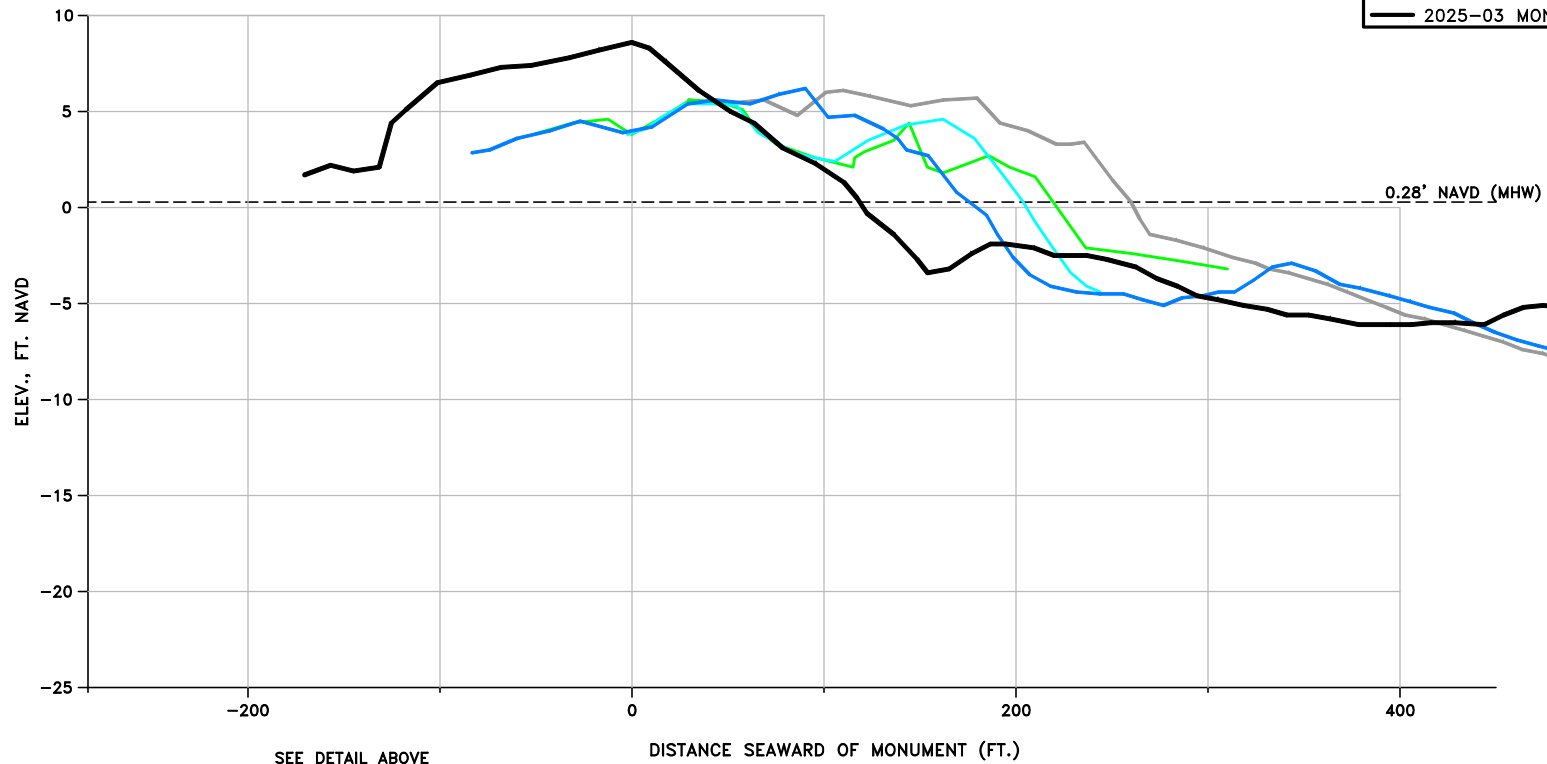
FIGURE:

5679 STRAND COURT
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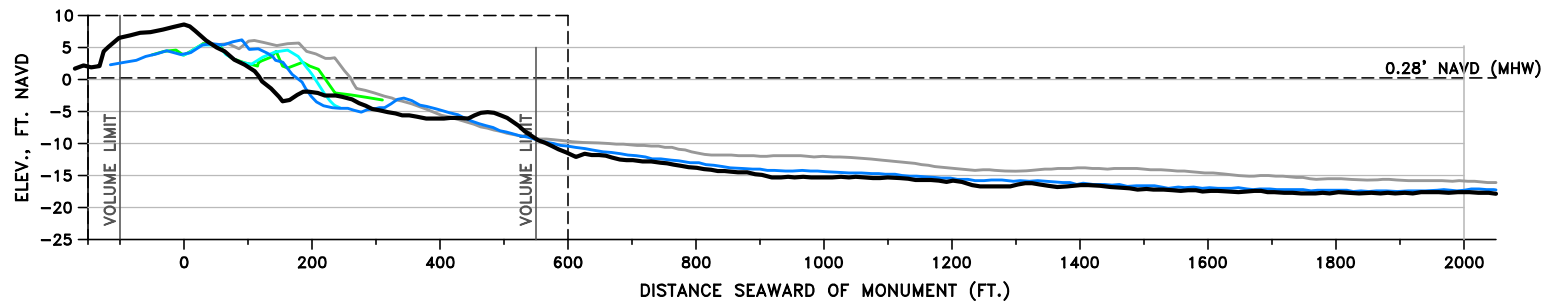
BEACH PROFILE R-117.50

NEARSHORE DETAIL

SURVEY LEGEND	
—	2022-09 PRE-IAN SDI
—	2022-12 POST-IAN SDI
—	2023-07 PRE-BERM SDI
—	2024-06 POST-BERM SDI
—	2025-03 MONITORING SDI



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SCALE: SHOWN

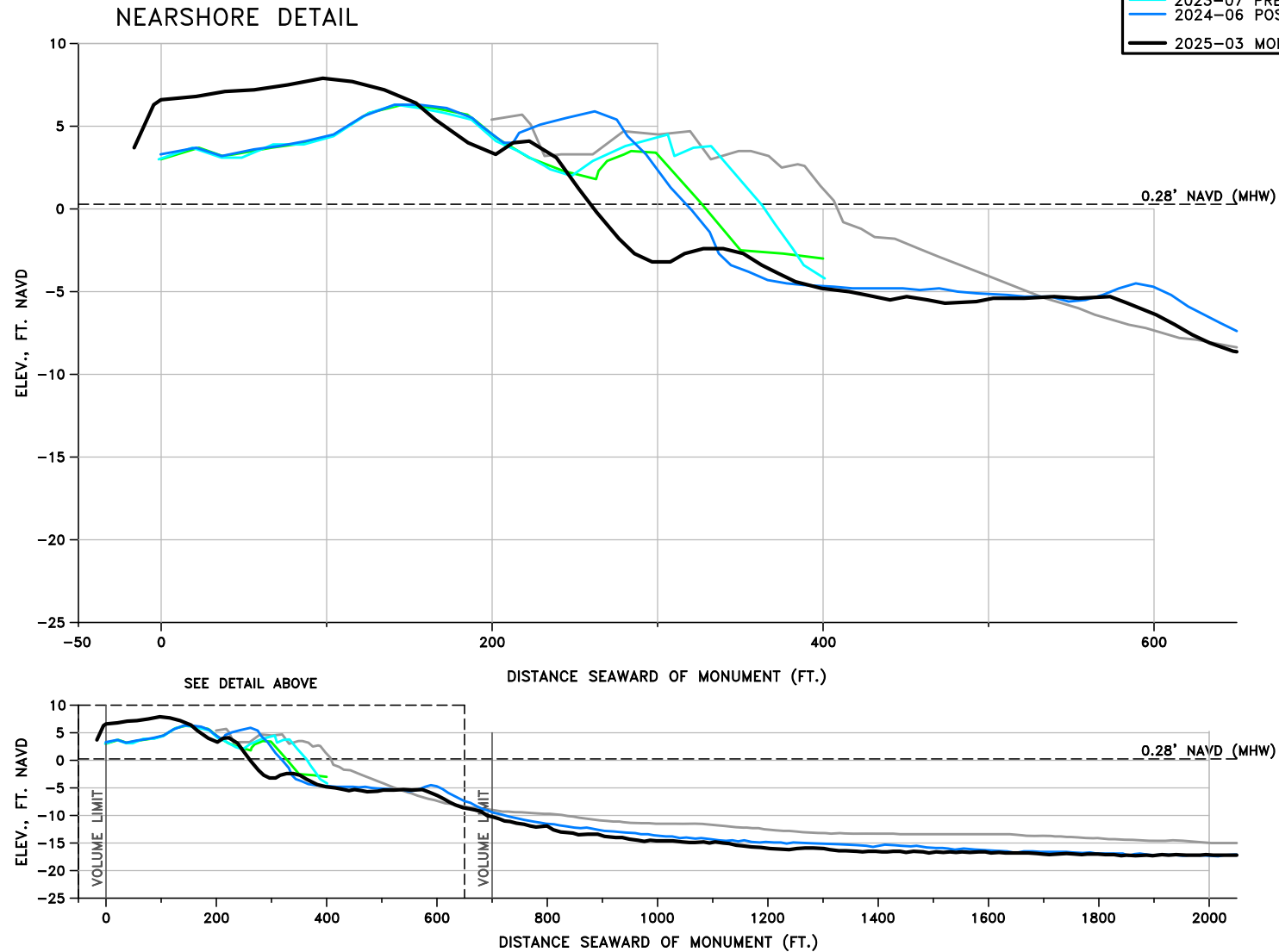
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FIGURE:

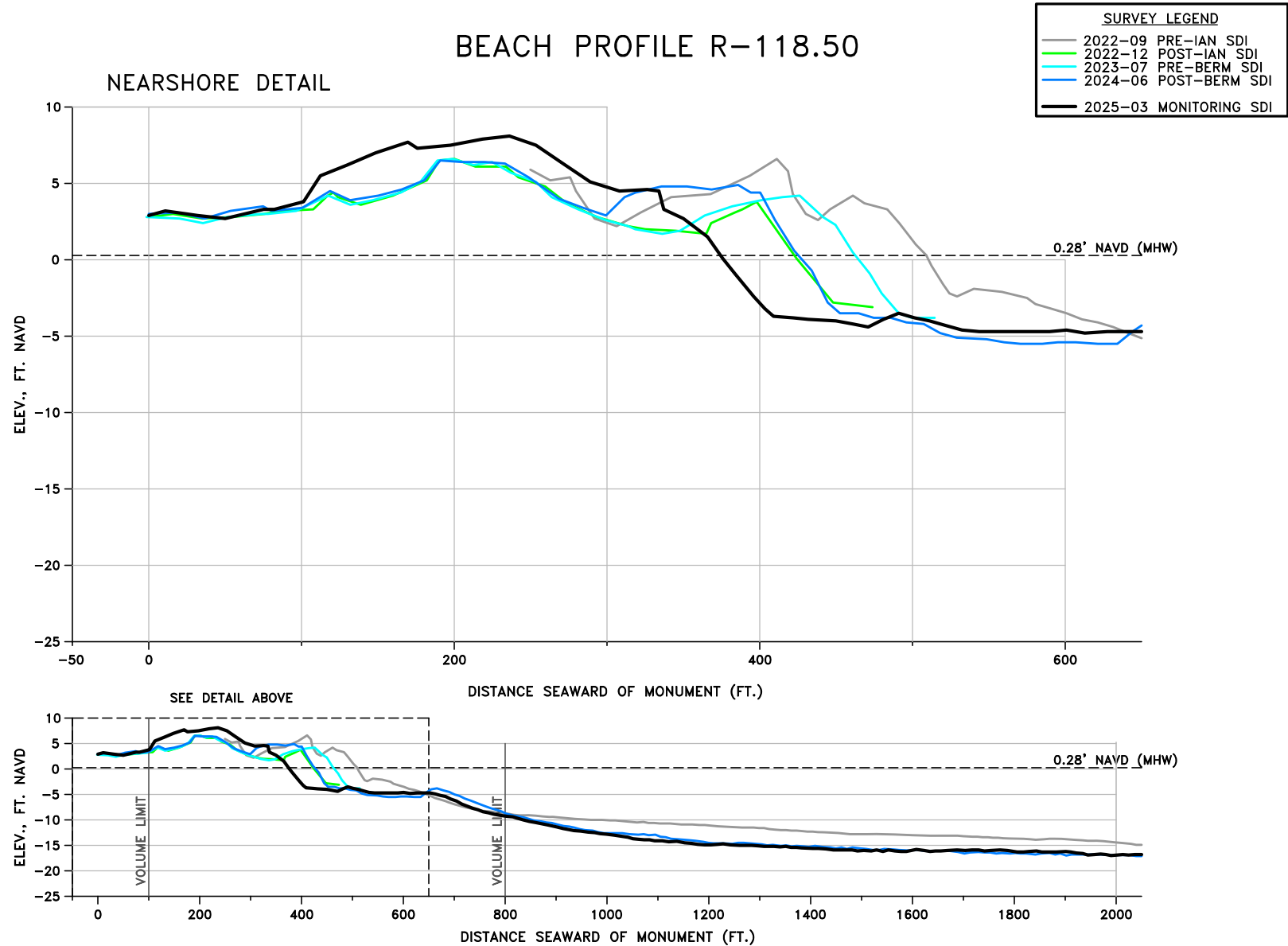
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BEACH PROFILE R-118



SANIBEL ISLAND BEACH PROFILE		
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DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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SCALE: SHOWN

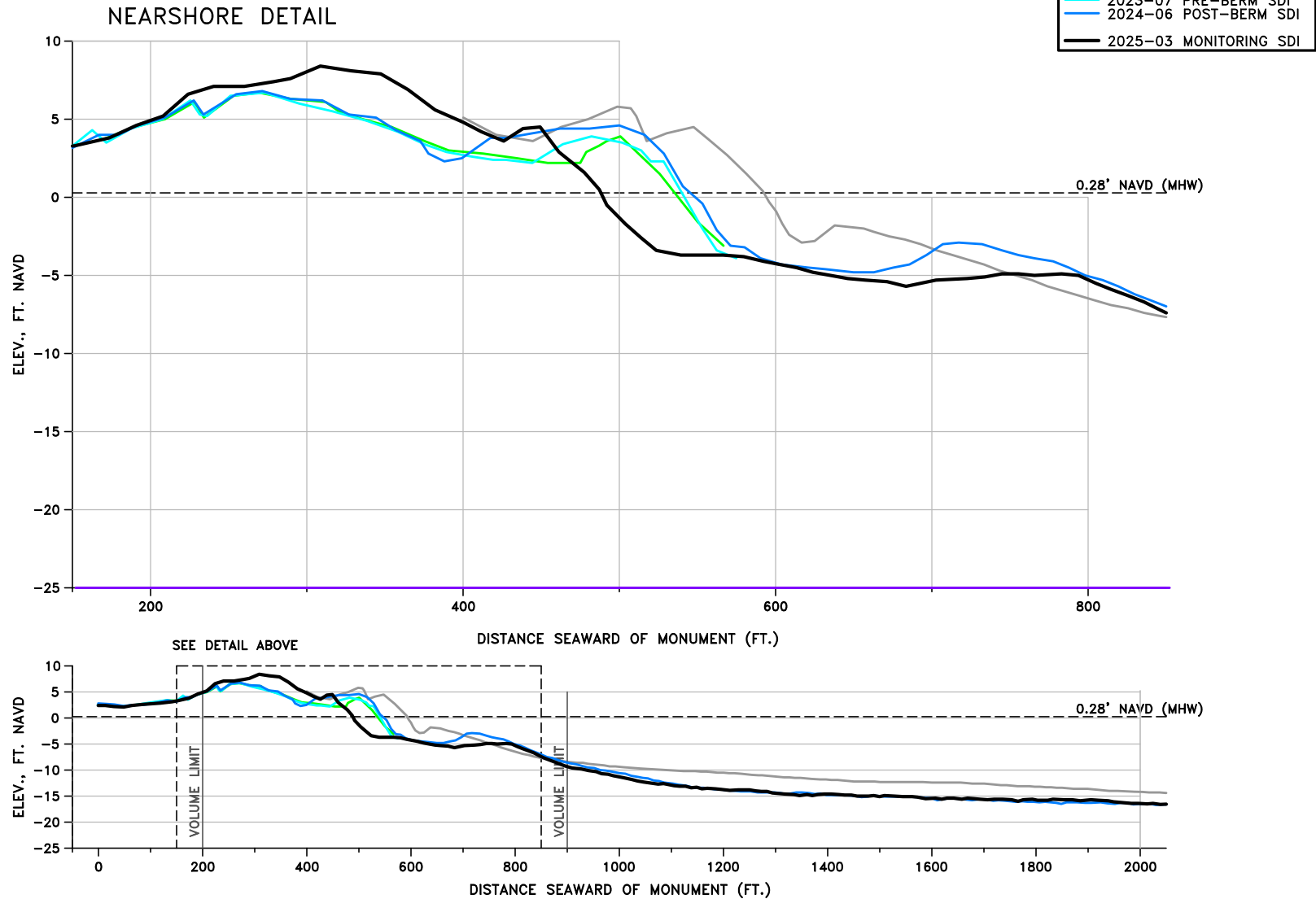
JOB: 27008

DATUM: NAVD

FIGURE:

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BEACH PROFILE R-119

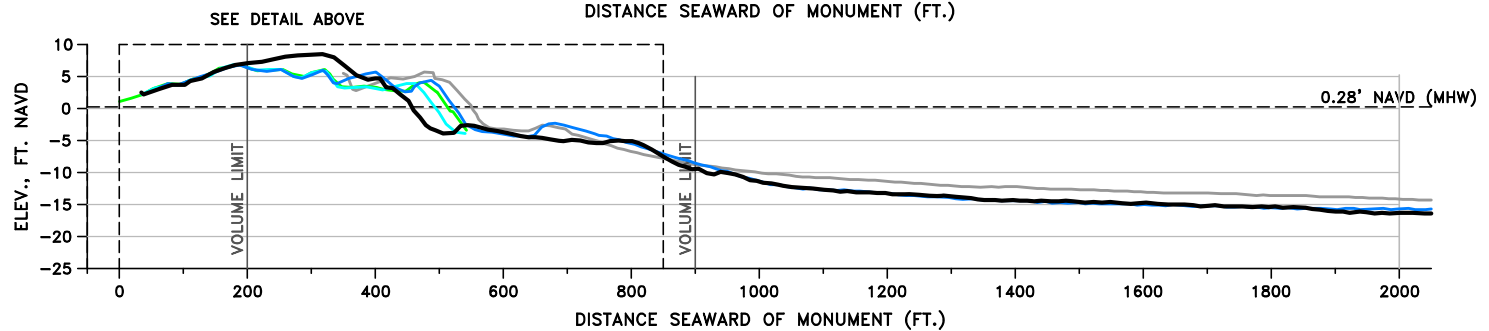
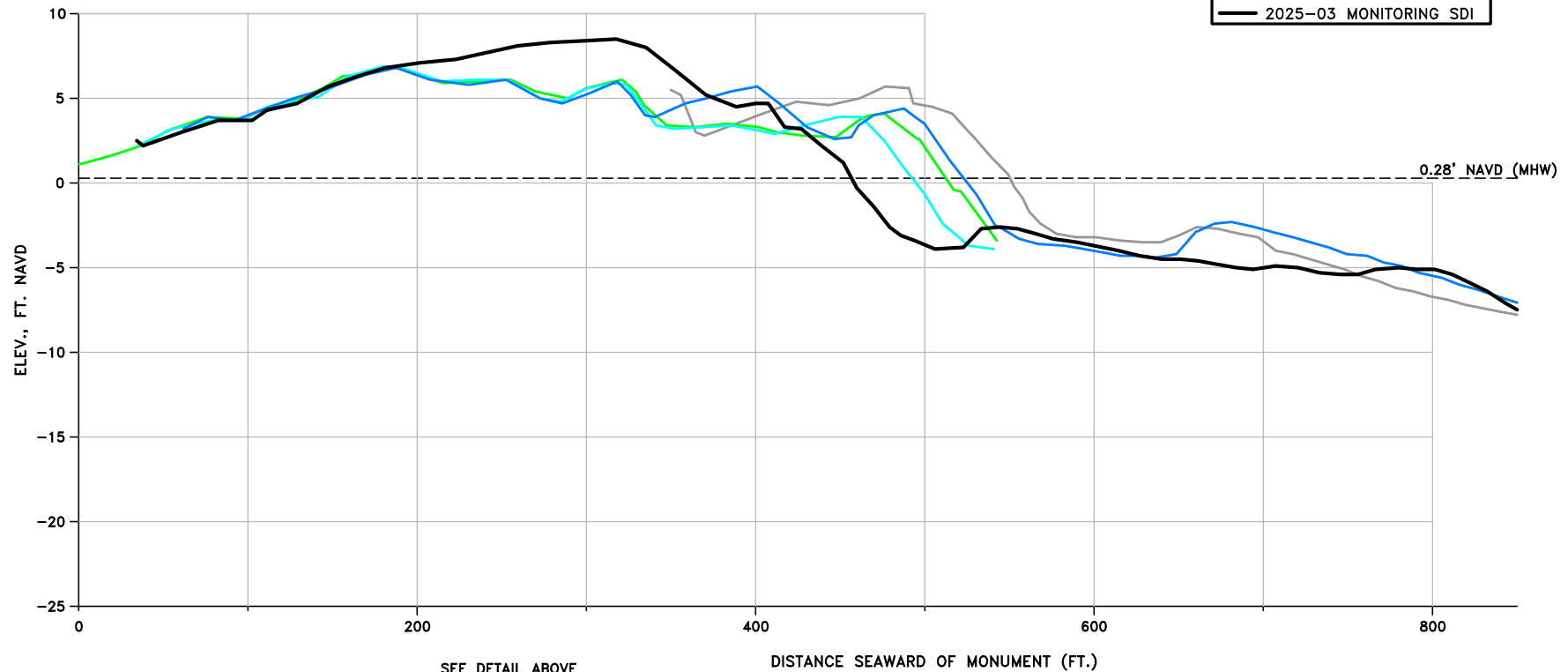


SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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NEARSHORE DETAIL



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FOR: CITY OF SANIBEL

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JOB: 27008

FILE: SECTION

DATUM: NAVD

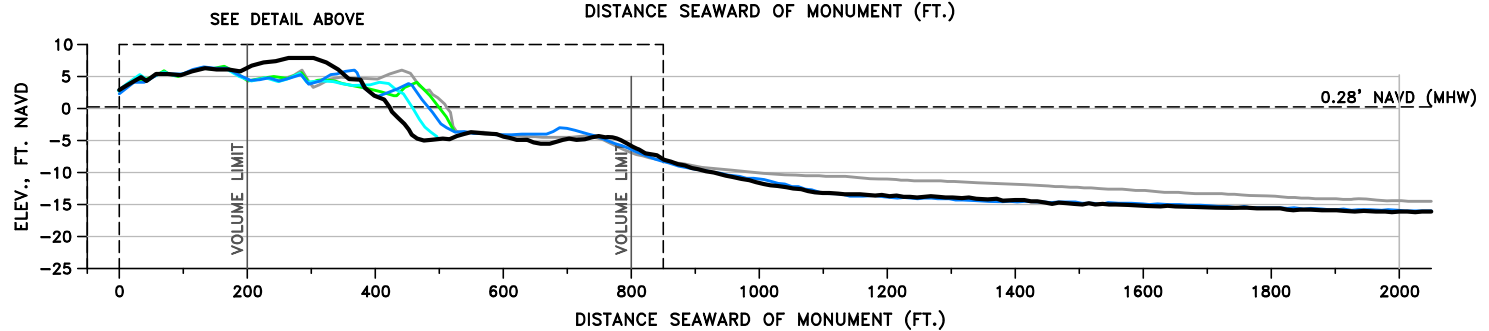
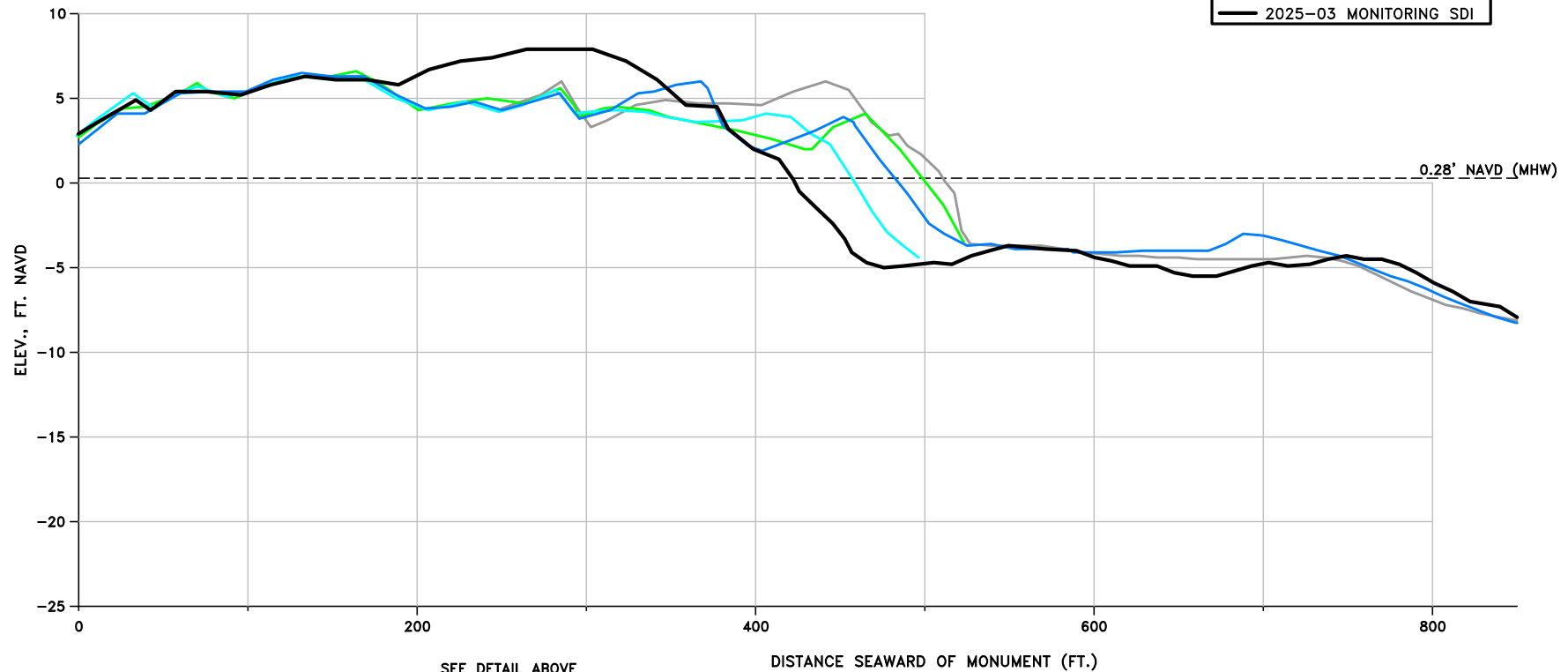
SCALE: SHOWN

FIGURE:

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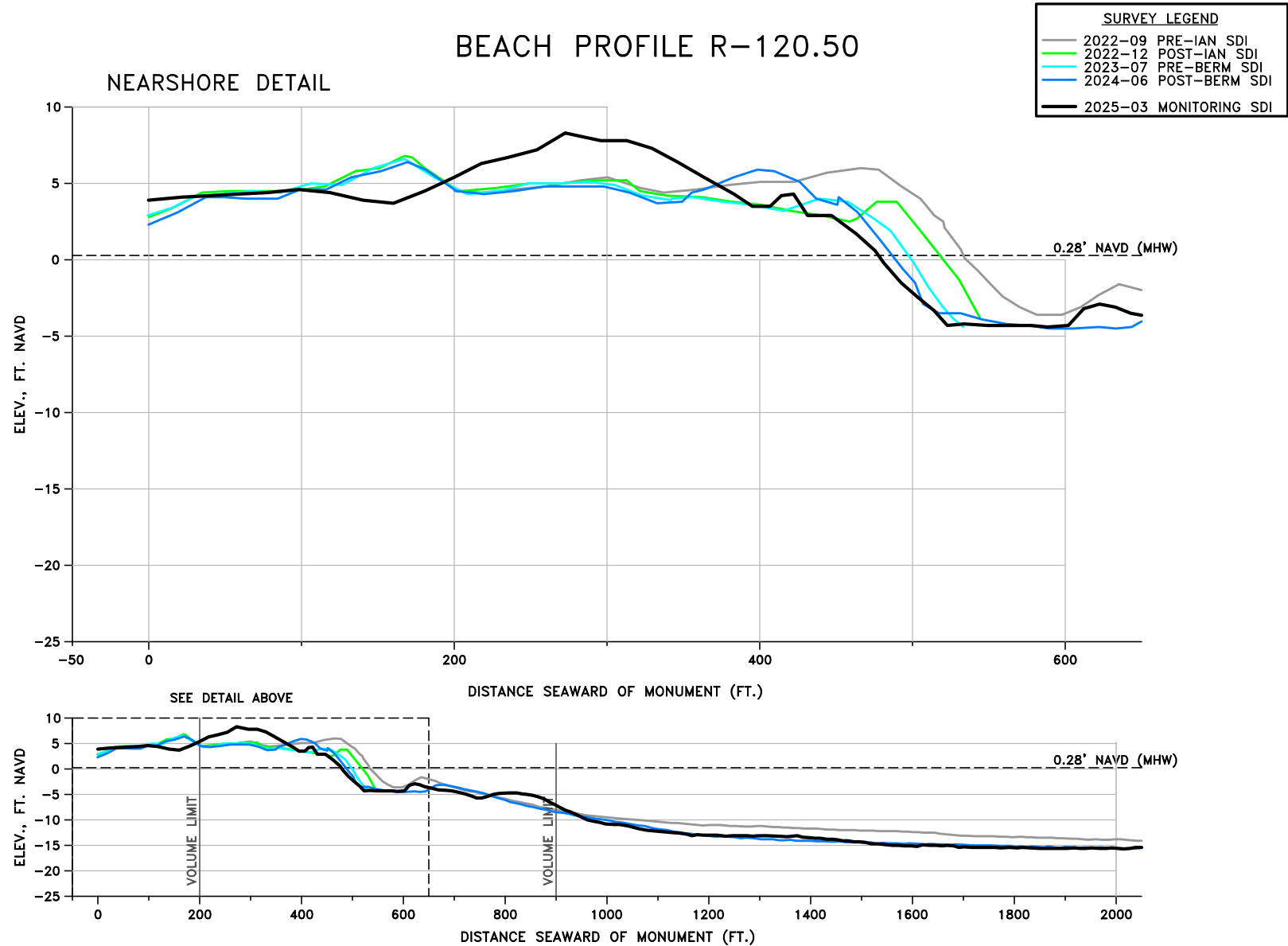
BEACH PROFILE R-120


NEARSHORE DETAIL



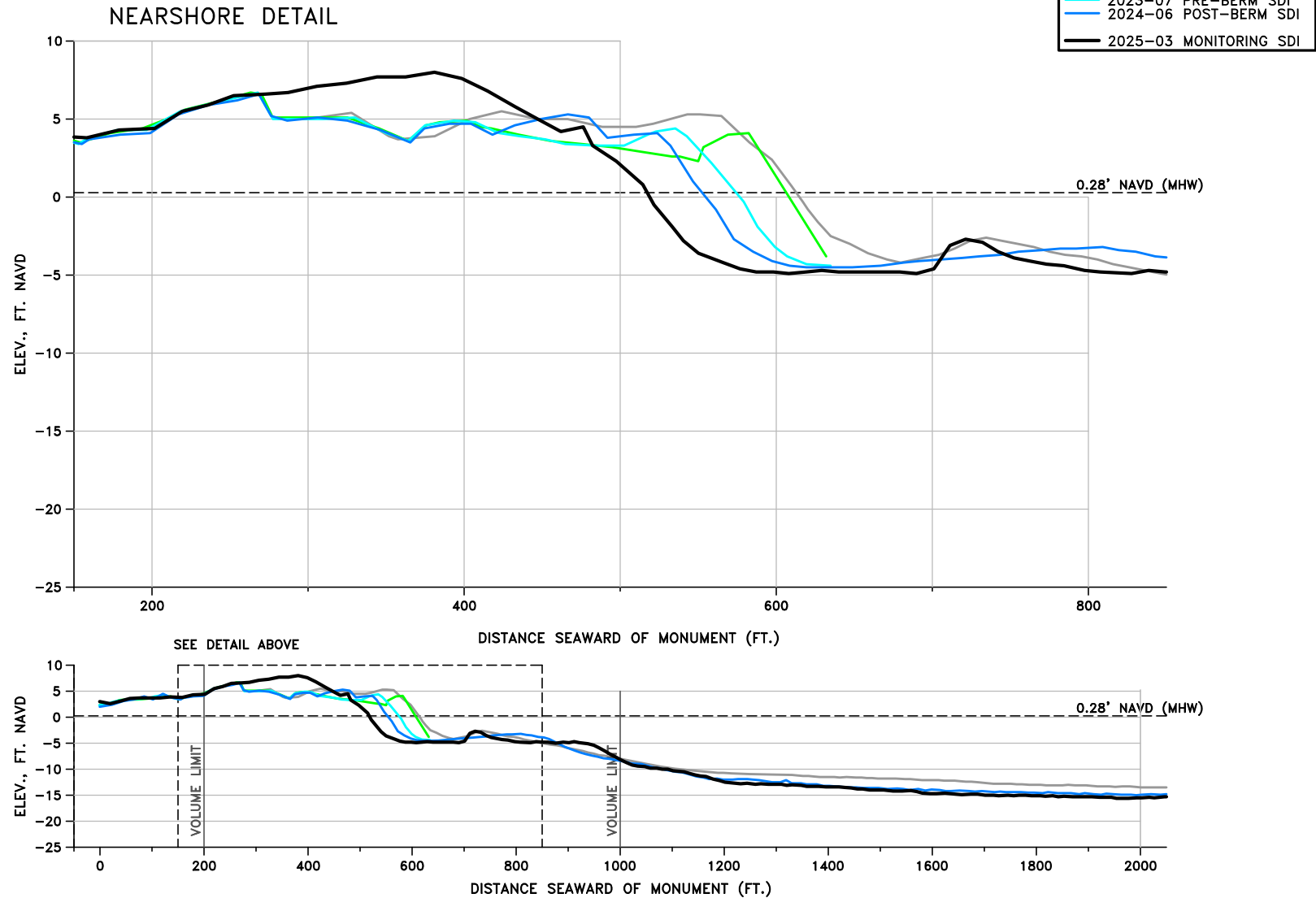
SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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	FOR: CITY OF SANIBEL			
	DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN	
	JOB: 27008	DATUM: NAVD	FIGURE:	

BEACH PROFILE R-121



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FOR: CITY OF SANIBEL

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FILE: SECTION

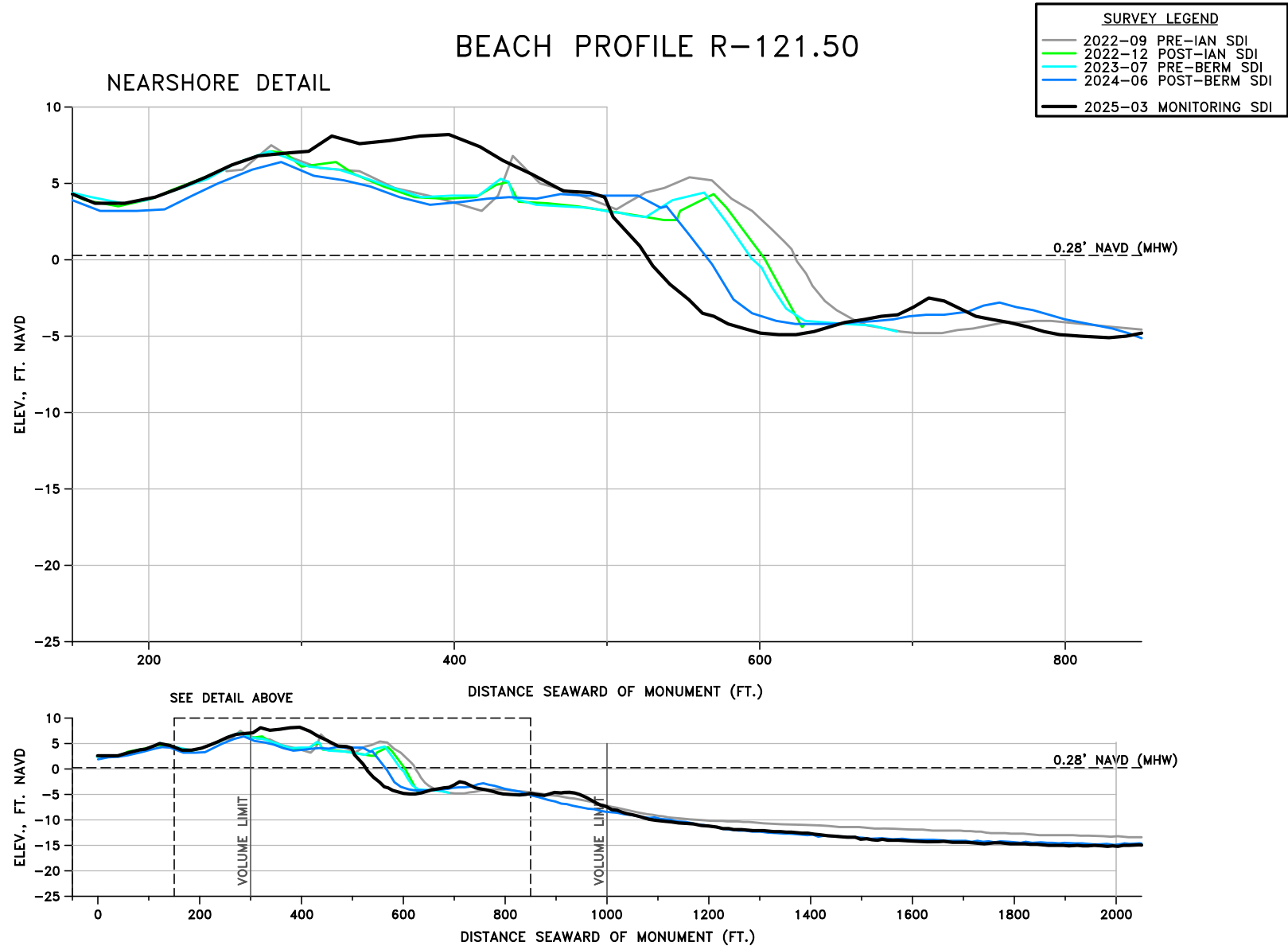
SCALE: SHOWN

JOB: 27008

DATUM: NAVD

FIGURE:

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JOB: 27008

FILE: SECTION

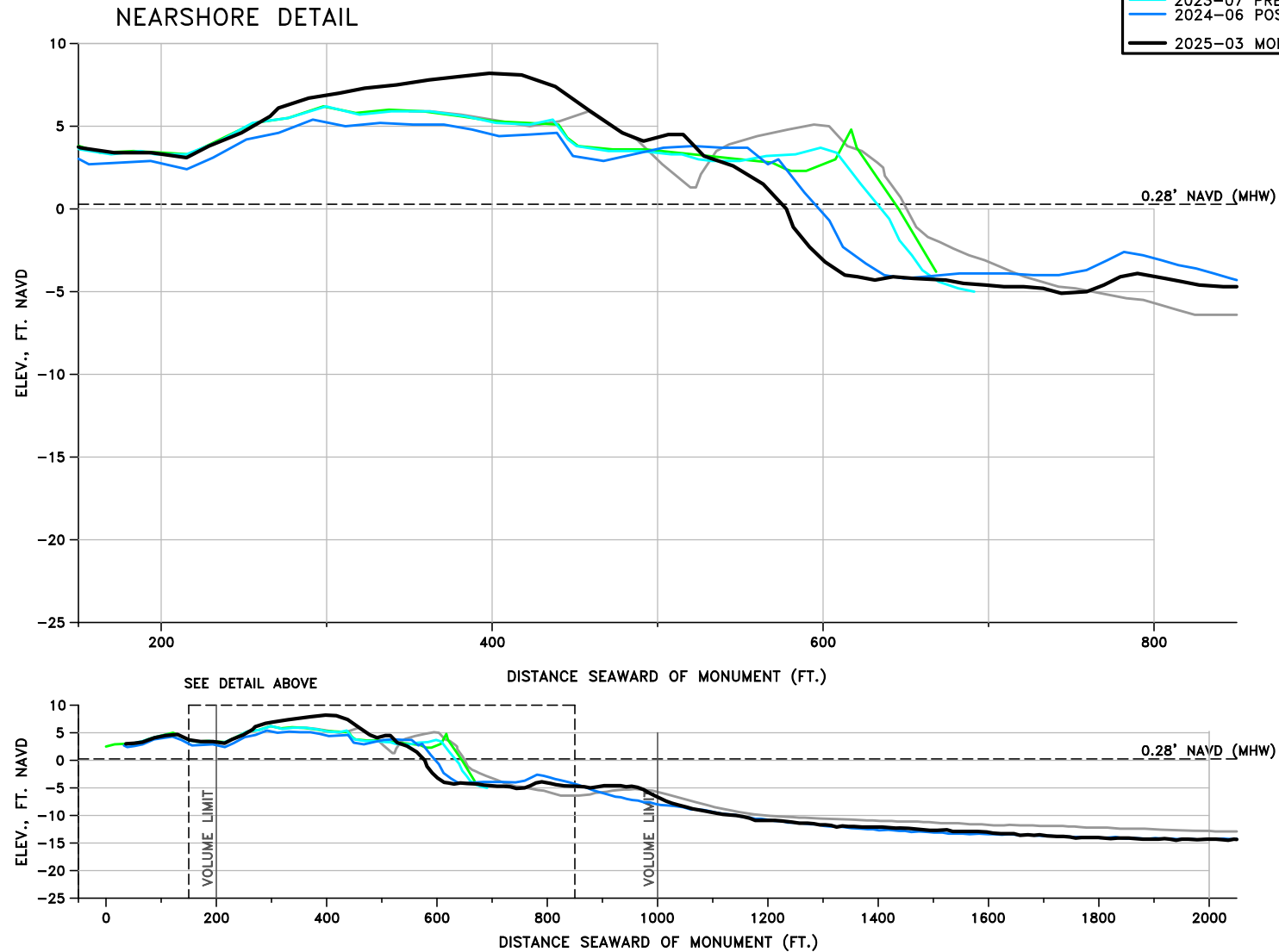
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SCALE: SHOWN

FIGURE:

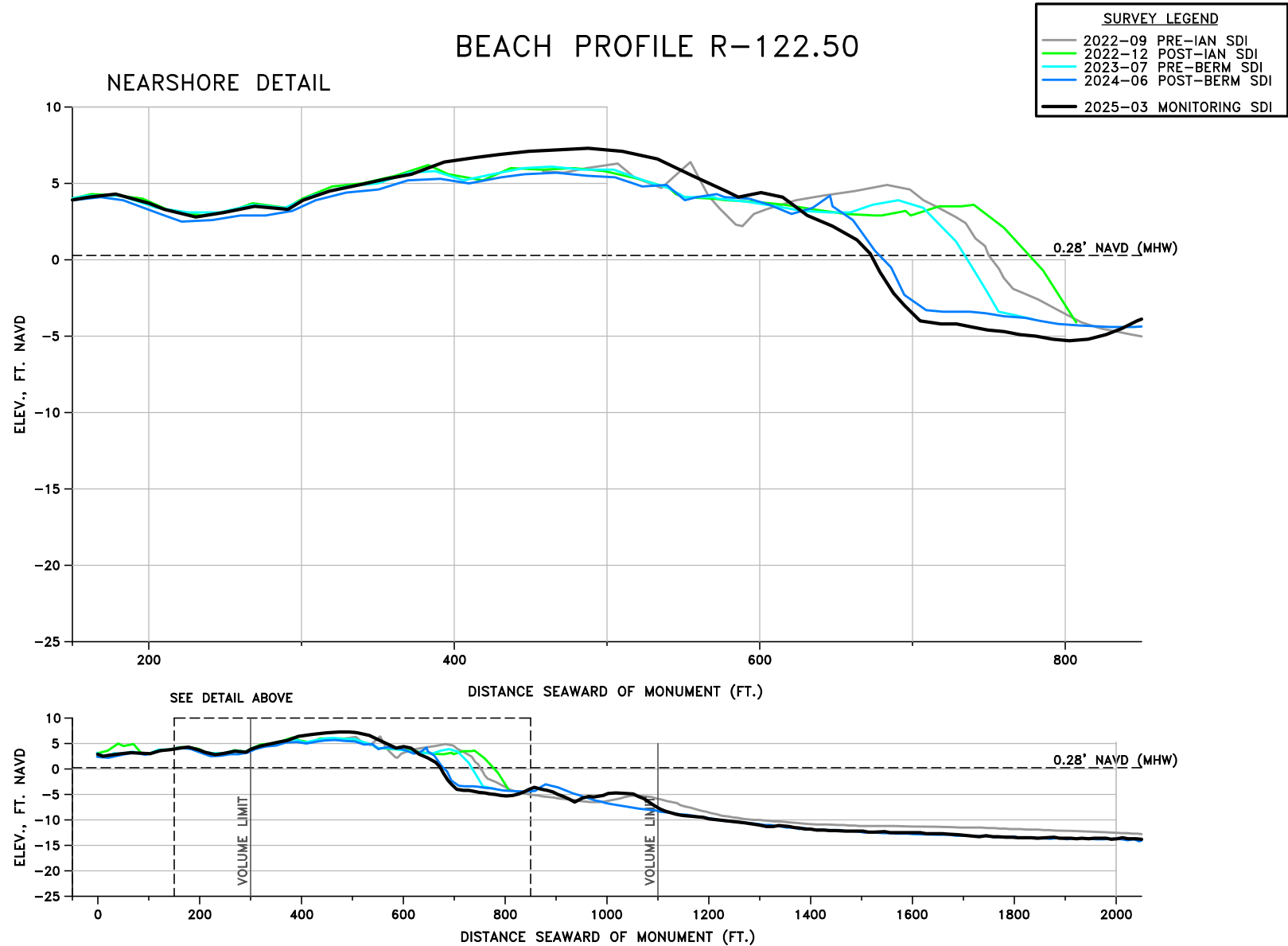
5679 STRAND COURT
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BEACH PROFILE R-122



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

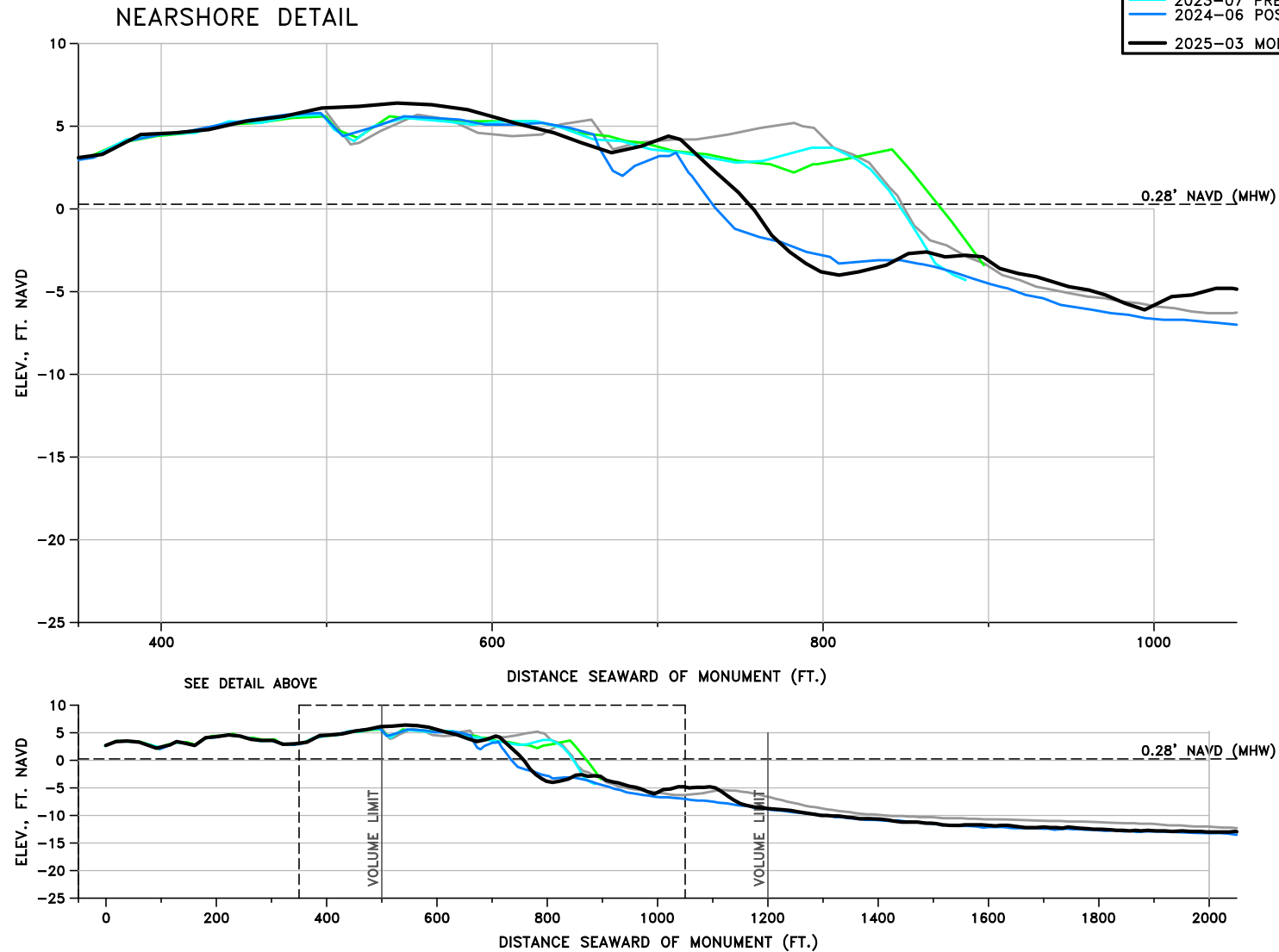
JOB: 27008

DATUM: NAVD

FIGURE:

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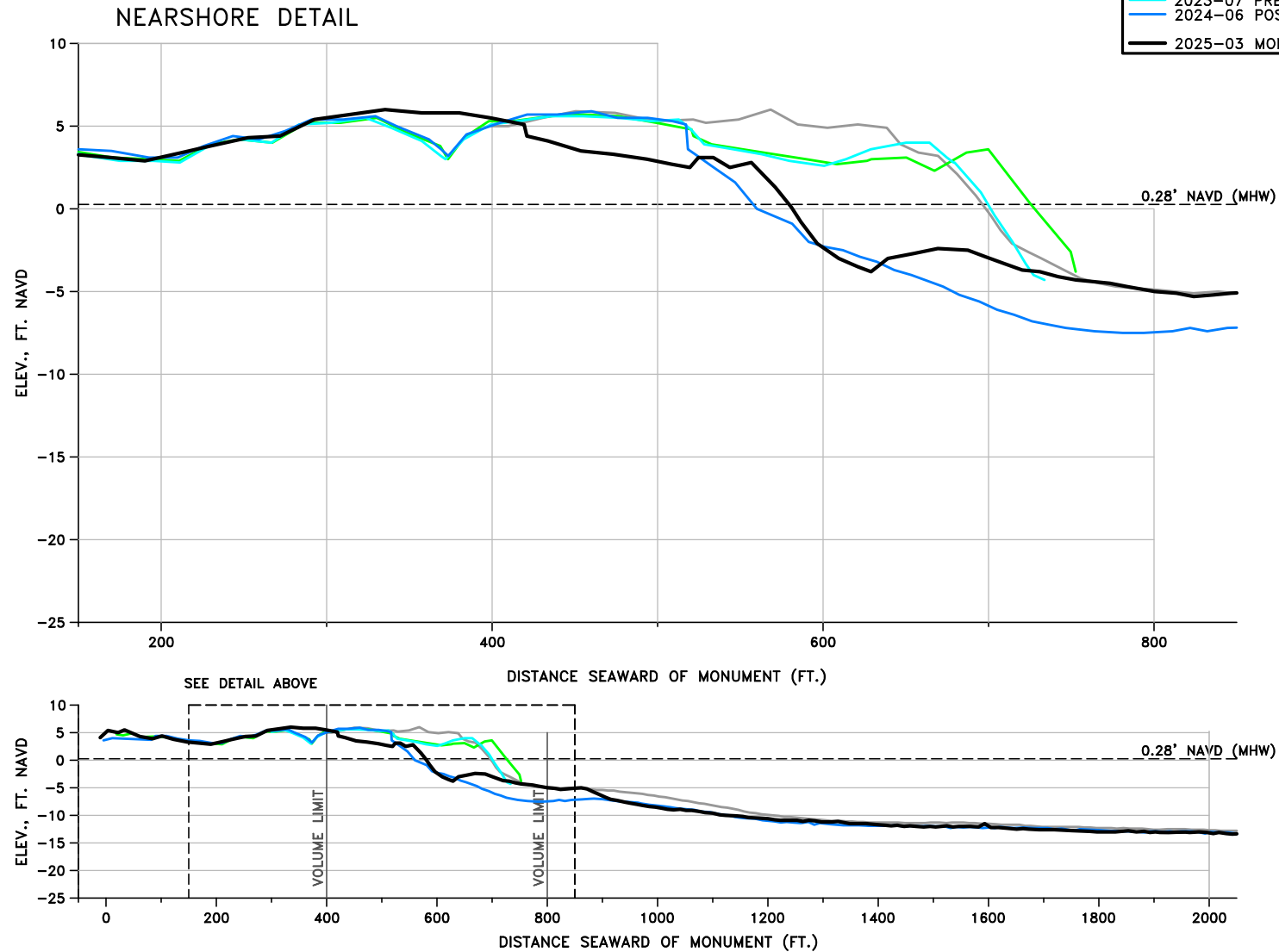
BEACH PROFILE R-123



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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BEACH PROFILE R-123.50



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FOR: CITY OF SANIBEL

DATE: 3/25/25

JOB: 27008

FILE: SECTION

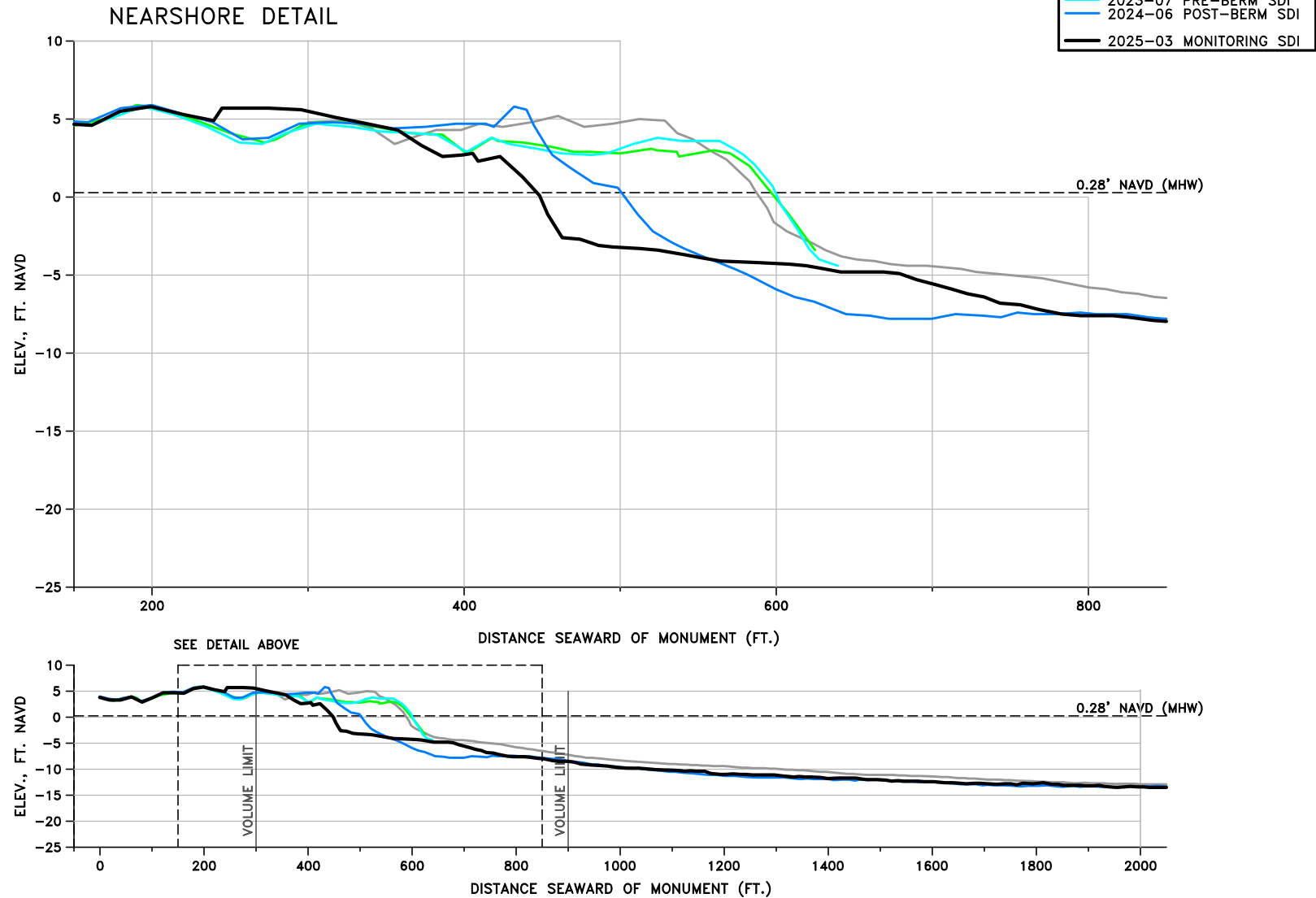
DATUM: NAVD

SCALE: SHOWN

FIGURE:

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BEACH PROFILE R-124



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FOR: CITY OF SANIBEL

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FILE: SECTION

SCALE: SHOWN

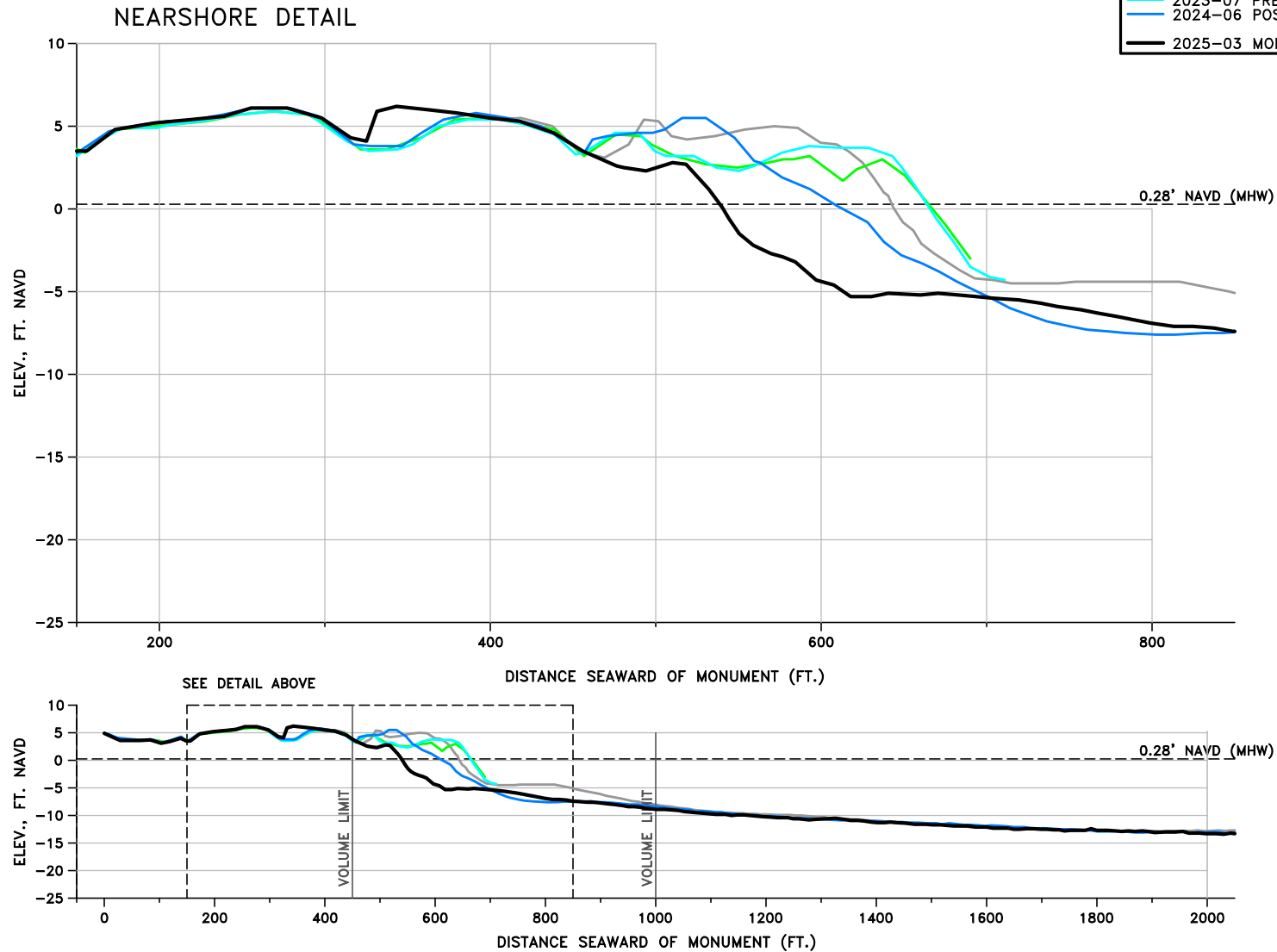
JOB: 27008

DATUM: NAVD

FIGURE:

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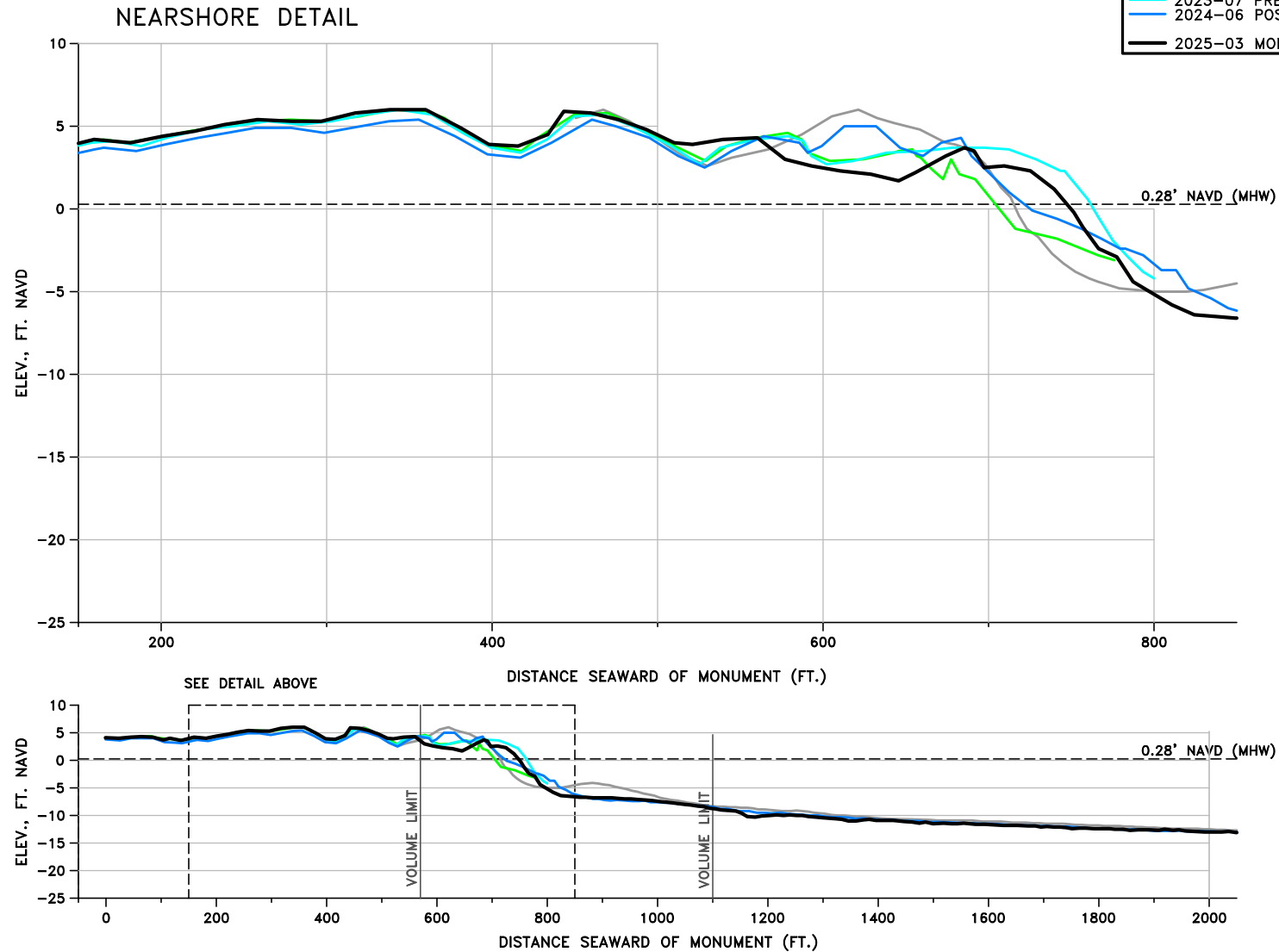
BEACH PROFILE R-124.50



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

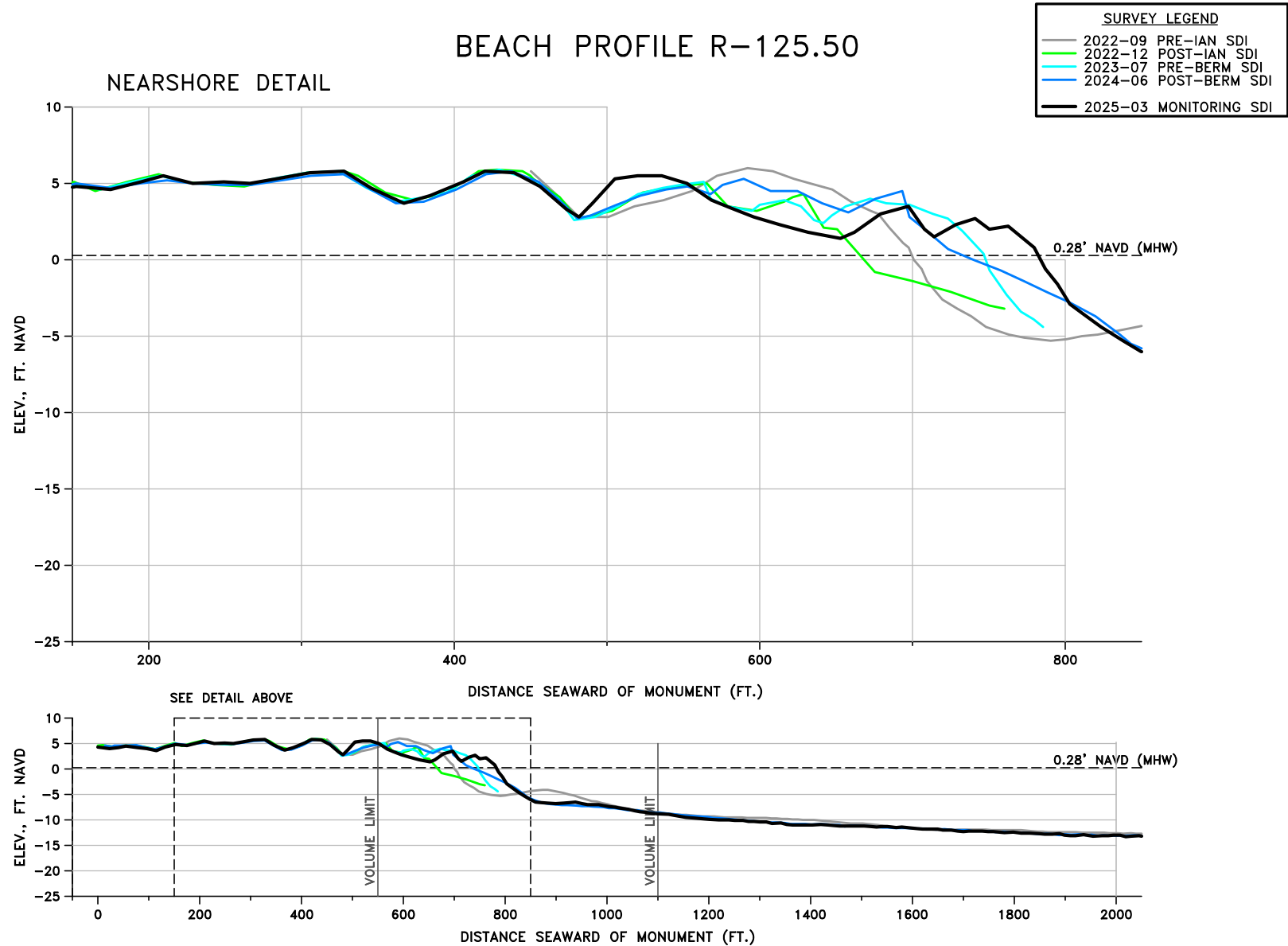
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BEACH PROFILE R-125

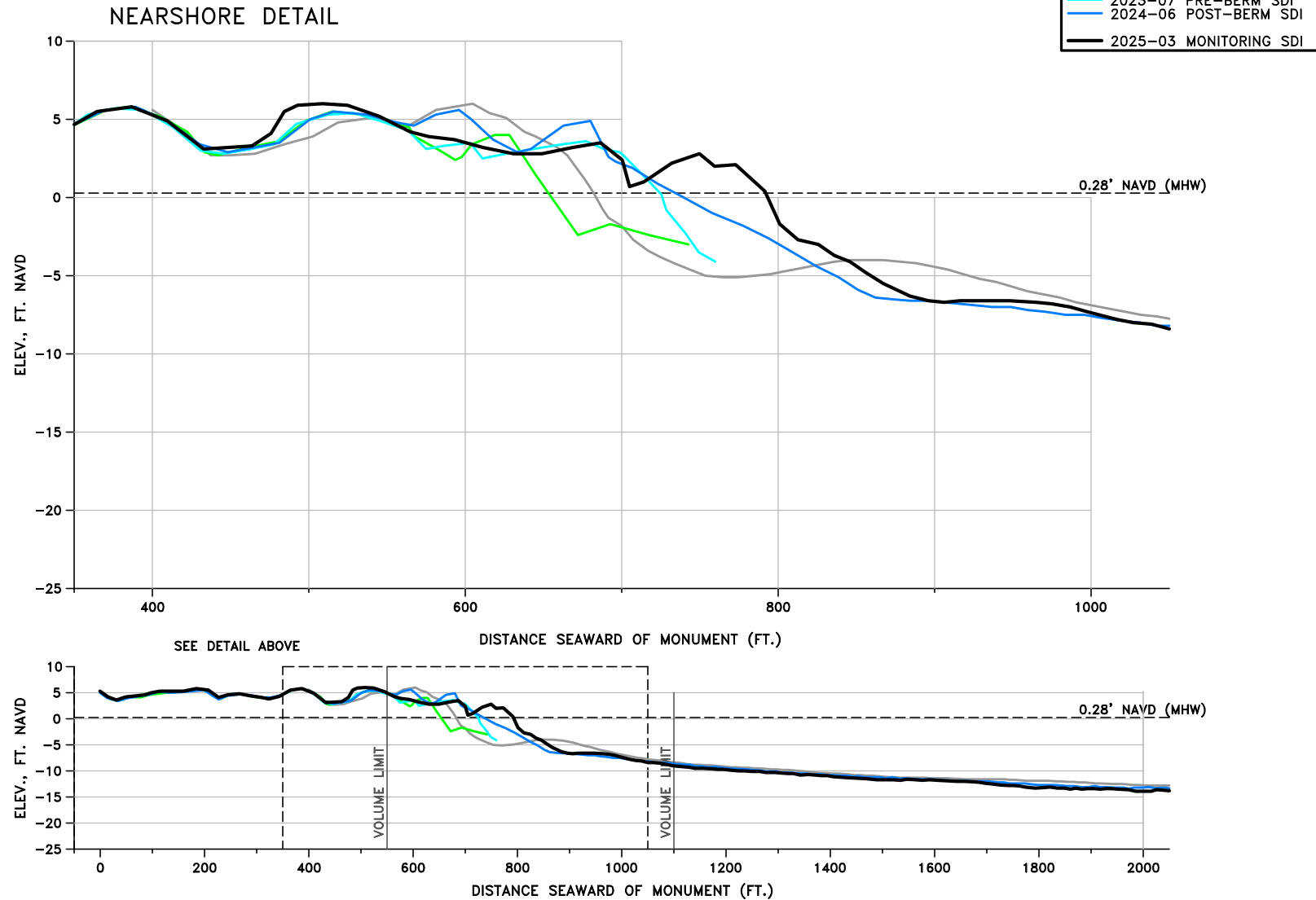


SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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BEACH PROFILE R-126



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DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

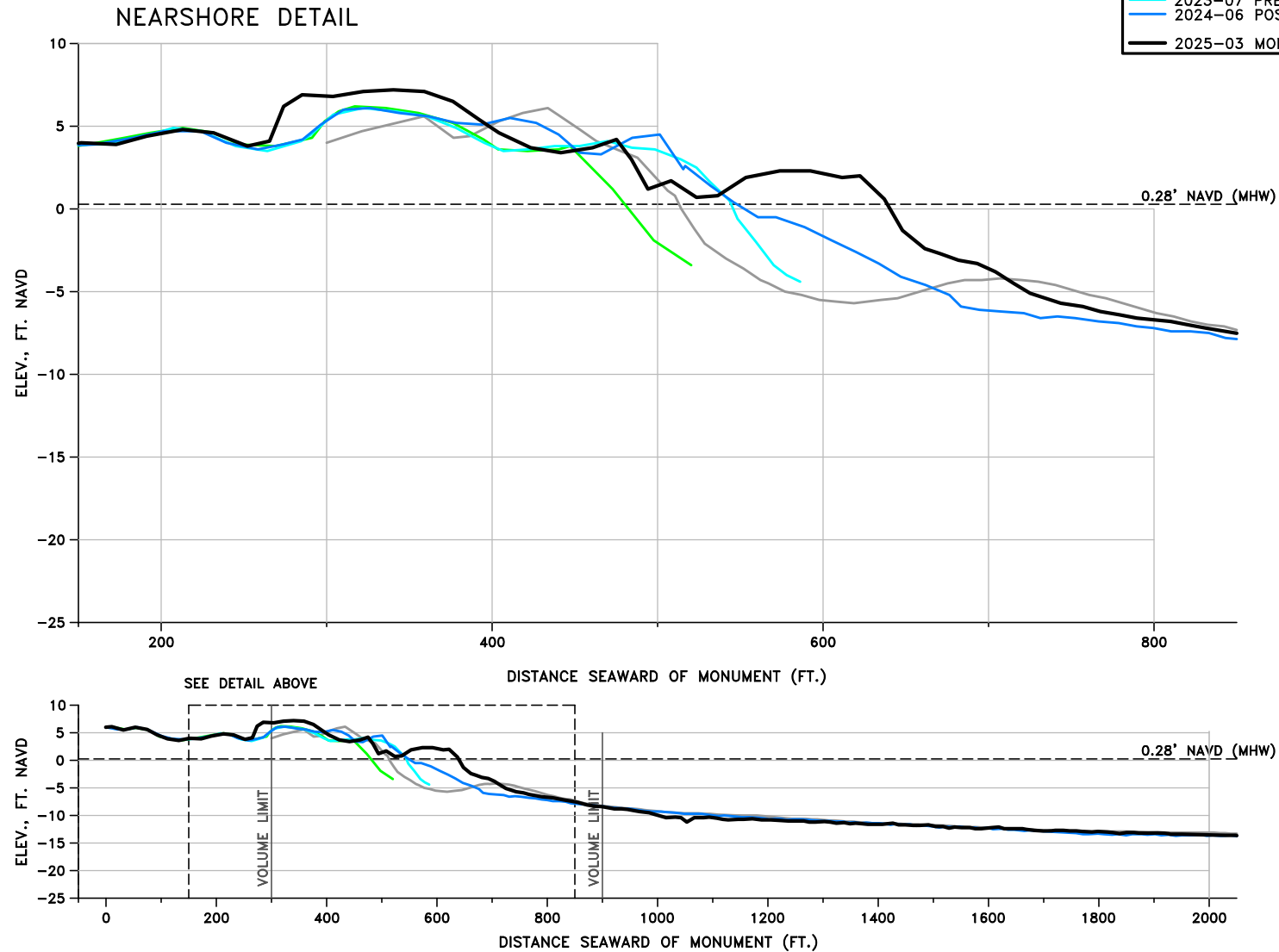
JOB: 27008

DATUM: NAVD

FIGURE:

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BEACH PROFILE R-126.50



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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

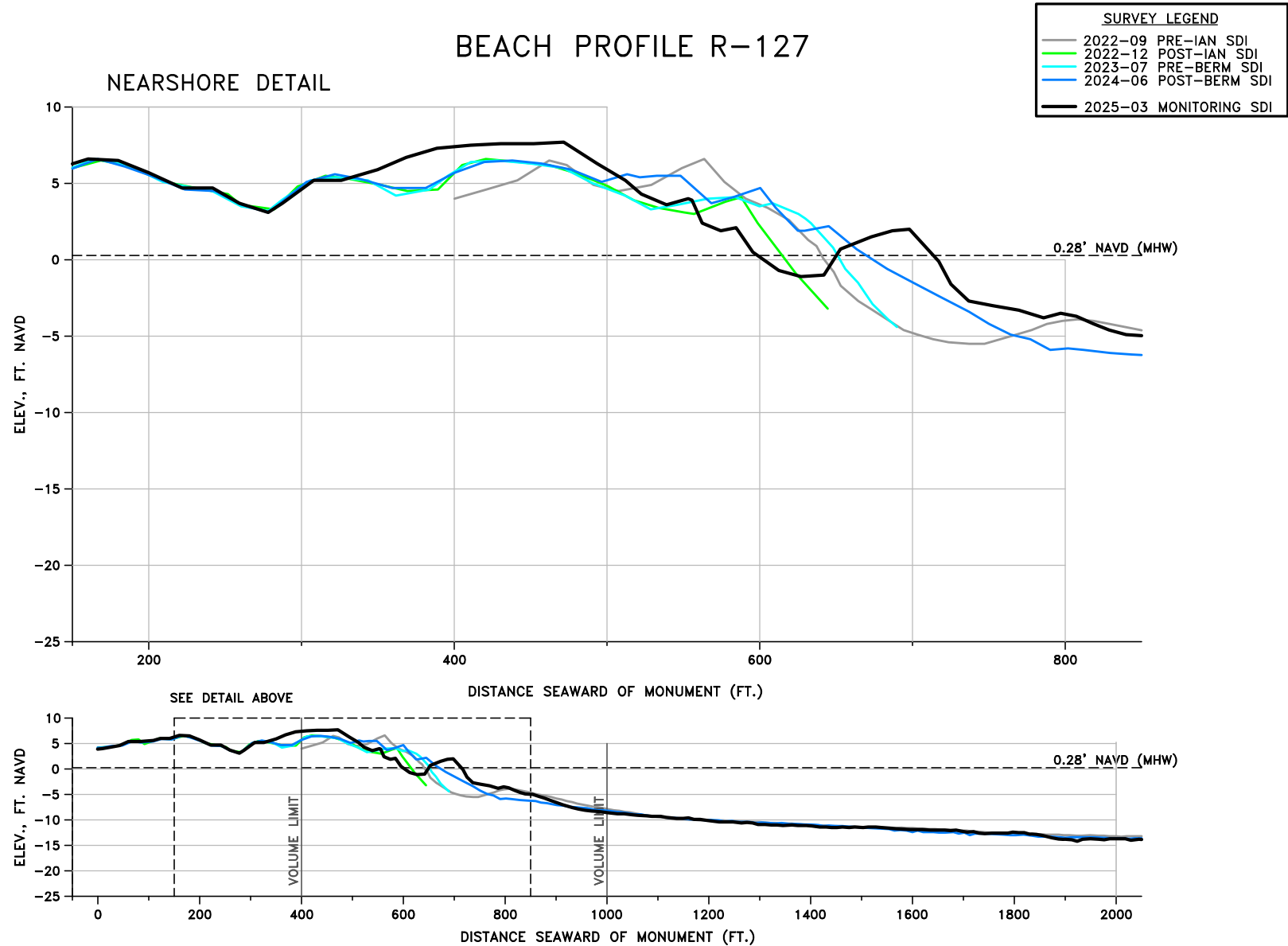
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JOB: 27008

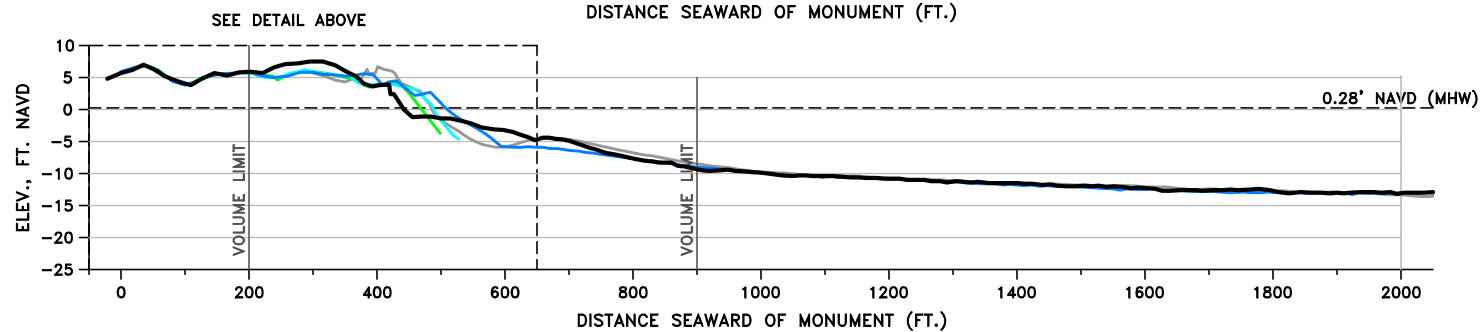
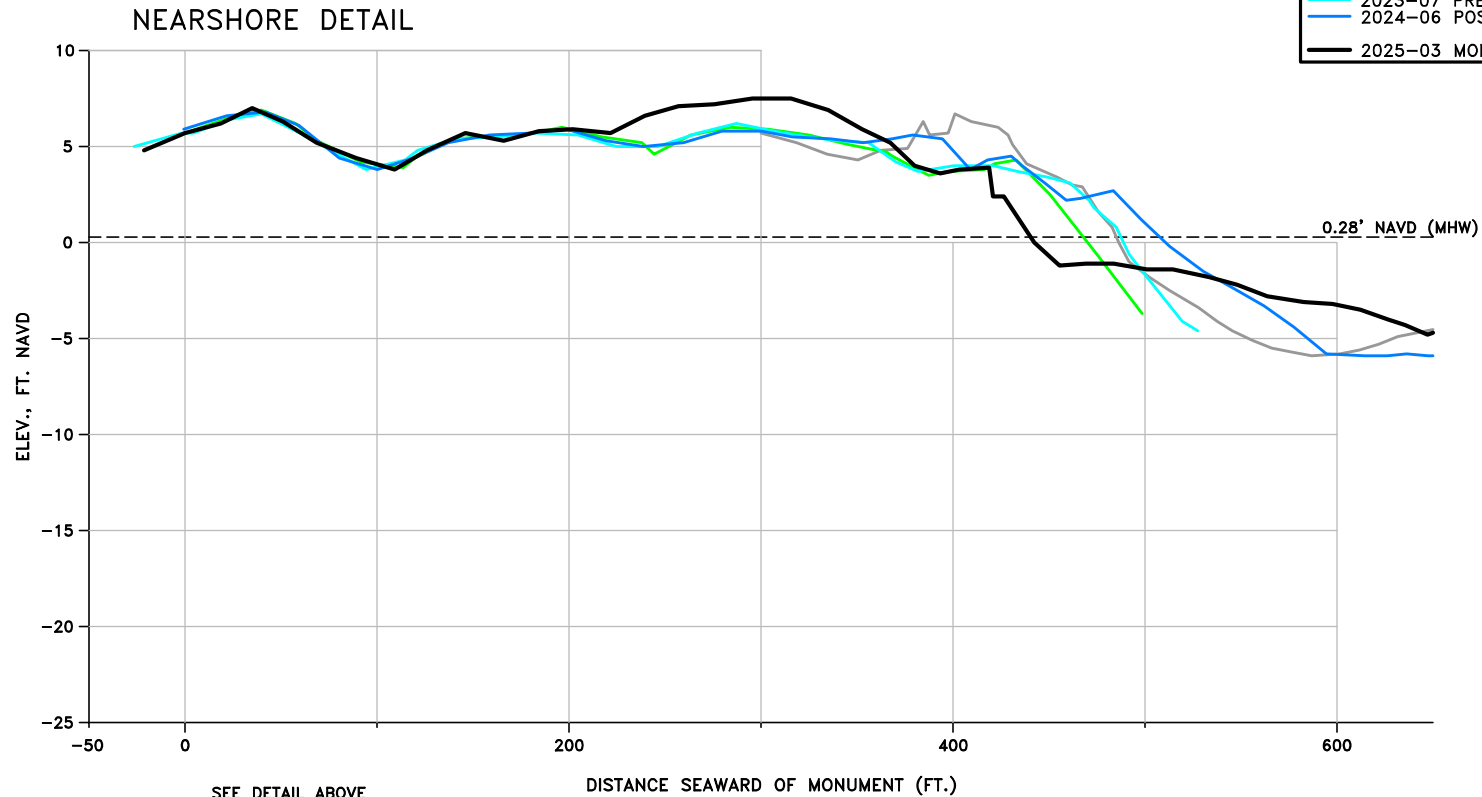
DATUM: NAVD

FIGURE:

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BEACH PROFILE R-127.50



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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

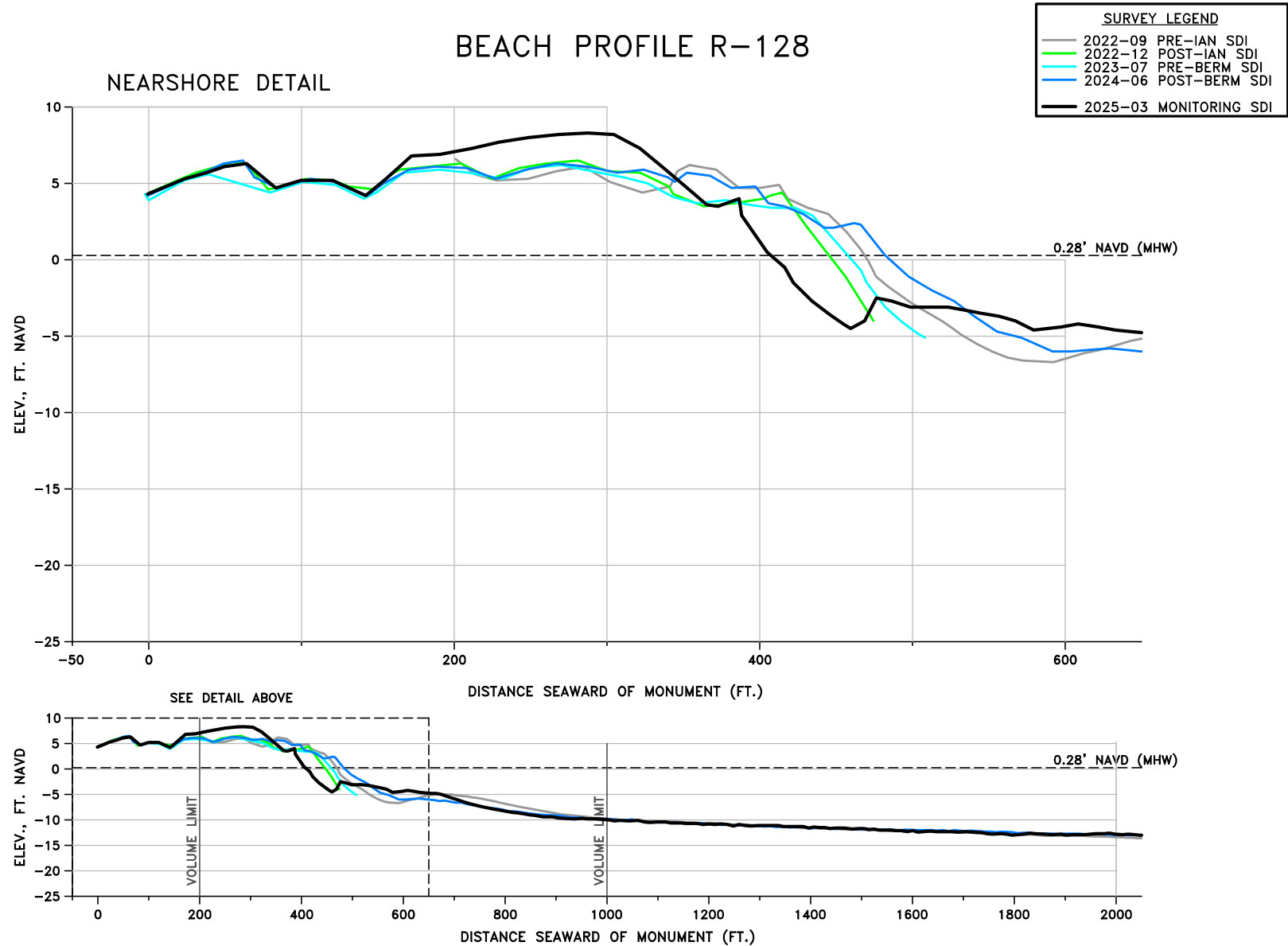
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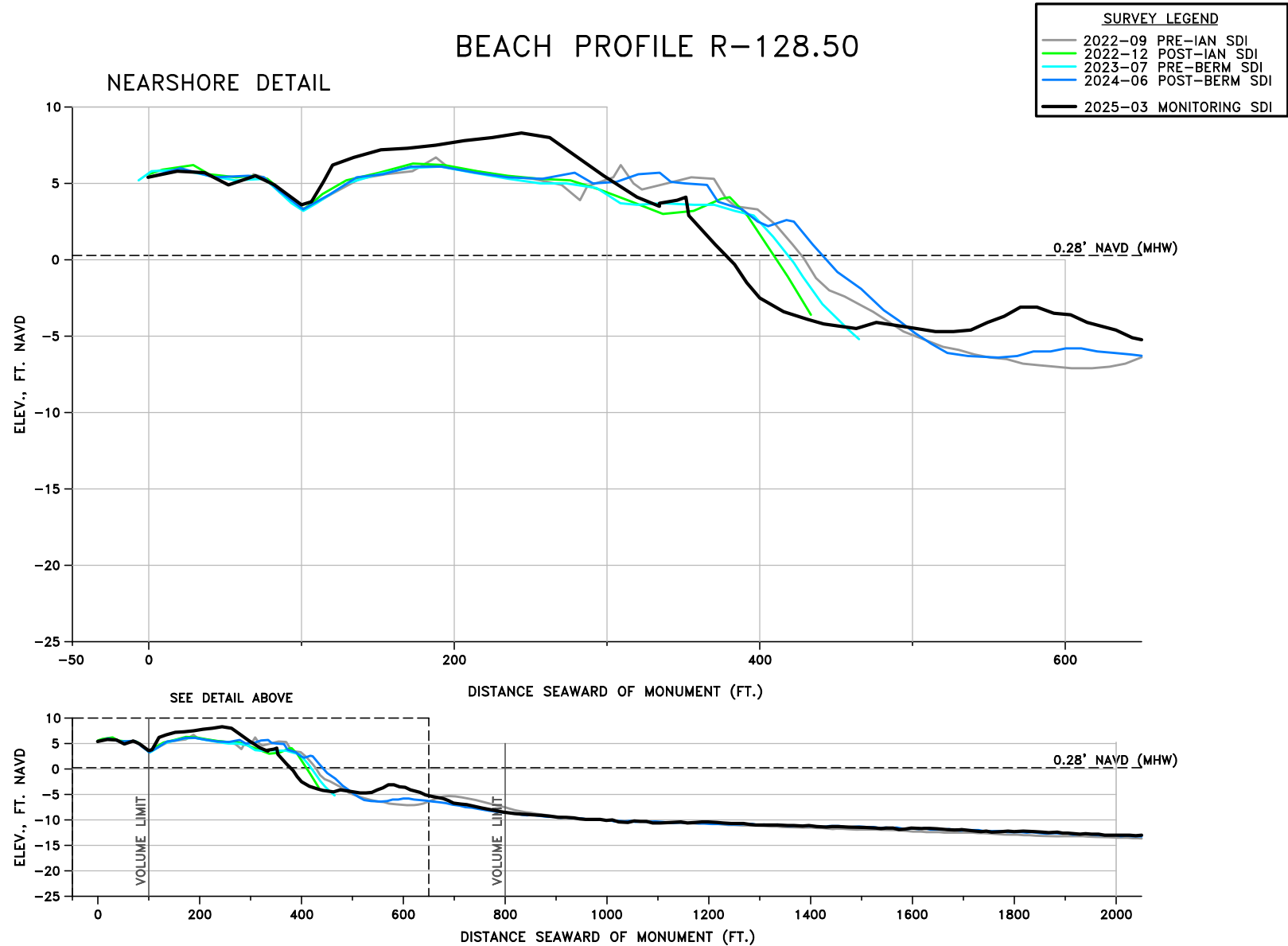
JOB: 27008

DATUM: NAVD

FIGURE:

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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

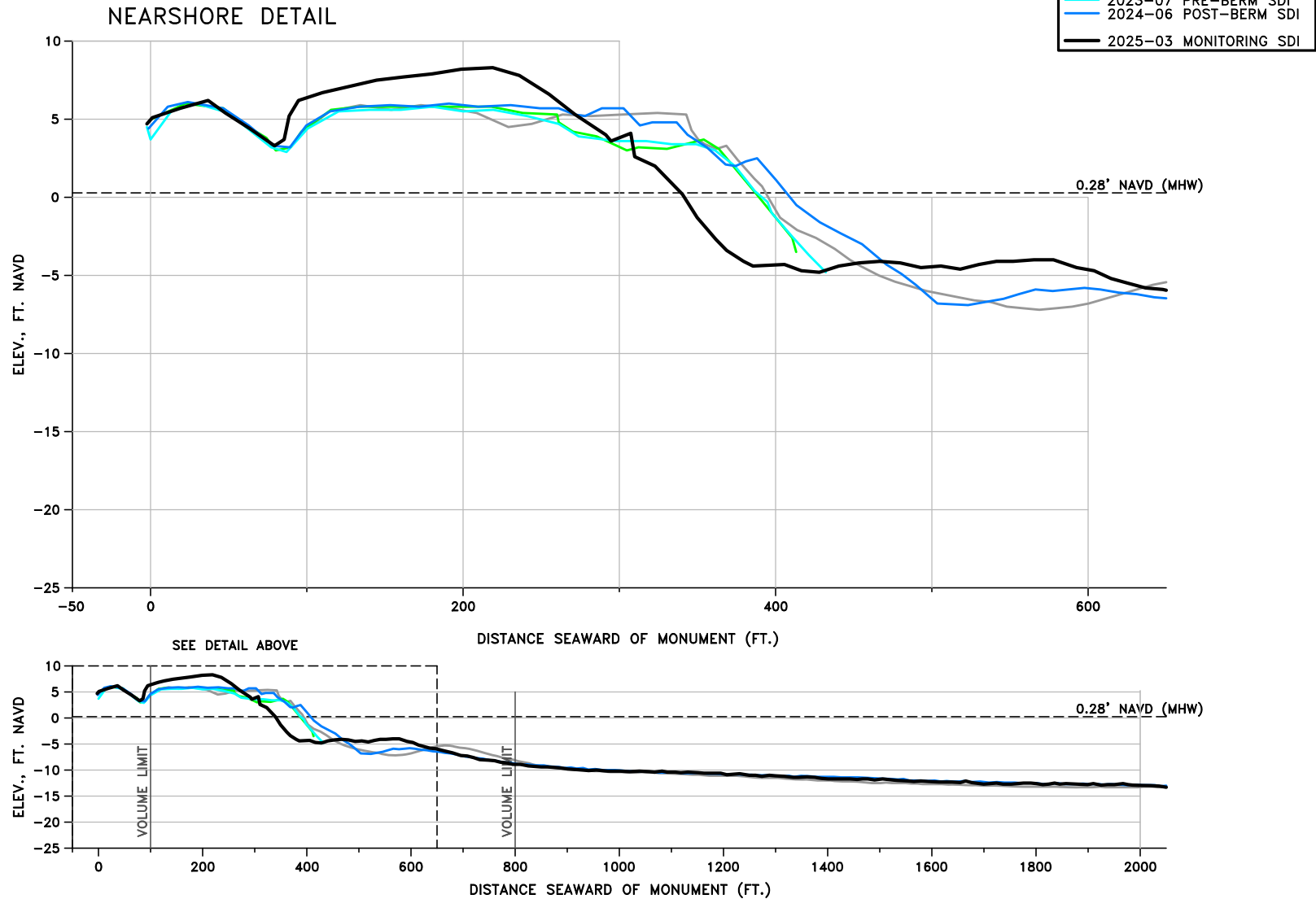
JOB: 27008

DATUM: NAVD

FIGURE:

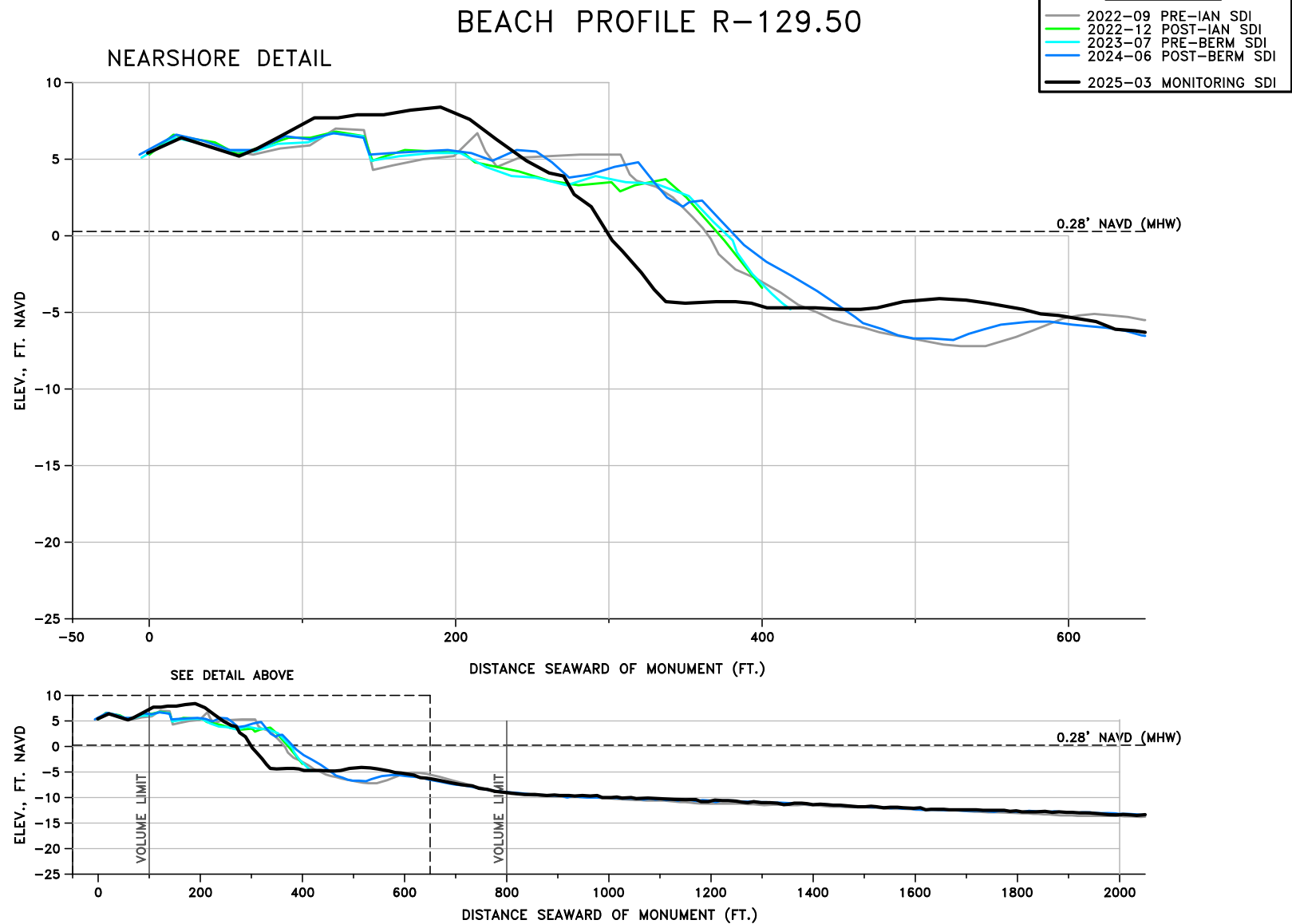
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BEACH PROFILE R-129



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

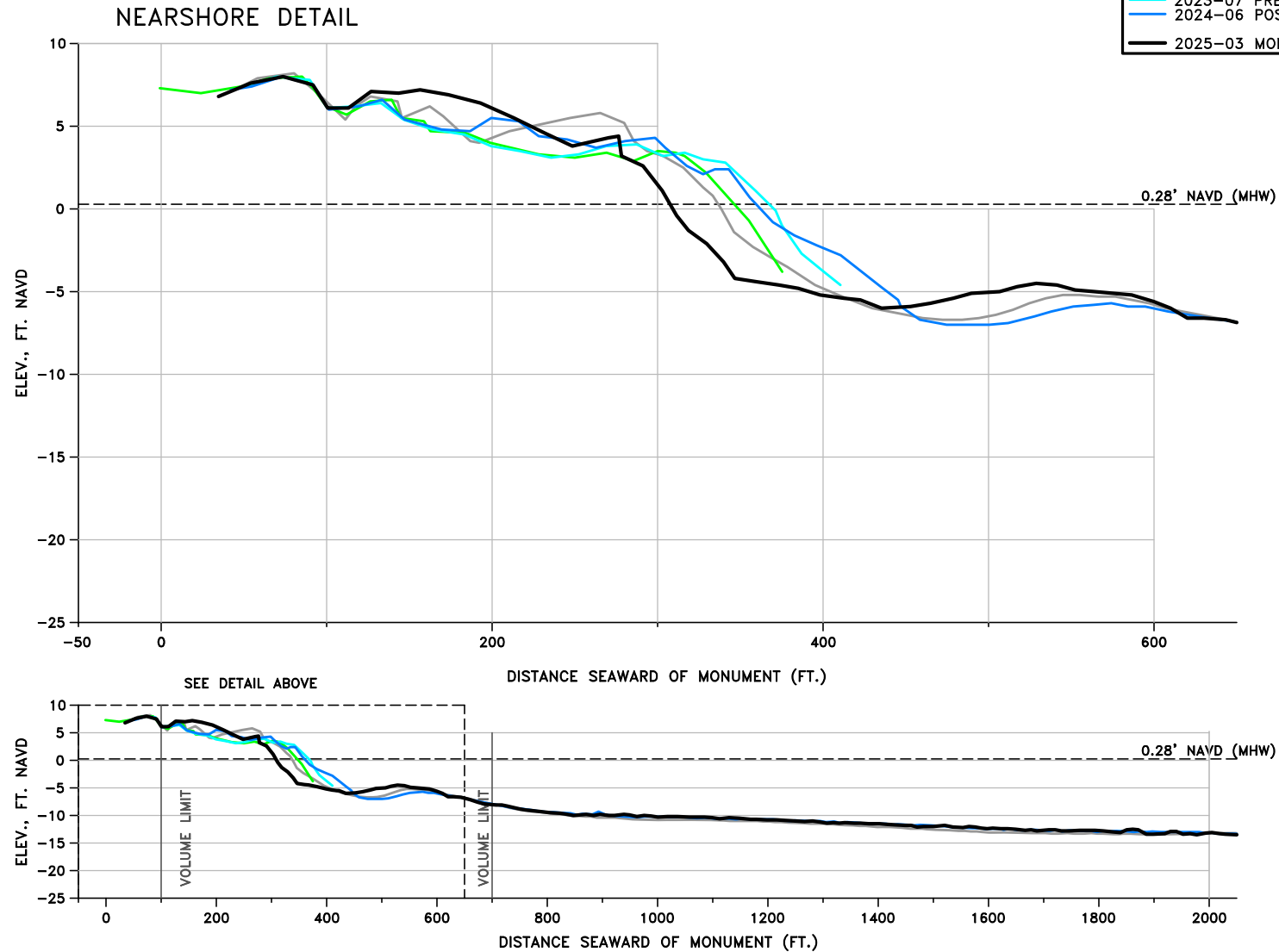
5679 STRAND COURT
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	COASTAL ENGINEERING DESIGN AND PERMITTING			FOR: CITY OF SANIBEL		
	DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN			
	JOB: 27008	DATUM: NAVD	FIGURE:			

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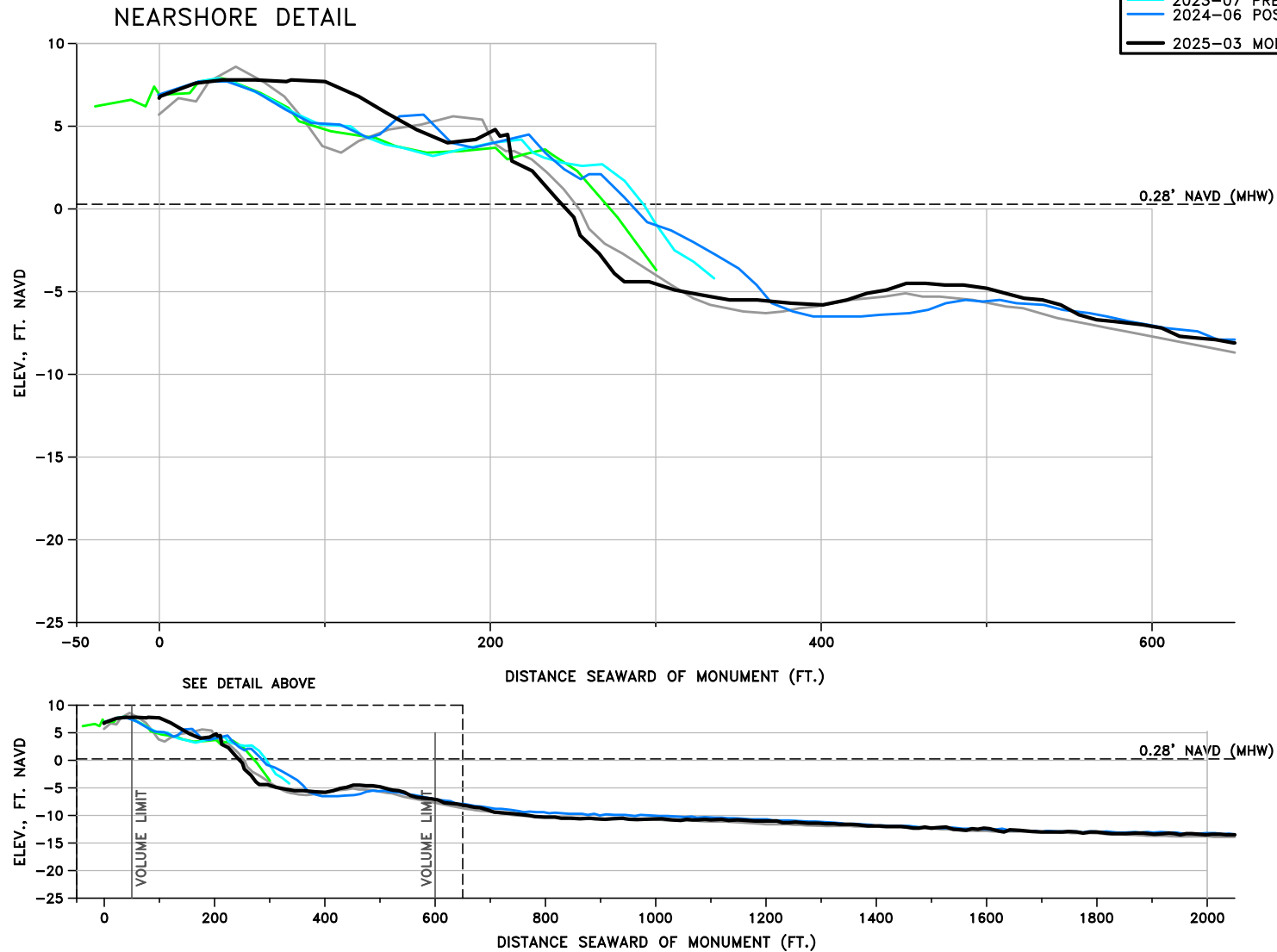
BEACH PROFILE R-130



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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BEACH PROFILE R-130.50



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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

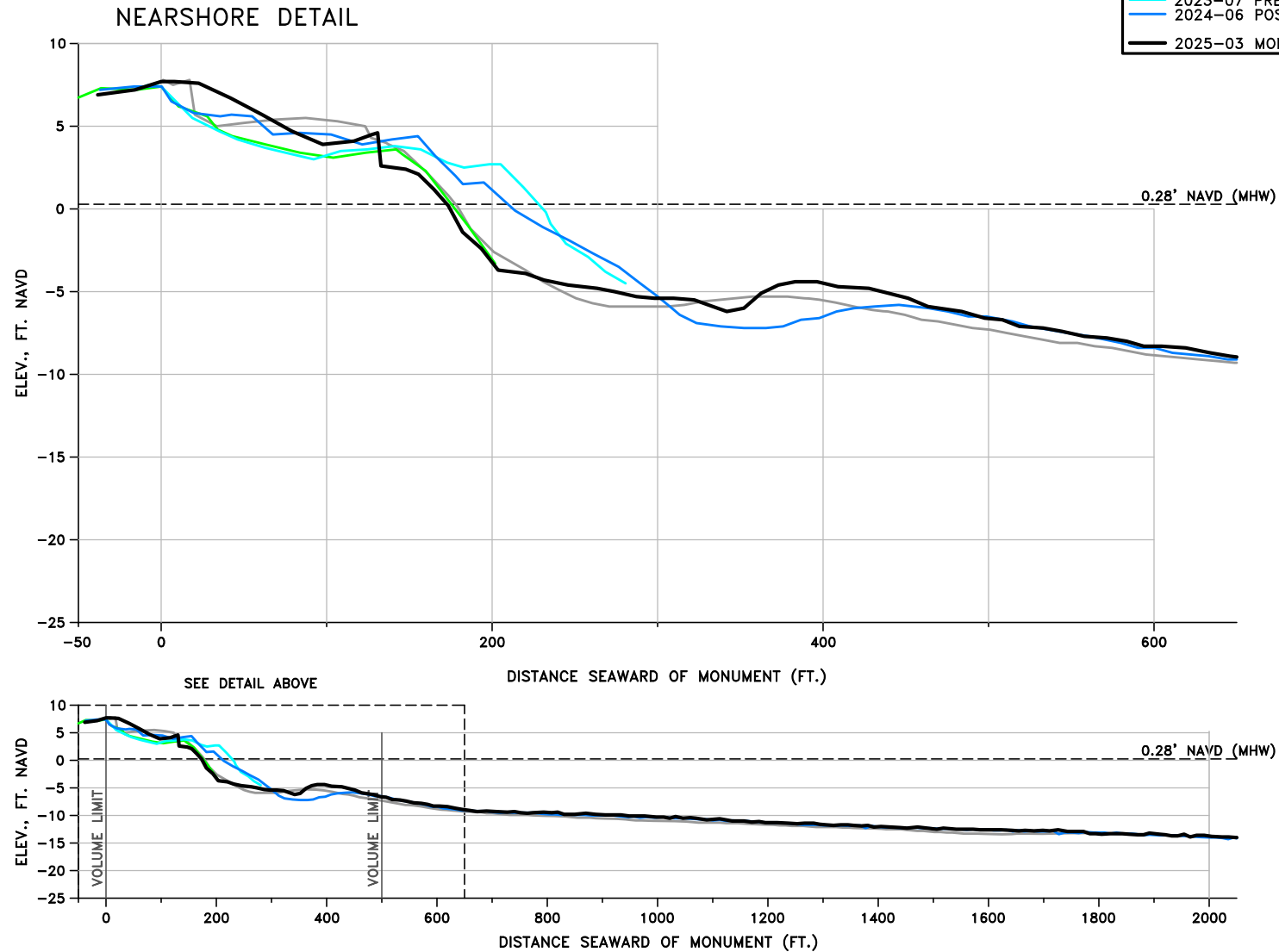
JOB: 27008

DATUM: NAVD

FIGURE:

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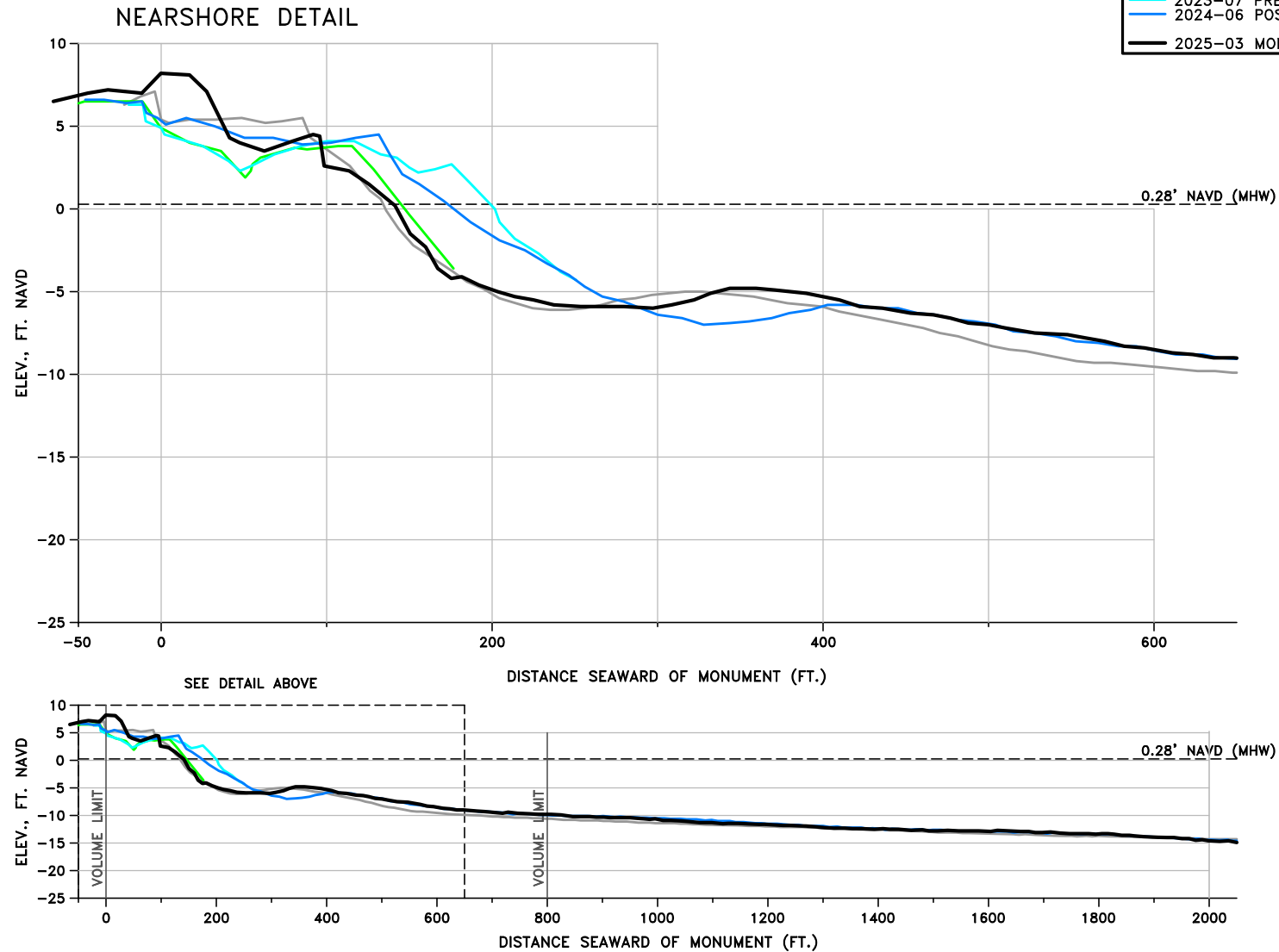
BEACH PROFILE R-131



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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BEACH PROFILE R-131.50



SANIBEL ISLAND
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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

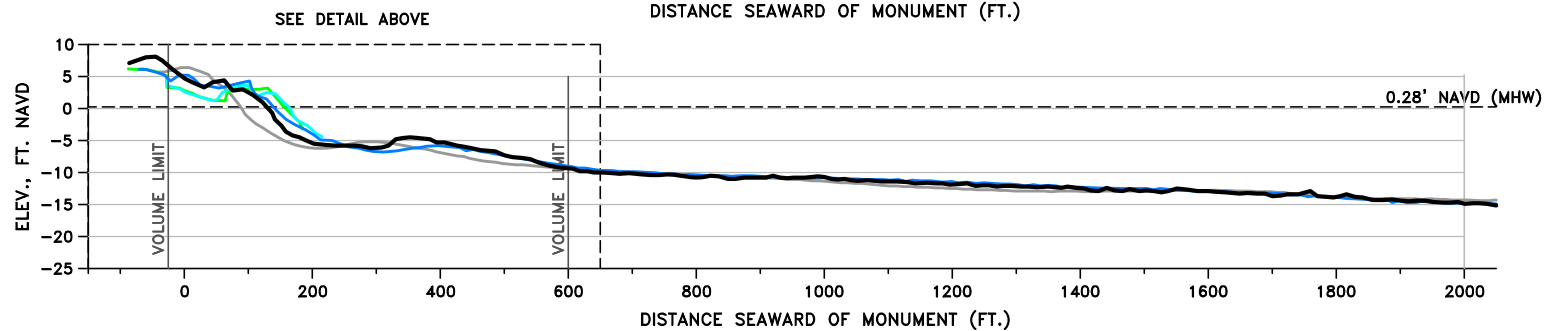
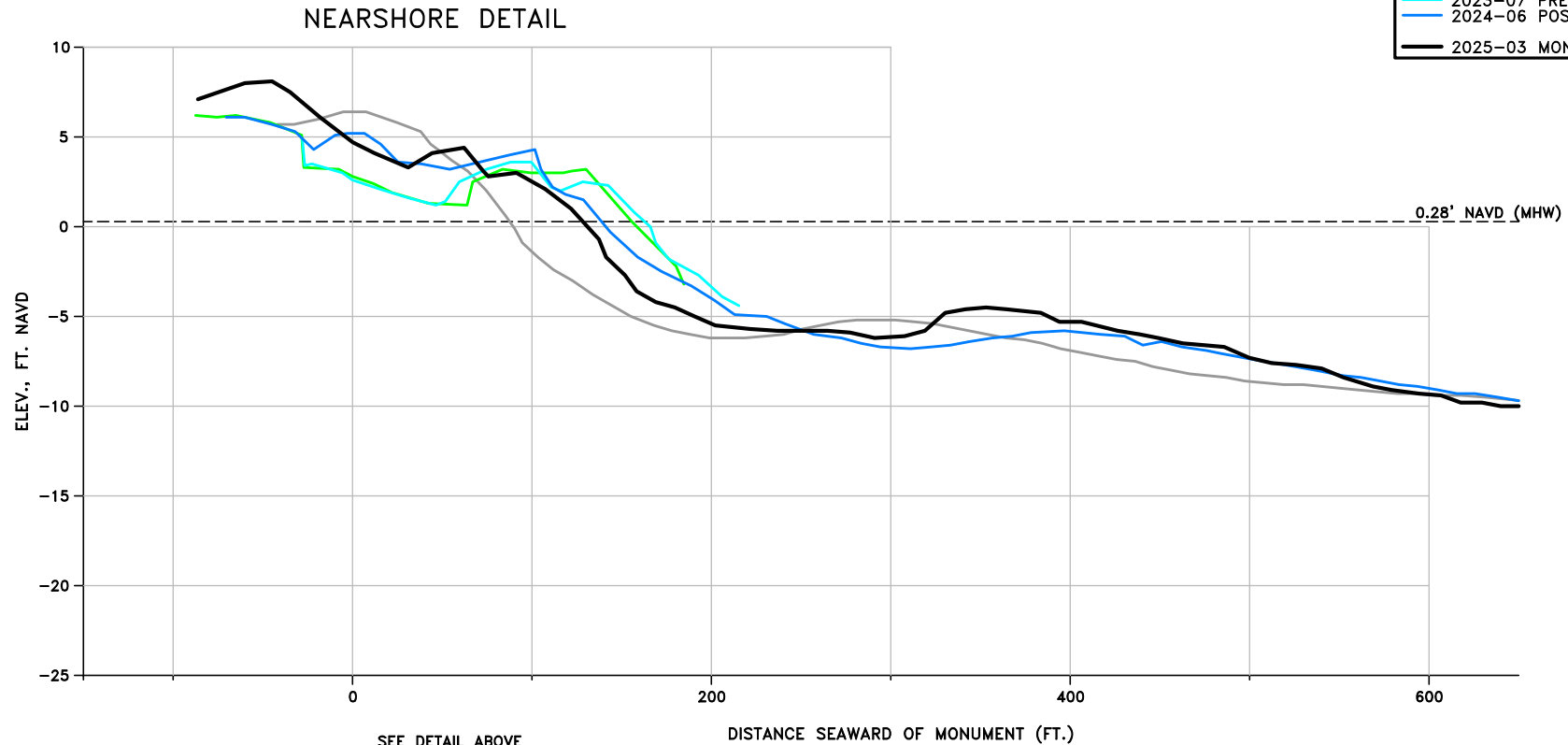
JOB: 27008

DATUM: NAVD

FIGURE:

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BEACH PROFILE R-132



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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

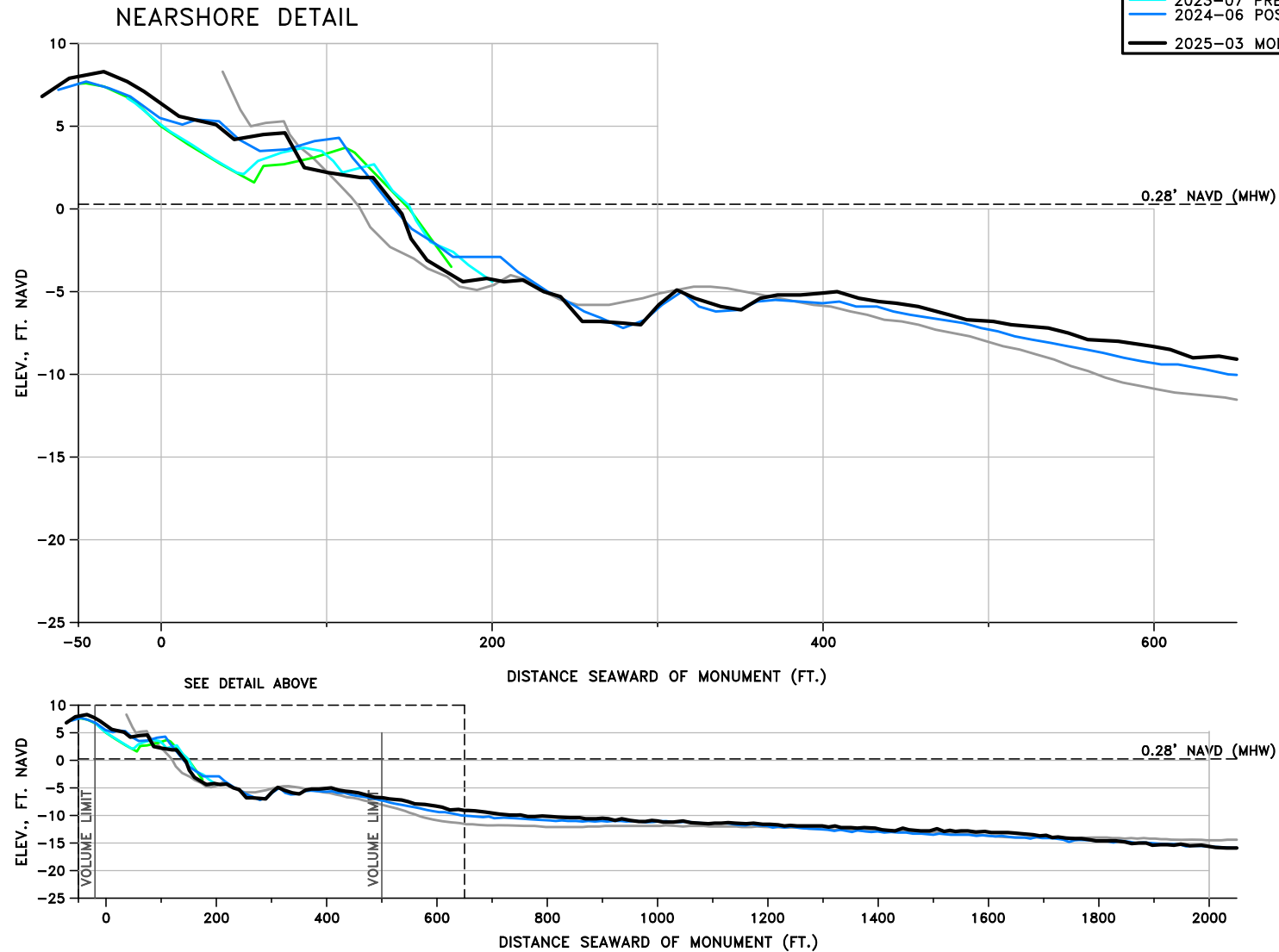
JOB: 27008

DATUM: NAVD

FIGURE:

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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

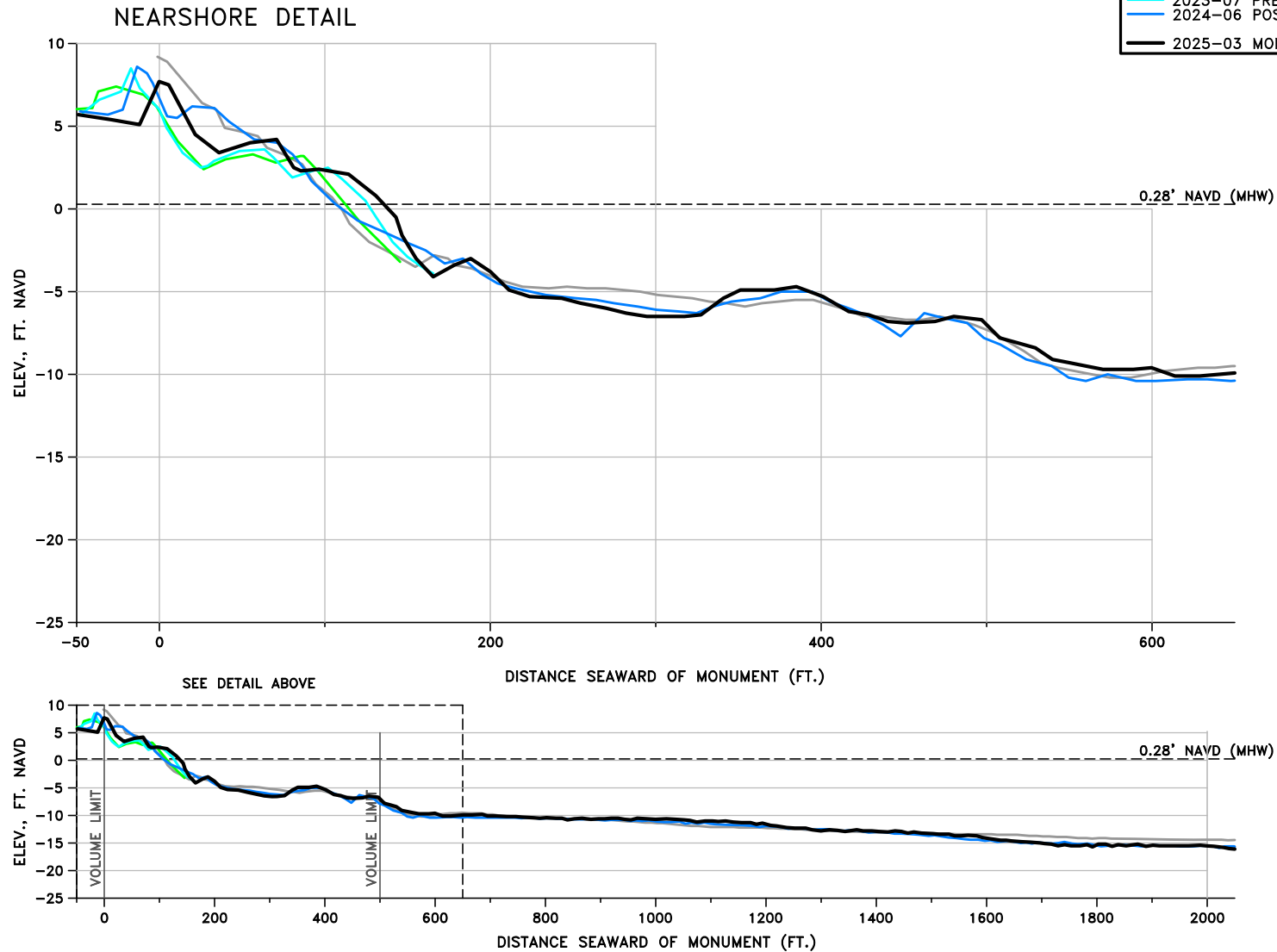
JOB: 27008

DATUM: NAVD

FIGURE:

5679 STRAND COURT
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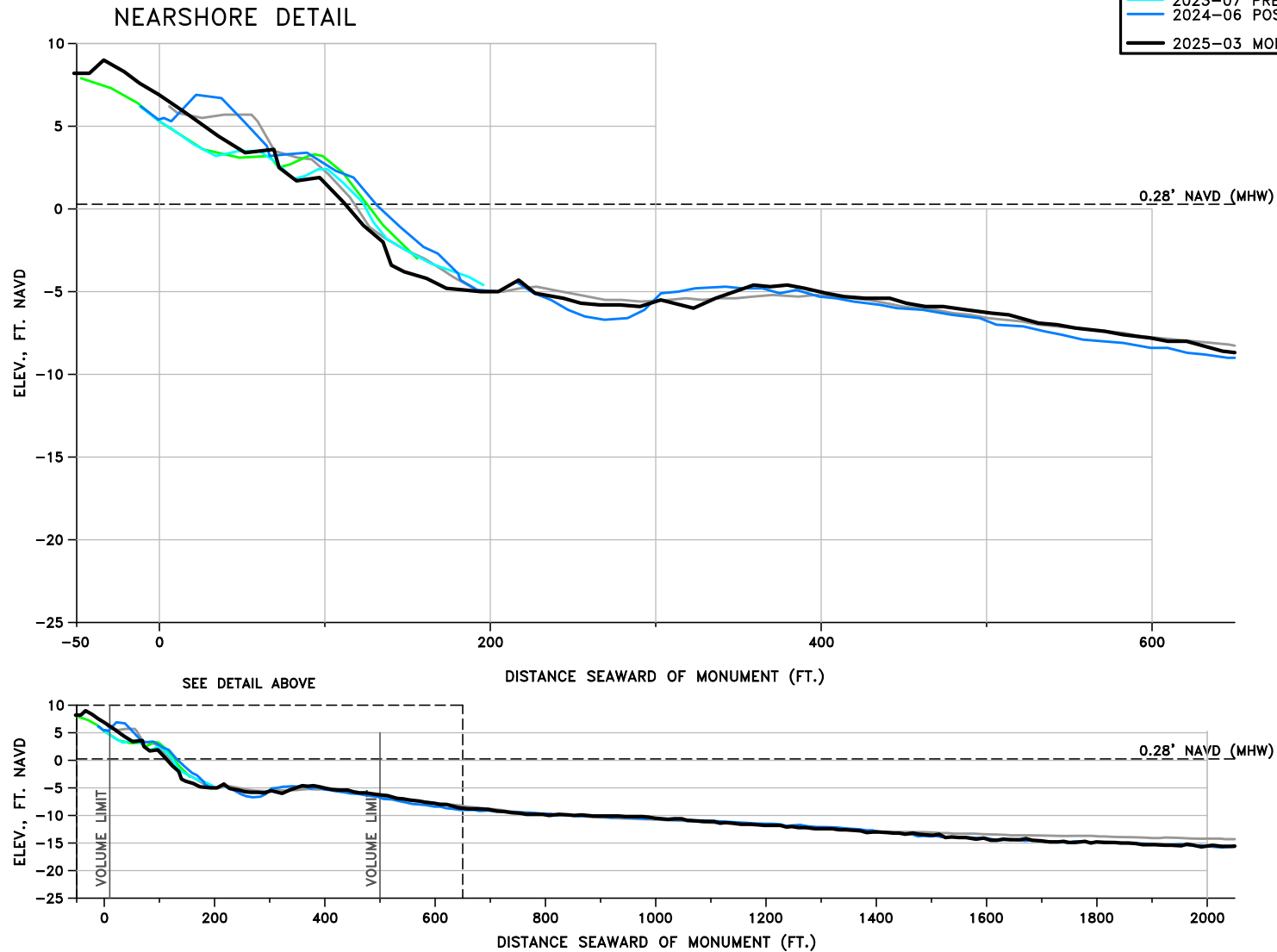
BEACH PROFILE R-133



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

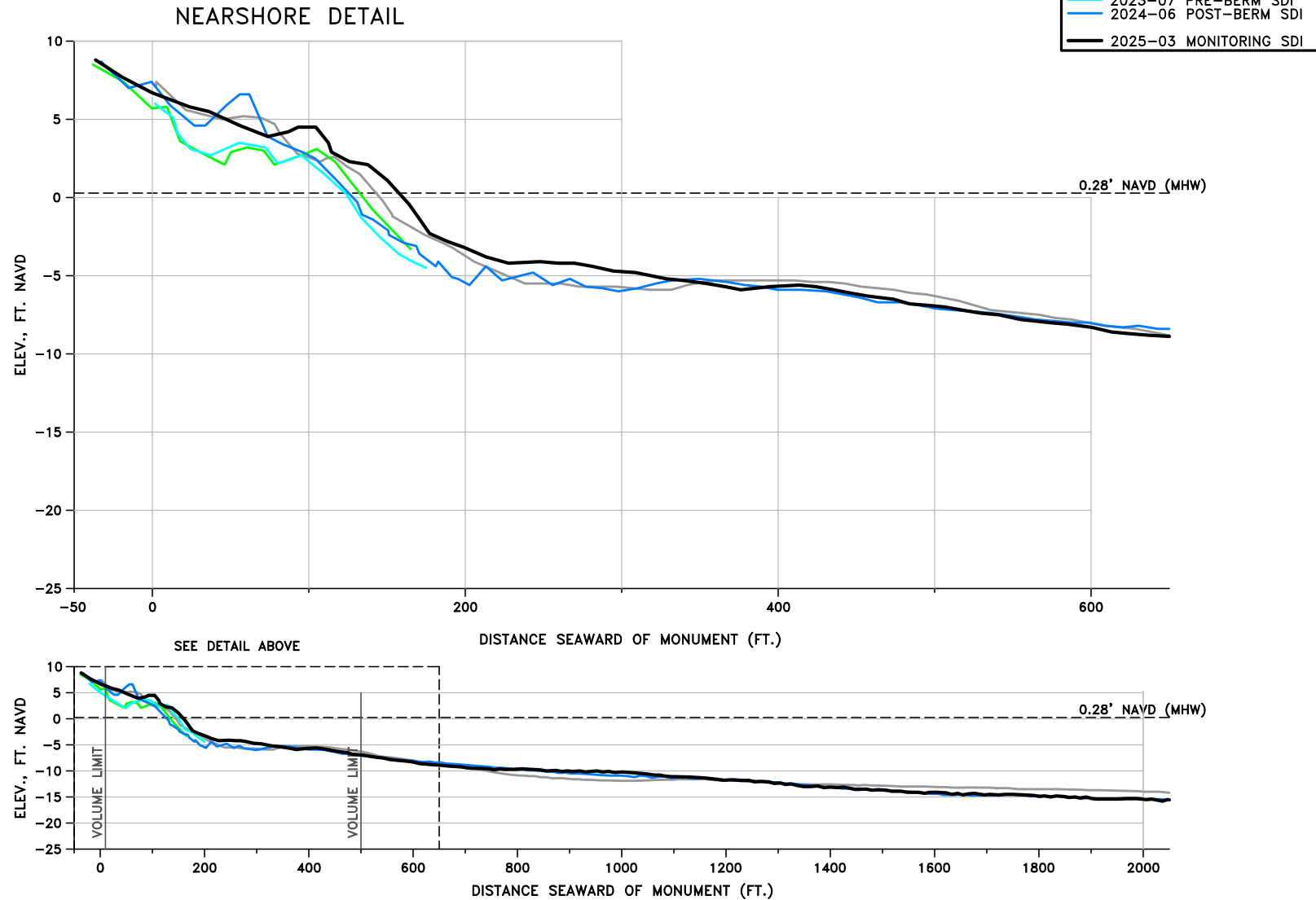
JOB: 27008

DATUM: NAVD

FIGURE:

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BEACH PROFILE R-134



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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

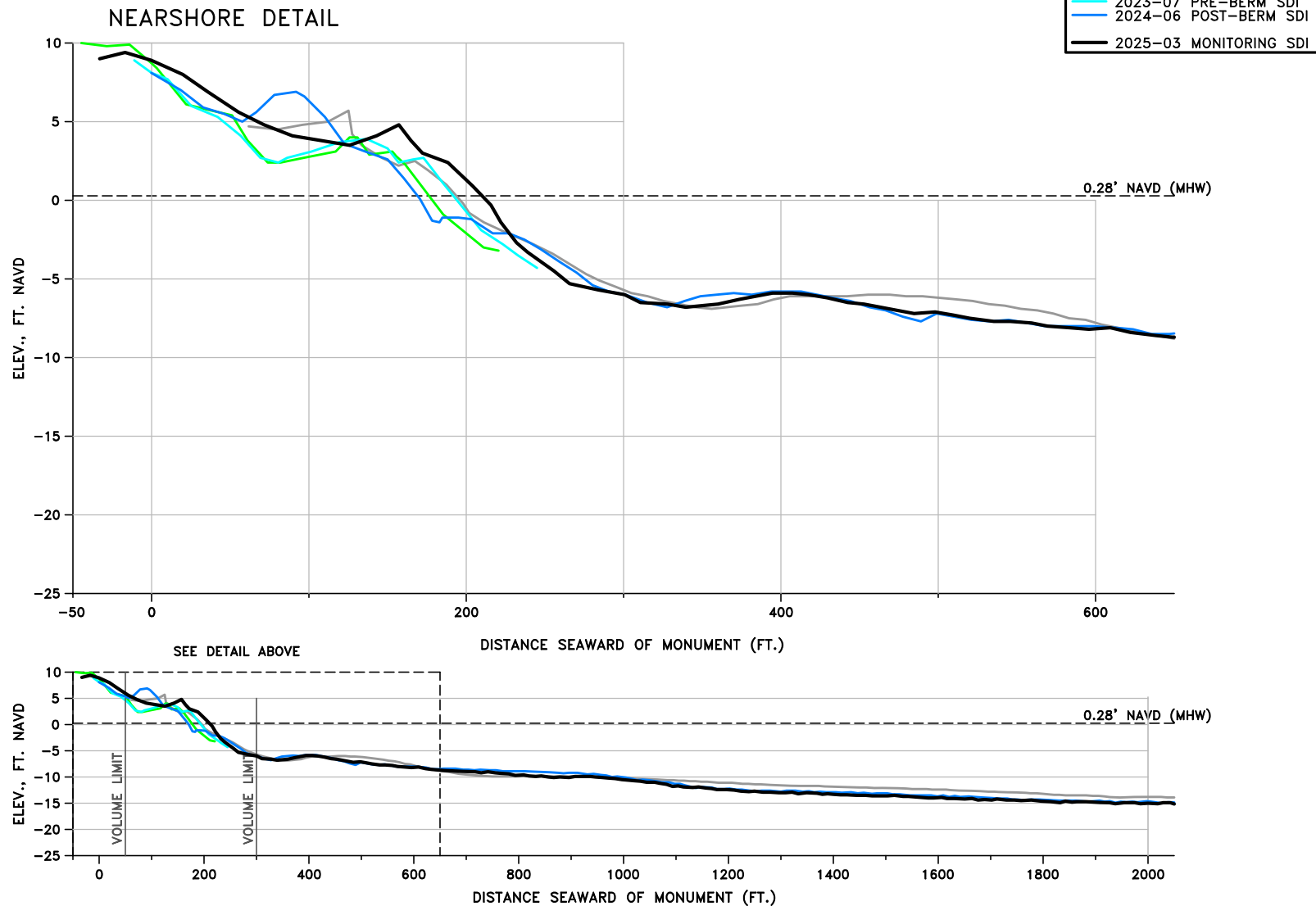
JOB: 27008

DATUM: NAVD

FIGURE:

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BEACH PROFILE R-135



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FILE: SECTION

SCALE: SHOWN

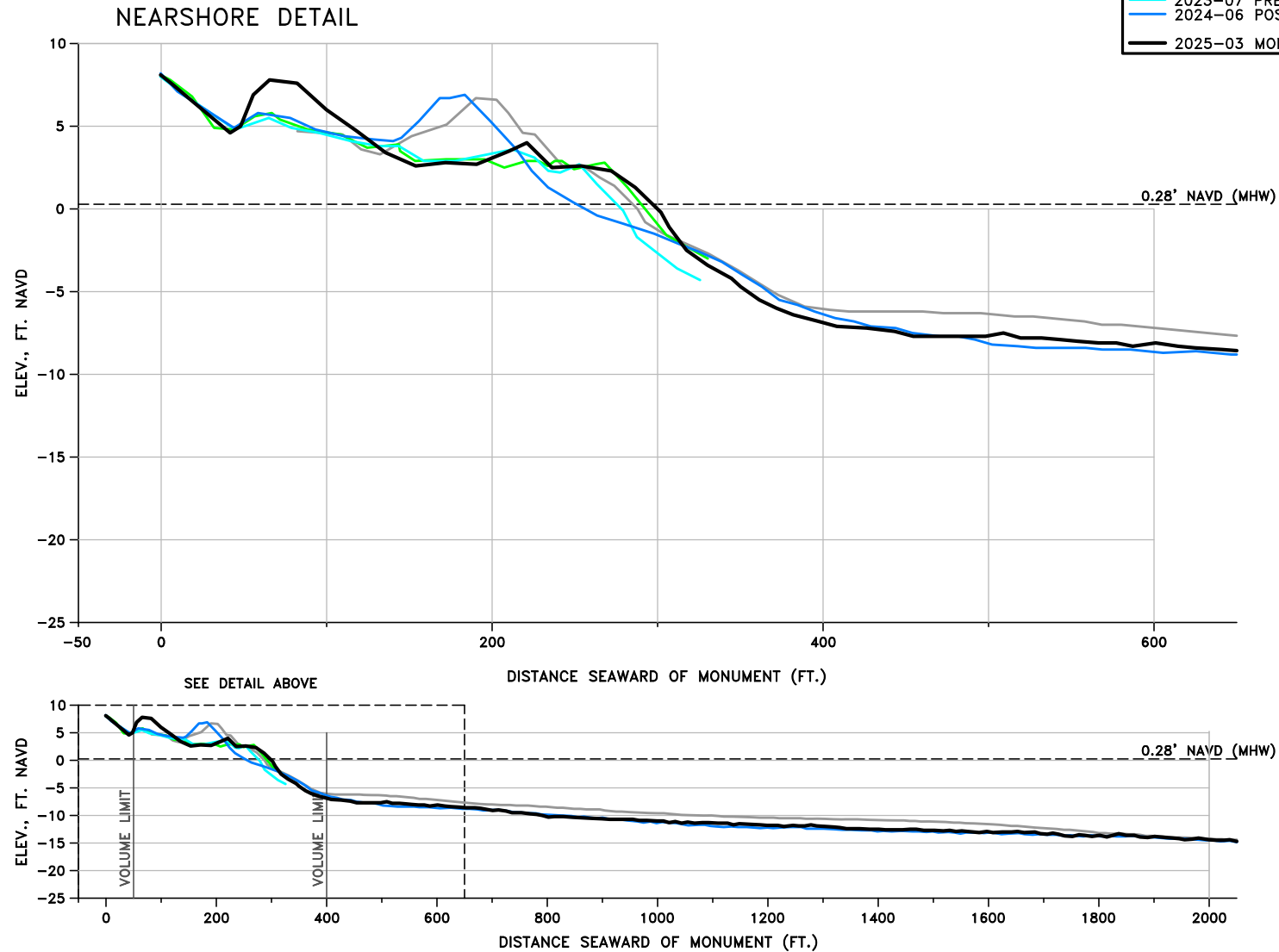
JOB: 27008

DATUM: NAVD

FIGURE:

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BEACH PROFILE R-136



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DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

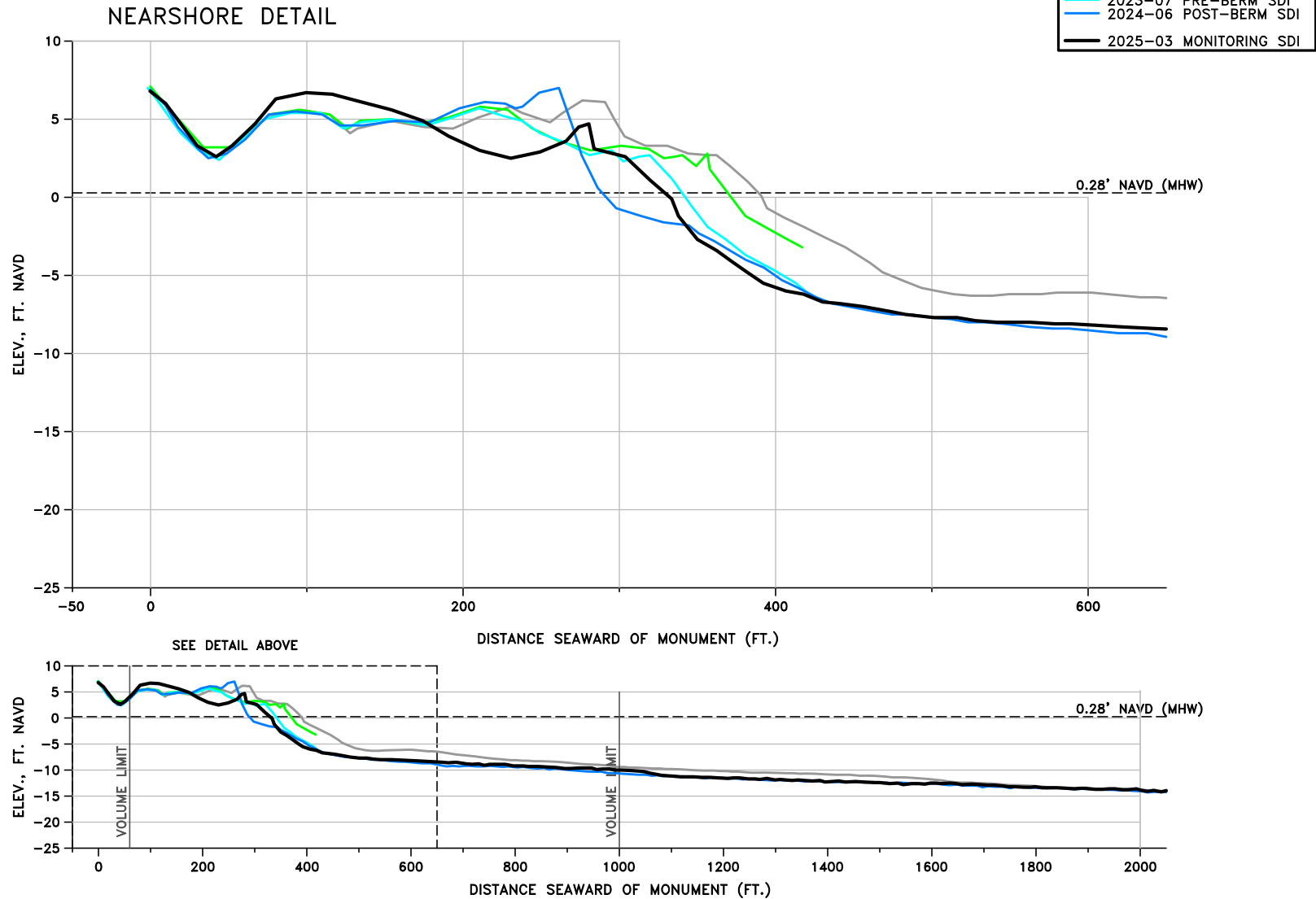
JOB: 27008

DATUM: NAVD

FIGURE:

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BEACH PROFILE R-137



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DATE: 3/25/25

FILE: SECTION

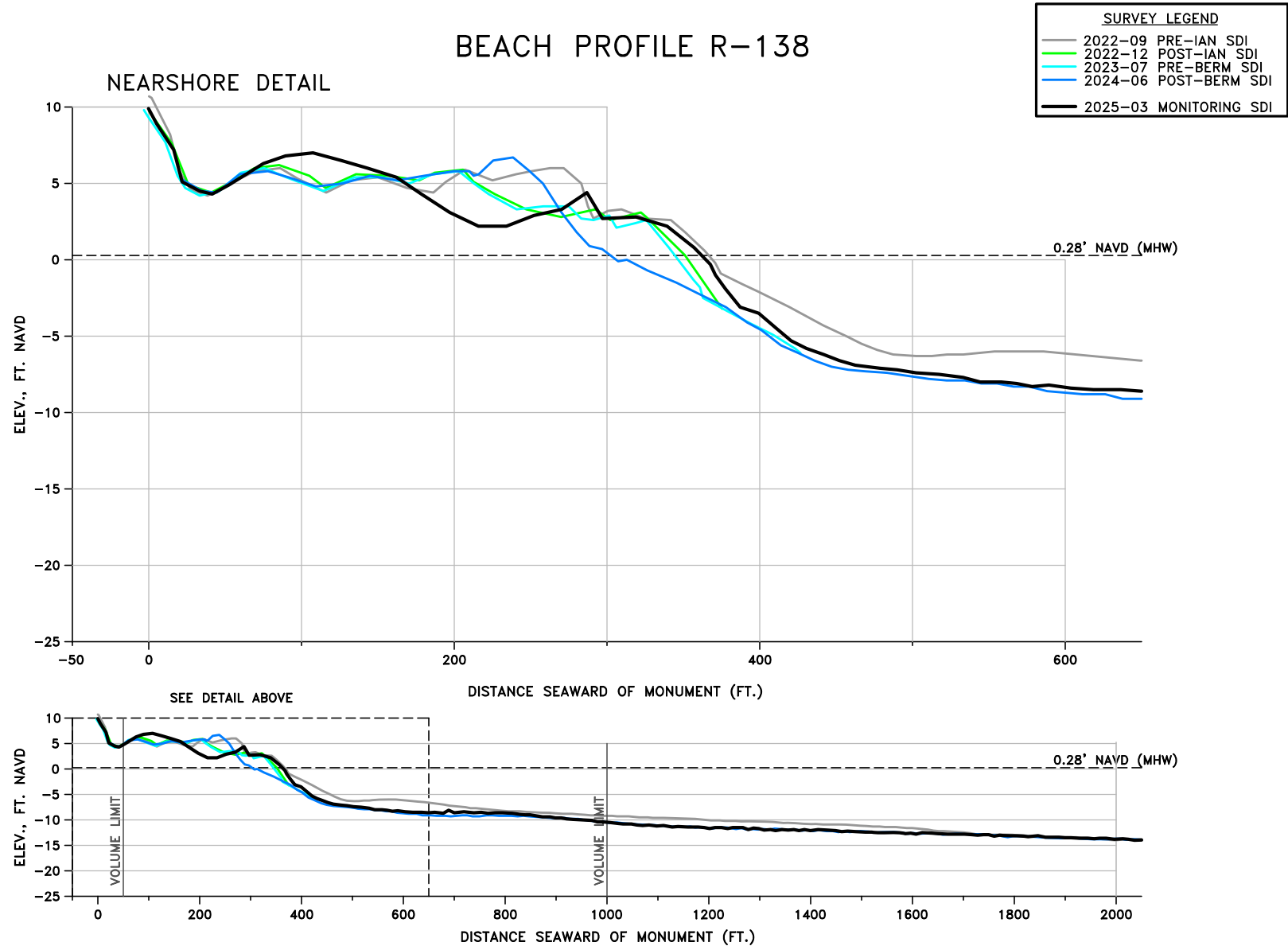
SCALE: SHOWN

JOB: 27008

DATUM: NAVD

FIGURE:

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FILE: SECTION

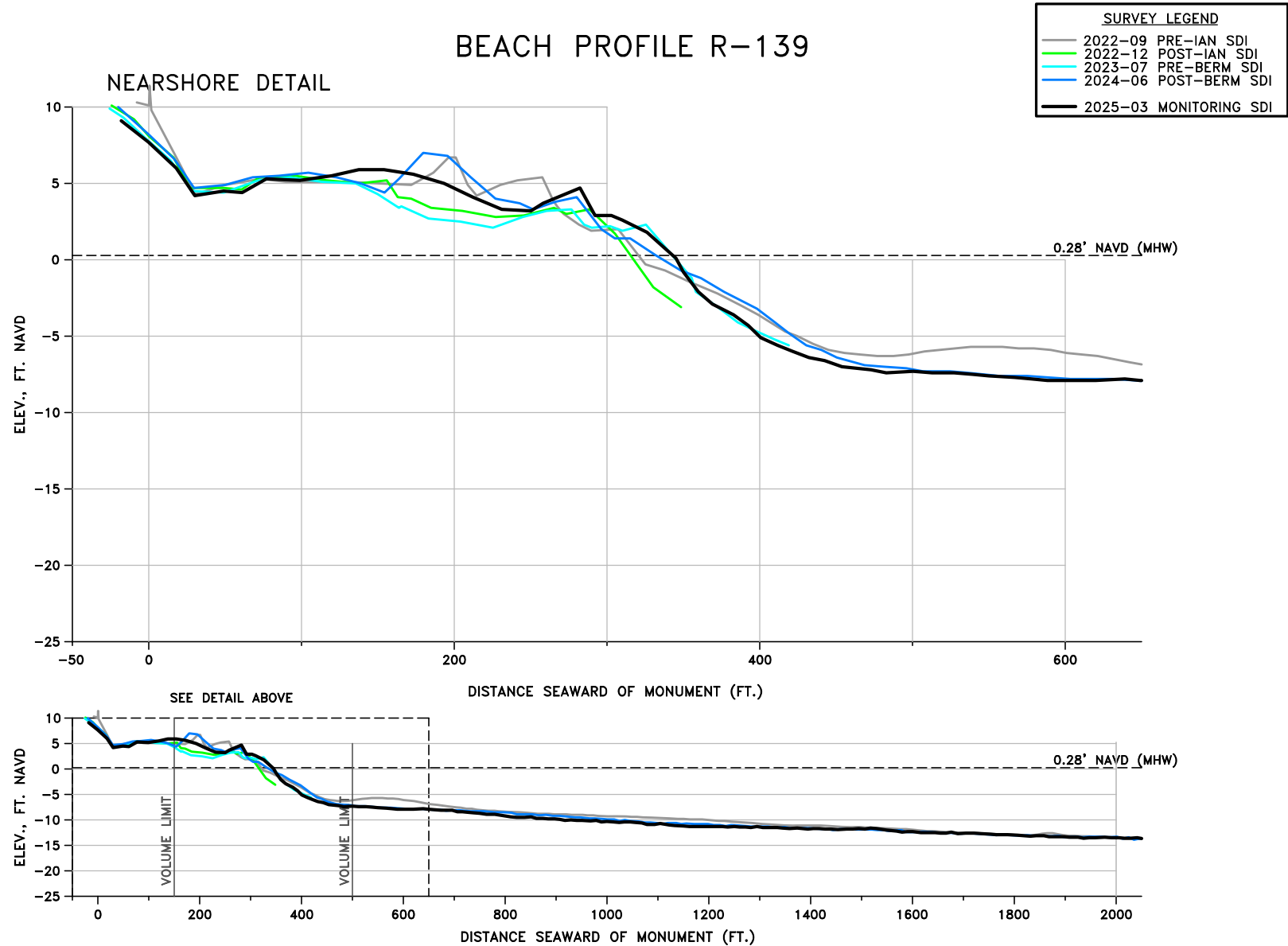
SCALE: SHOWN

JOB: 27008

DATUM: NAVD

FIGURE:

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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

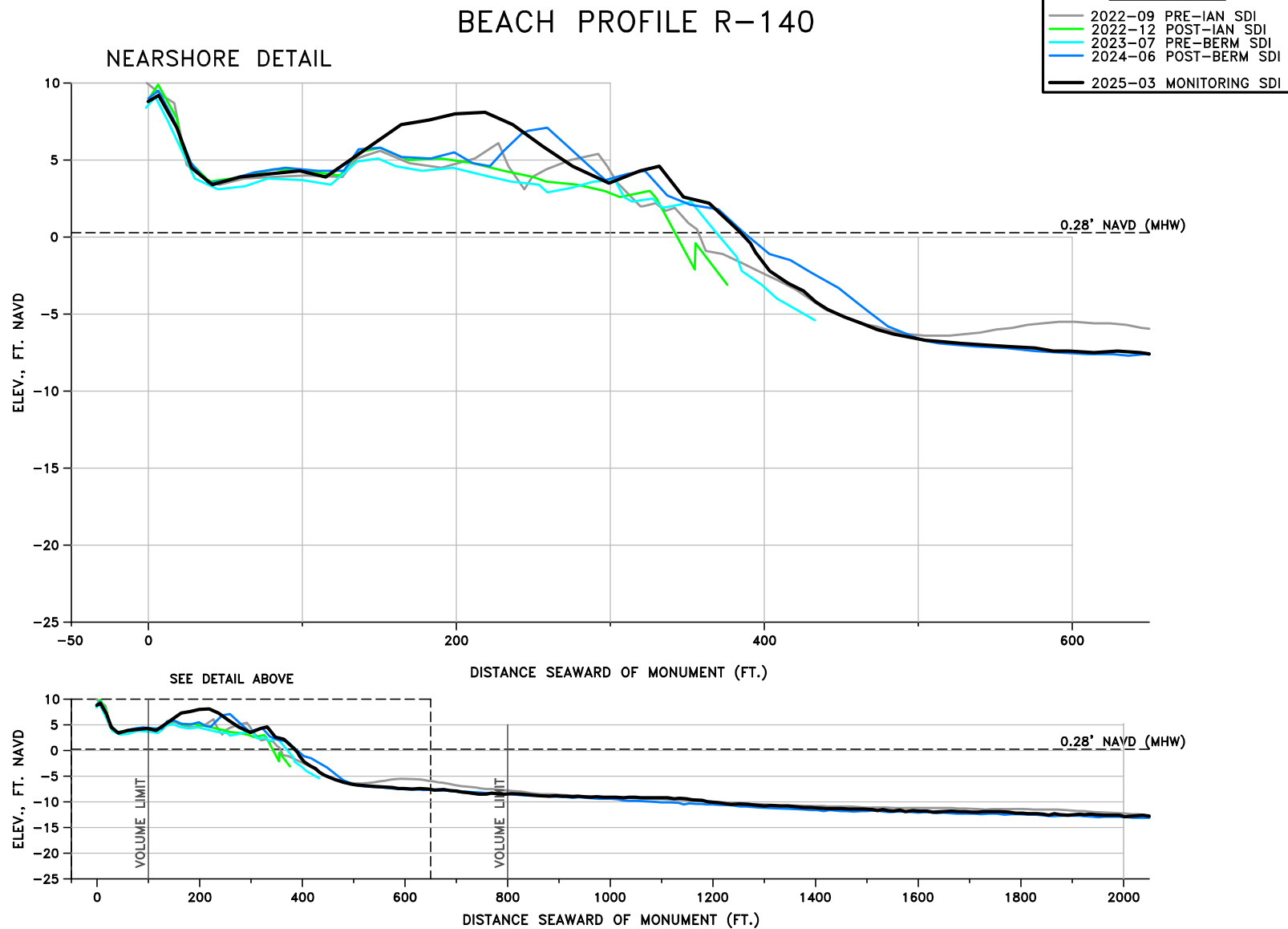
SCALE: SHOWN

JOB: 27008

DATUM: NAVD

FIGURE:

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FILE: SECTION

SCALE: SHOWN

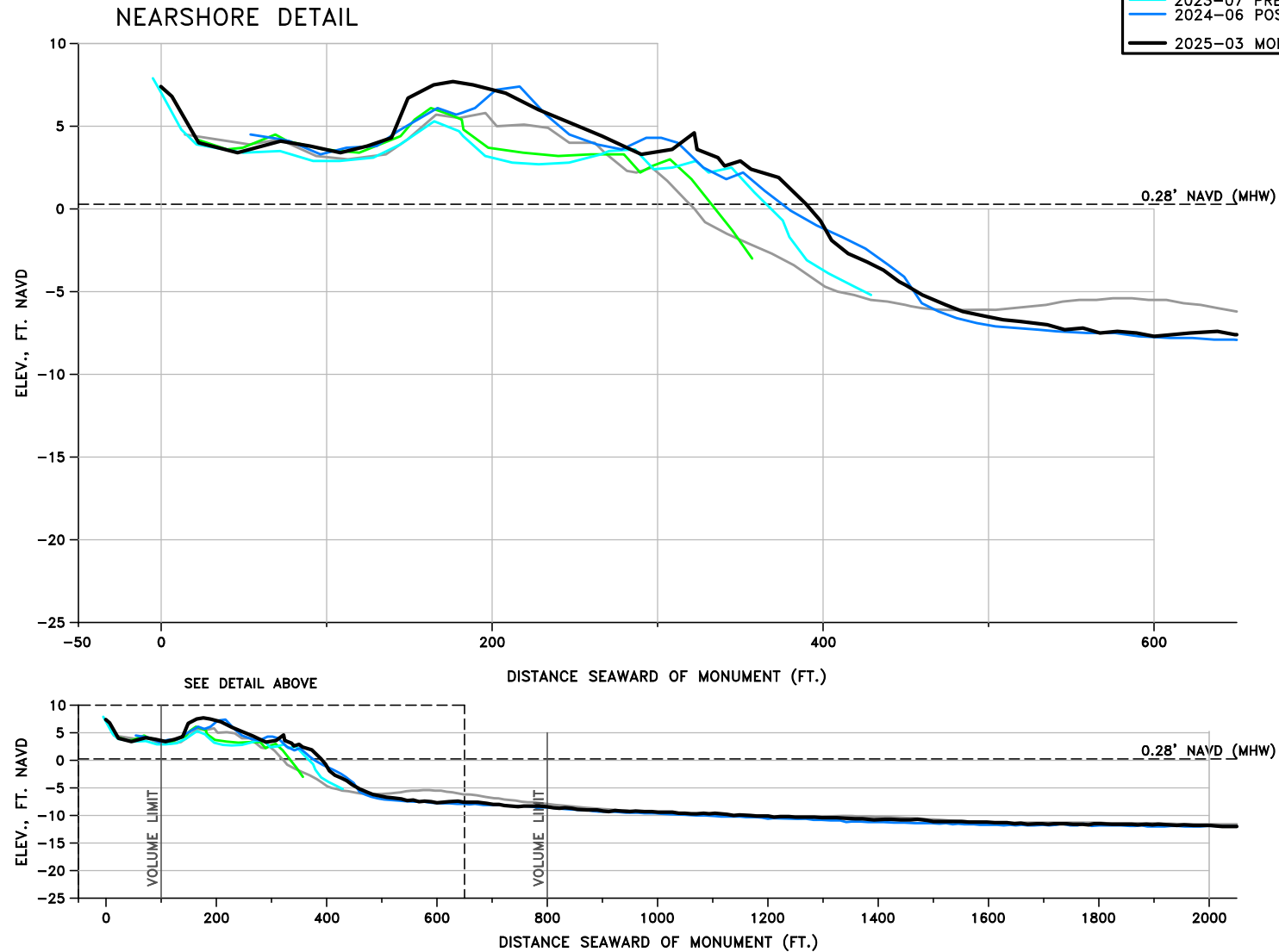
JOB: 27008

DATUM: NAVD

FIGURE:

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BEACH PROFILE R-141



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FILE: SECTION

SCALE: SHOWN

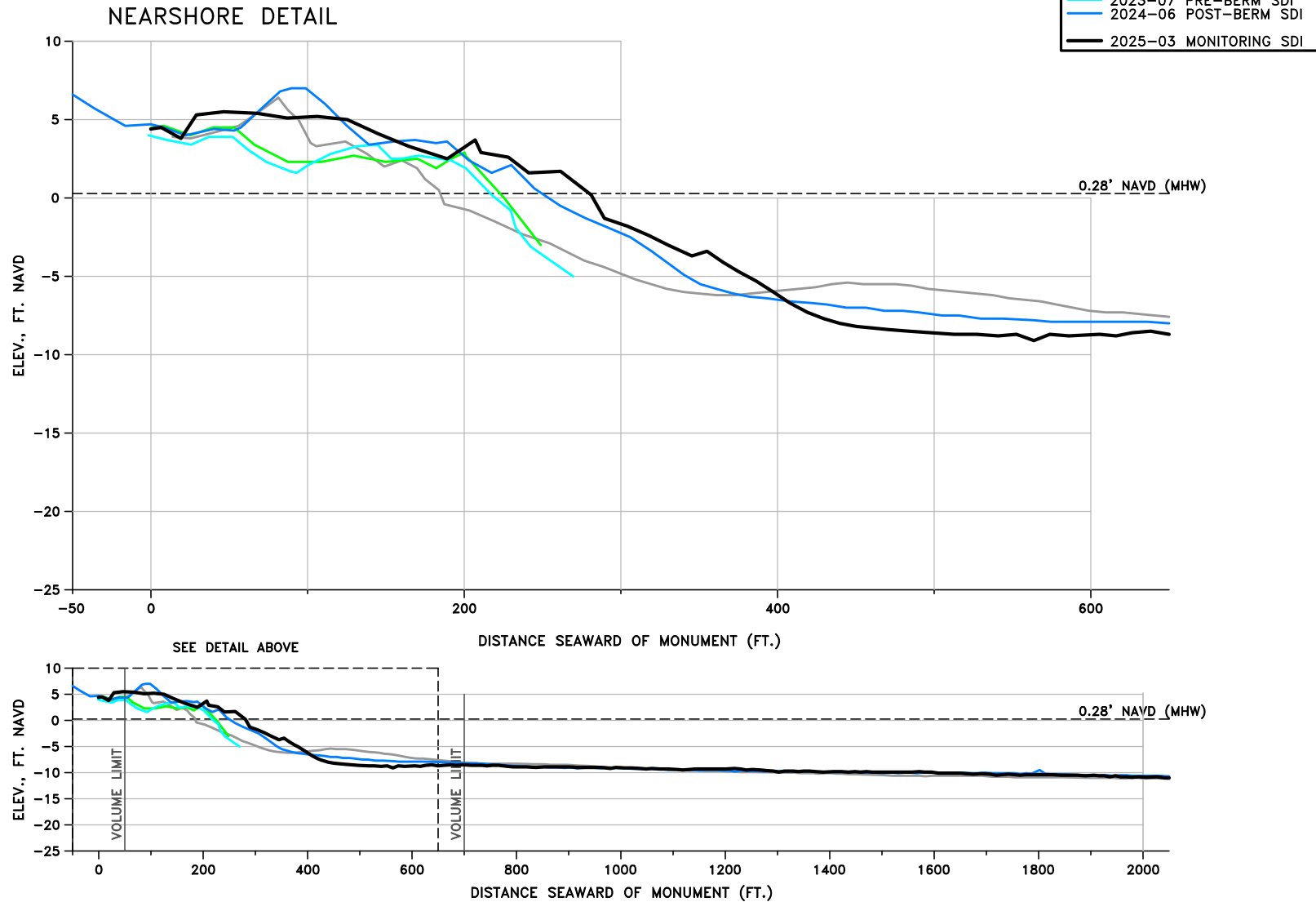
JOB: 27008

DATUM: NAVD

FIGURE:

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BEACH PROFILE R-142



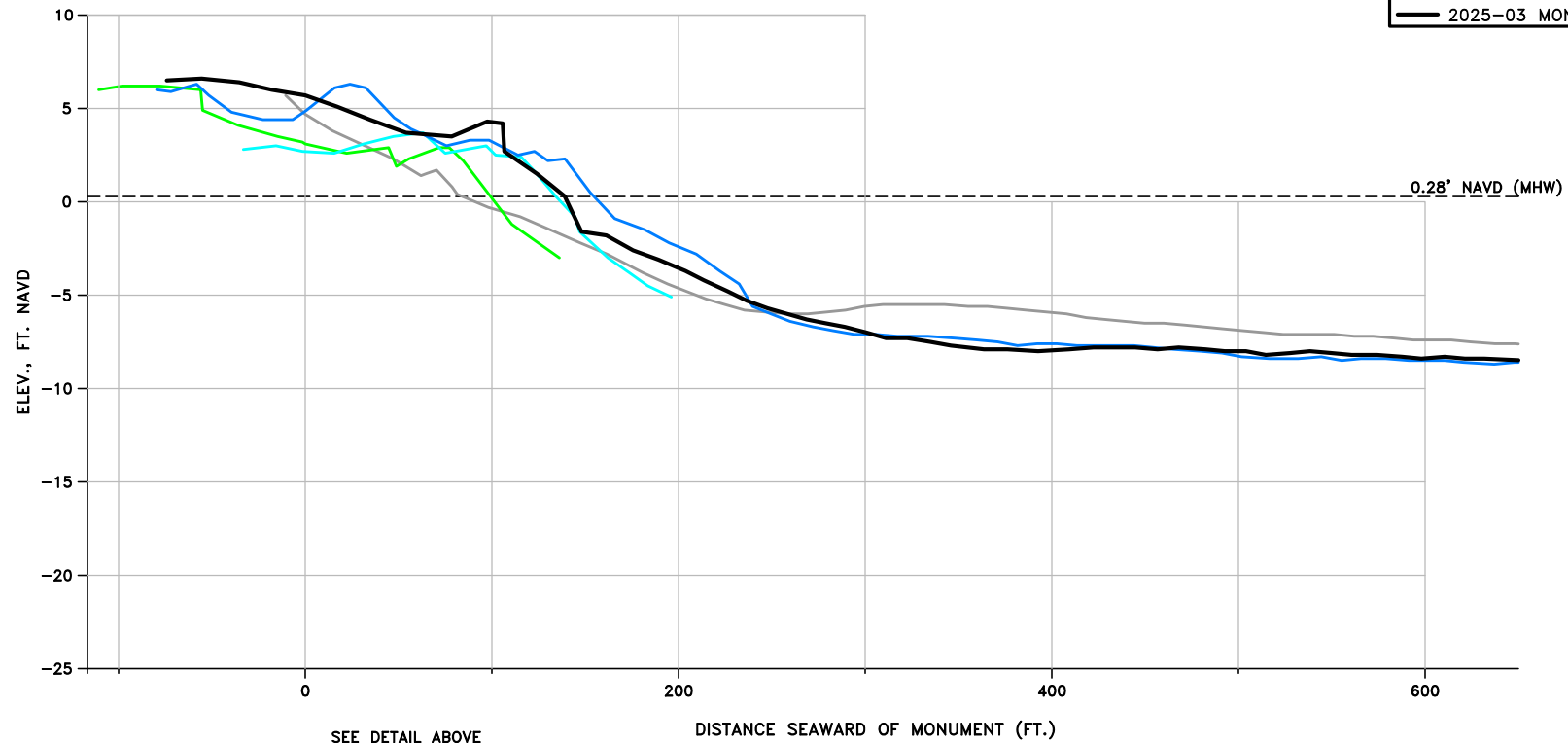
SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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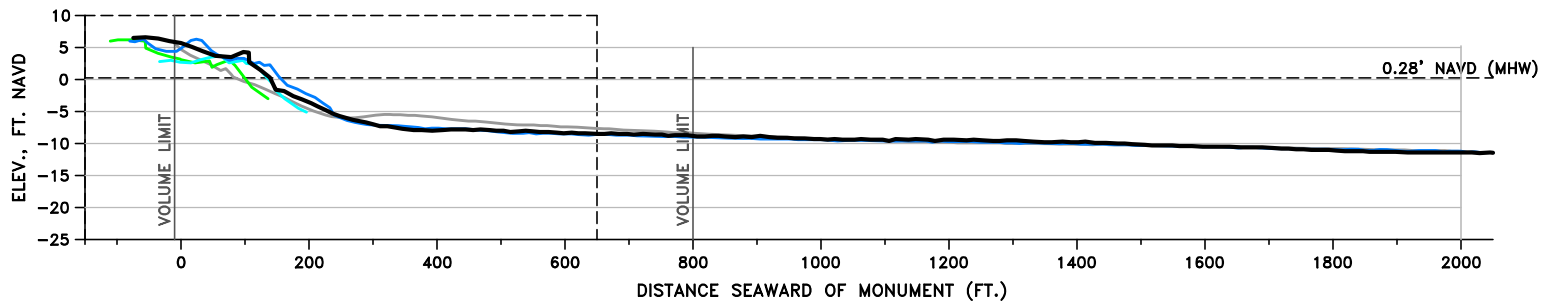
BEACH PROFILE R-143

SURVEY LEGEND	
—	2022-09 PRE-IAN SDI
—	2022-12 POST-IAN SDI
—	2023-07 PRE-BERM SDI
—	2024-06 POST-BERM SDI
—	2025-03 MONITORING SDI

NEARSHORE DETAIL



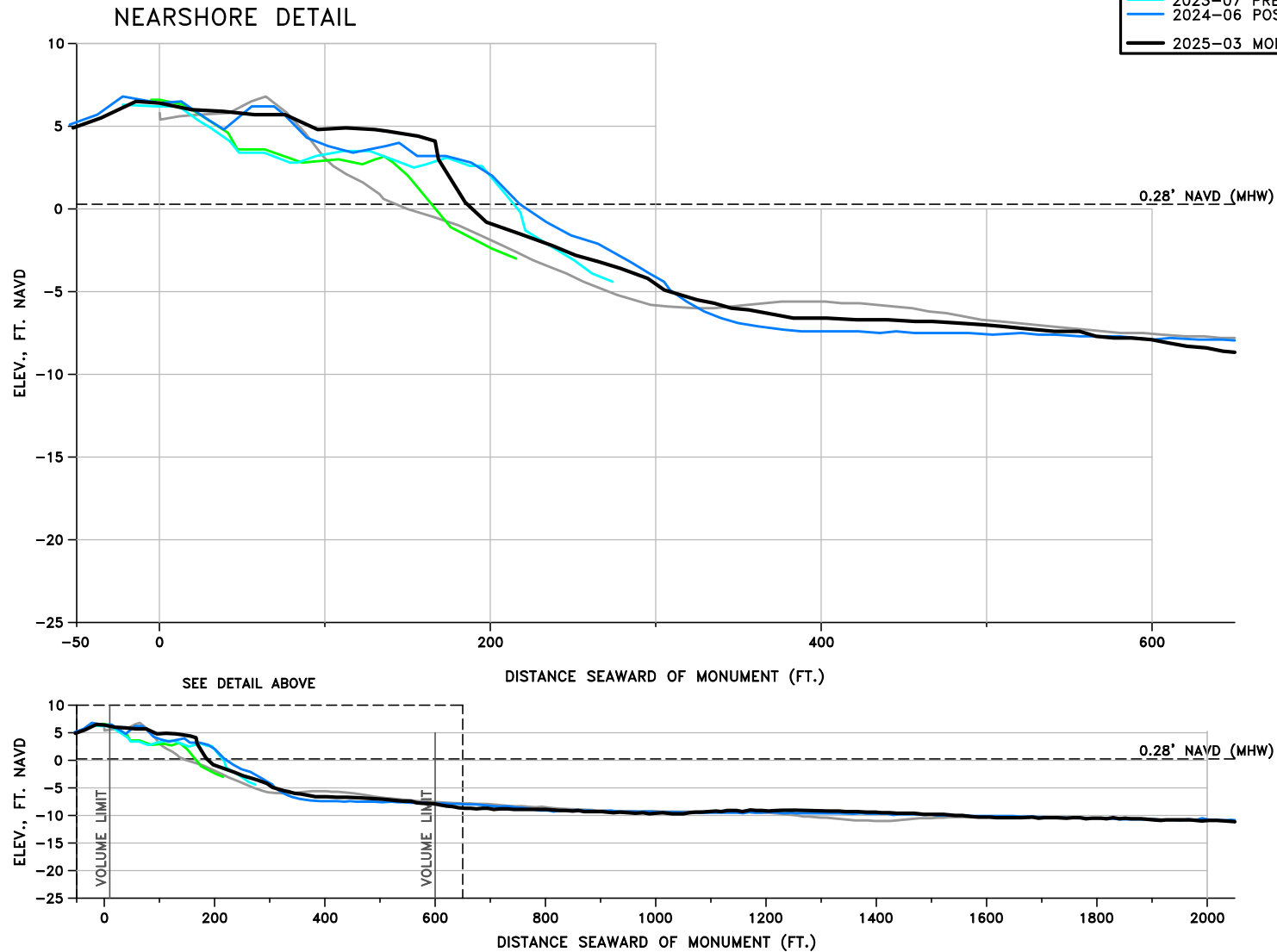
SEE DETAIL ABOVE



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FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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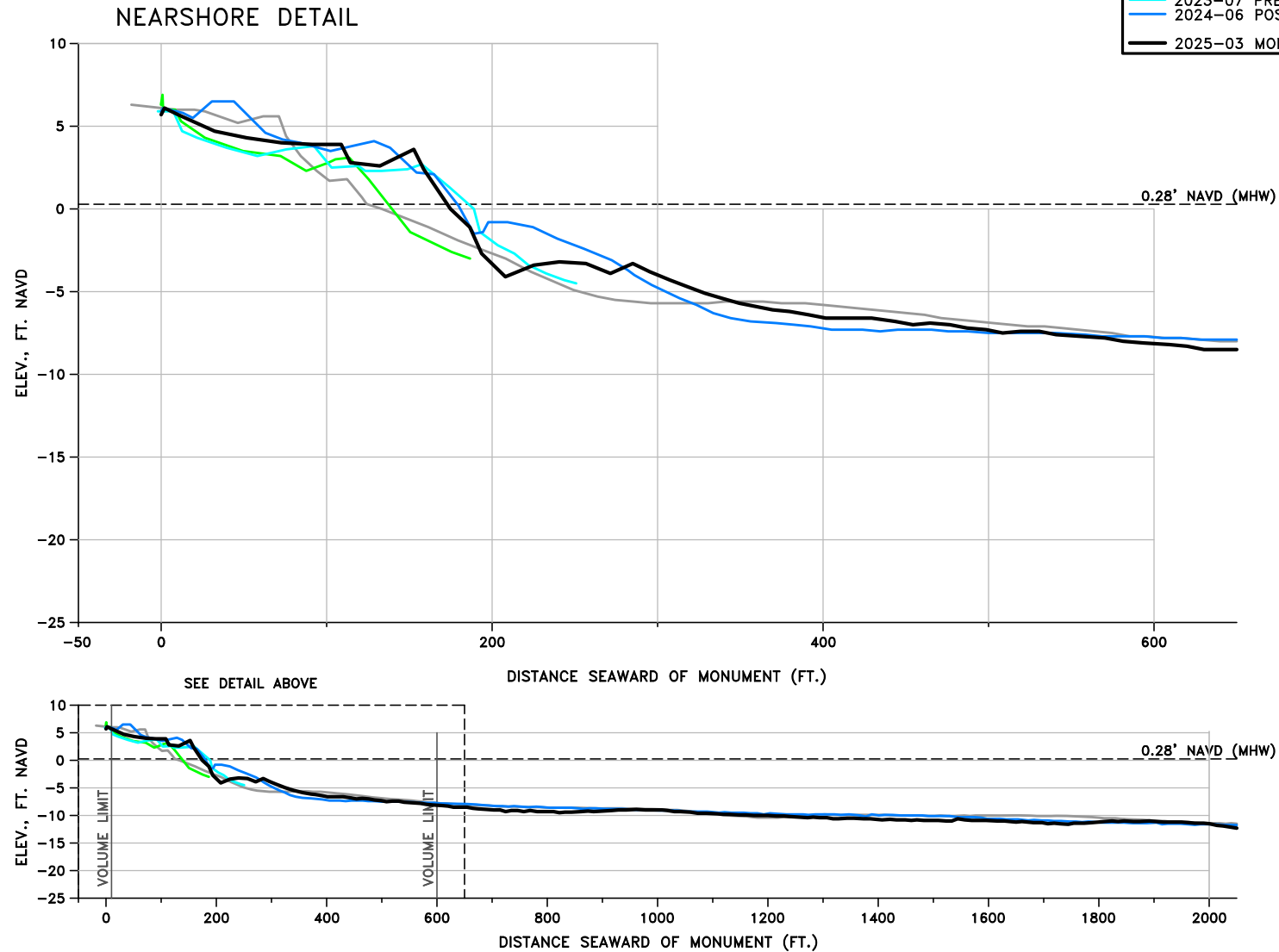
BEACH PROFILE R-144



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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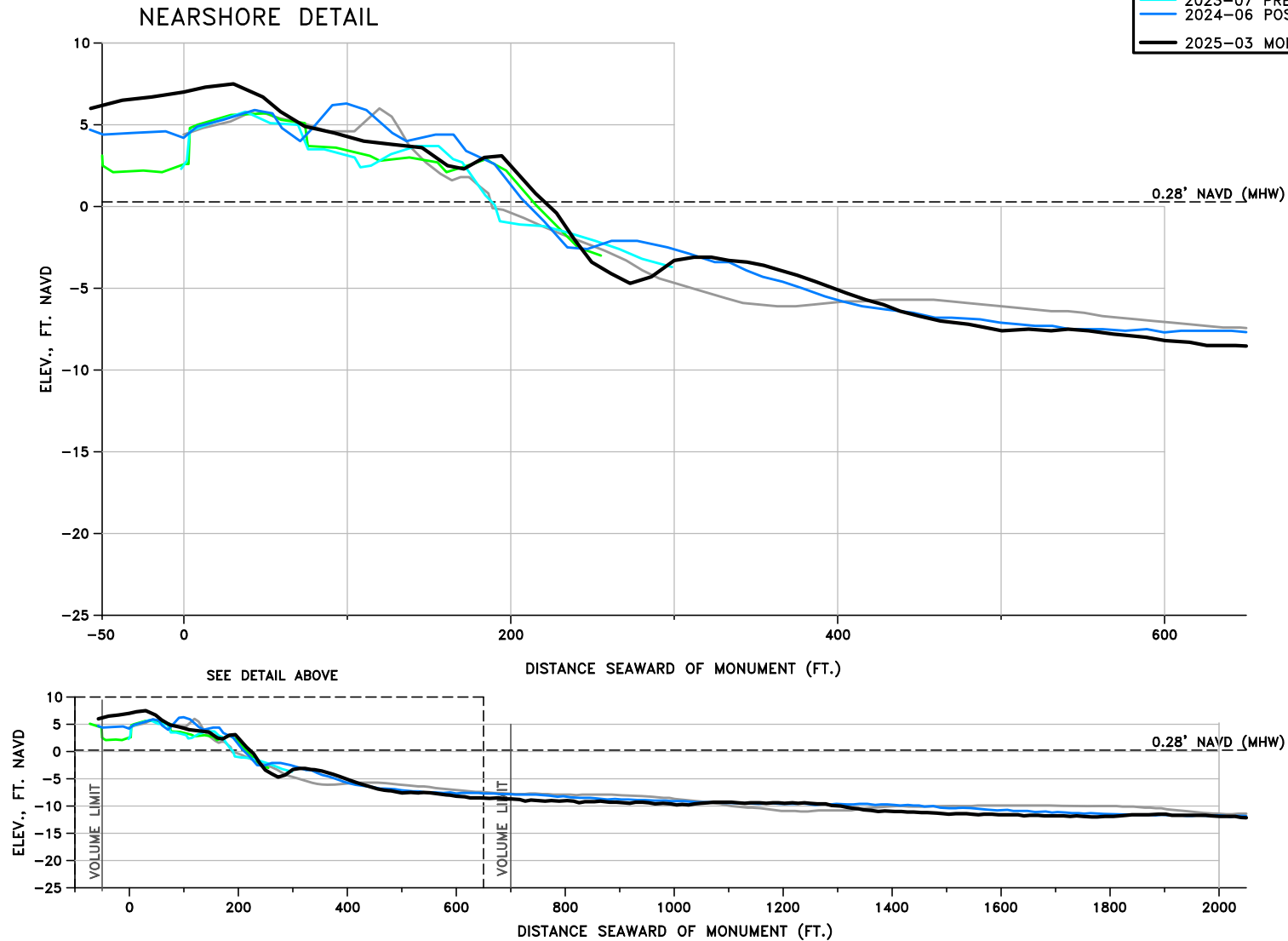
BEACH PROFILE R-145



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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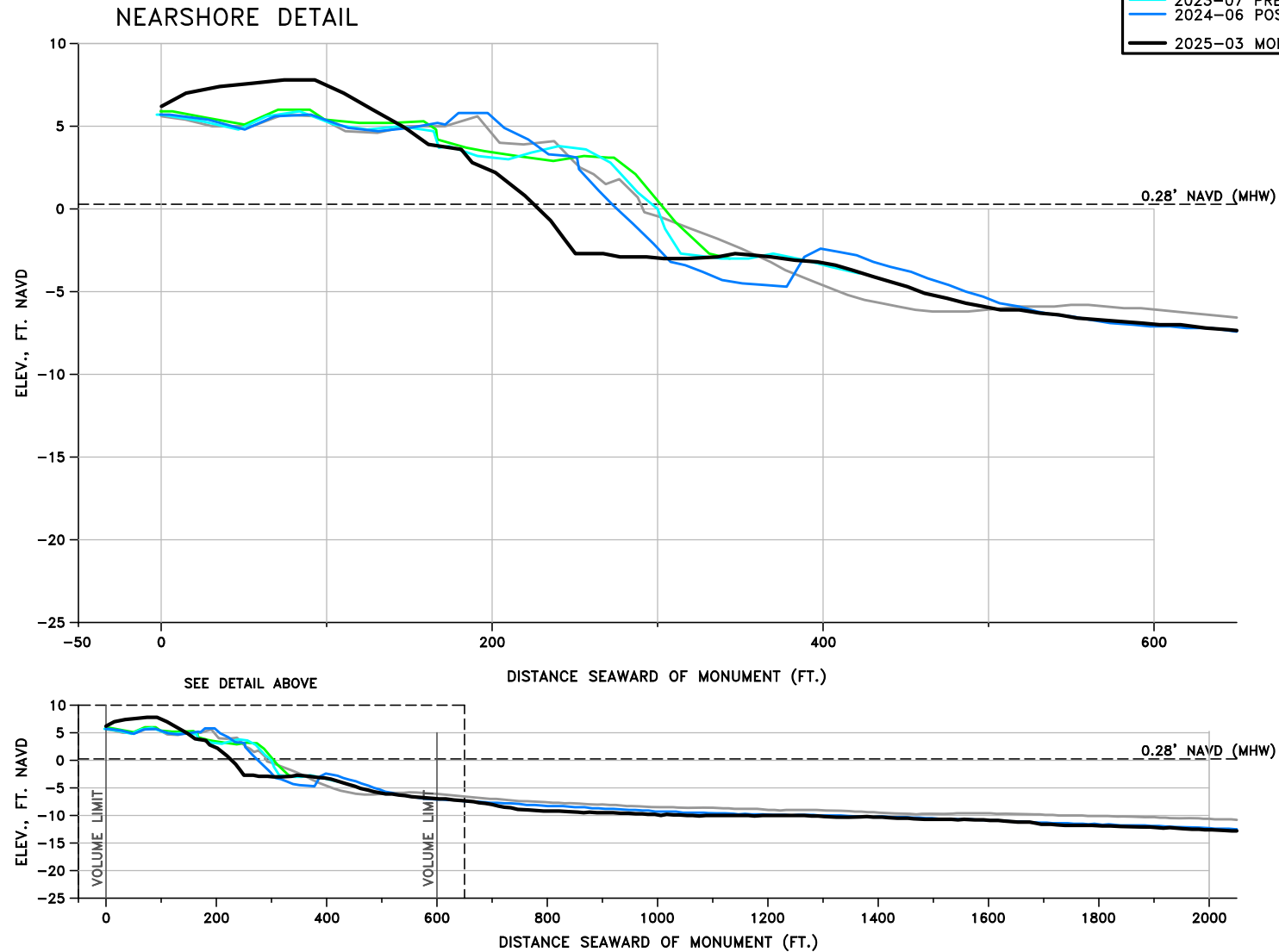
BEACH PROFILE R-146



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
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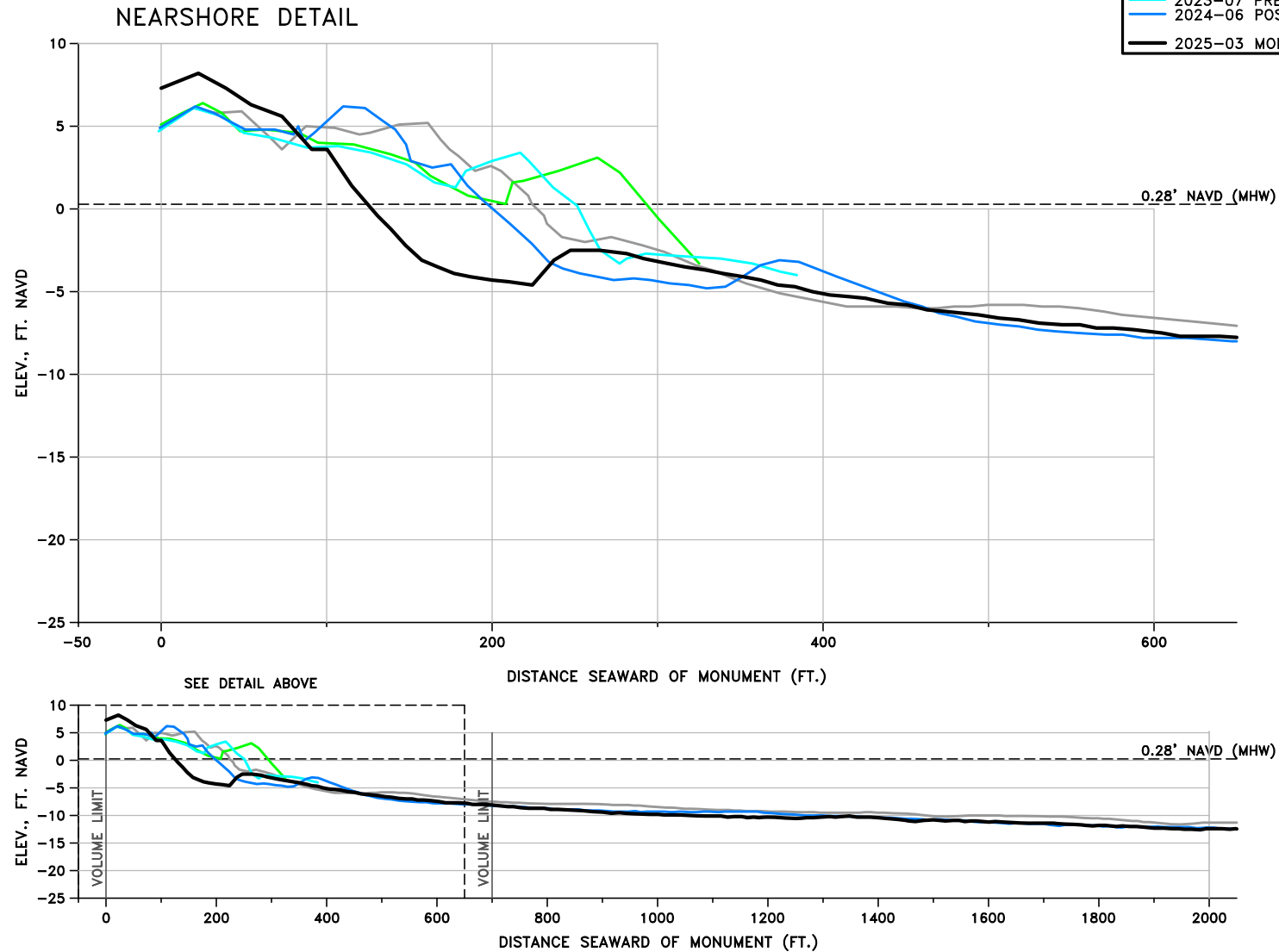
BEACH PROFILE R-147



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
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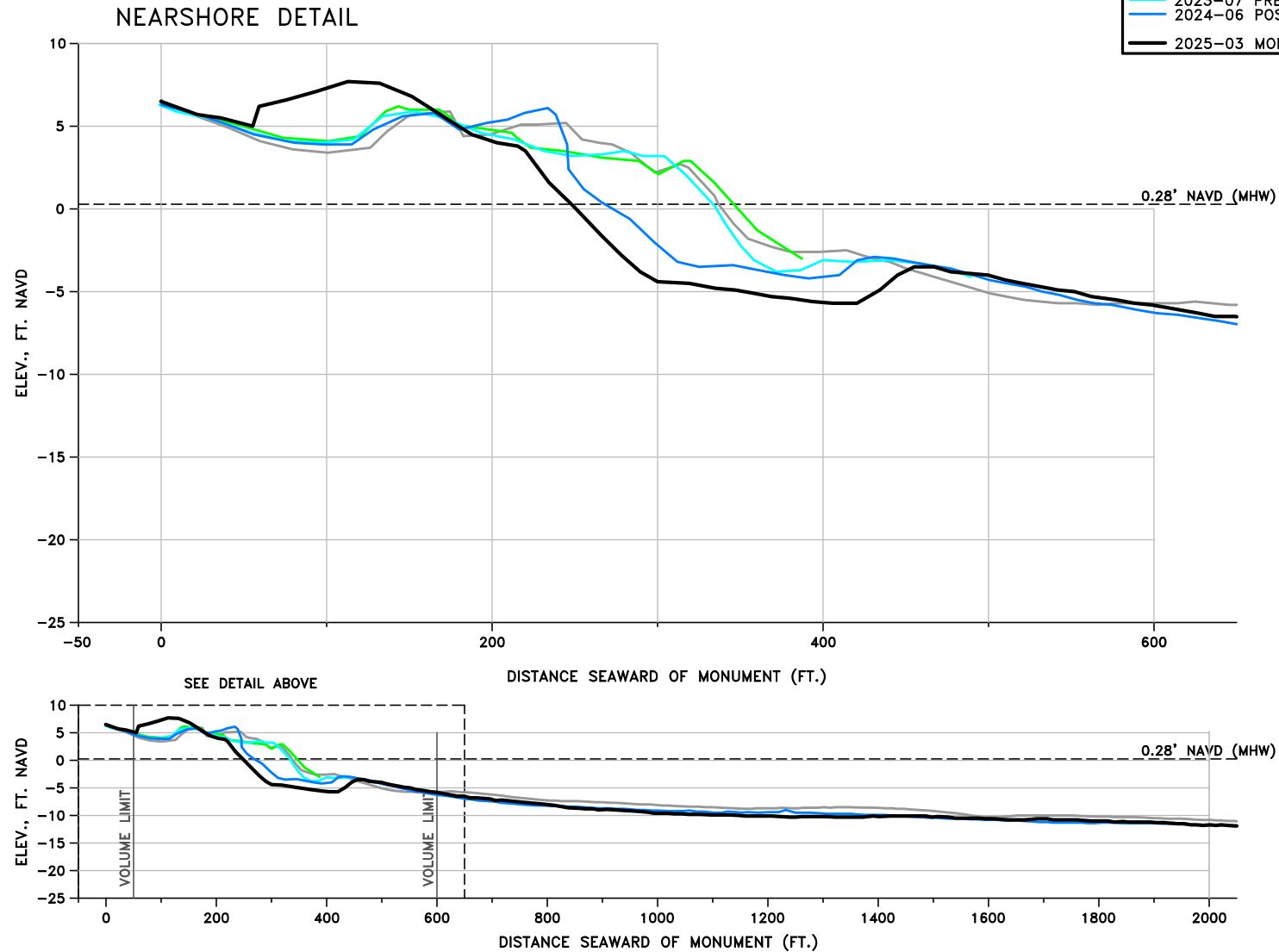
BEACH PROFILE R-148



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
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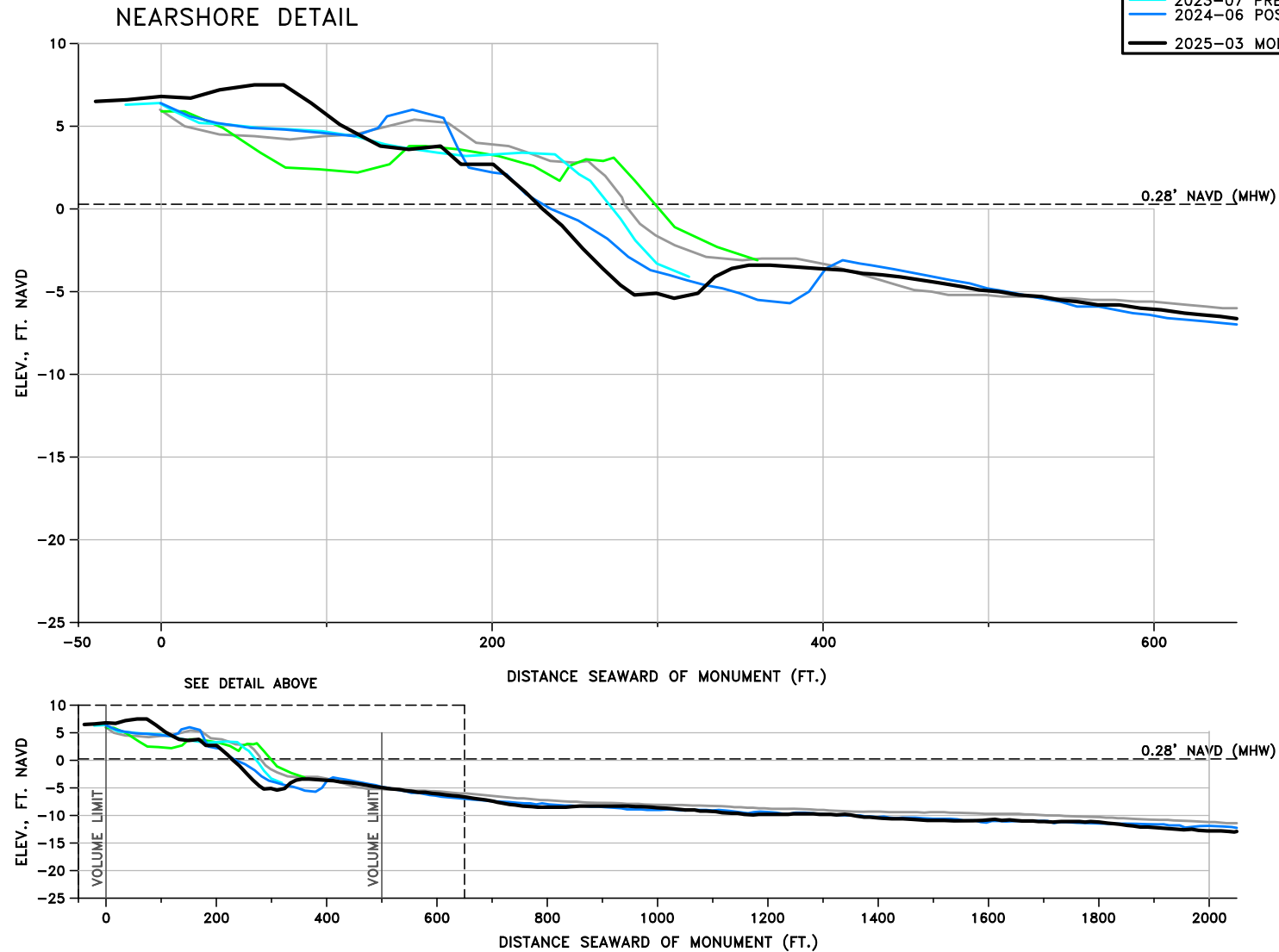
BEACH PROFILE R-149



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
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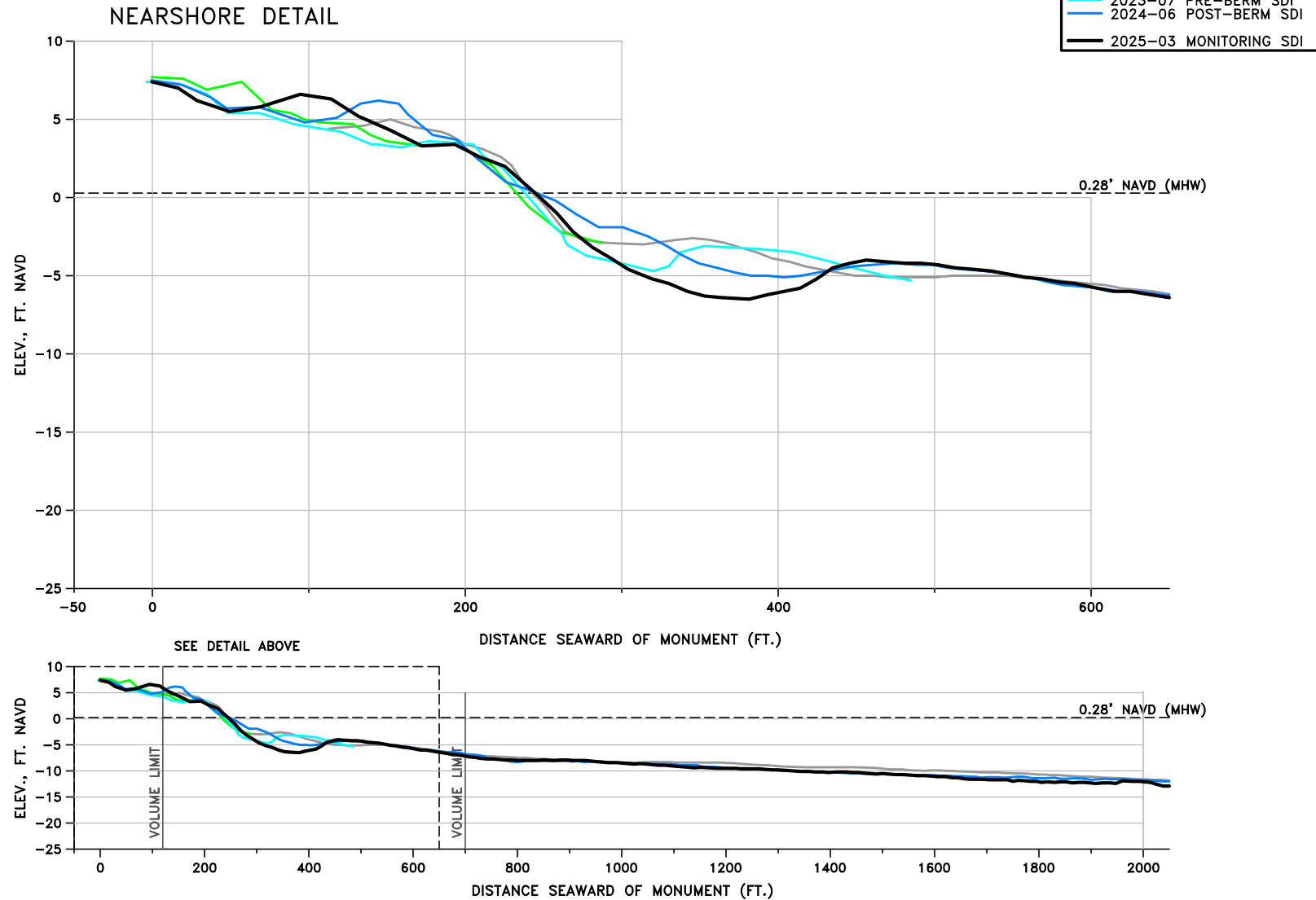
BEACH PROFILE R-150



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
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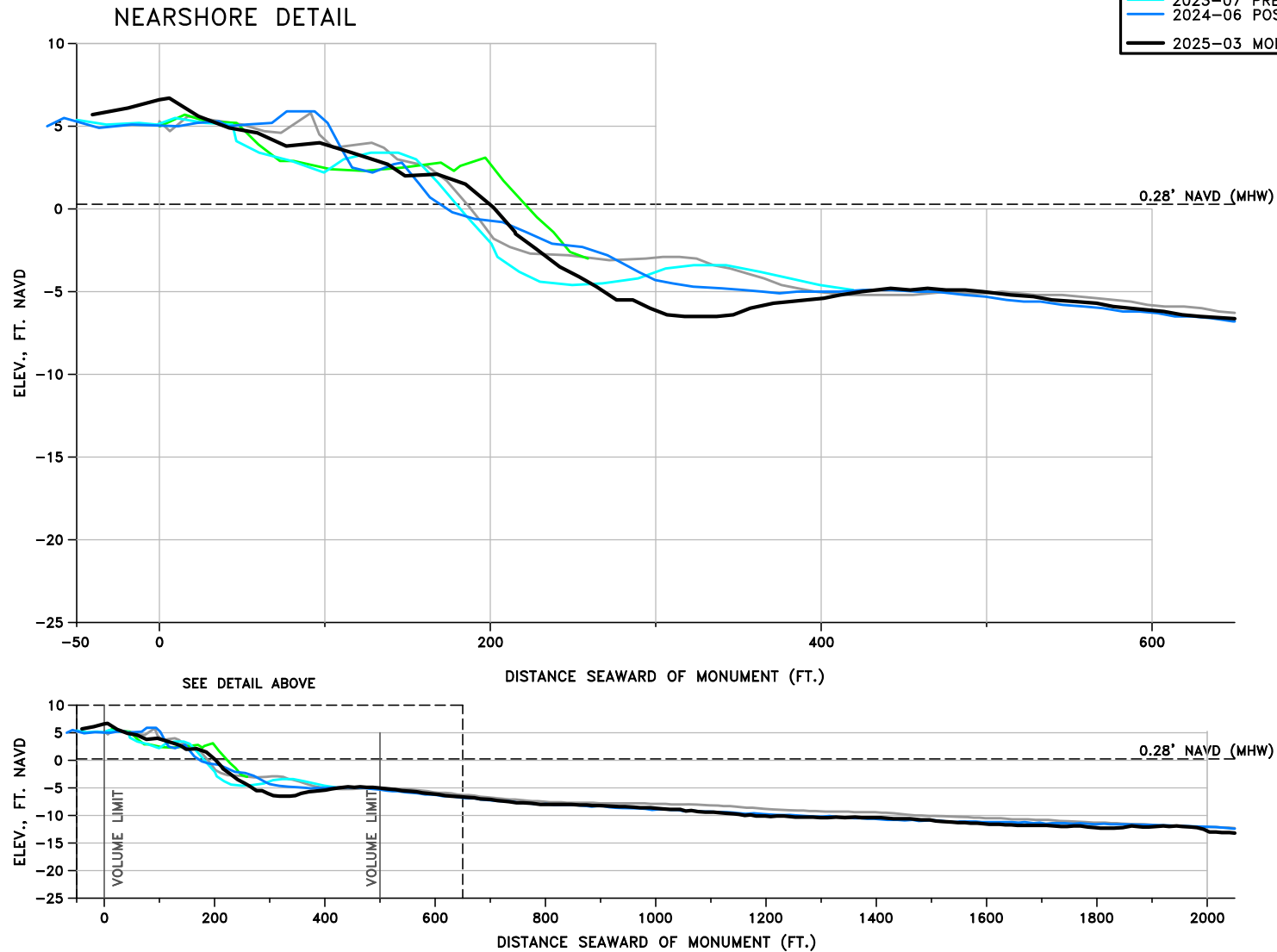
BEACH PROFILE R-151



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
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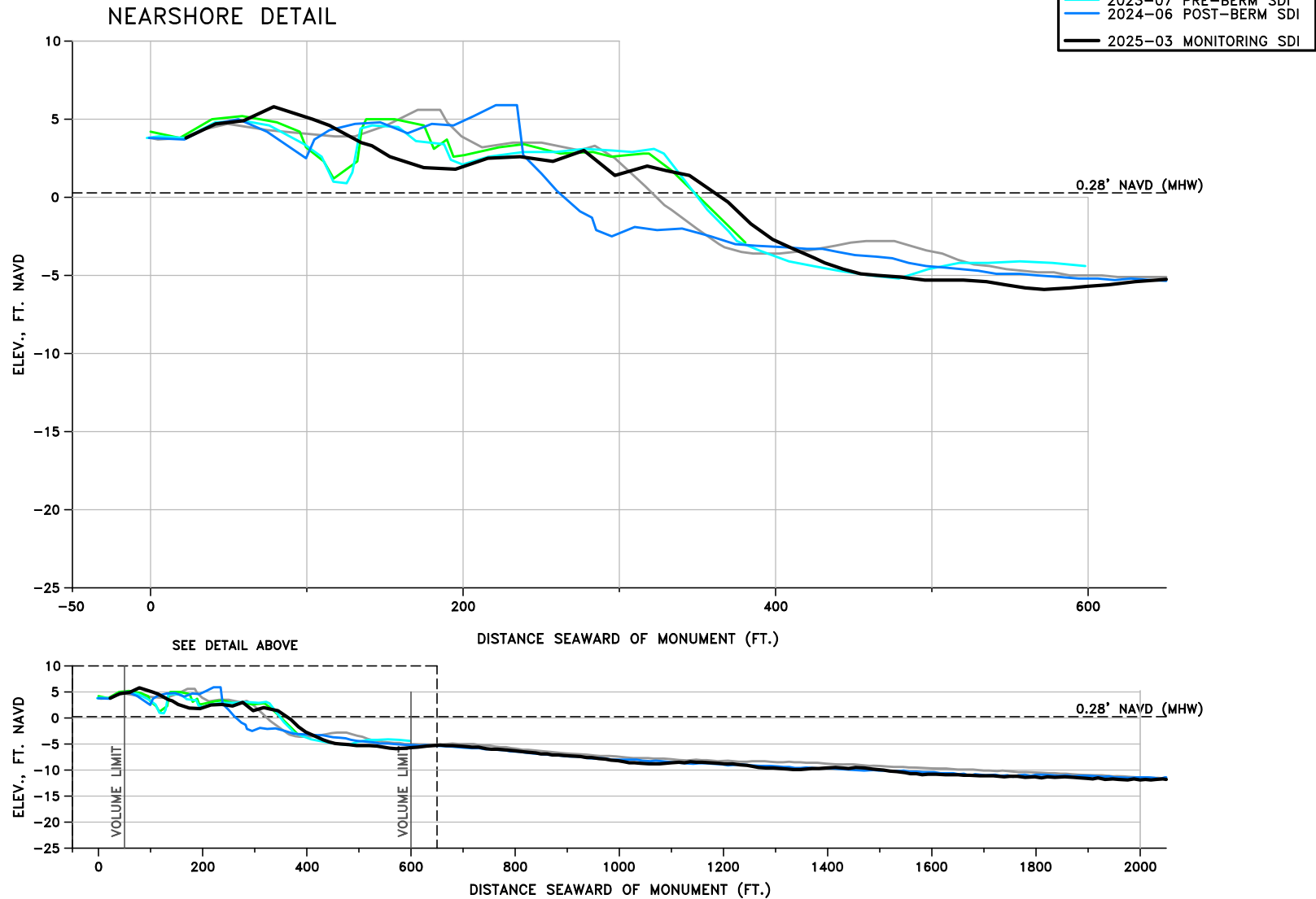
BEACH PROFILE R-152



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
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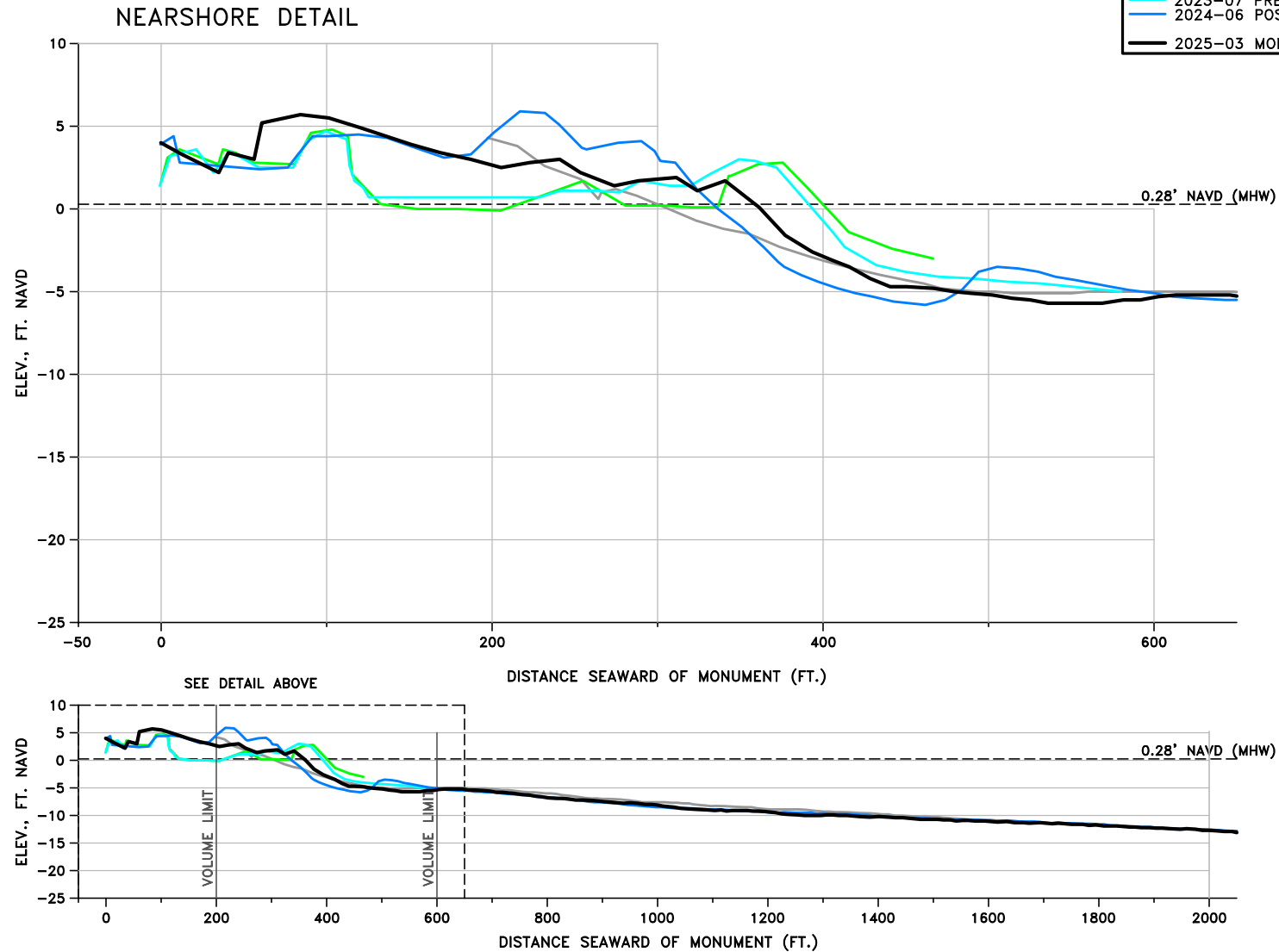
BEACH PROFILE R-153



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
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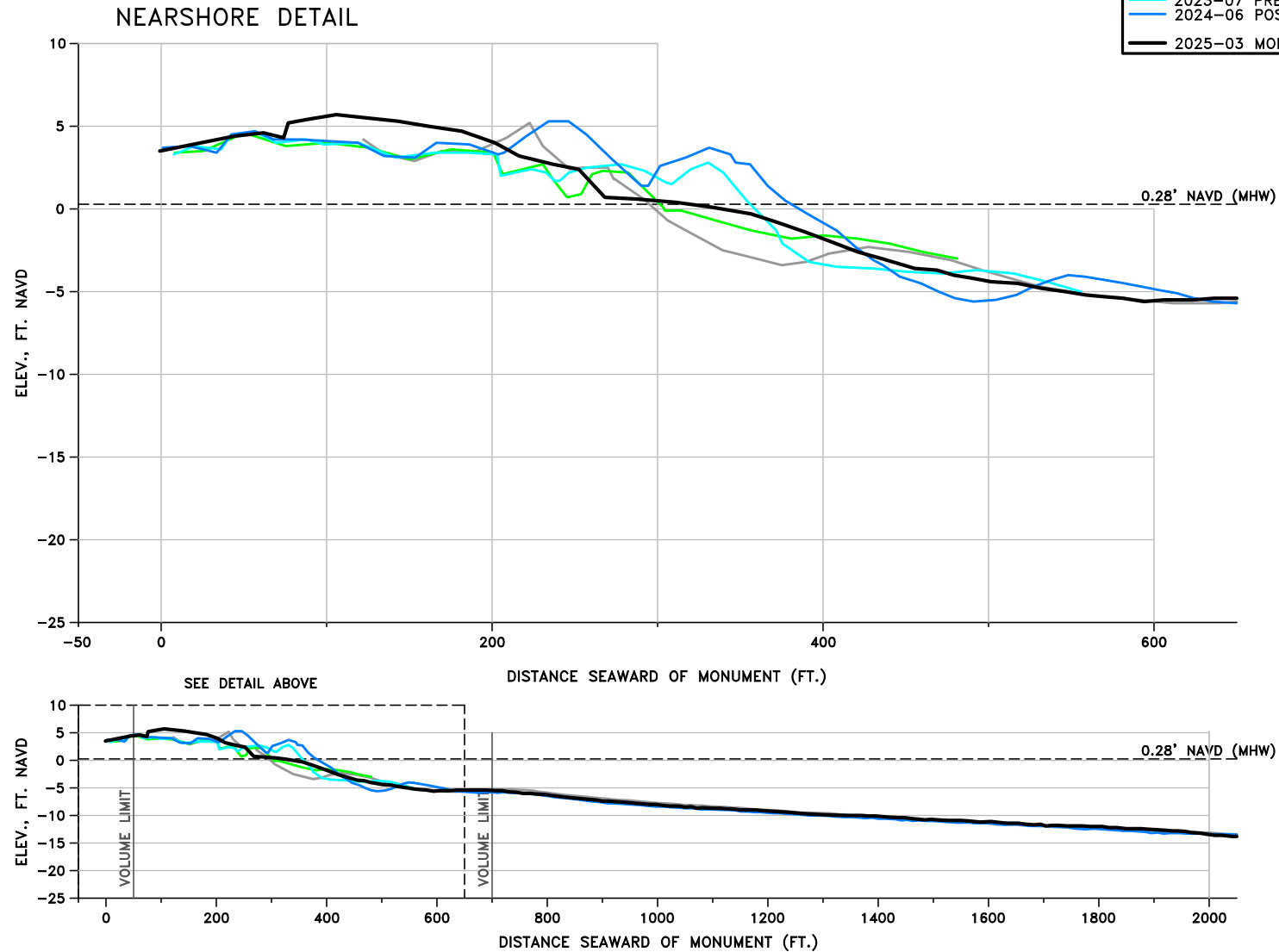
BEACH PROFILE R-154



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
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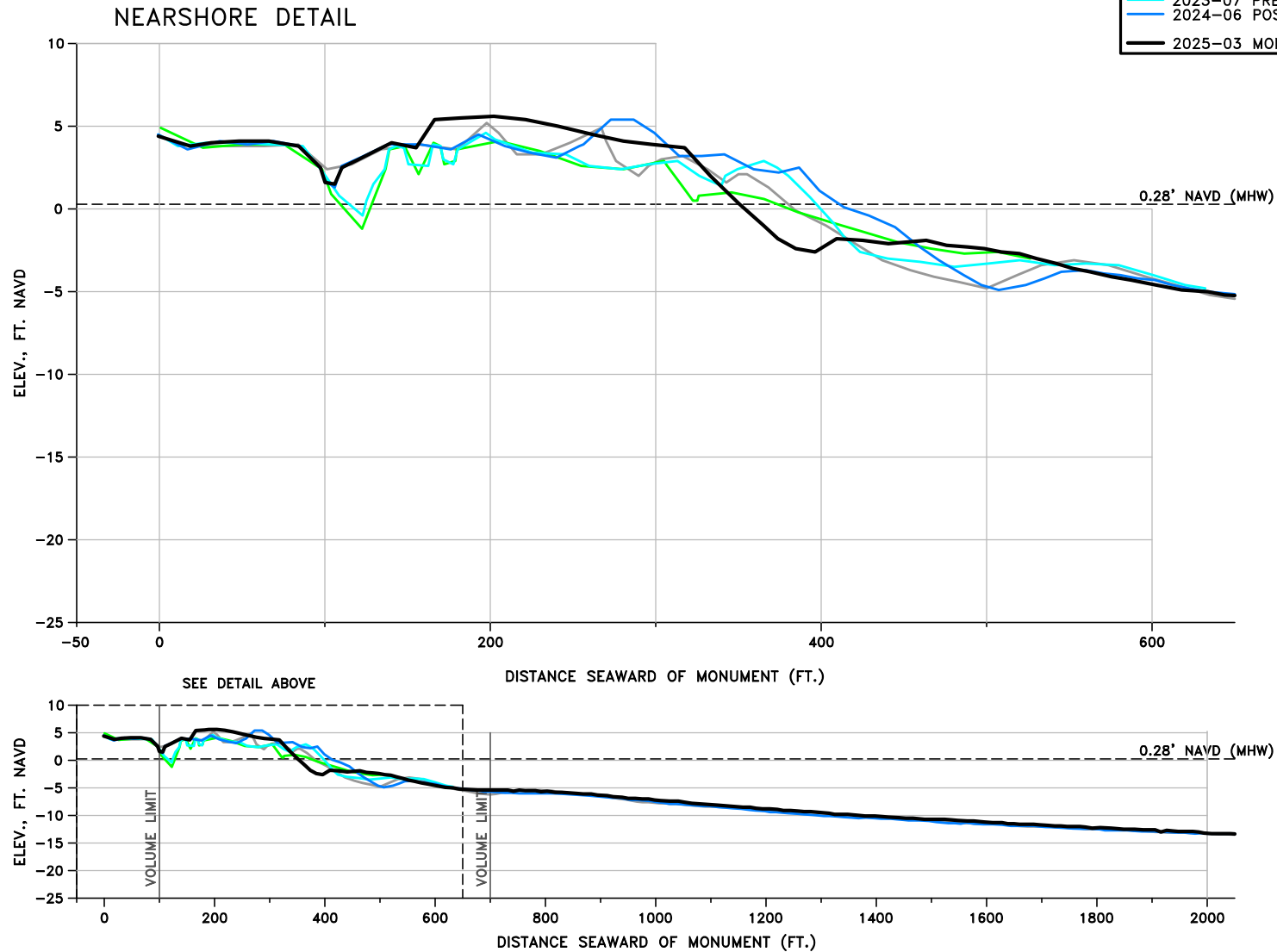
BEACH PROFILE R-155



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
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BEACH PROFILE R-156



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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

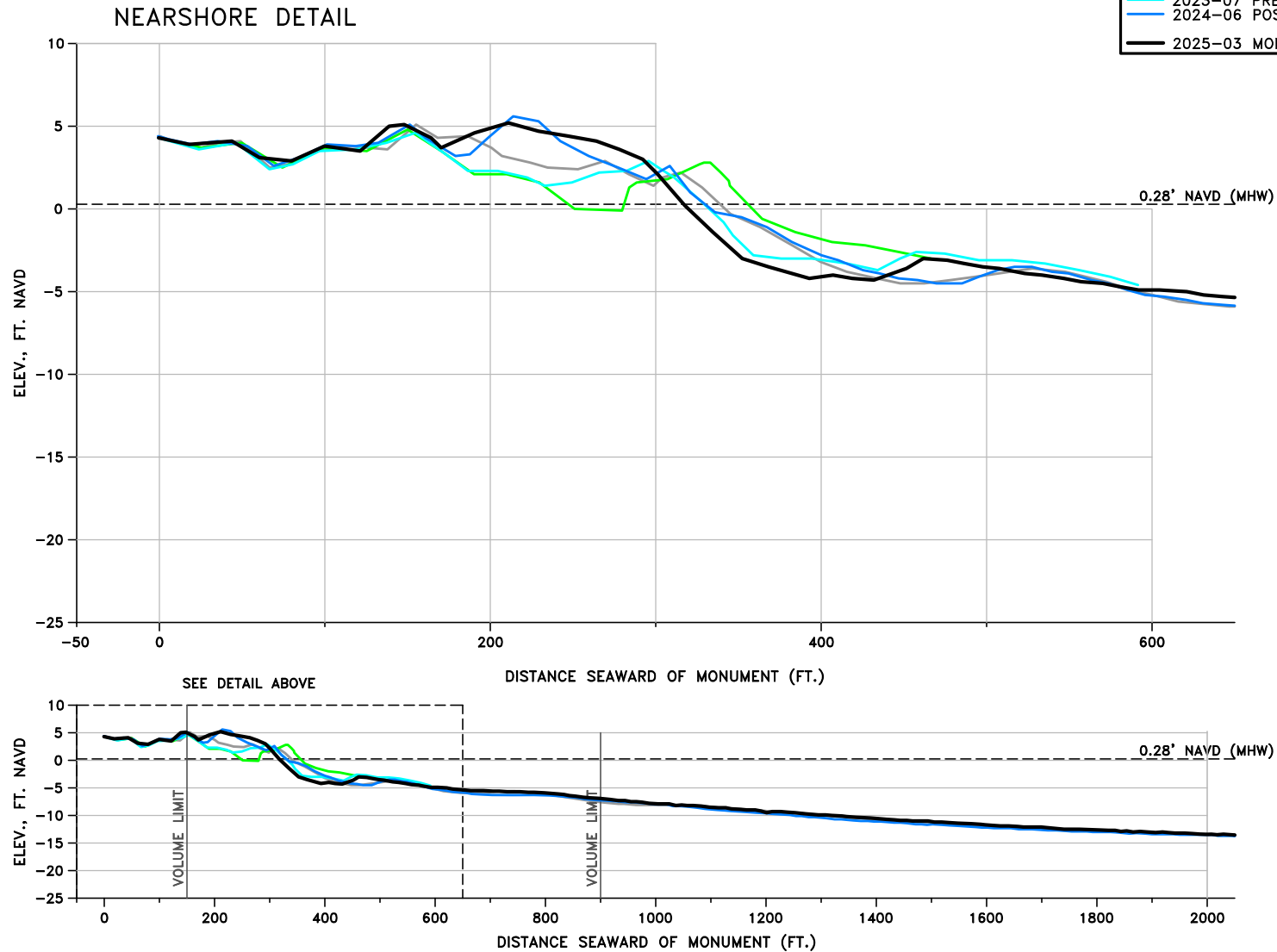
JOB: 27008

DATUM: NAVD

FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
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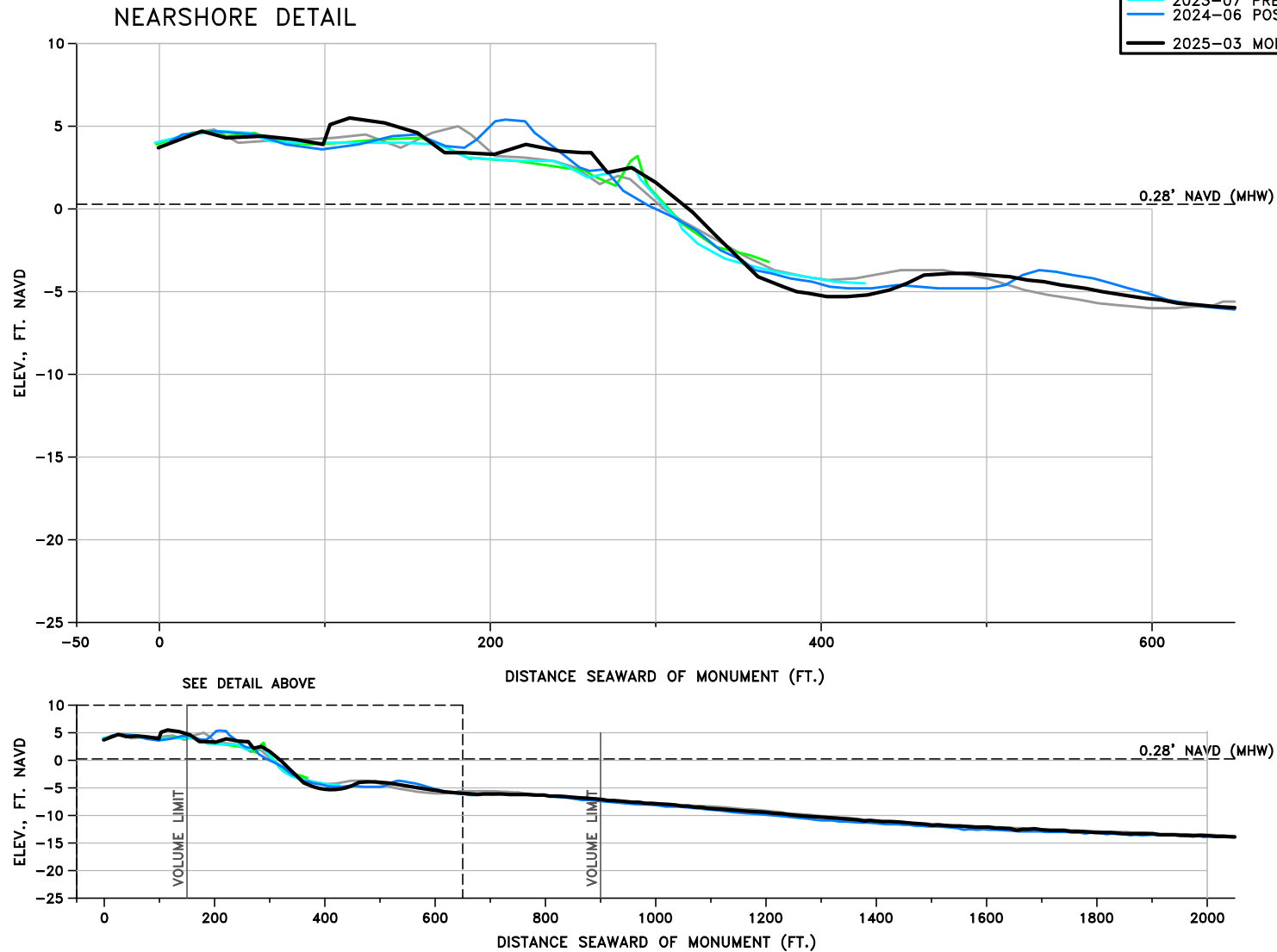
BEACH PROFILE R-157



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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BEACH PROFILE R-158



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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

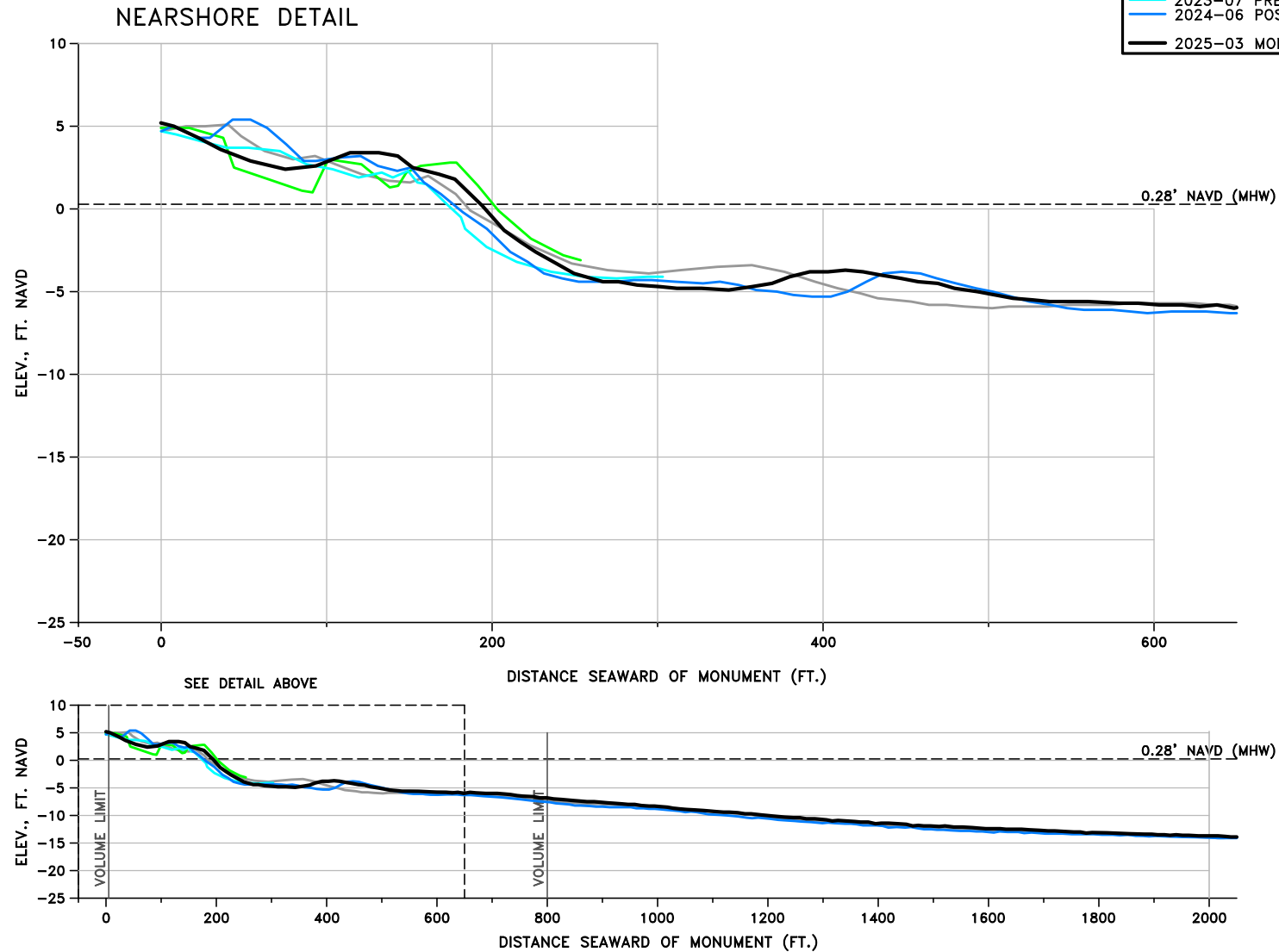
JOB: 27008

DATUM: NAVD

FIGURE:

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BEACH PROFILE R-159



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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

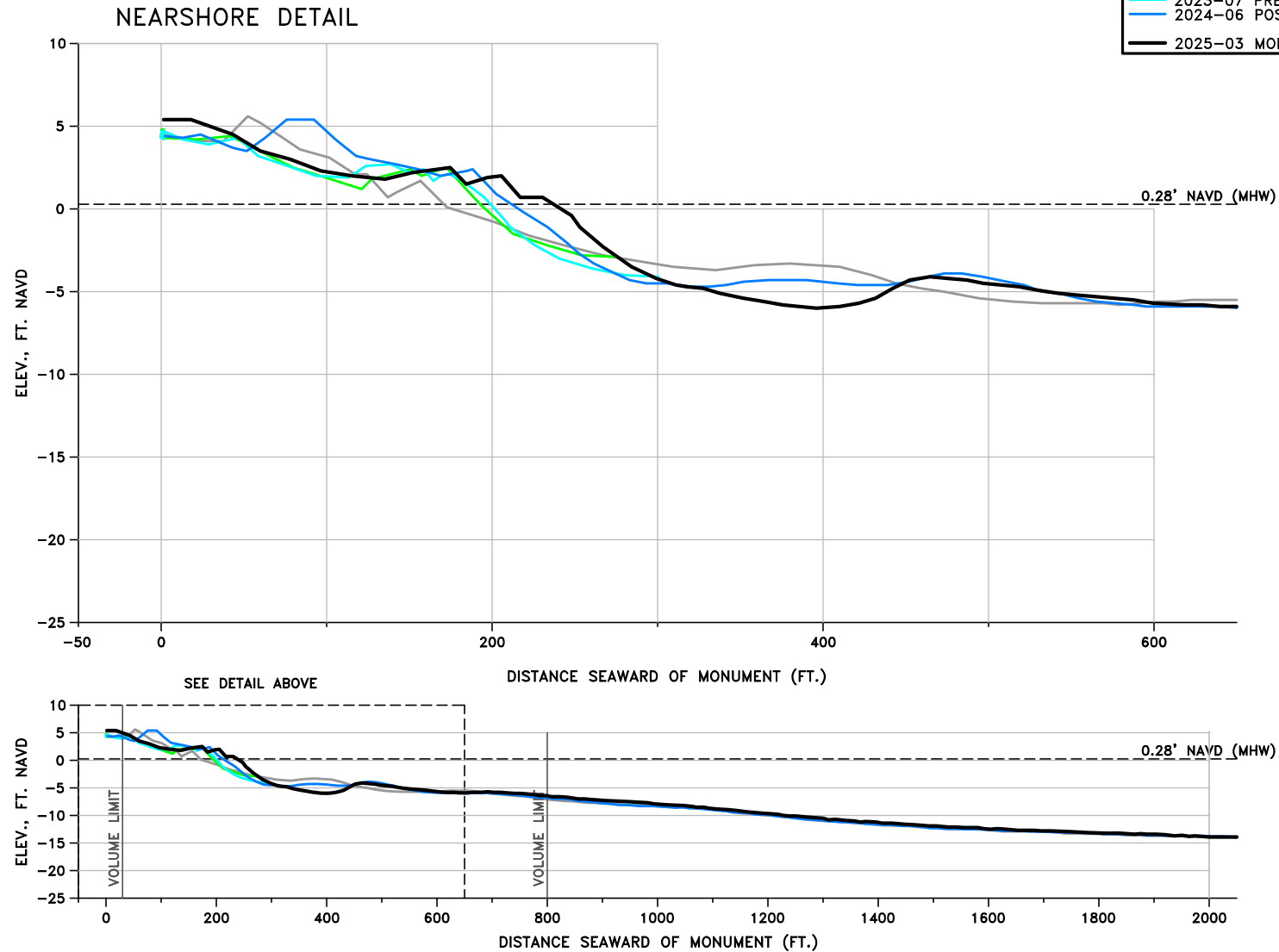
JOB: 27008

DATUM: NAVD

FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
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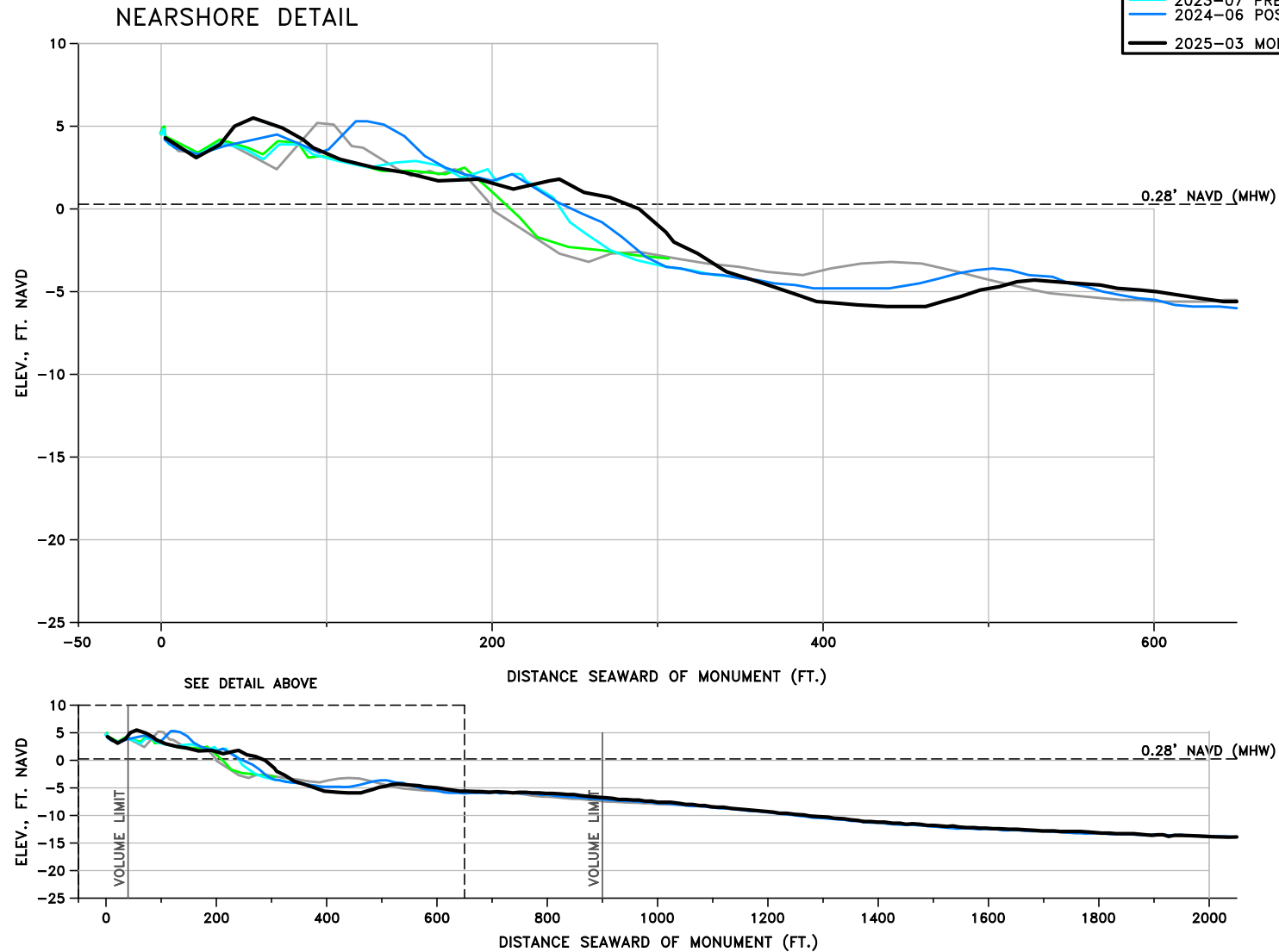
BEACH PROFILE R-160



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
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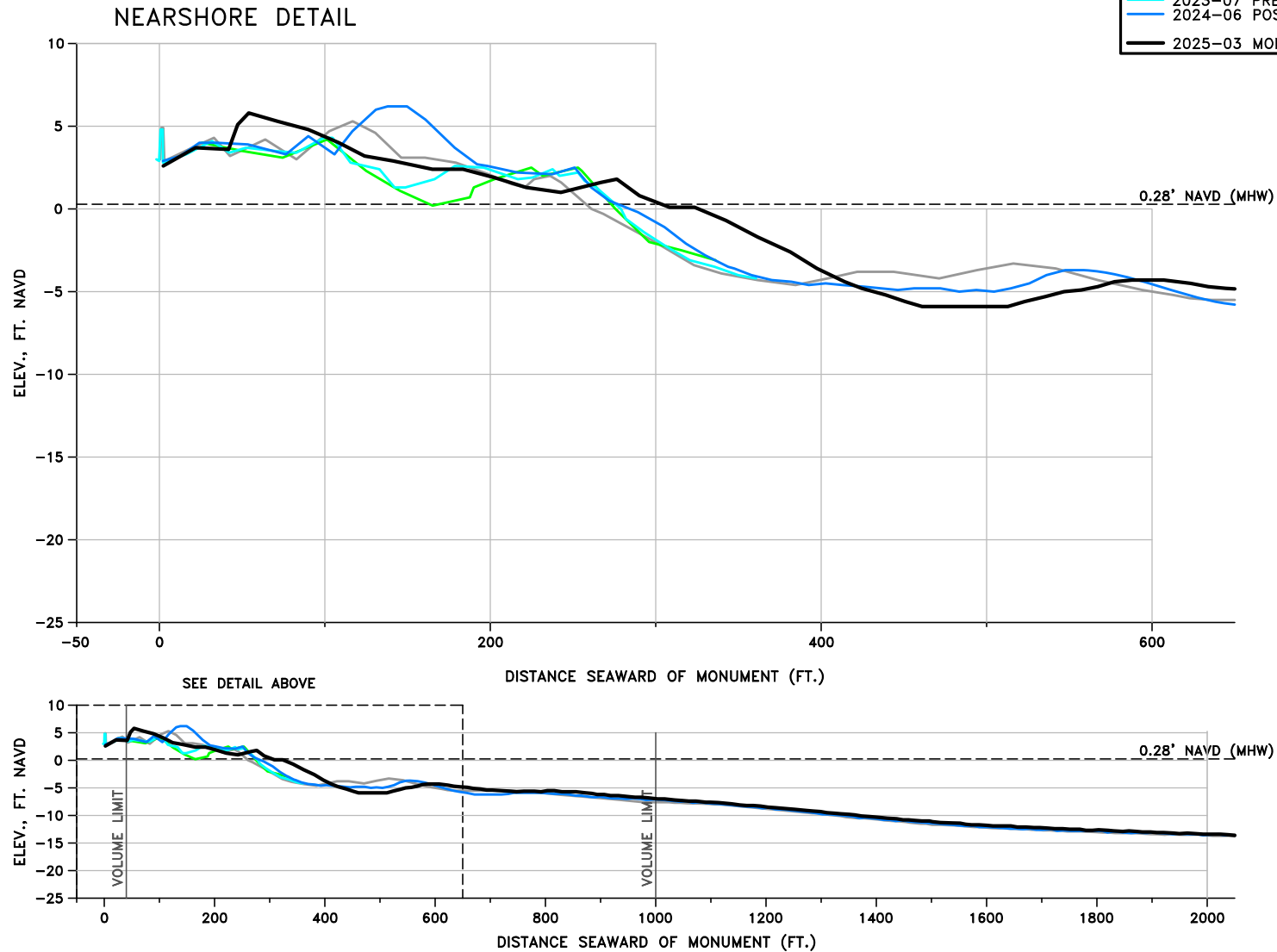
BEACH PROFILE R-161



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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BEACH PROFILE R-161A



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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

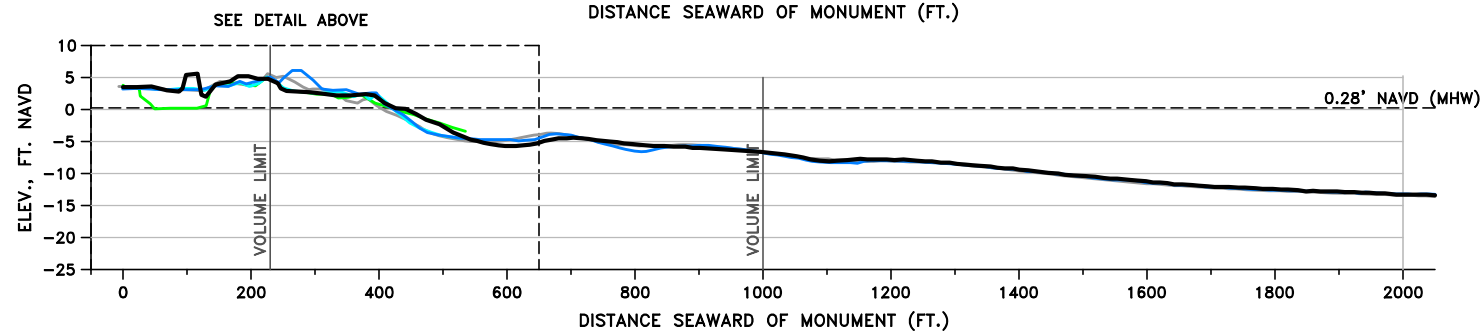
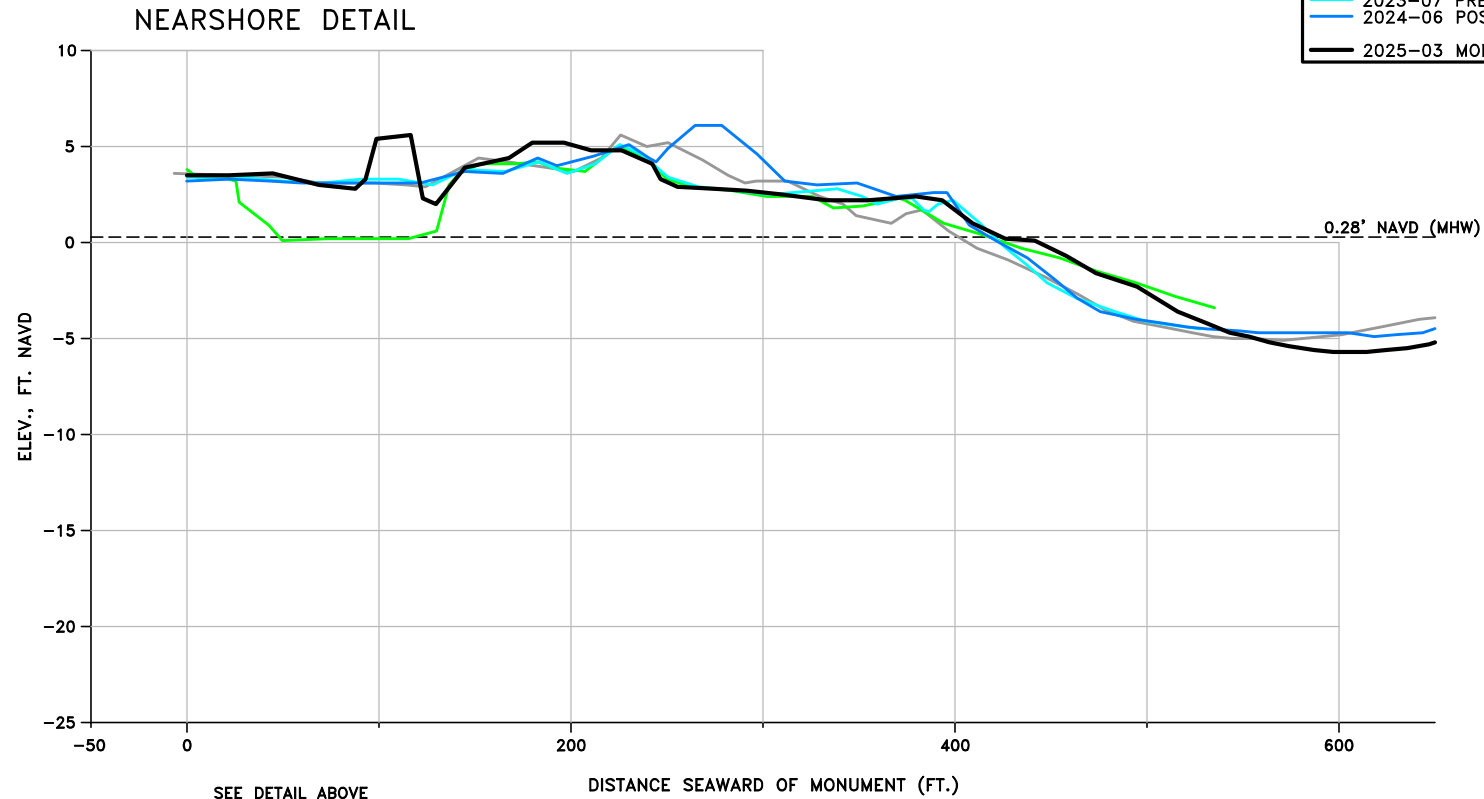
JOB: 27008

DATUM: NAVD

FIGURE:

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BEACH PROFILE R-162



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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

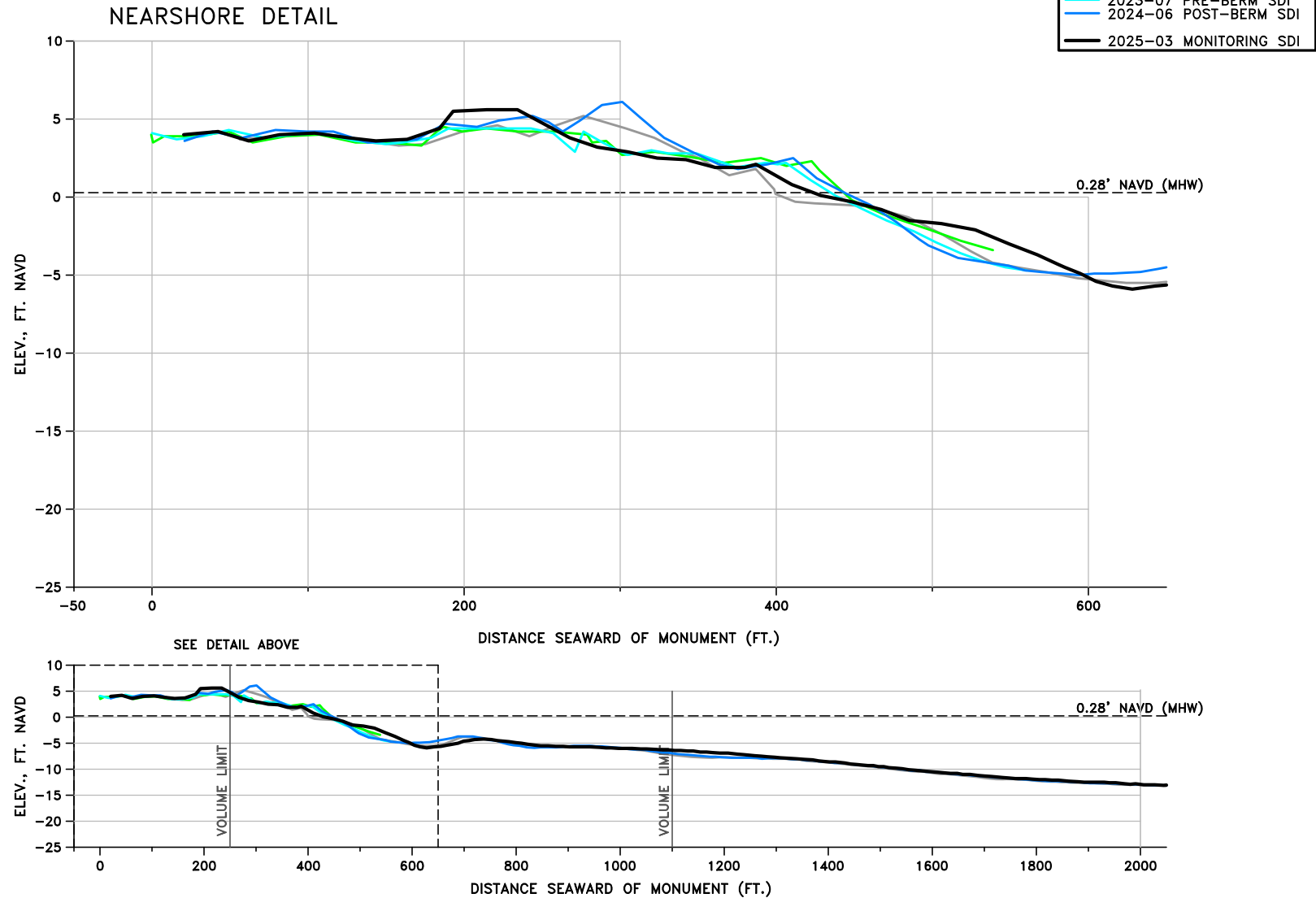
JOB: 27008

DATUM: NAVD

FIGURE:

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BEACH PROFILE R-163



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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

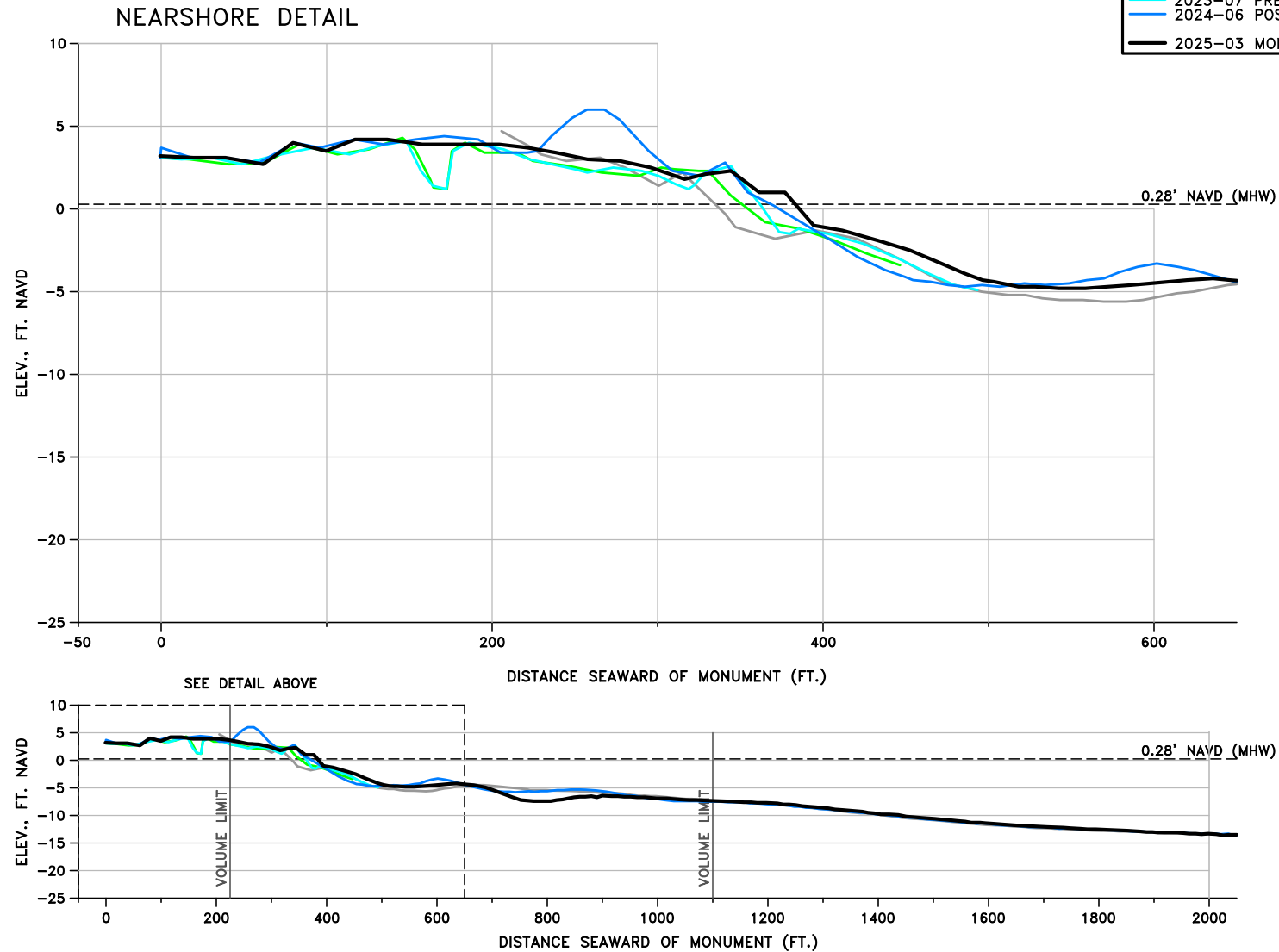
JOB: 27008

DATUM: NAVD

FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
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BEACH PROFILE R-164

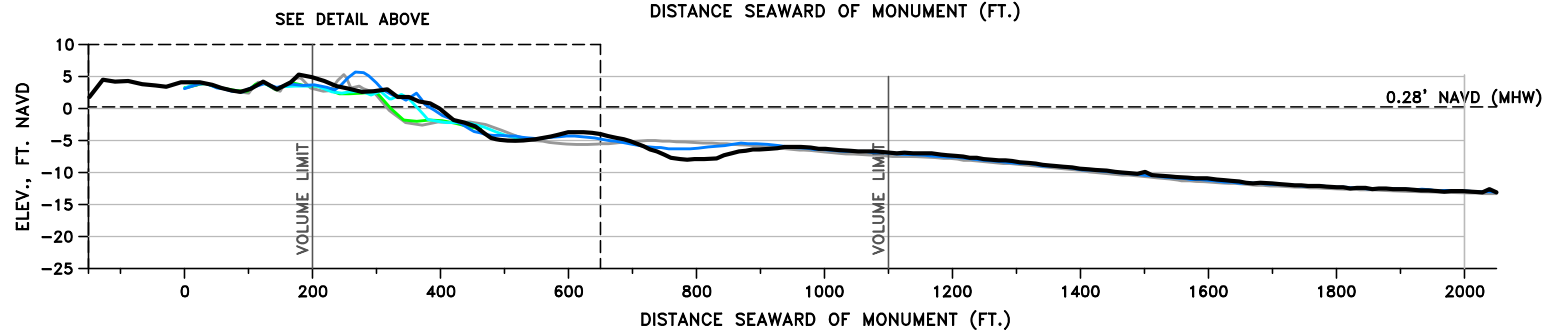
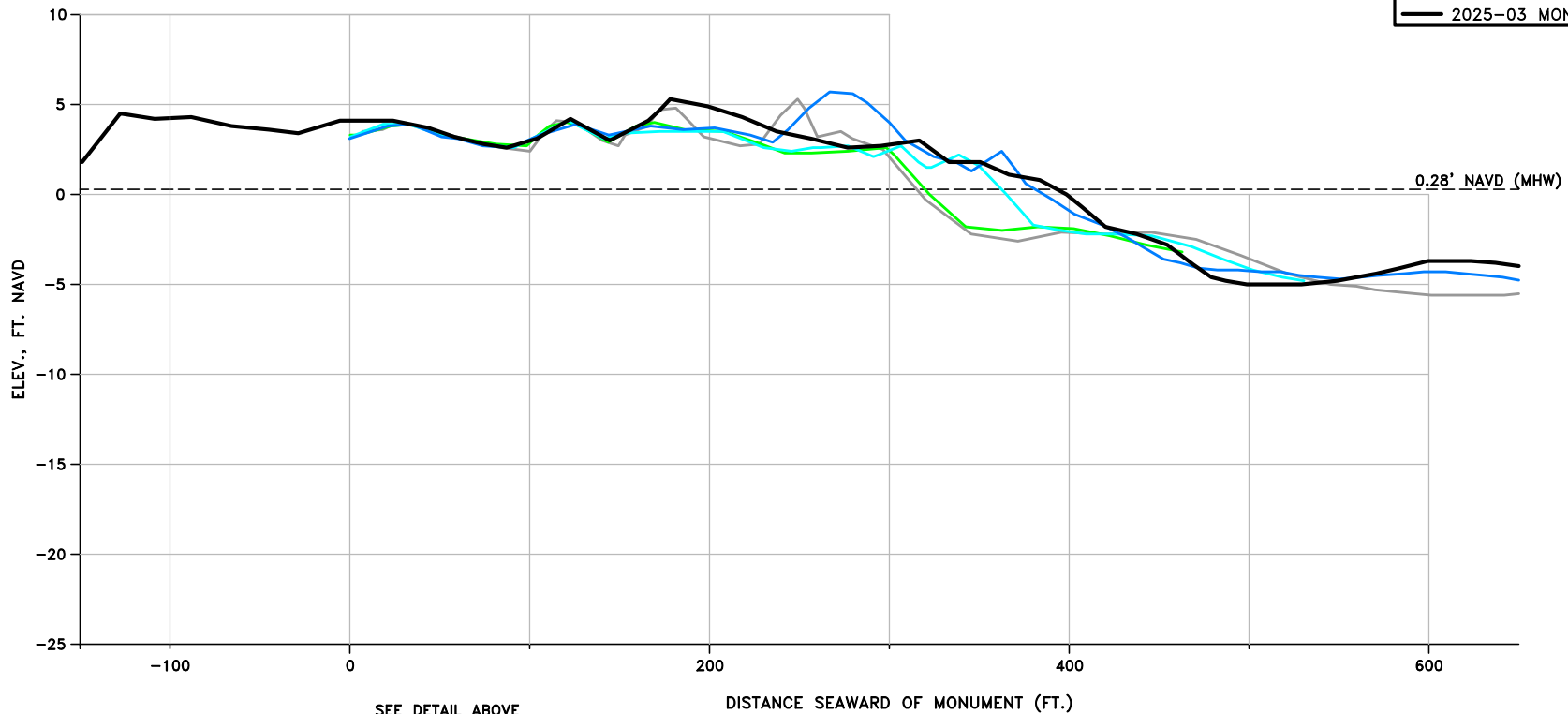


SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
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BEACH PROFILE R-165

NEARSHORE DETAIL



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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

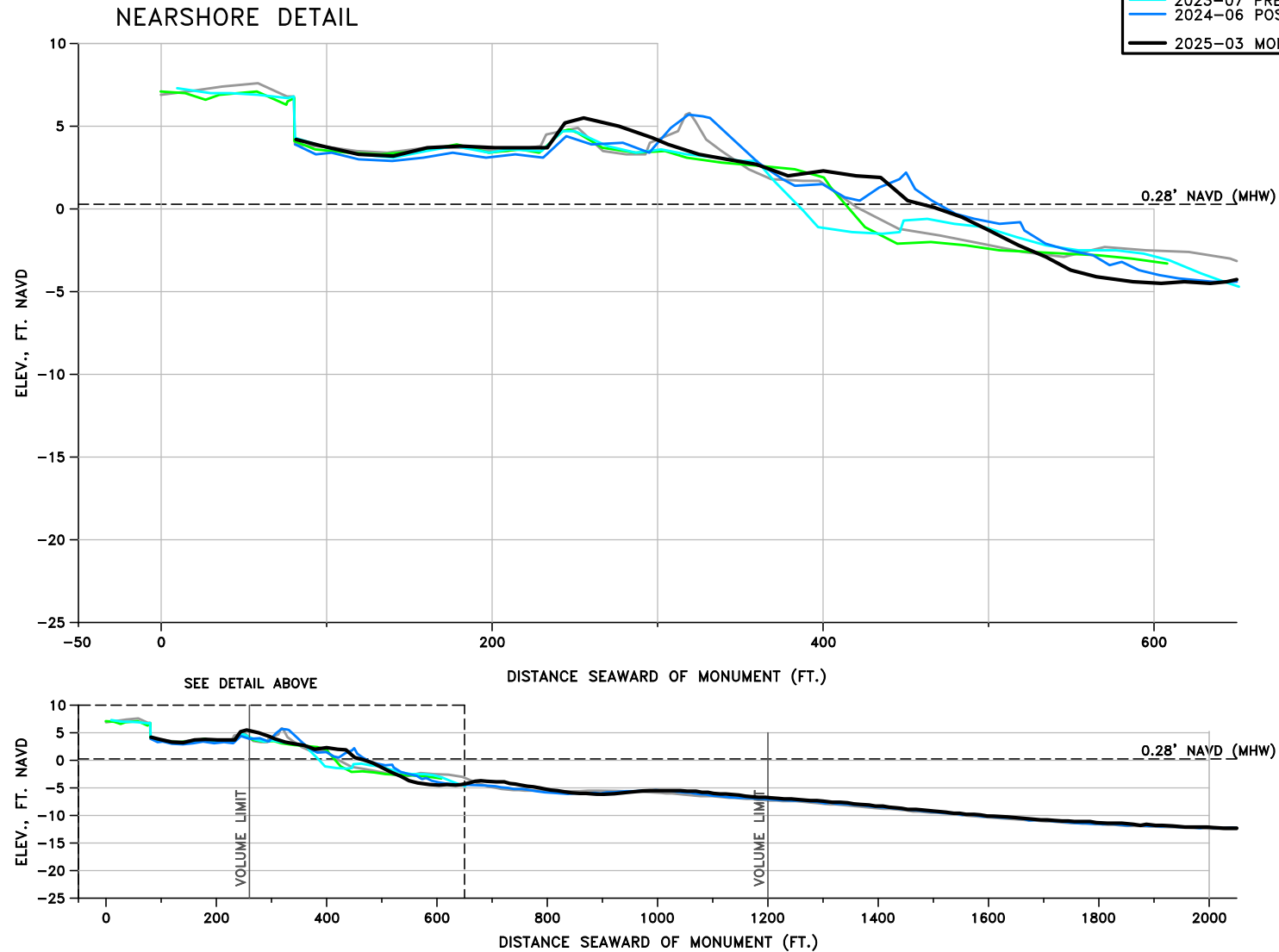
JOB: 27008

DATUM: NAVD

FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
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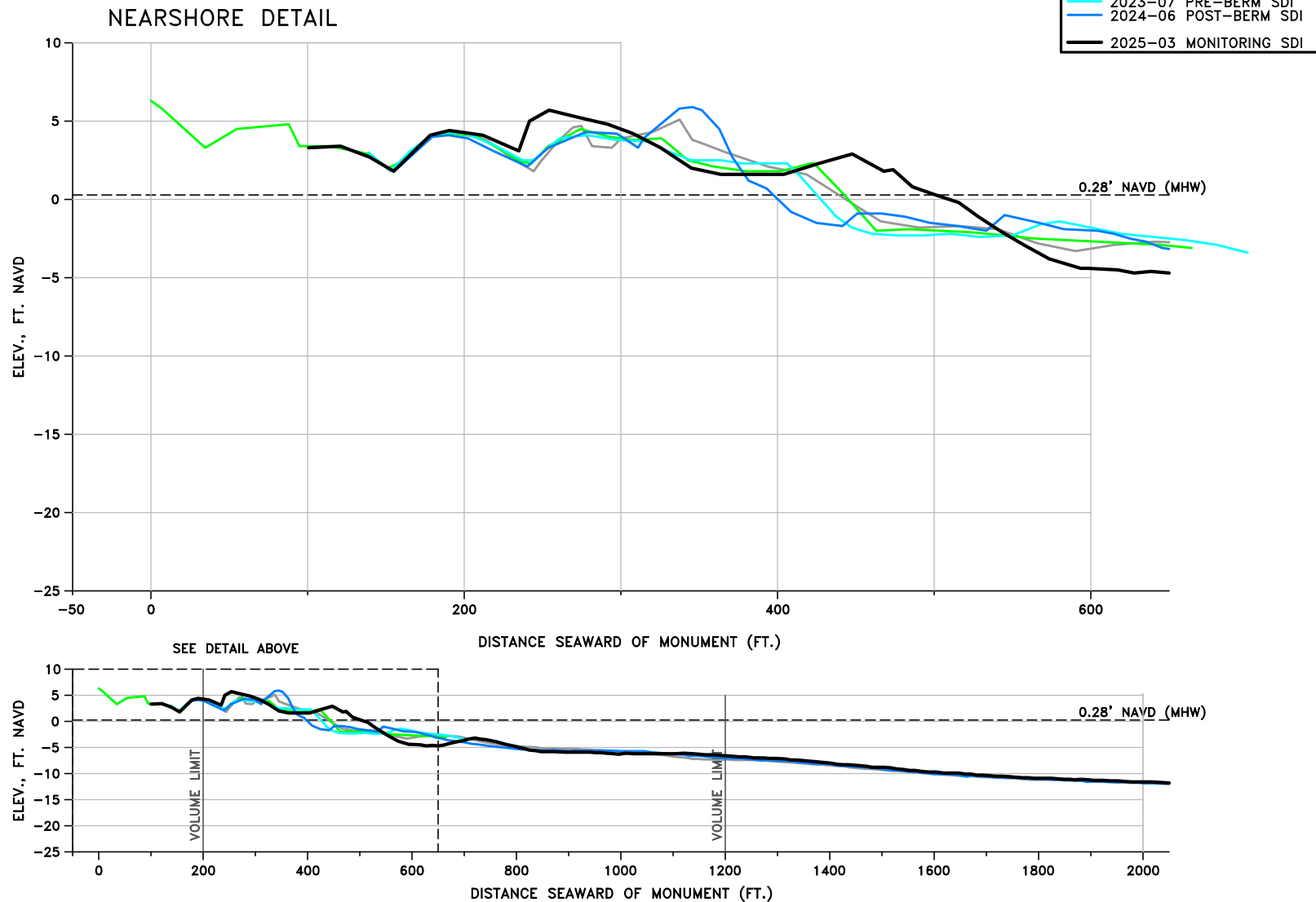
BEACH PROFILE R-166



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
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BEACH PROFILE R-167



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BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

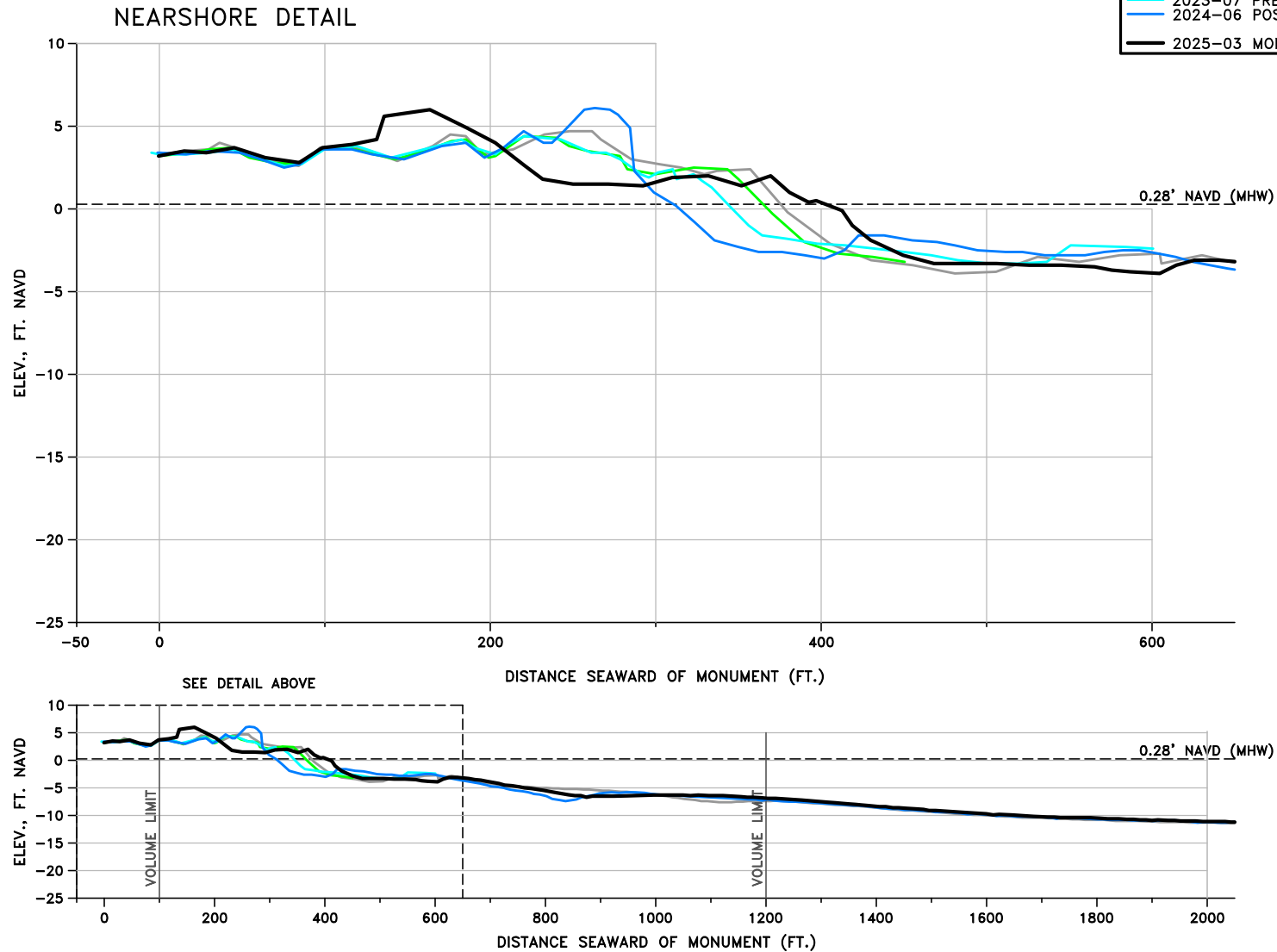
JOB: 27008

DATUM: NAVD

FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
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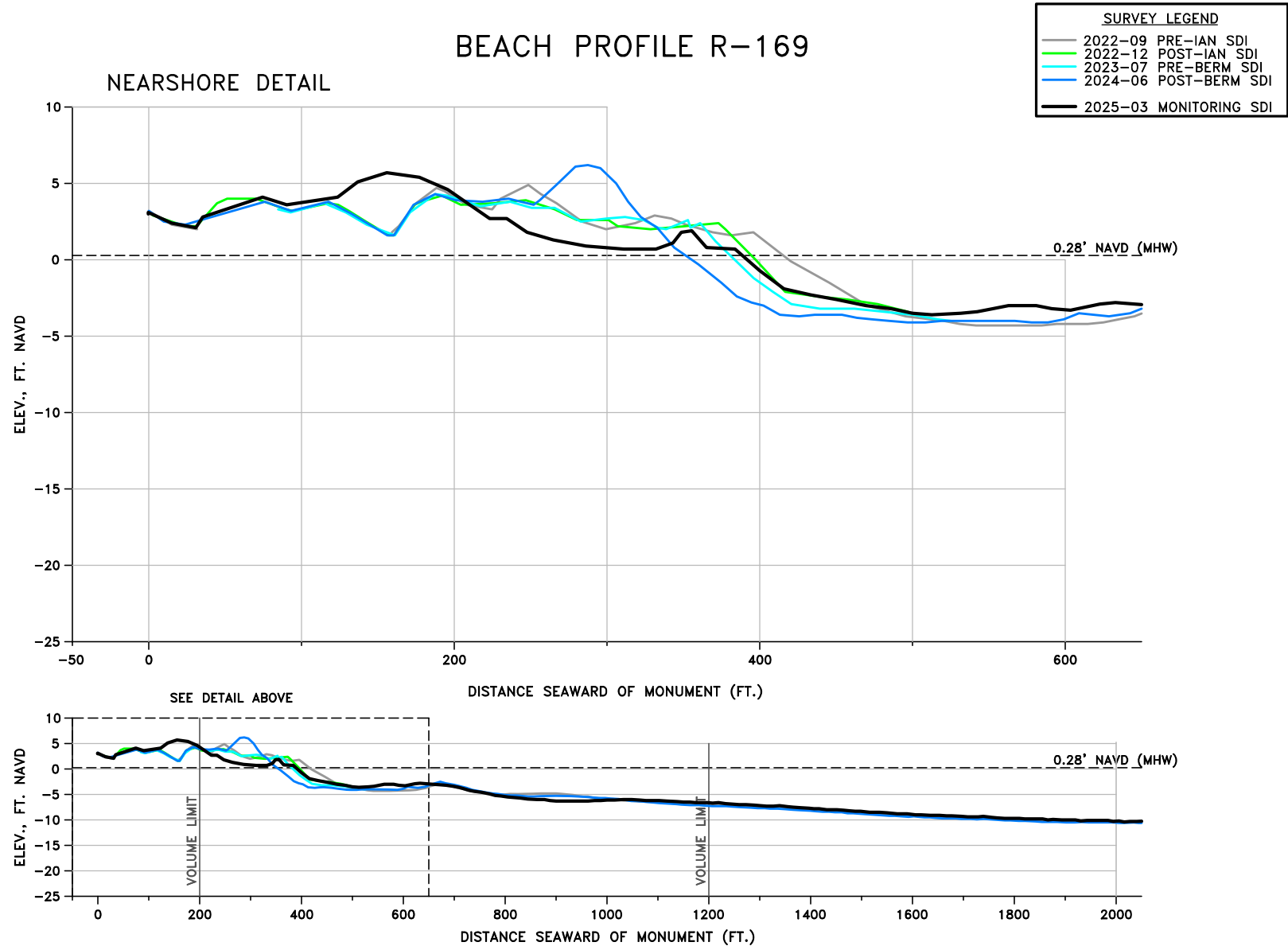
BEACH PROFILE R-168



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
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BEACH PROFILE R-169



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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

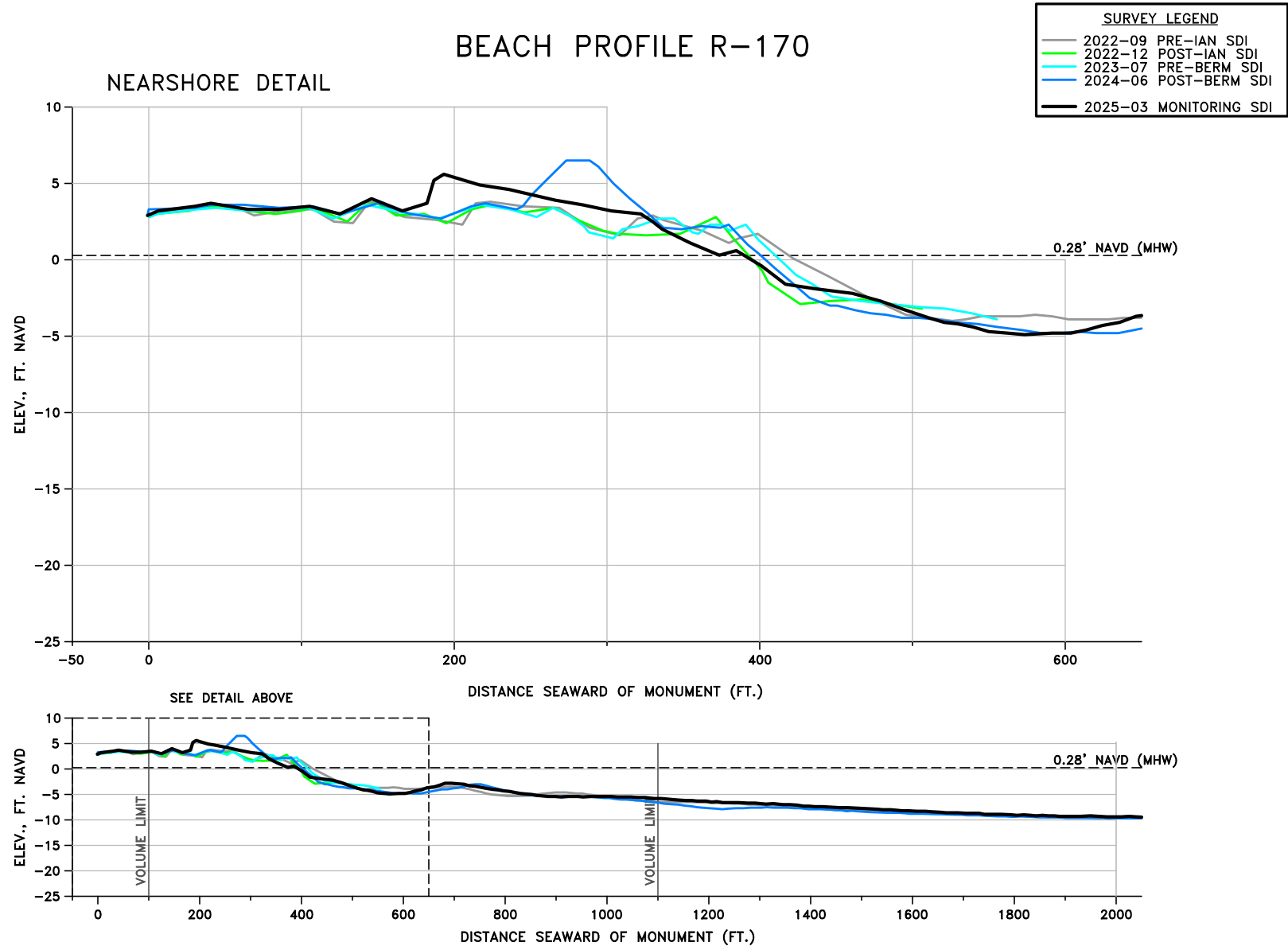
SCALE: SHOWN

JOB: 27008

DATUM: NAVD

FIGURE:

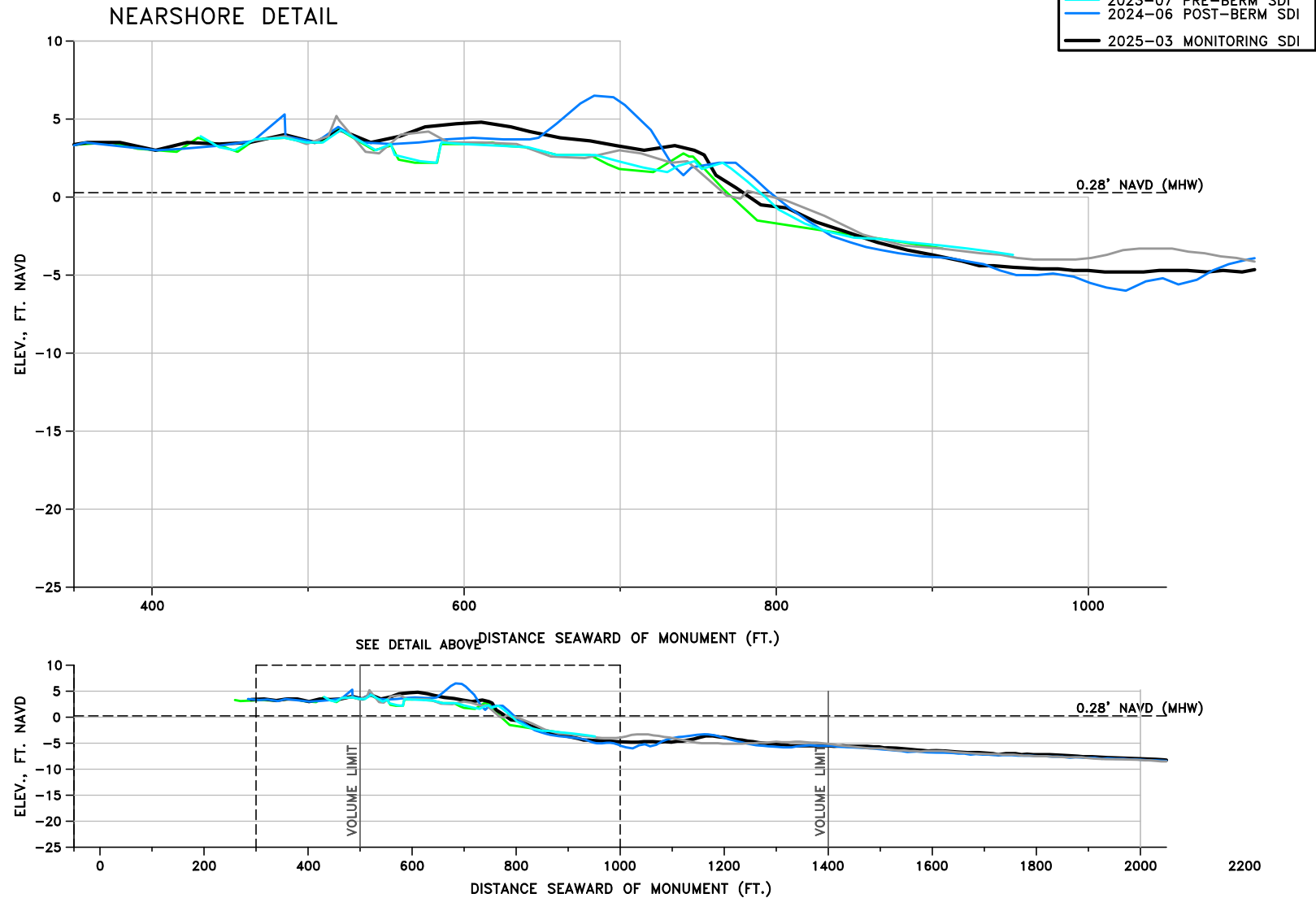
5679 STRAND COURT
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SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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BEACH PROFILE R-171



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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

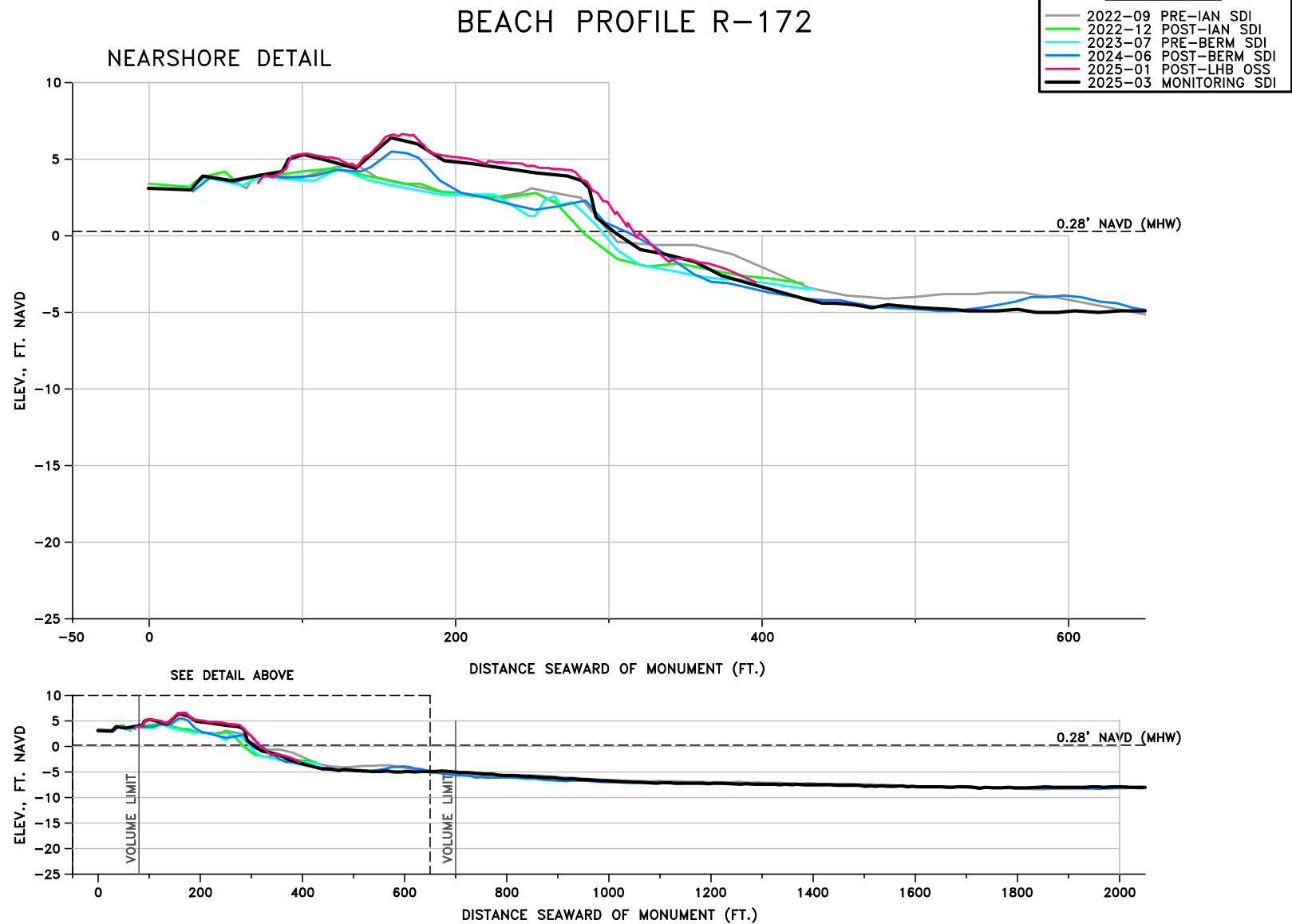
SCALE: SHOWN

JOB: 27008

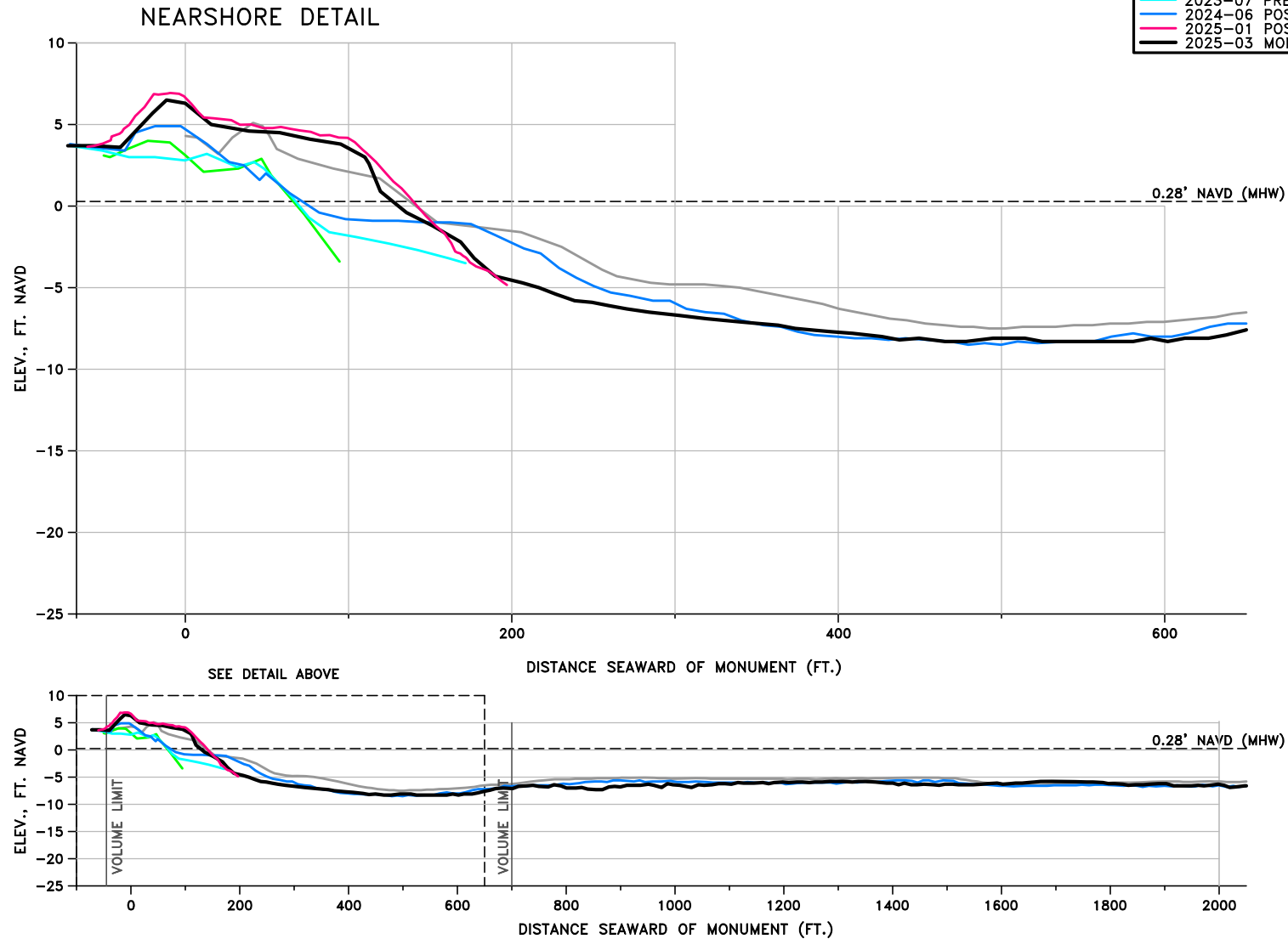
DATUM: NAVD

FIGURE:

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BEACH PROFILE R-173



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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

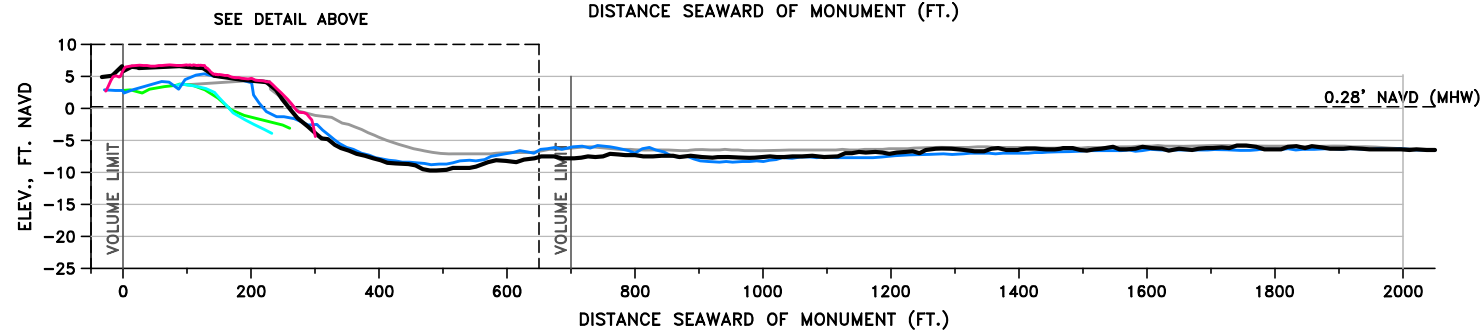
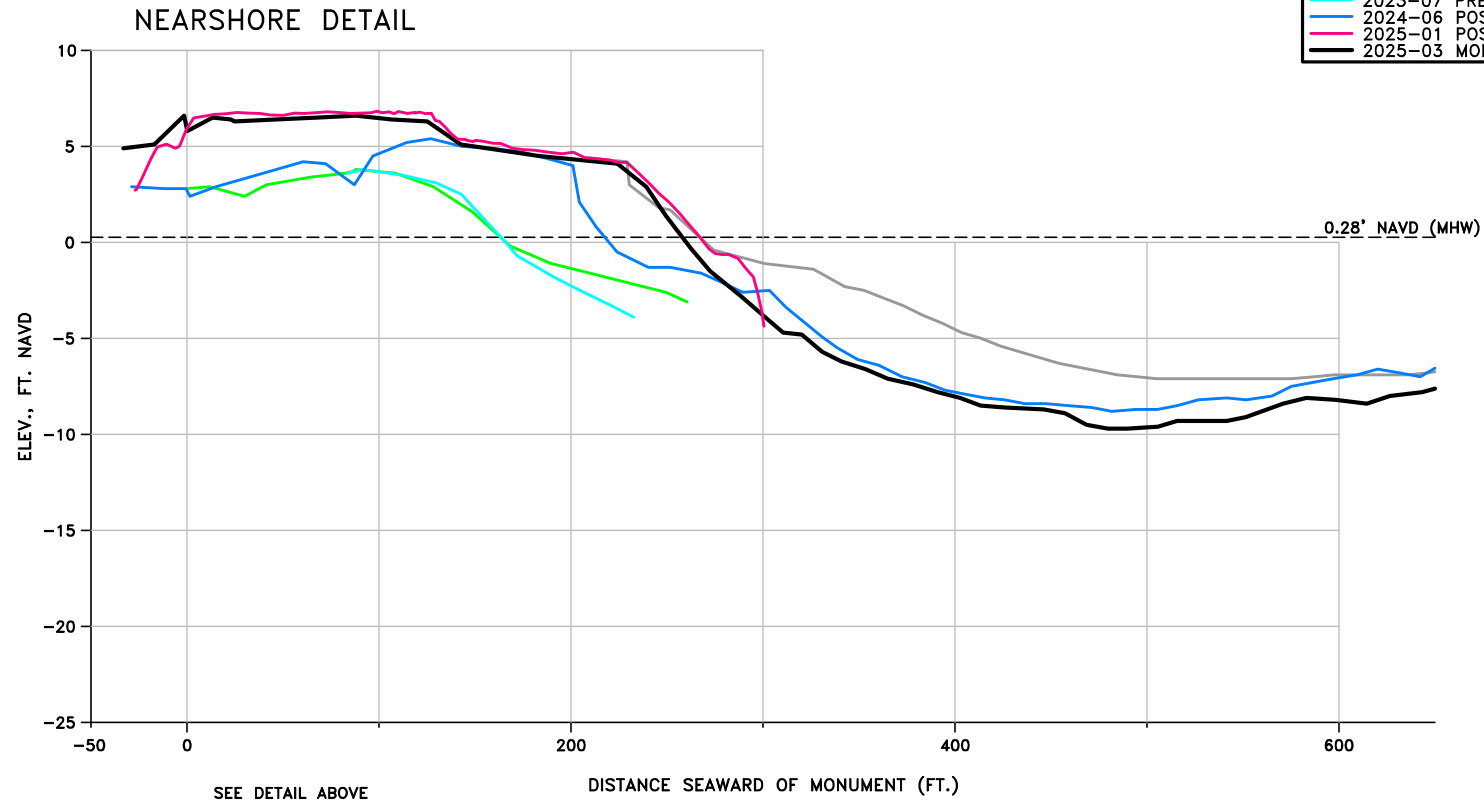
JOB: 27008

DATUM: NAVD

FIGURE:

5679 STRAND COURT
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BEACH PROFILE R-174 (140°)



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FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

JOB: 27008

DATUM: NAVD

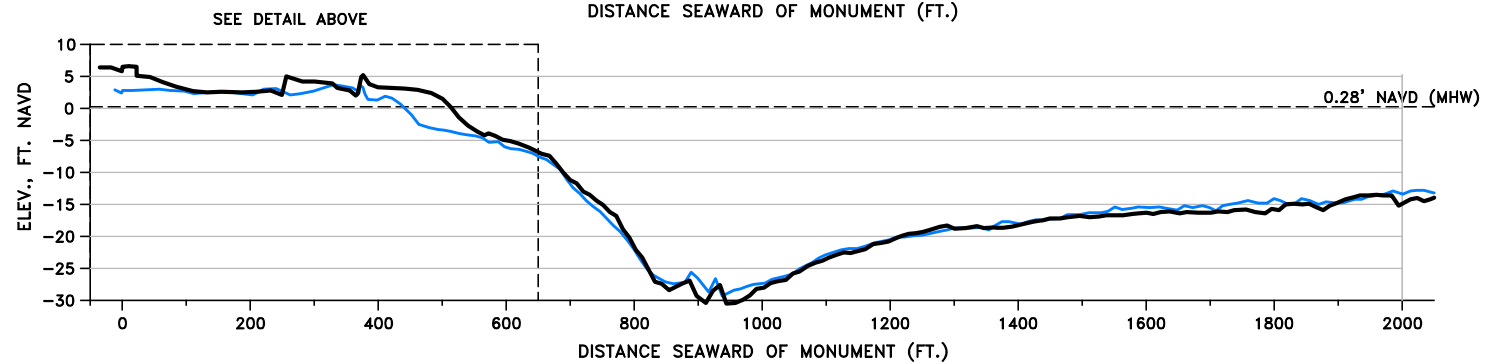
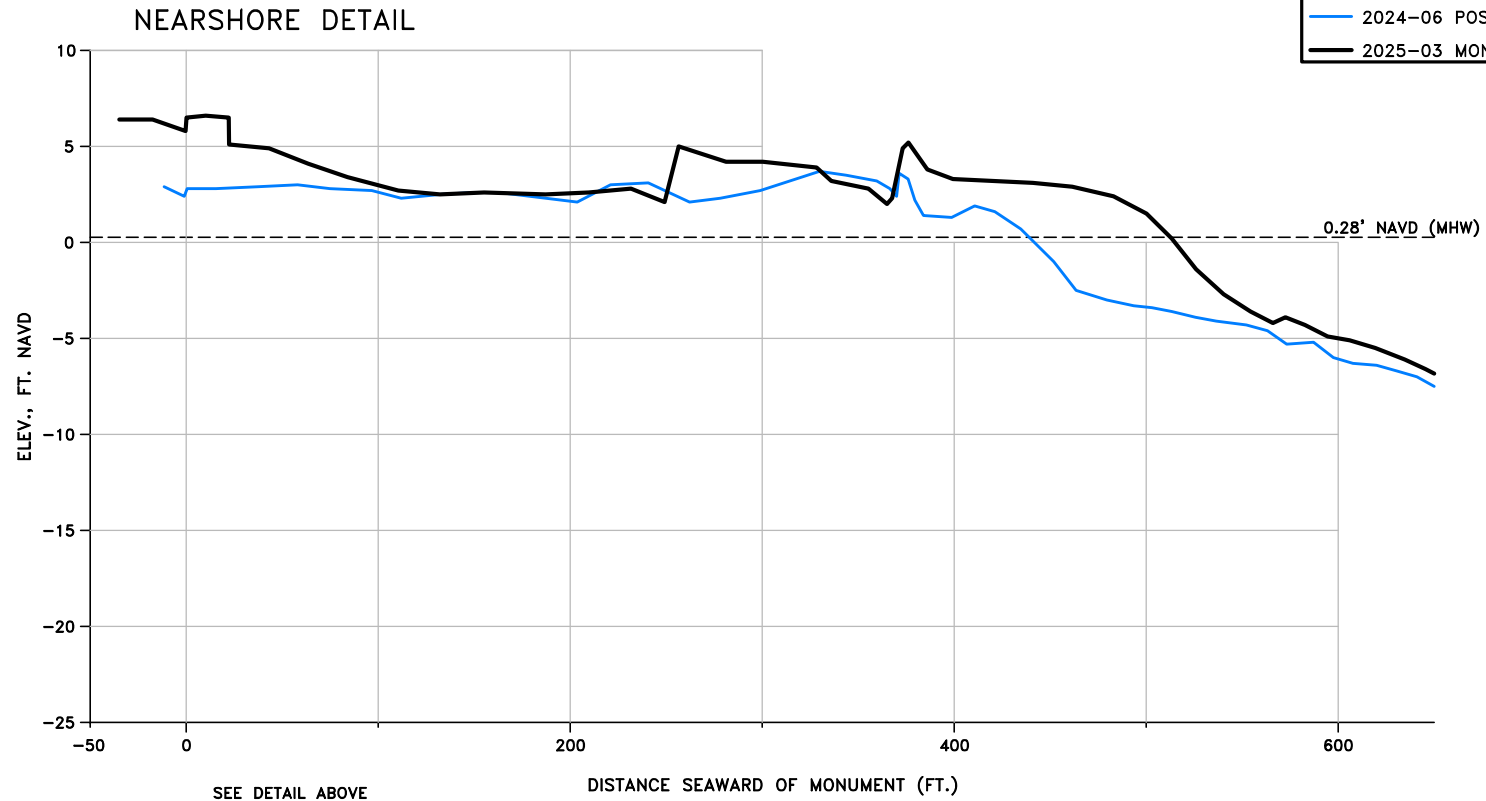
FIGURE:

5679 STRAND COURT
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BEACH PROFILE R-174 (0°)

SURVEY LEGEND

2024-06 POST-BERM SDI
2025-03 MONITORING SDI



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JOB: 27008

FILE: SECTION

DATUM: NAVD

SCALE: SHOWN

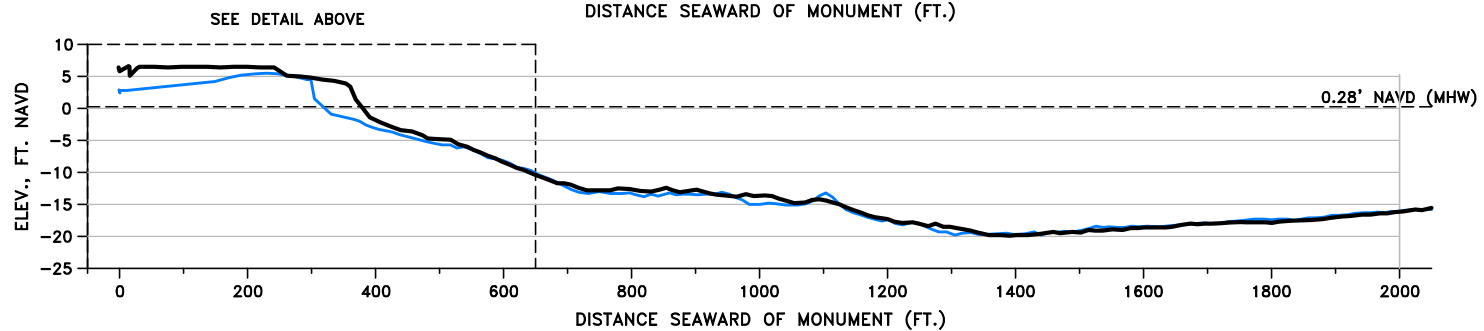
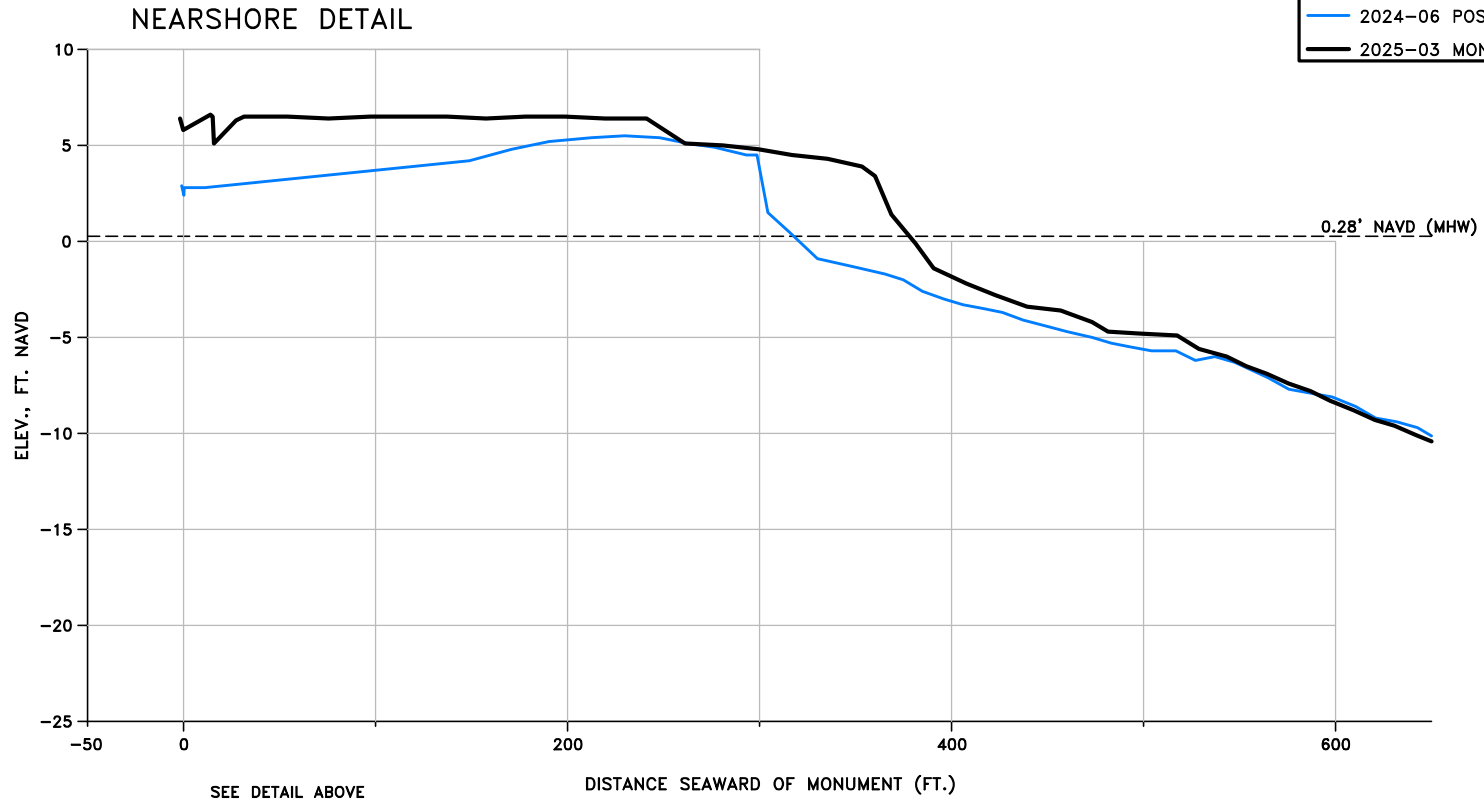
FIGURE:

5679 STRAND COURT
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BEACH PROFILE R-174 (45°)

SURVEY LEGEND

- 2024-06 POST-BERM SDI
- 2025-03 MONITORING SDI



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FOR: CITY OF SANIBEL

DATE: 3/25/25

JOB: 27008

FILE: SECTION

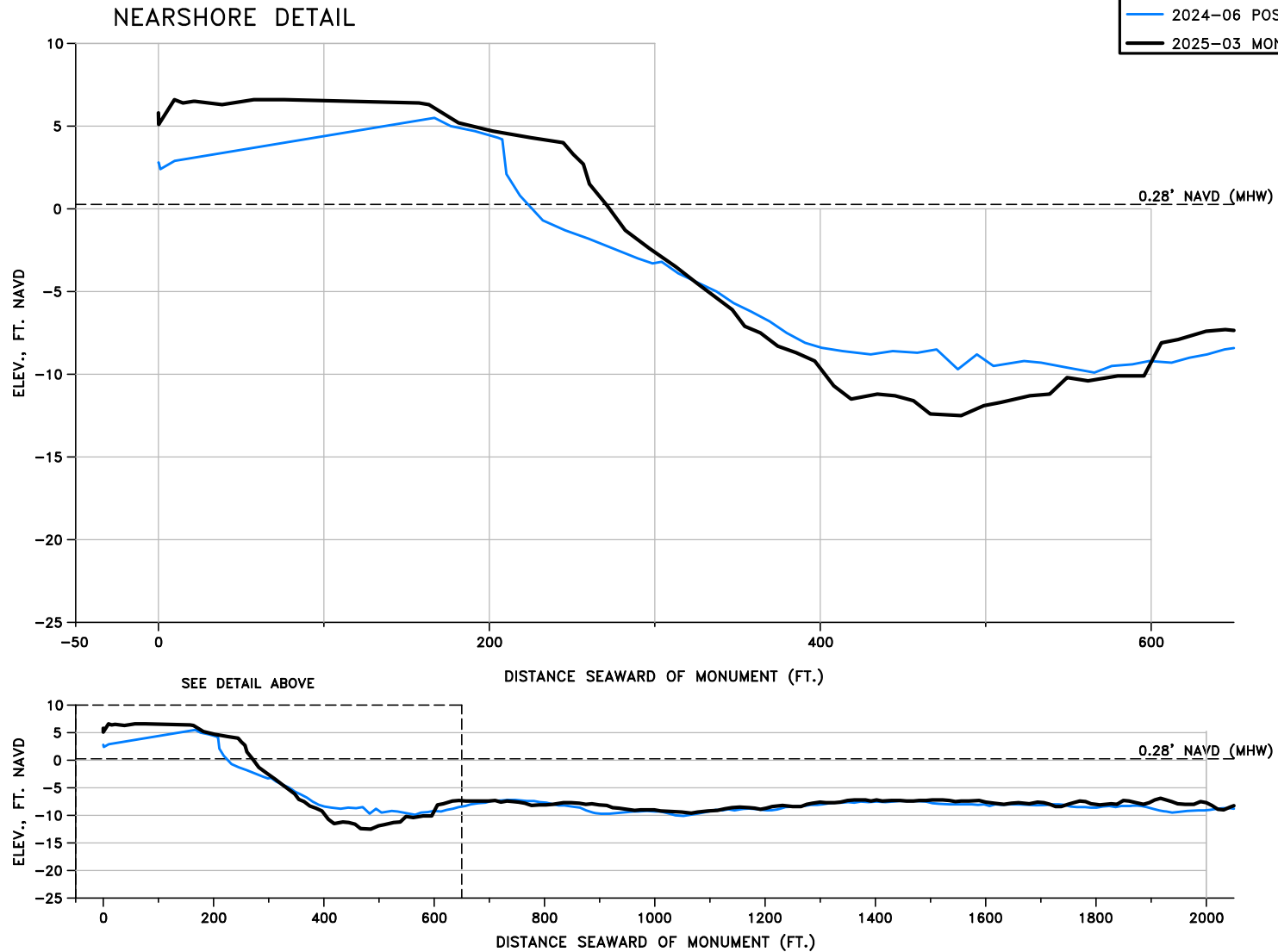
DATUM: NAVD

SCALE: SHOWN

FIGURE:

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BEACH PROFILE R-174 (90°)



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FOR: CITY OF SANIBEL

DATE: 3/25/25

JOB: 27008

FILE: SECTION

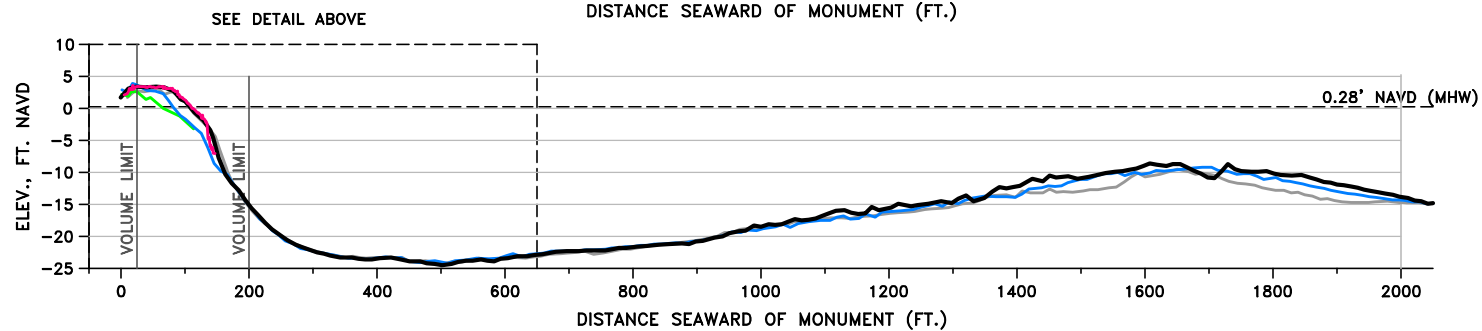
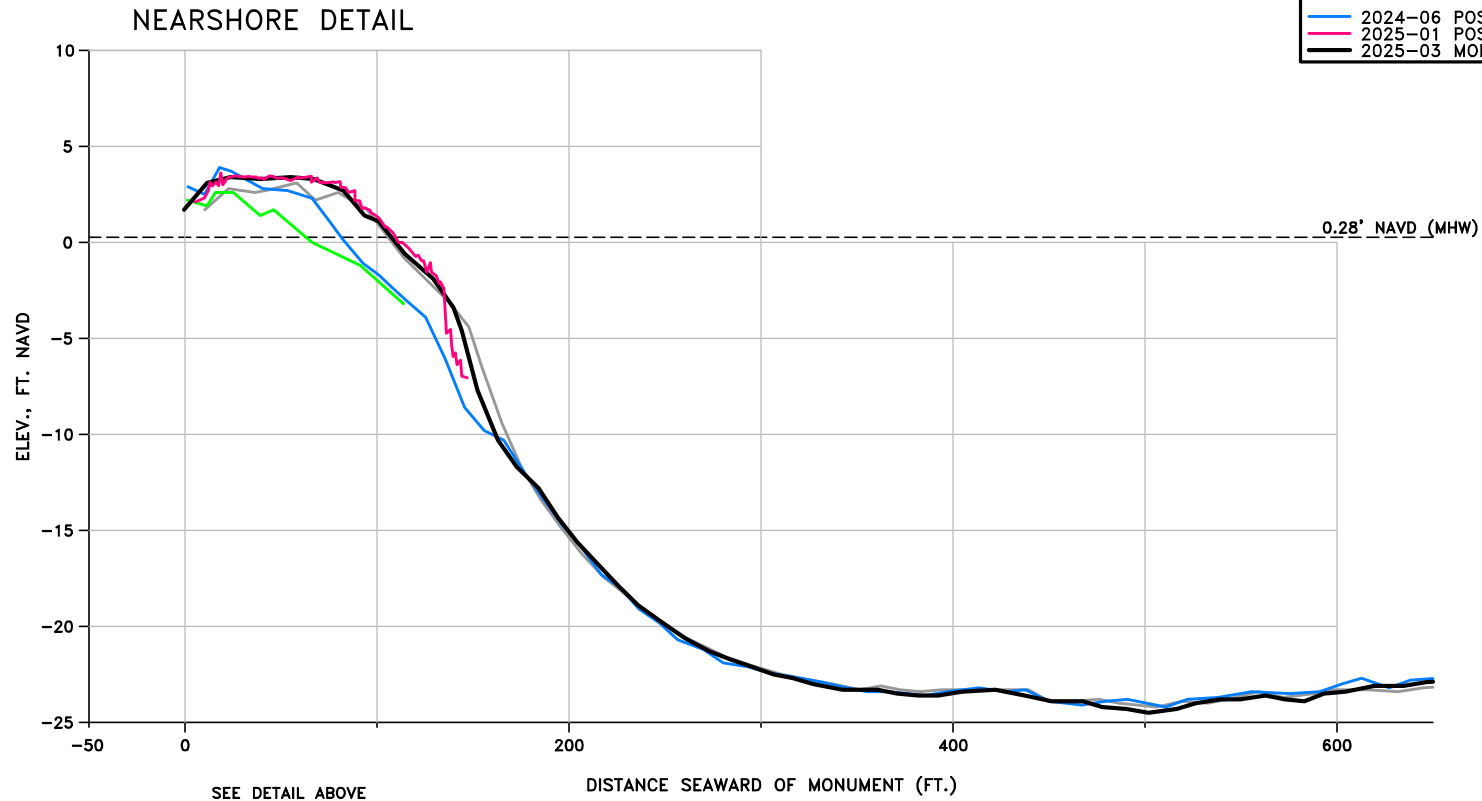
DATUM: NAVD

SCALE: SHOWN

FIGURE:

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BEACH PROFILE BAY-1



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FOR: CITY OF SANIBEL

DATE: 3/25/25

JOB: 27008

FILE: SECTION

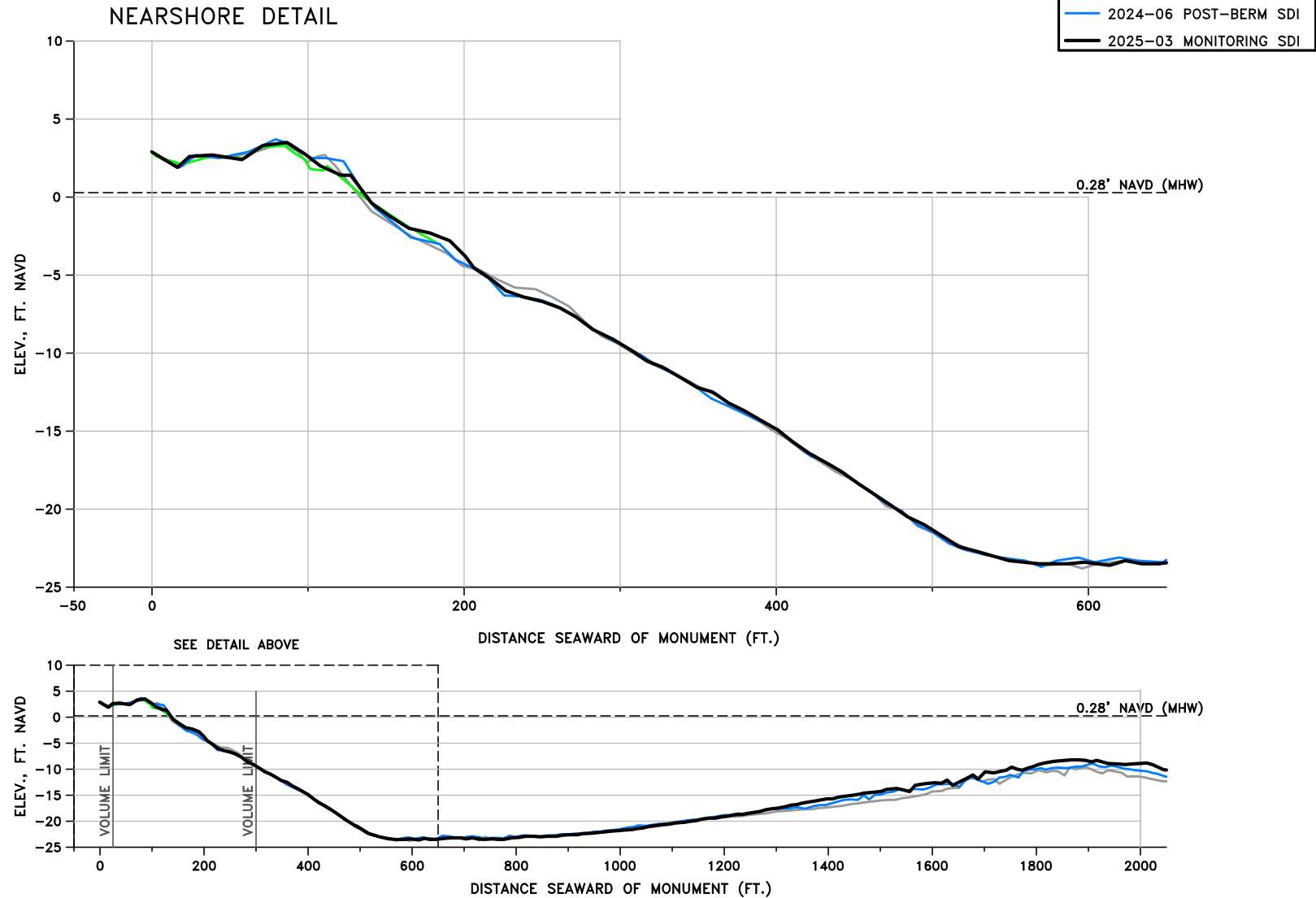
DATUM: NAVD

SCALE: SHOWN

FIGURE:

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BEACH PROFILE BAY-2



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FILE: SECTION

SCALE: SHOWN

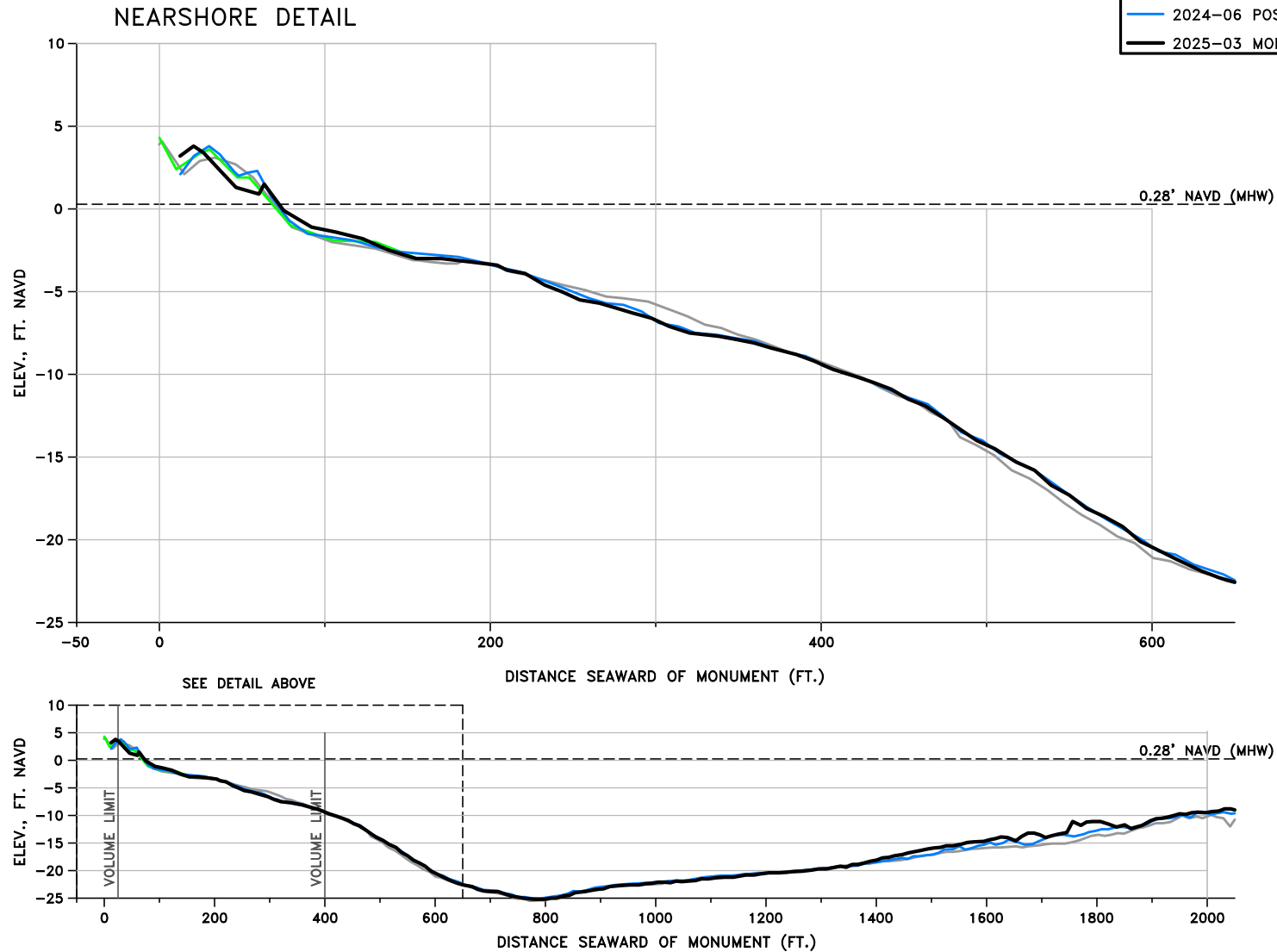
JOB: 27008

DATUM: NAVD

FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
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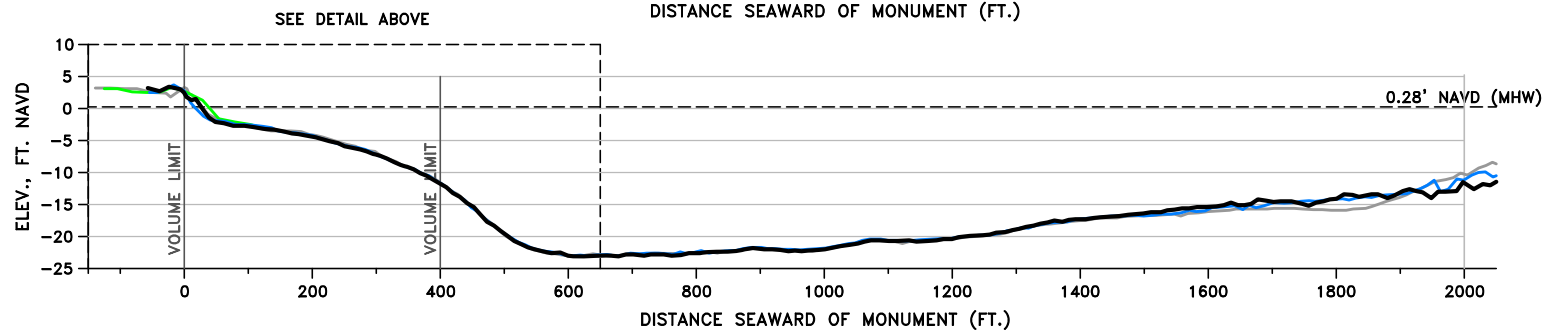
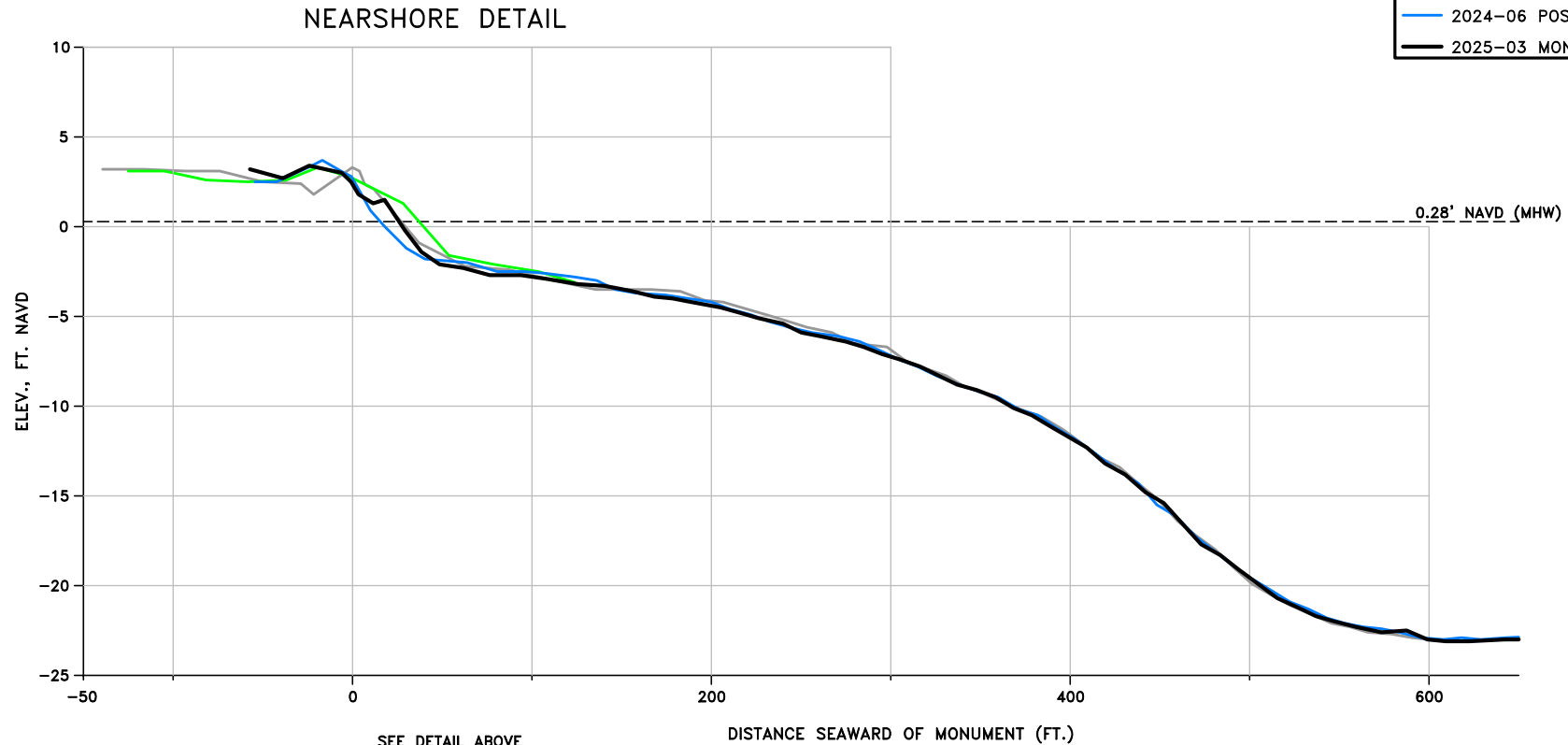
BEACH PROFILE BAY-3



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
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BEACH PROFILE BAY-4



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SANIBEL ISLAND
BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

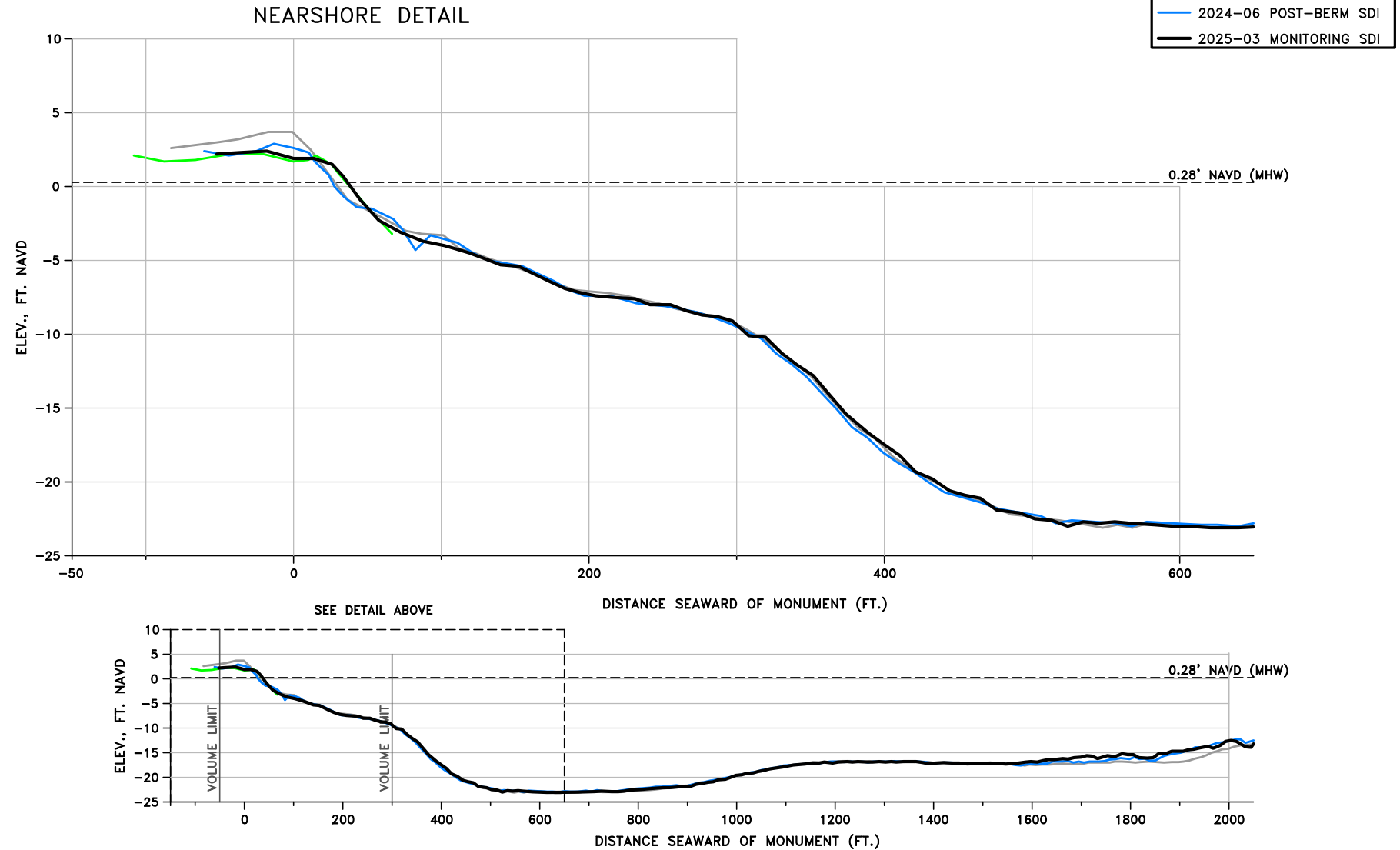
JOB: 27008

DATUM: NAVD

FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
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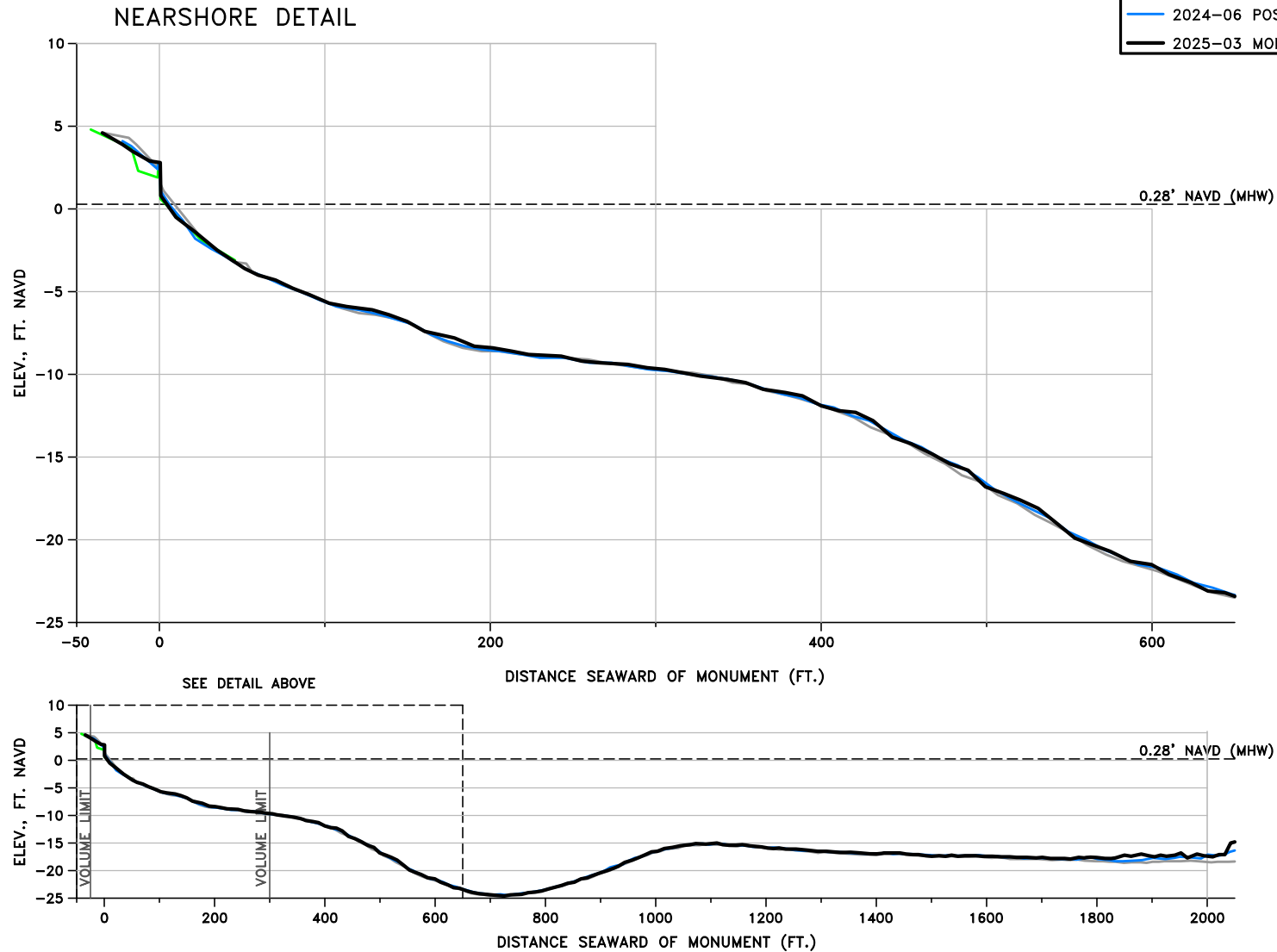
BEACH PROFILE BAY-5



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
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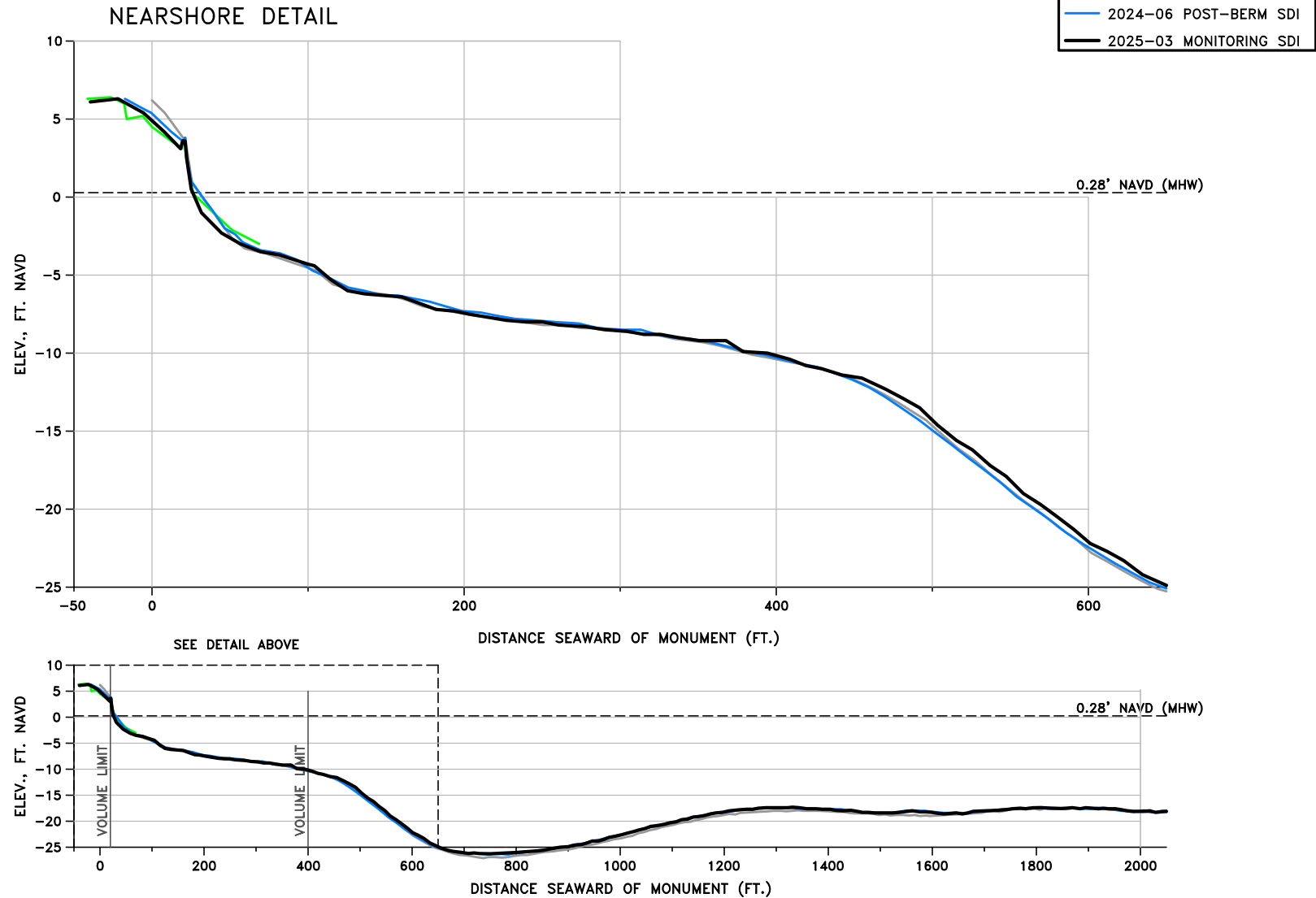
BEACH PROFILE BAY-5A



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
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BEACH PROFILE BAY-6



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BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

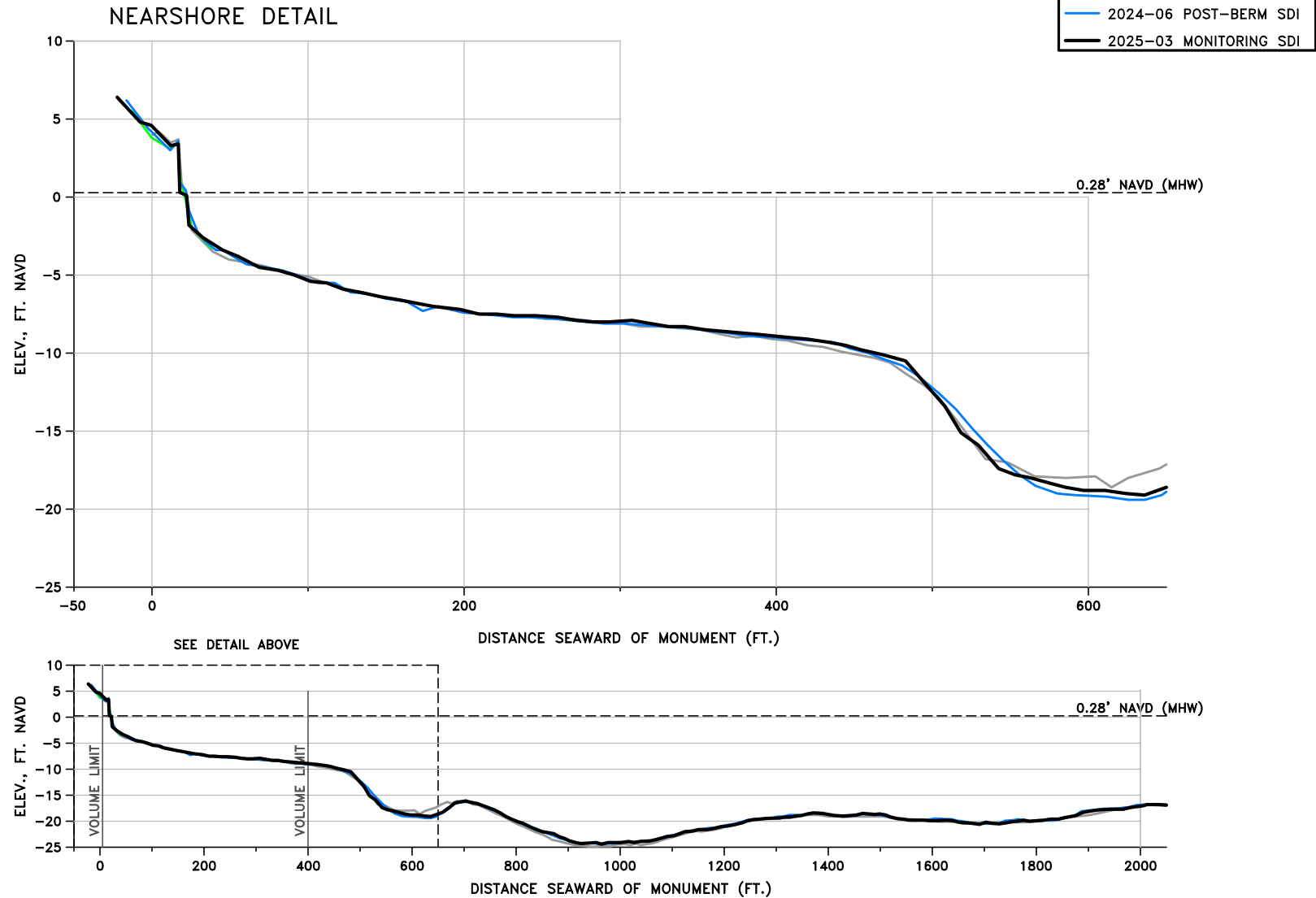
JOB: 27008

DATUM: NAVD

FIGURE:

5679 STRAND COURT
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BEACH PROFILE BAY-7



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SANIBEL ISLAND
BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 3/25/25

JOB: 27008

FILE: SECTION

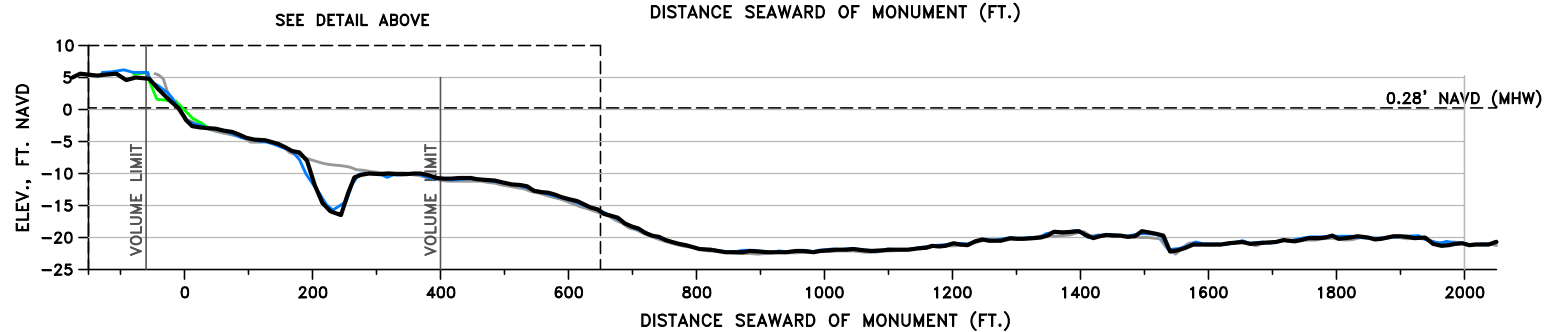
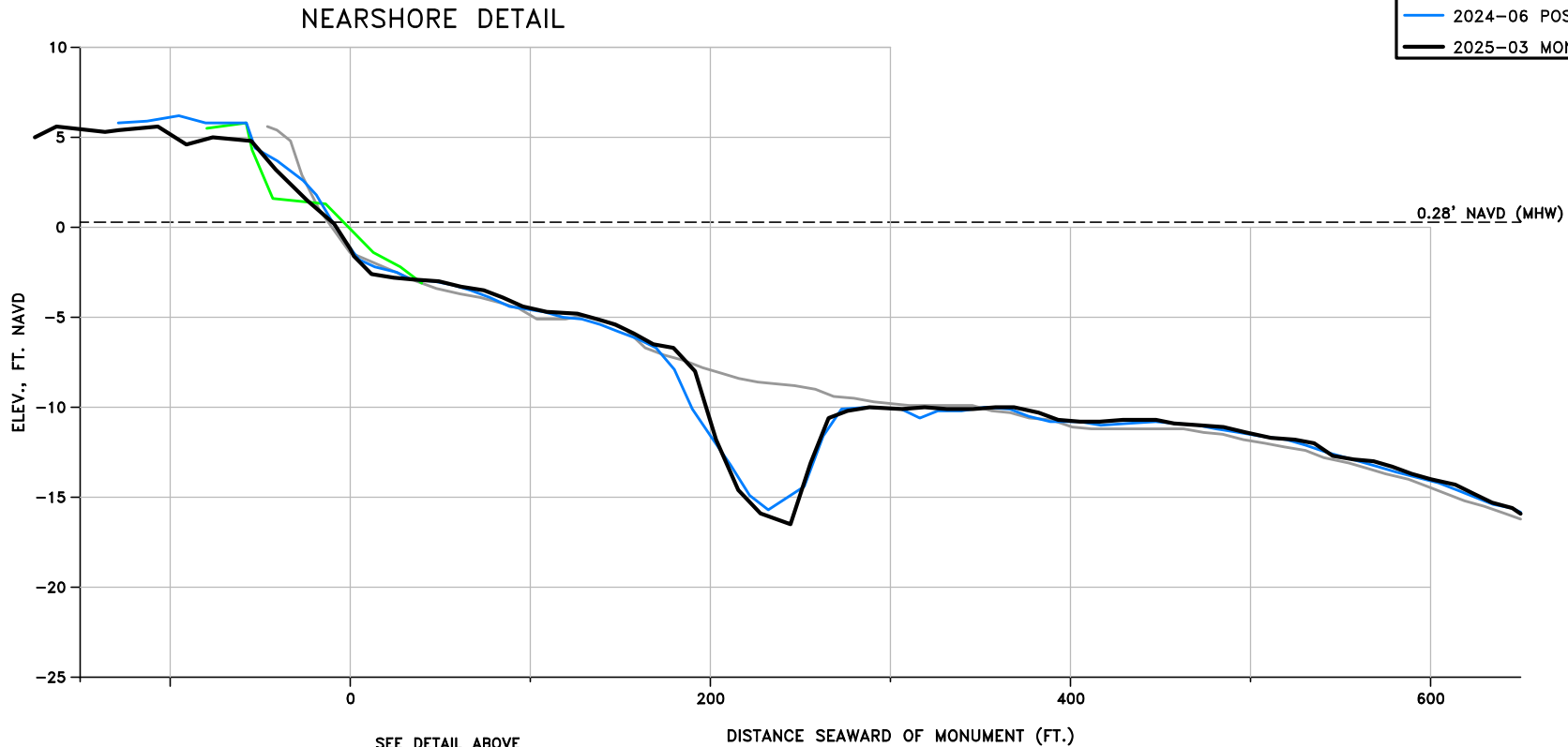
DATUM: NAVD

SCALE: SHOWN

FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
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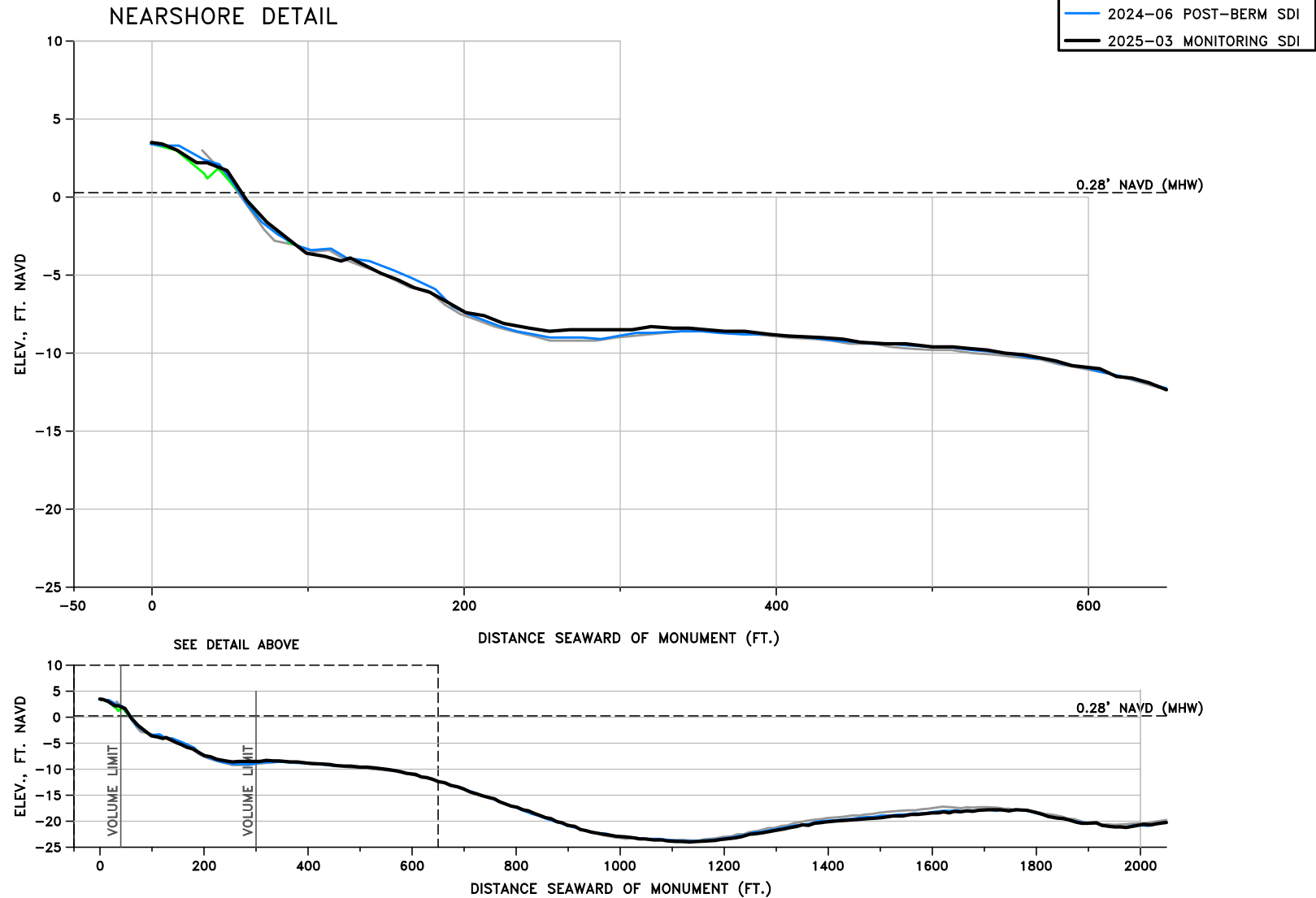
BEACH PROFILE BAY-8



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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BEACH PROFILE BAY-9



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SANIBEL ISLAND
BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 3/25/25

JOB: 27008

FILE: SECTION

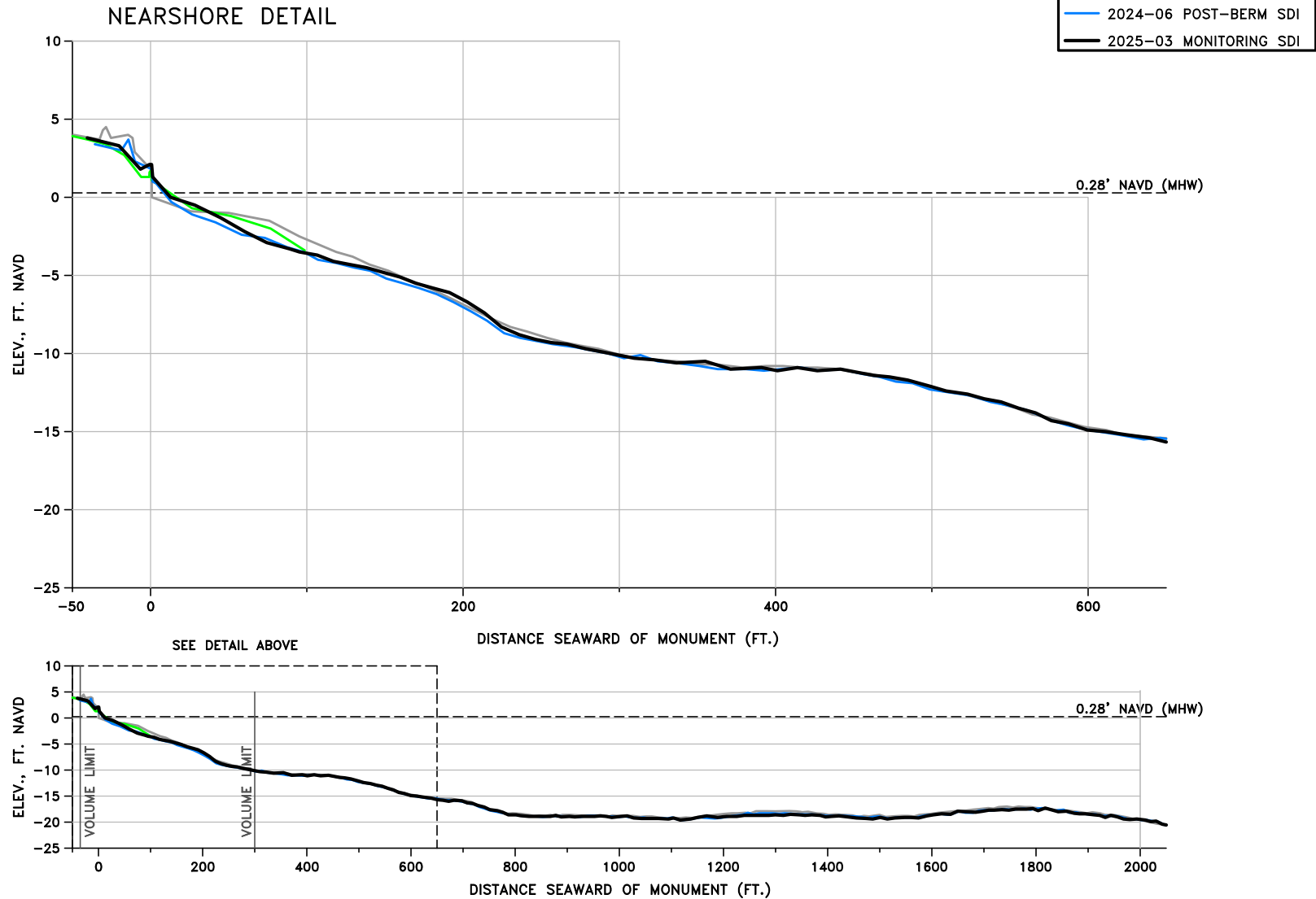
DATUM: NAVD

SCALE: SHOWN

FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
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BEACH PROFILE BAY-10



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SANIBEL ISLAND
BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

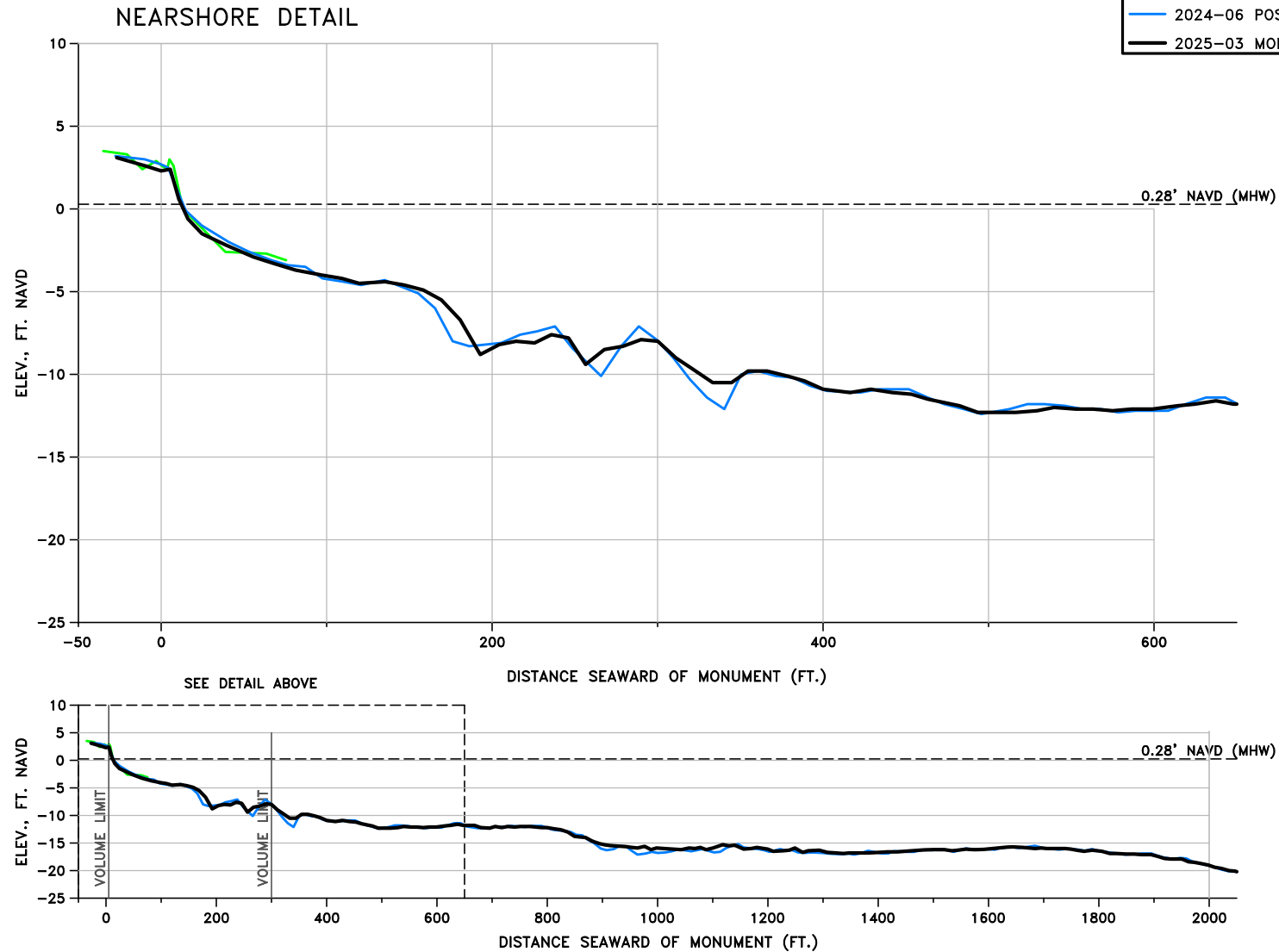
JOB: 27008

DATUM: NAVD

FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
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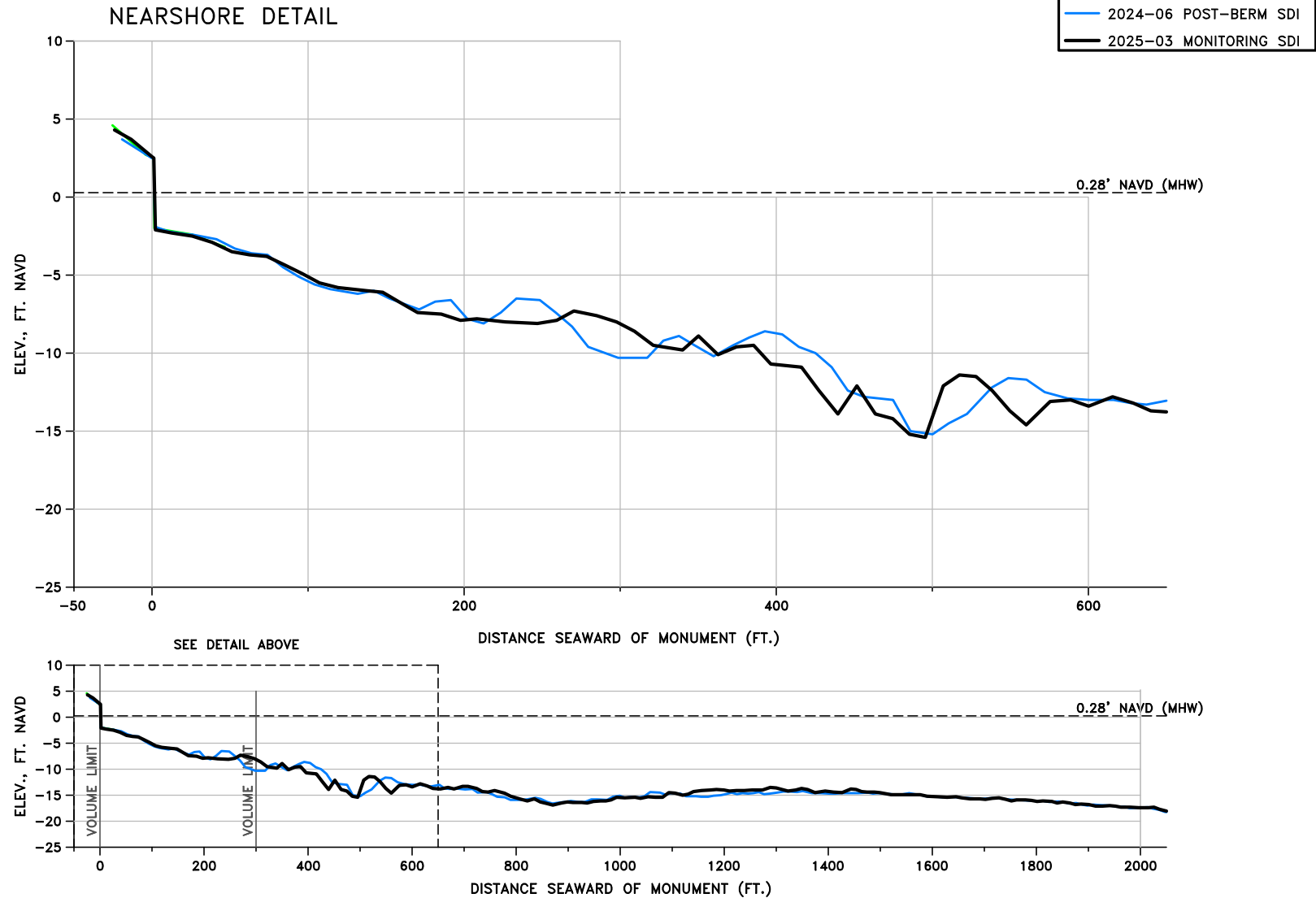
BEACH PROFILE BAY-11



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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BEACH PROFILE BAY-12



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SANIBEL ISLAND
BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 3/25/25

JOB: 27008

FILE: SECTION

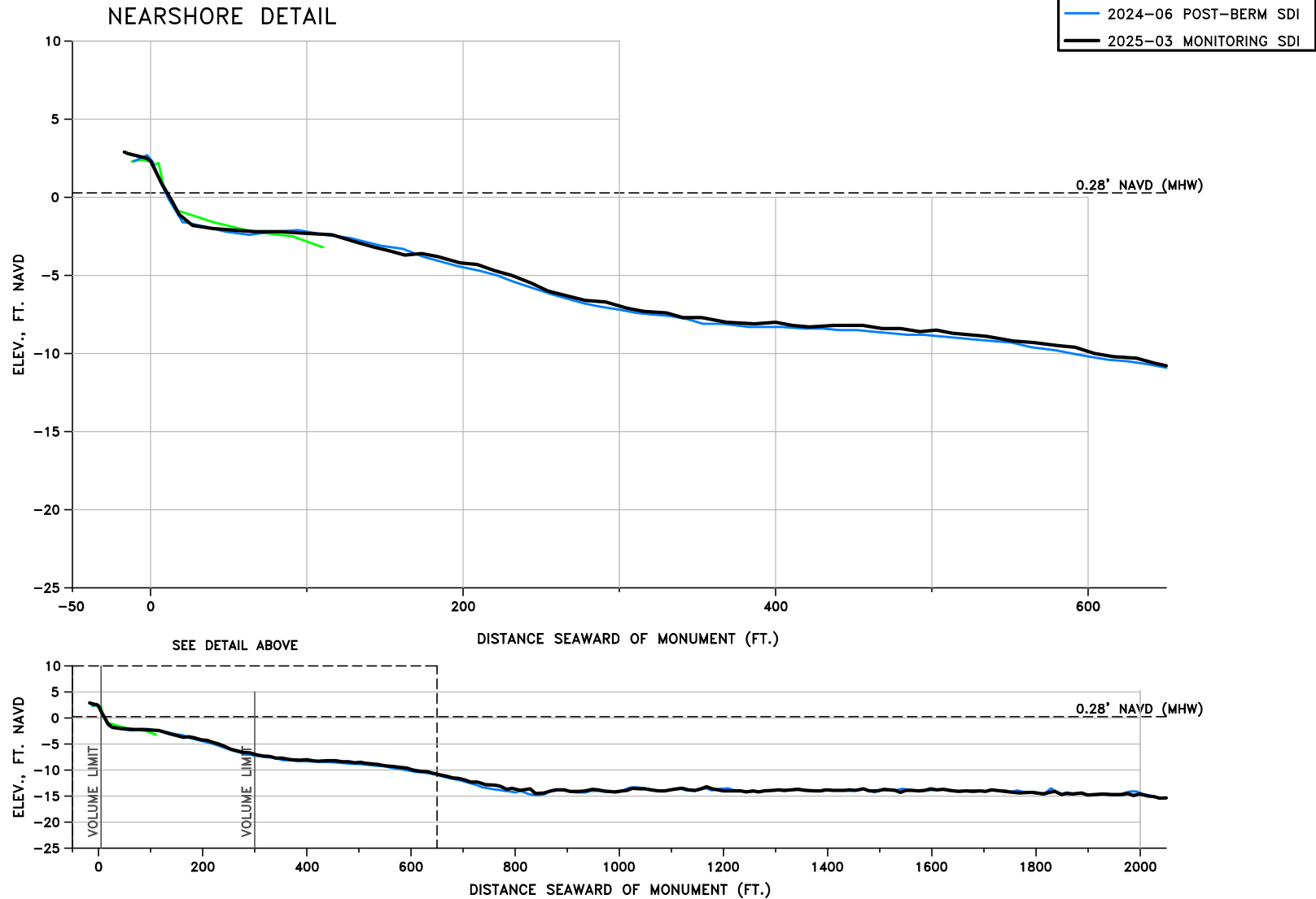
DATUM: NAVD

SCALE: SHOWN

FIGURE:

5679 STRAND COURT
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BEACH PROFILE BAY-13



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SANIBEL ISLAND
BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

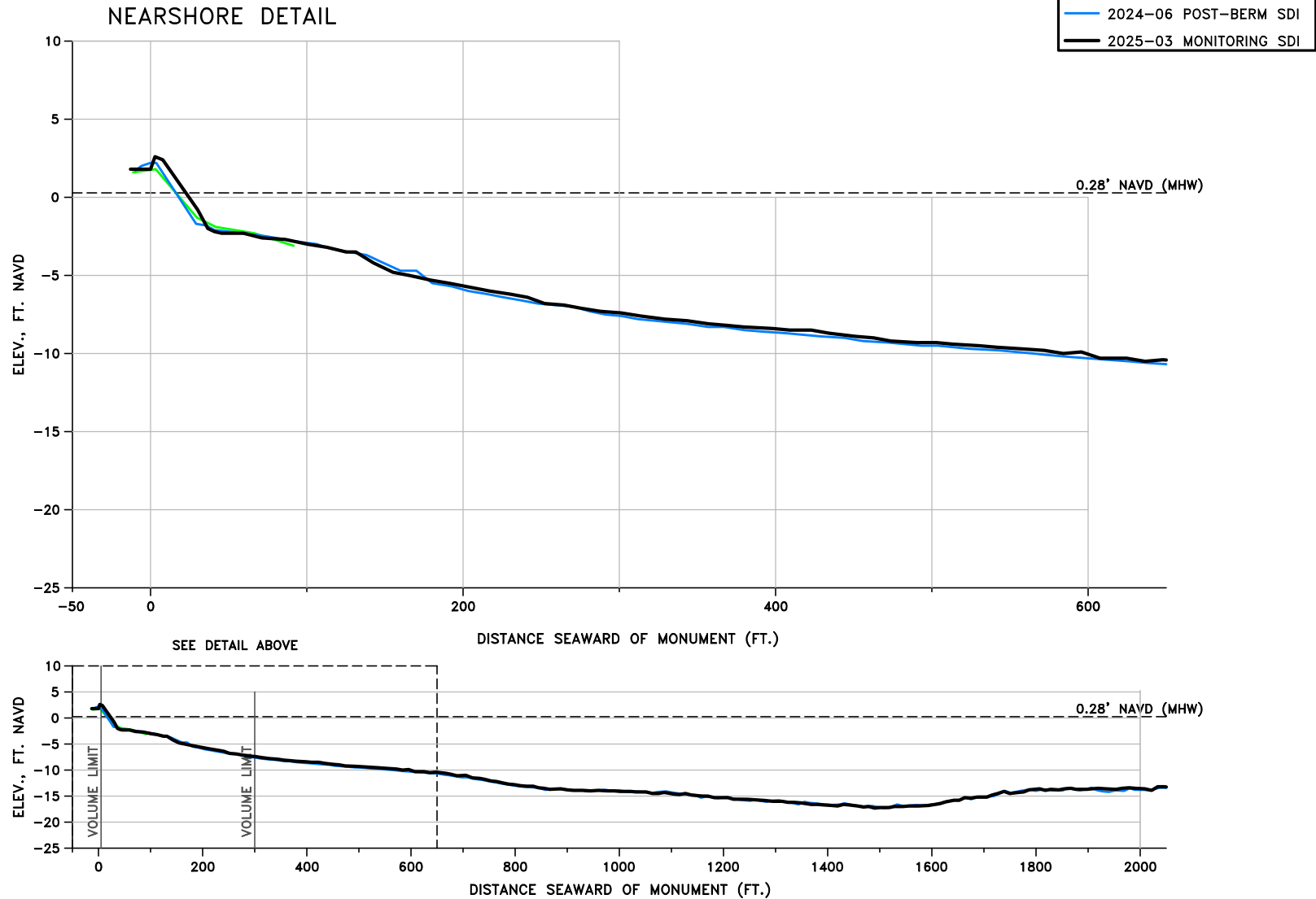
JOB: 27008

DATUM: NAVD

FIGURE:

5679 STRAND COURT
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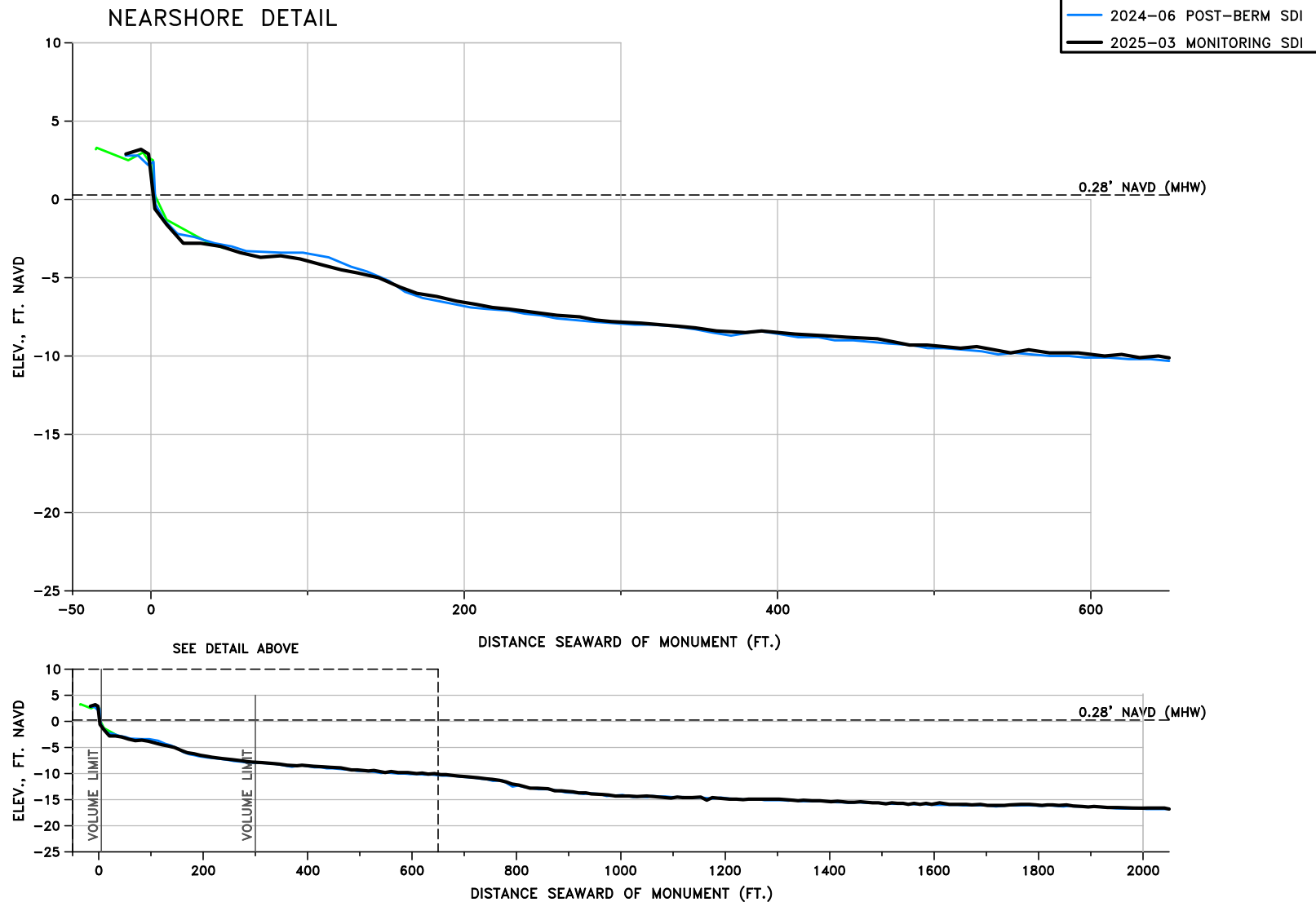
BEACH PROFILE BAY-14



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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BEACH PROFILE BAY-15



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SANIBEL ISLAND
BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 3/25/25

JOB: 27008

FILE: SECTION

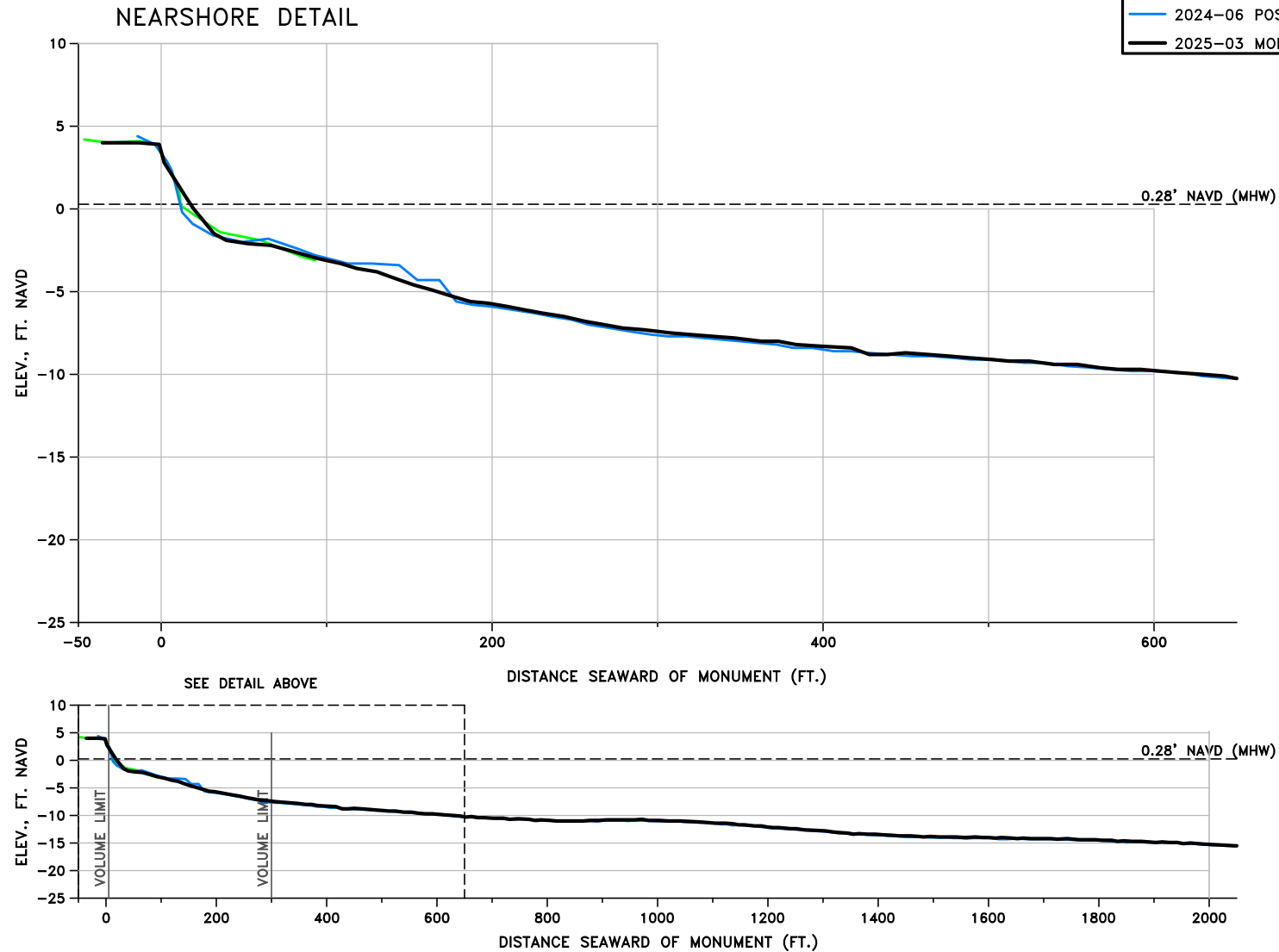
DATUM: NAVD

SCALE: SHOWN

FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
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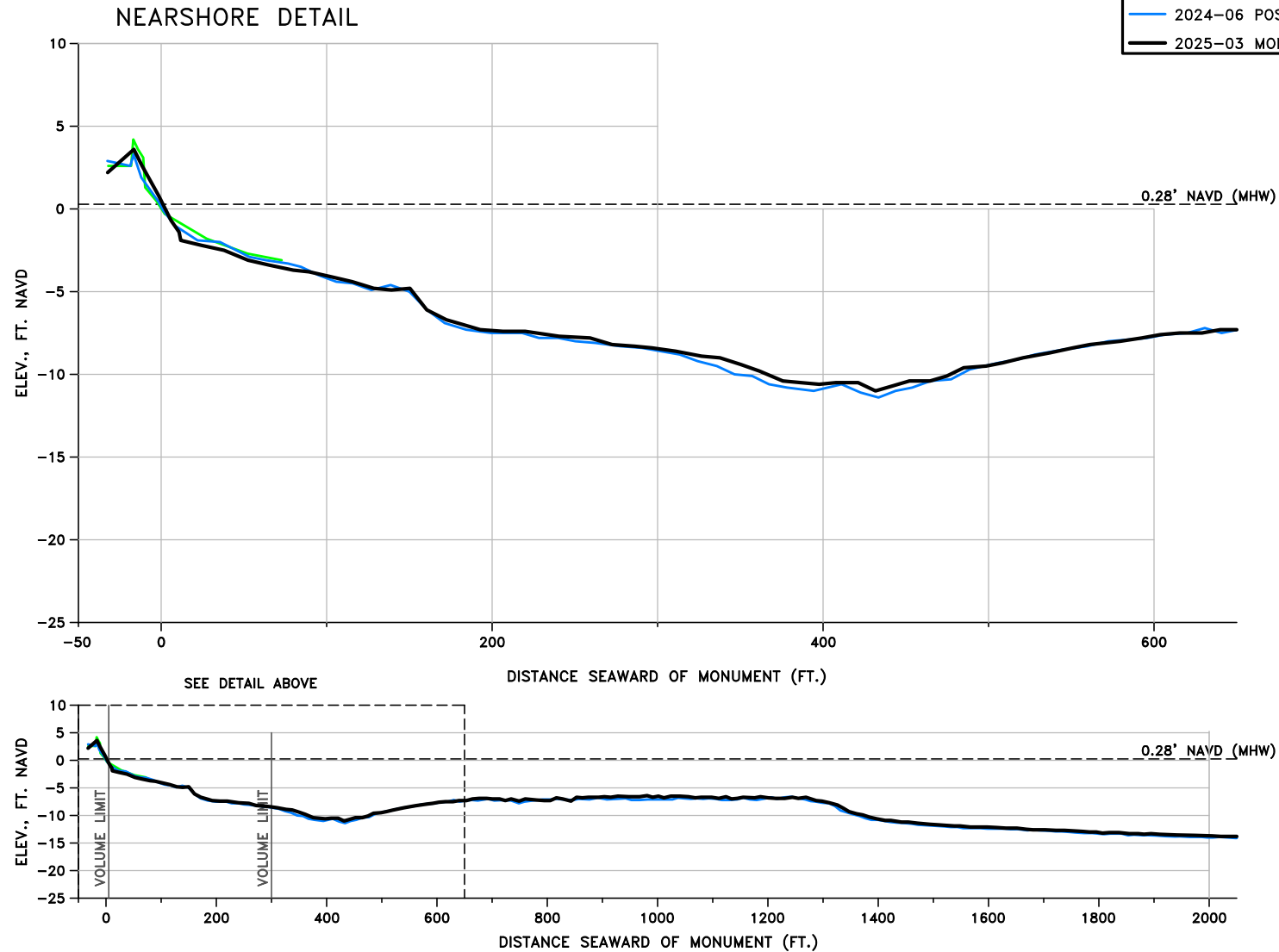
BEACH PROFILE BAY-16



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
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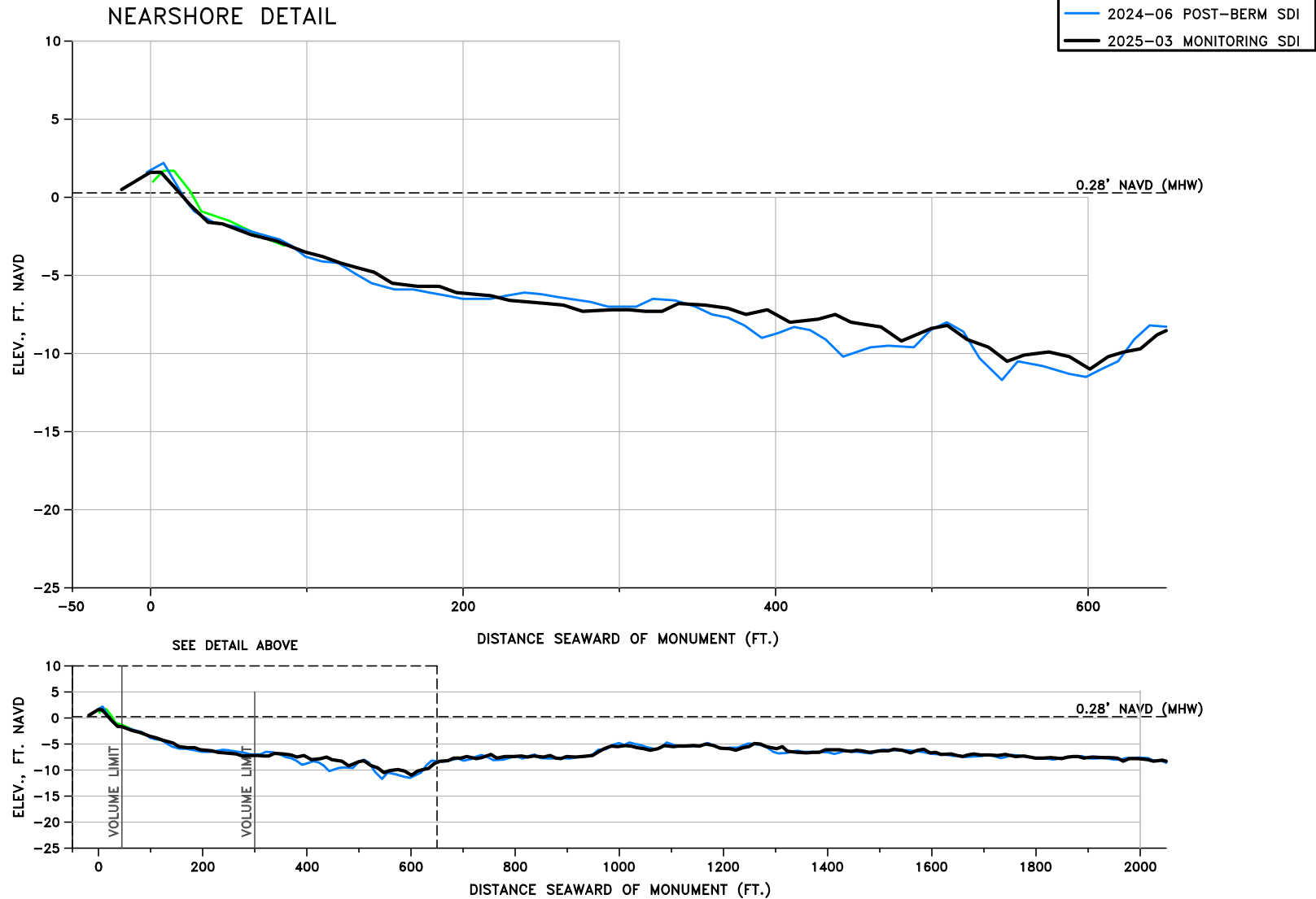
BEACH PROFILE BAY-17



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

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BEACH PROFILE BAY-18



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BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

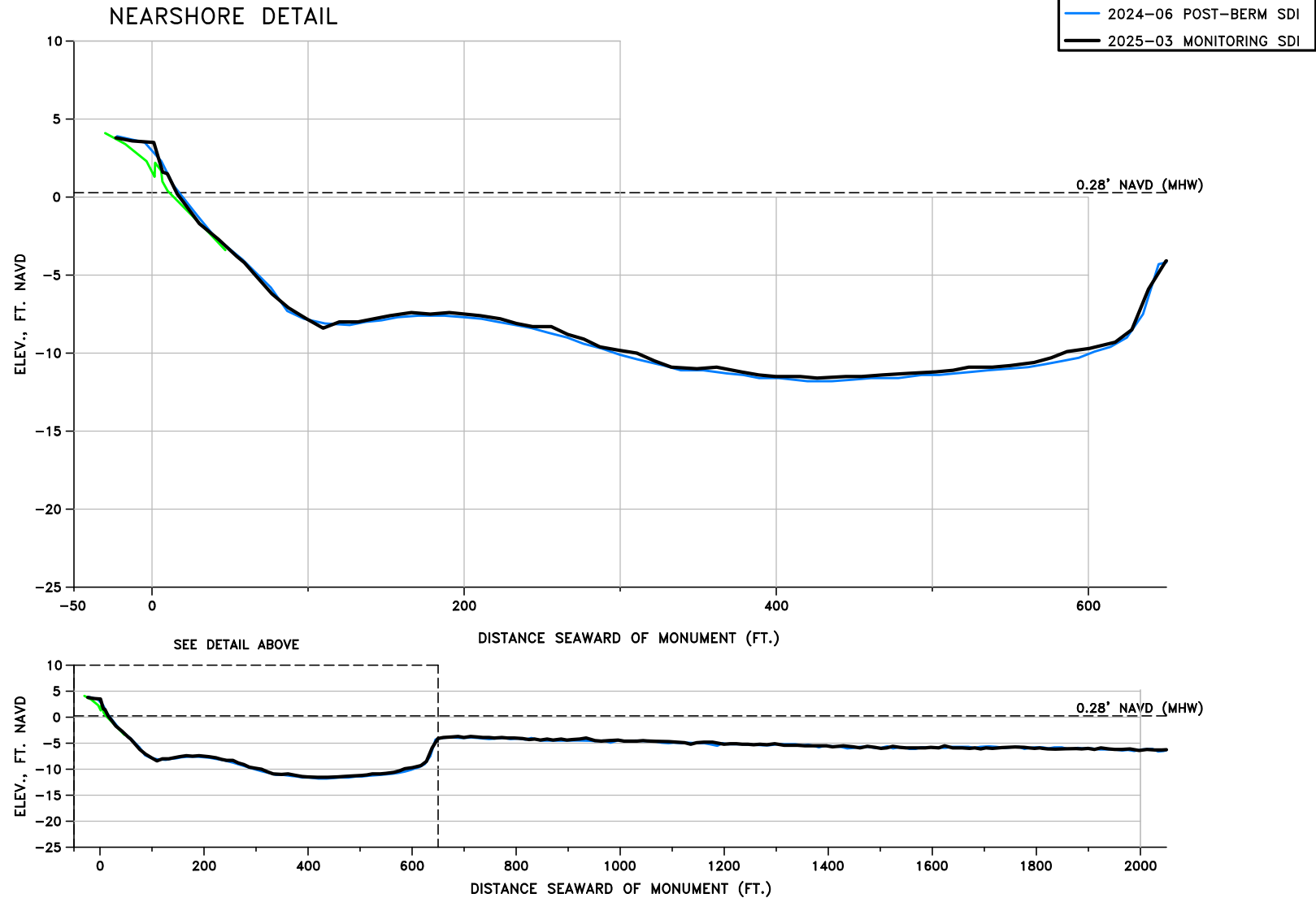
JOB: 27008

DATUM: NAVD

FIGURE:

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BEACH PROFILE BAY-19



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SANIBEL ISLAND BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 3/25/25

FILE: SECTION

SCALE: SHOWN

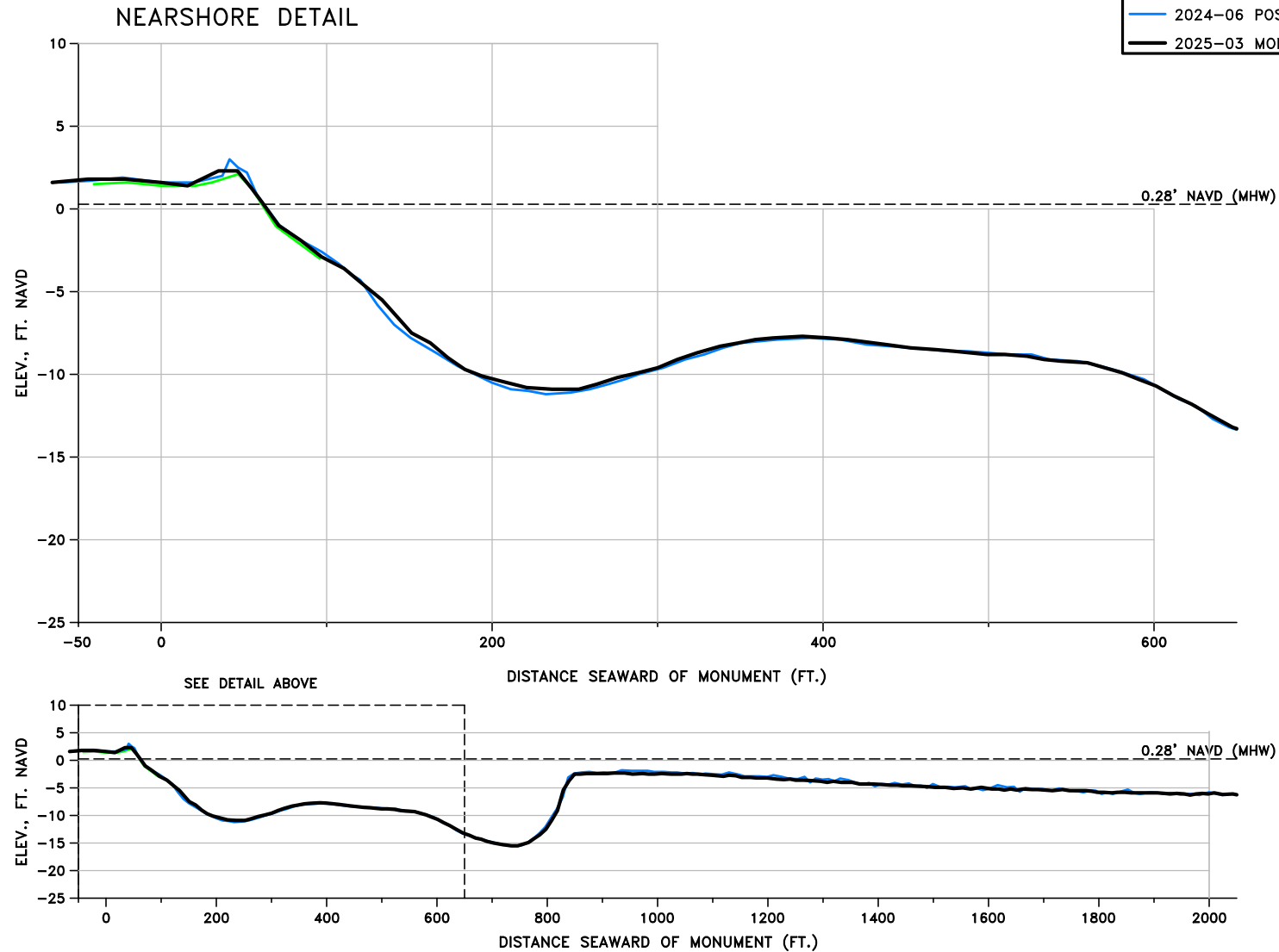
JOB: 27008

DATUM: NAVD

FIGURE:

5679 STRAND COURT
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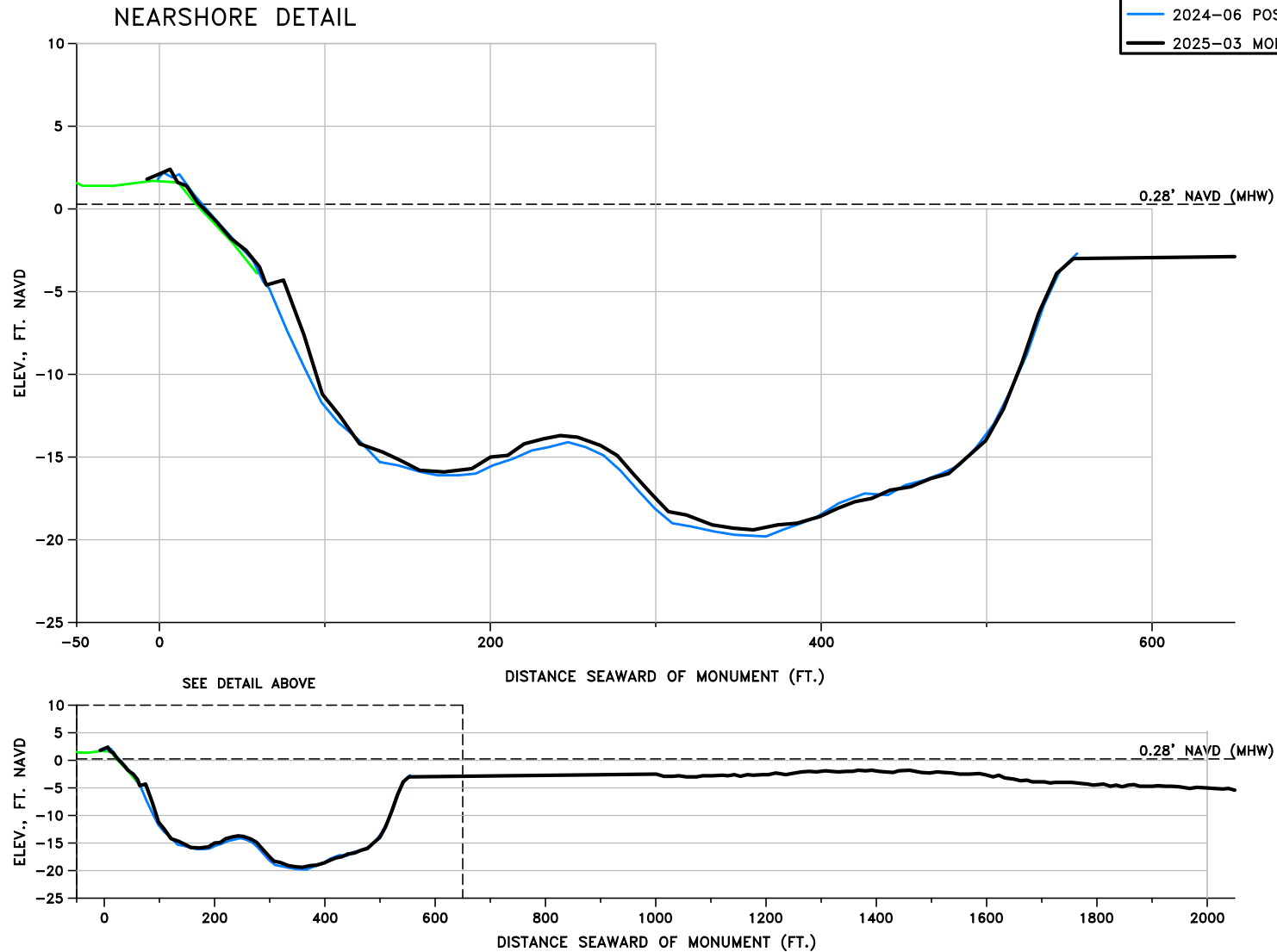
BEACH PROFILE BAY-20



SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
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BEACH PROFILE BAY-21



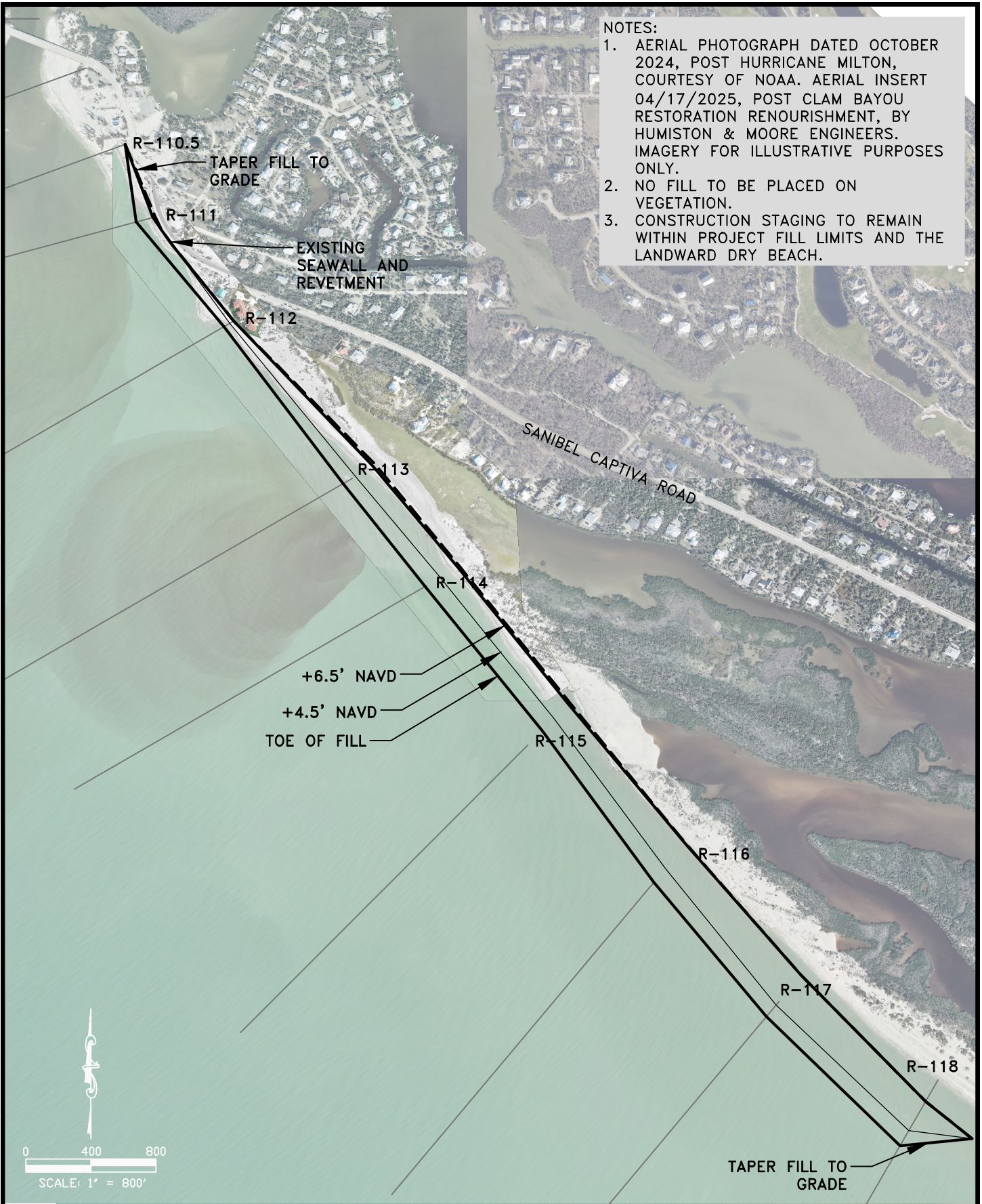
SANIBEL ISLAND BEACH PROFILE		
FOR: CITY OF SANIBEL		
DATE: 3/25/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

5679 STRAND COURT
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Appendix C: North Sanibel Beach Restoration Project Plans, R-111 to R-118

NOTES:

1. AERIAL PHOTOGRAPH DATED OCTOBER 2024, POST HURRICANE MILTON, COURTESY OF NOAA. AERIAL INSERT 04/17/2025, POST CLAM BAYOU RESTORATION RENOURISHMENT, BY HUMISTON & MOORE ENGINEERS. IMAGERY FOR ILLUSTRATIVE PURPOSES ONLY.
2. NO FILL TO BE PLACED ON VEGETATION.
3. CONSTRUCTION STAGING TO REMAIN WITHIN PROJECT FILL LIMITS AND THE LANDWARD DRY BEACH.



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**BLIND PASS POST-STORM FILL PROJECT
SITE PLAN**

FOR: CITY OF SANIBEL

DATE: 04/01/25

JOB: 27008

FILE: PLAN

DATUM: NONE

SCALE: SHOWN

SHEET:

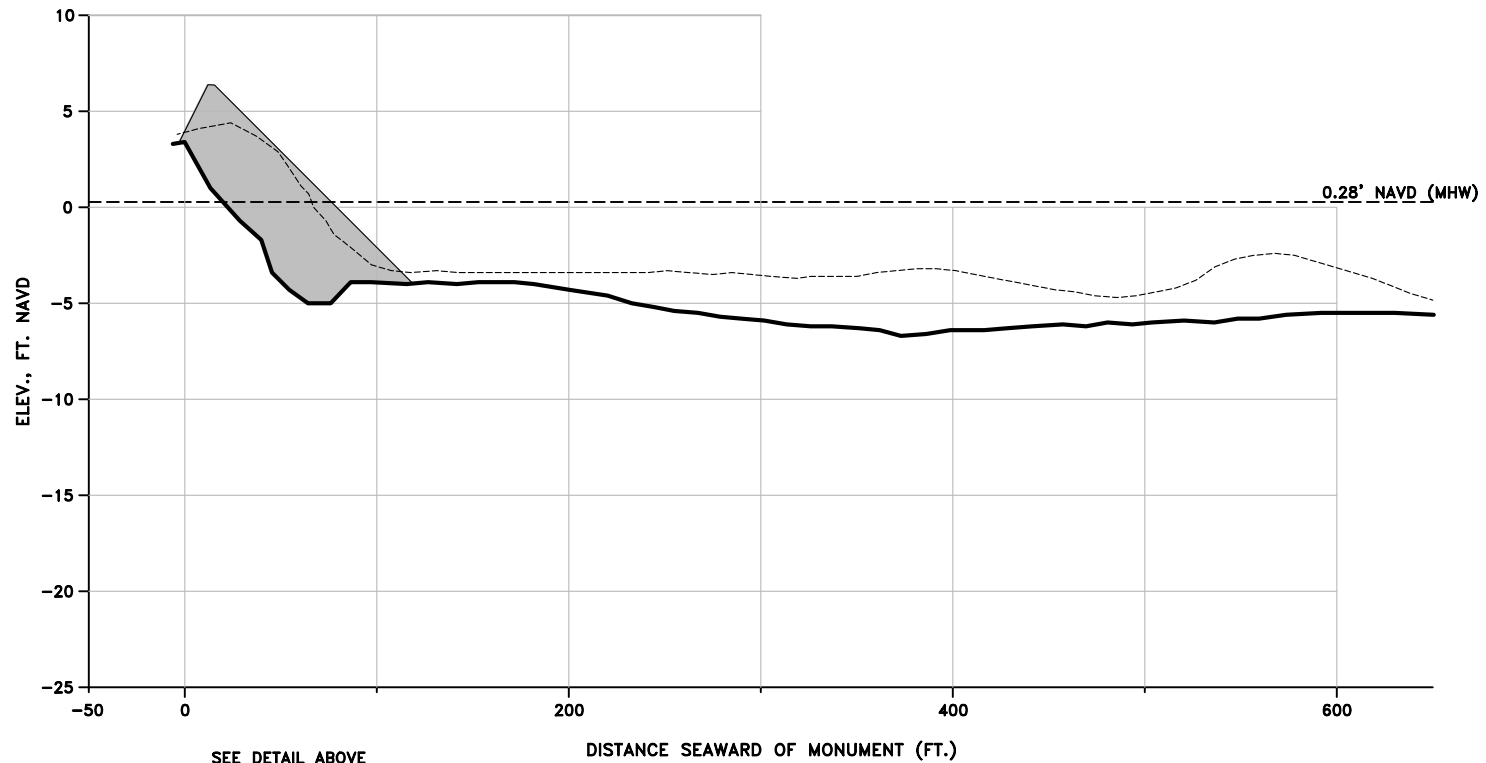
5679 STRAND COURT
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BEACH PROFILE R-111 255°

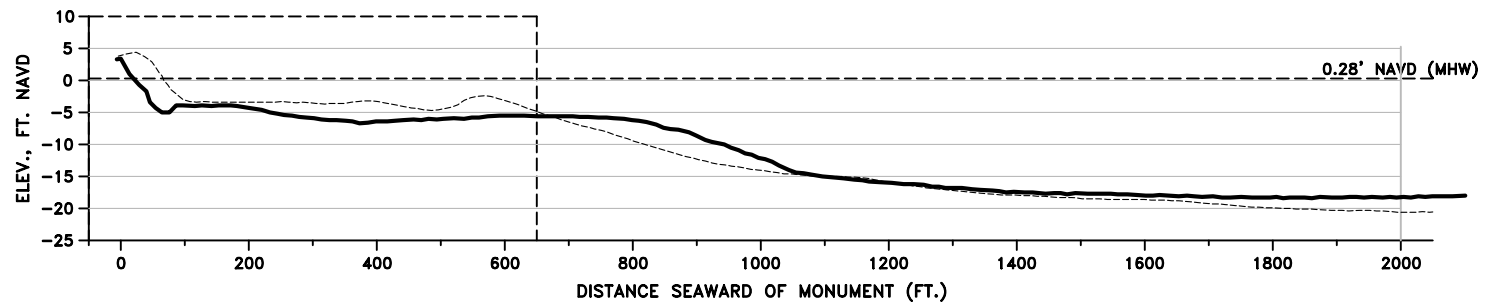
SURVEY LEGEND

----- 2022-09 PRE-IAN SDI
 ——— 2025-03 PRE-CON SDI

NEARSHORE DETAIL



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SANIBEL ISLAND BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 04/01/25

JOB: 27008

FILE: SECTION

DATUM: NAVD

SCALE: SHOWN

FIGURE:

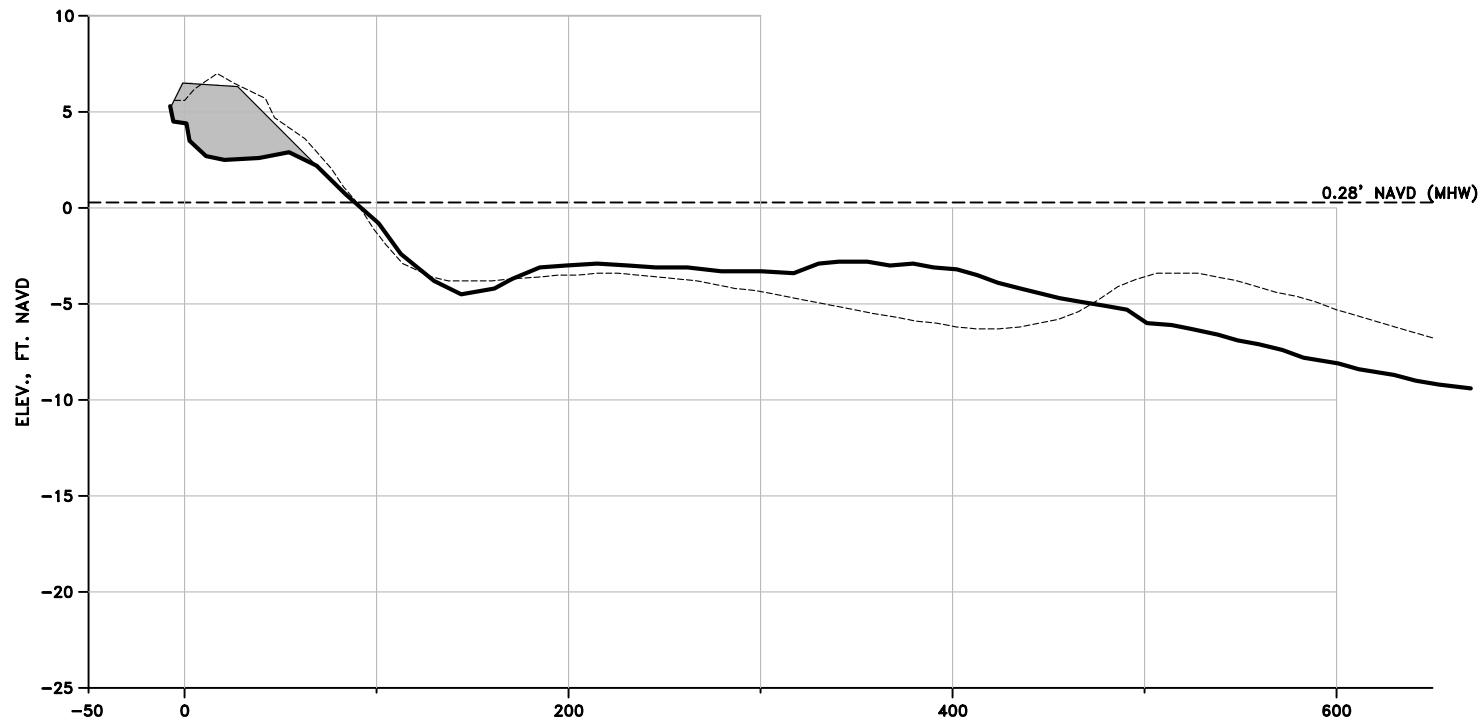
5679 STRAND COURT
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 FAX: (239) 594-2025
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BEACH PROFILE R-112

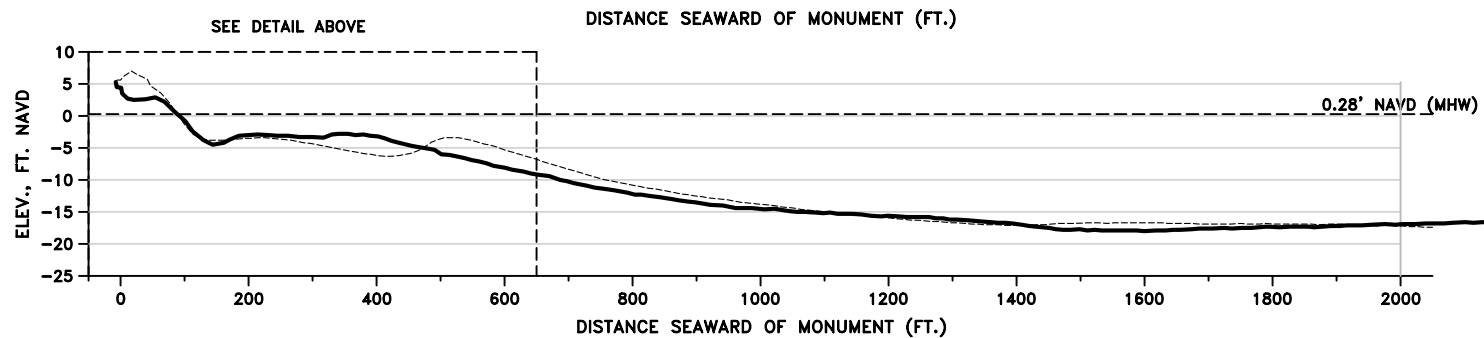
SURVEY LEGEND

----- 2022-09 PRE-IAN SDI
 ———— 2025-03 PRE-CON SDI

NEARSHORE DETAIL



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SANIBEL ISLAND
 BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 04/01/25

FILE: SECTION

SCALE: SHOWN

JOB: 27008

DATUM: NAVD

FIGURE:

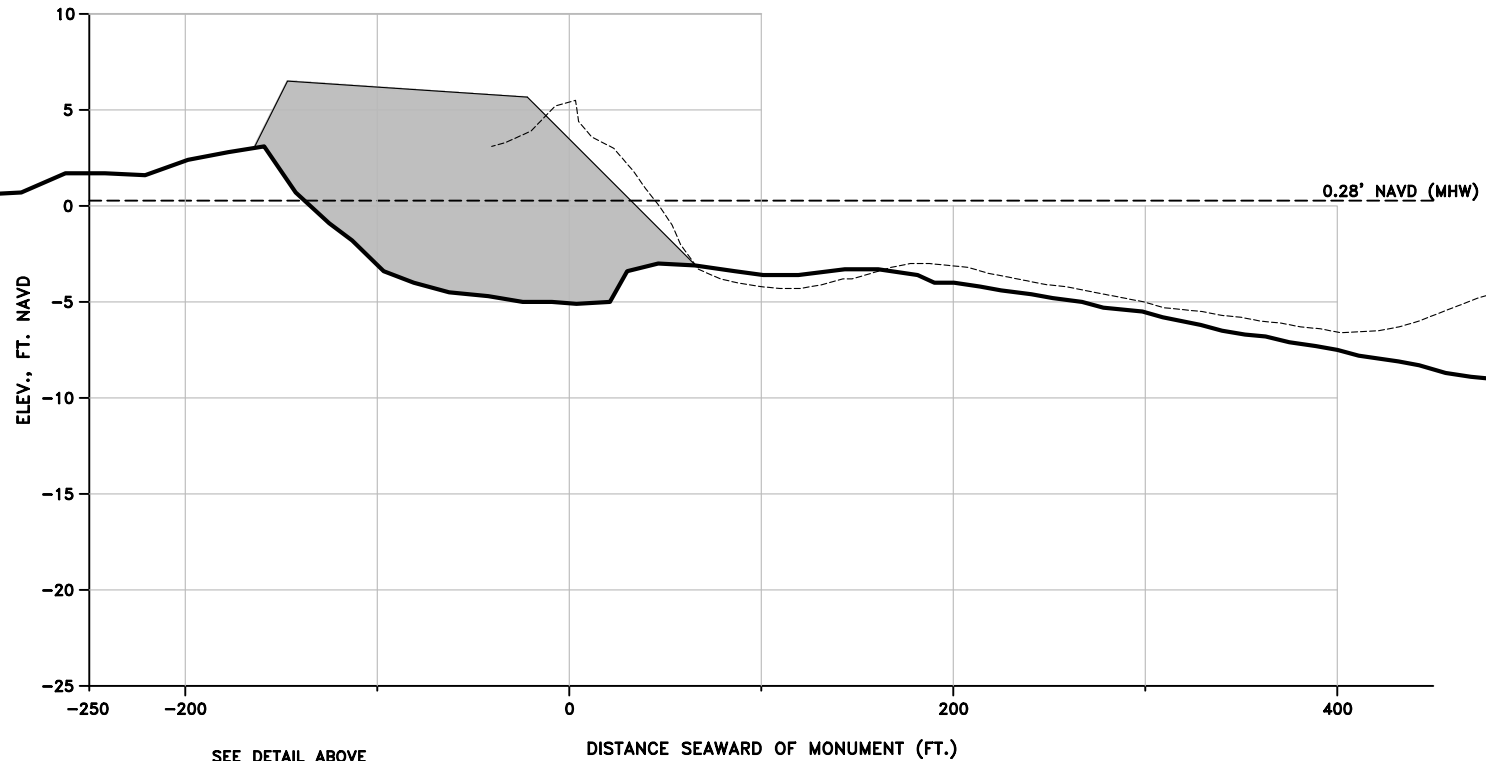
5679 STRAND COURT
 NAPLES, FL 34110
 FAX: (239) 594-2025
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BEACH PROFILE R-113

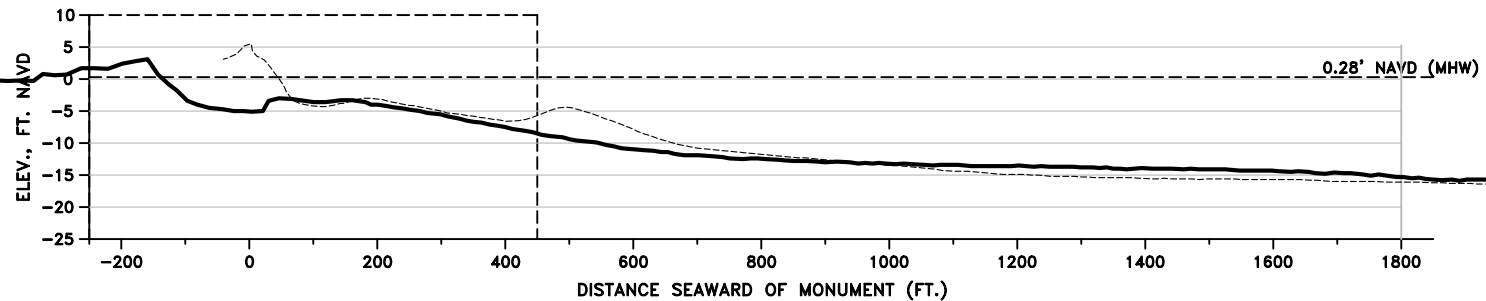
SURVEY LEGEND

----- 2022-09 PRE-IAN SDI
 ——— 2025-03 PRE-CON SDI

NEARSHORE DETAIL



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SANIBEL ISLAND
BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 04/01/25

FILE: SECTION

SCALE: SHOWN

JOB: 27008

DATUM: NAVD

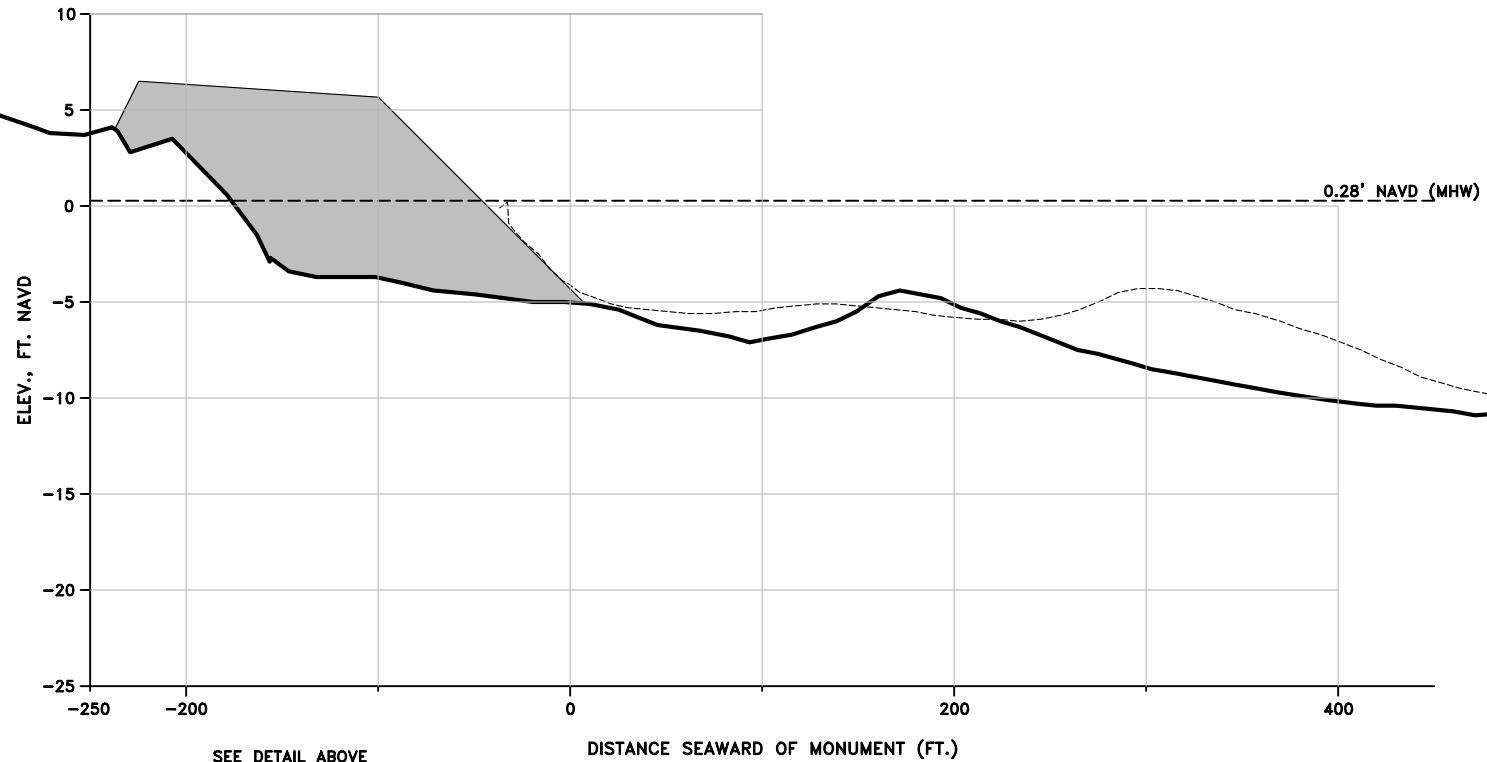
FIGURE:

5679 STRAND COURT
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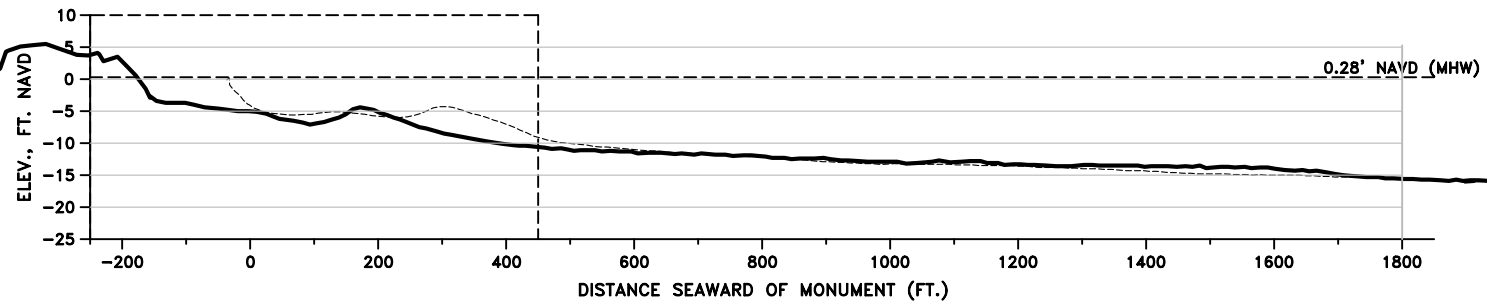
BEACH PROFILE R-114

SURVEY LEGEND	
---	2022-09 PRE-1AN SDI
—	2025-03 PRE-CON SDI

NEARSHORE DETAIL



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SANIBEL ISLAND
BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 04/01/25

FILE: SECTION

SCALE: SHOWN

JOB: 27008

DATUM: NAVD

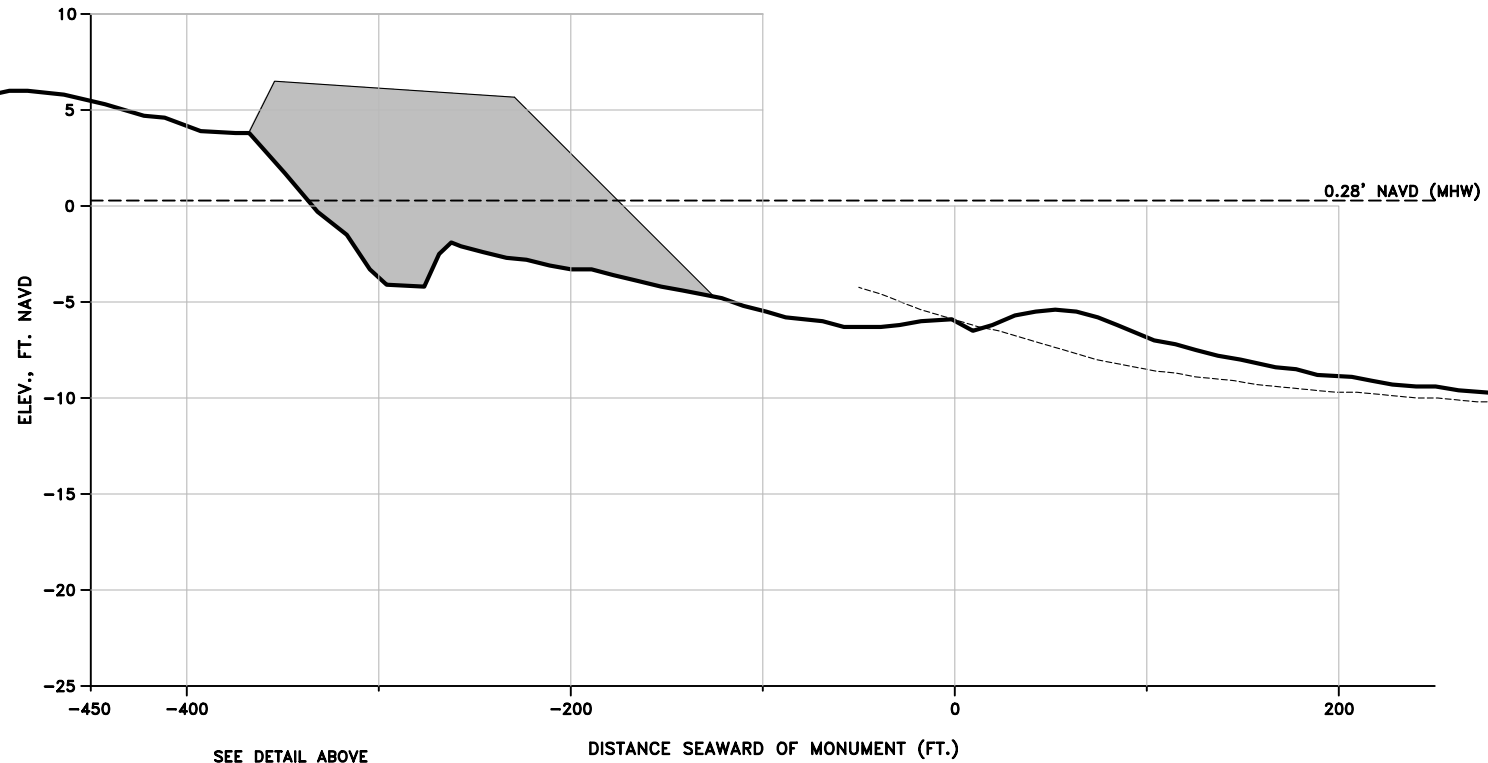
FIGURE:

5679 STRAND COURT
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PHONE: (239) 594-2021
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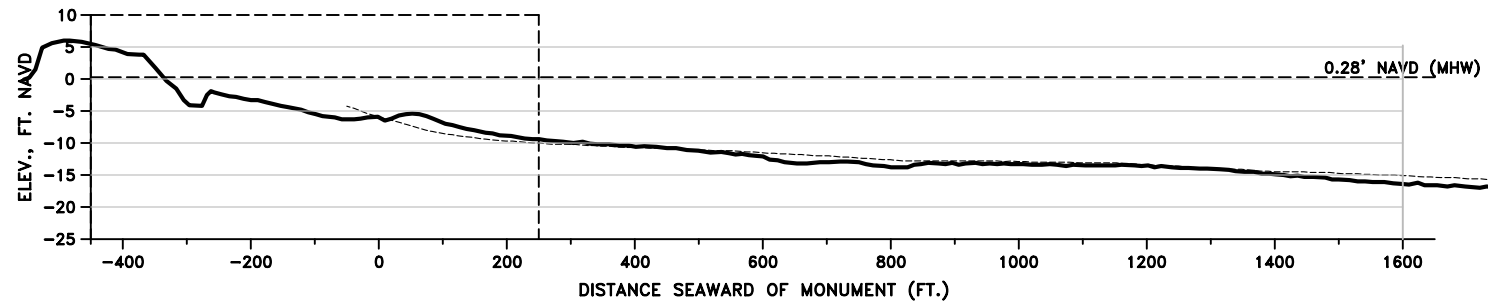
BEACH PROFILE R-115

SURVEY LEGEND		
---	2022-09	PRE-IAN SDI
—	2025-03	PRE-CON SDI

NEARSHORE DETAIL



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SANIBEL ISLAND
BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 04/01/25

FILE: SECTION

SCALE: SHOWN

JOB: 27008

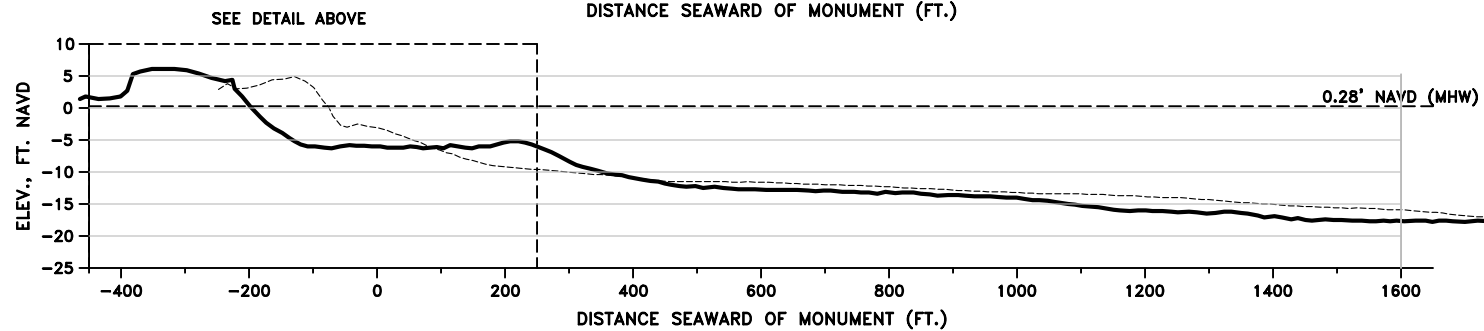
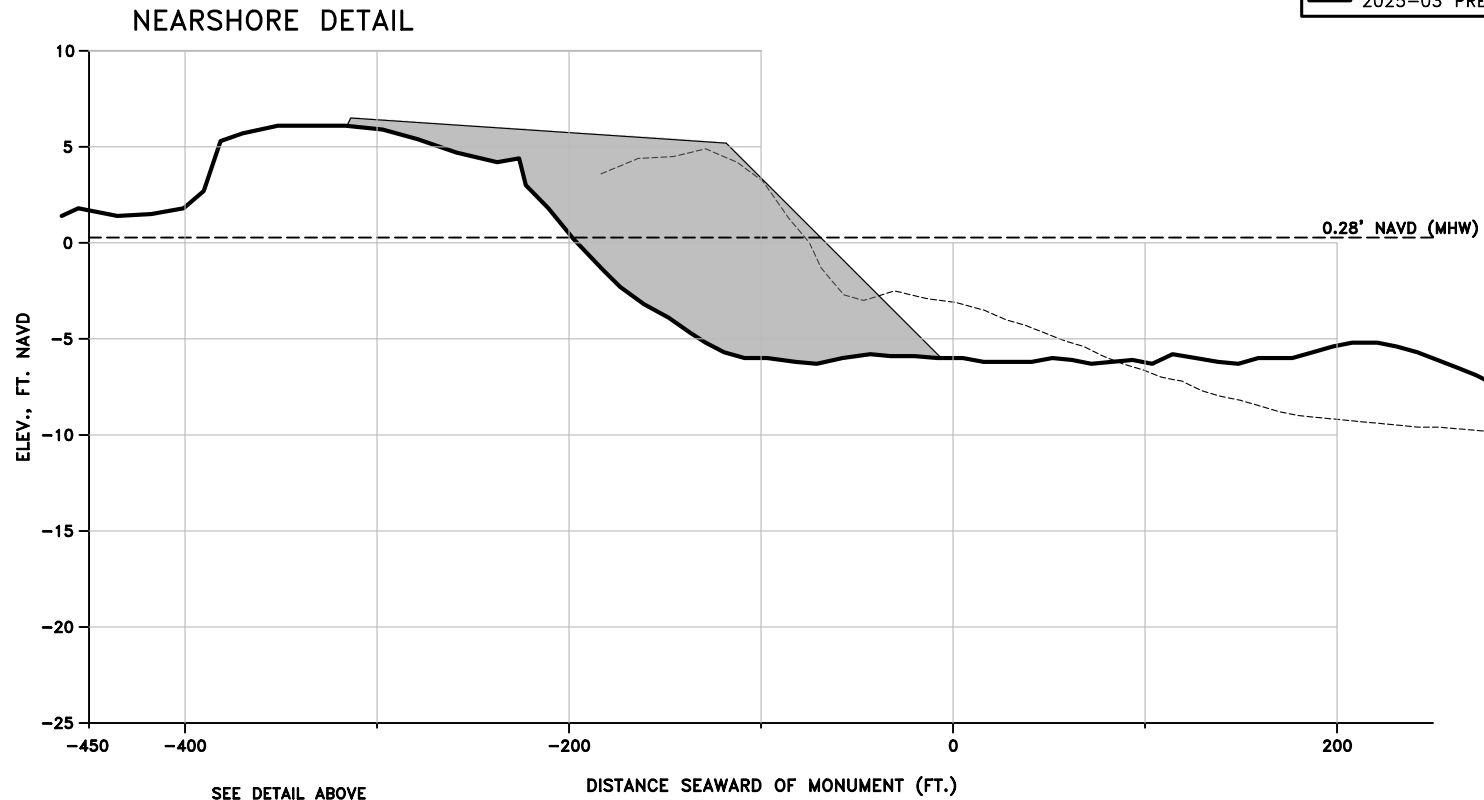
DATUM: NAVD

FIGURE:

5679 STRAND COURT
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BEACH PROFILE R-116

SURVEY LEGEND	
----	2022-09 PRE-IAN SDI
—	2025-03 PRE-CON SDI



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SANIBEL ISLAND
BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 04/01/25

FILE: SECTION

SCALE: SHOWN

JOB: 27008

DATUM: NAVD

FIGURE:

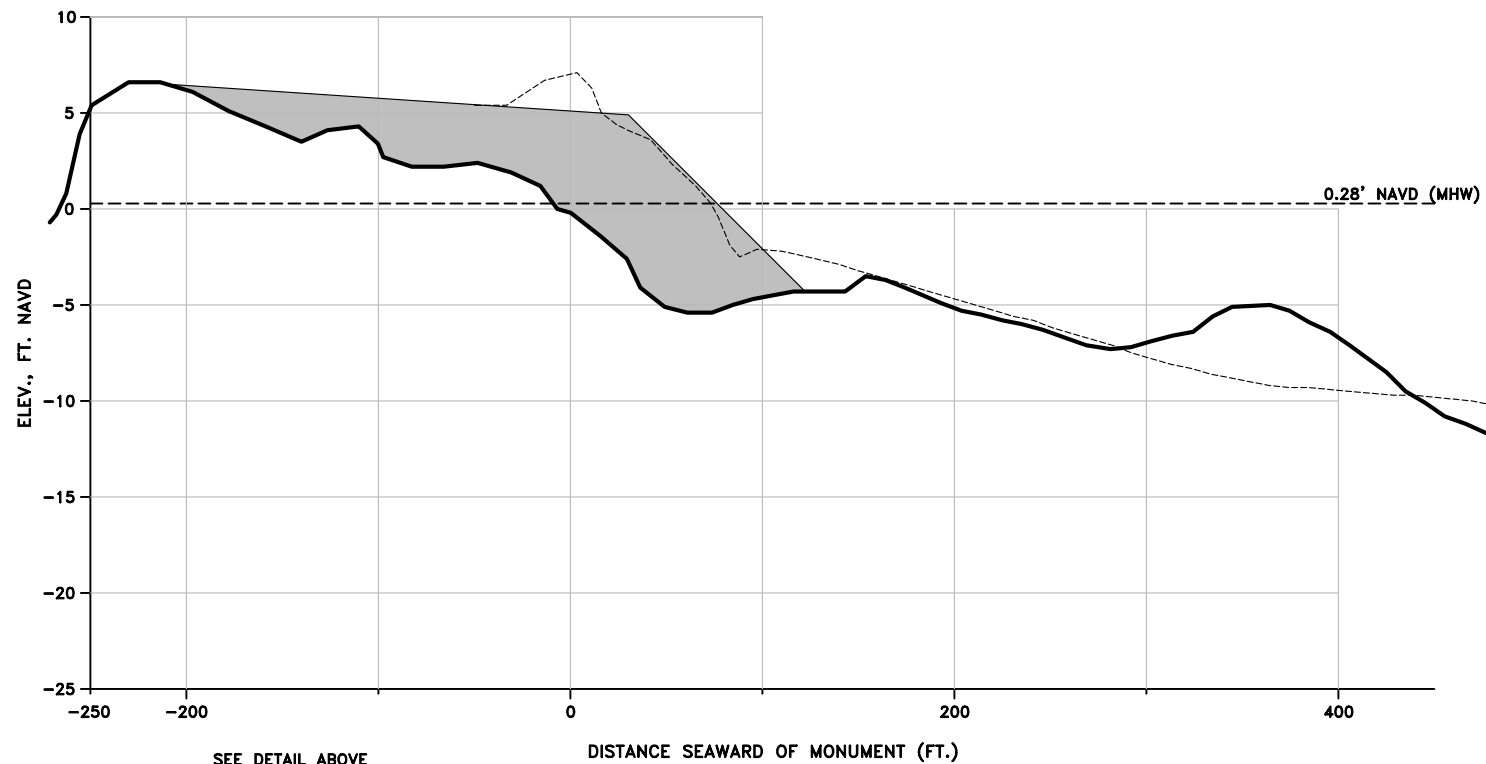
5679 STRAND COURT
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BEACH PROFILE R-117

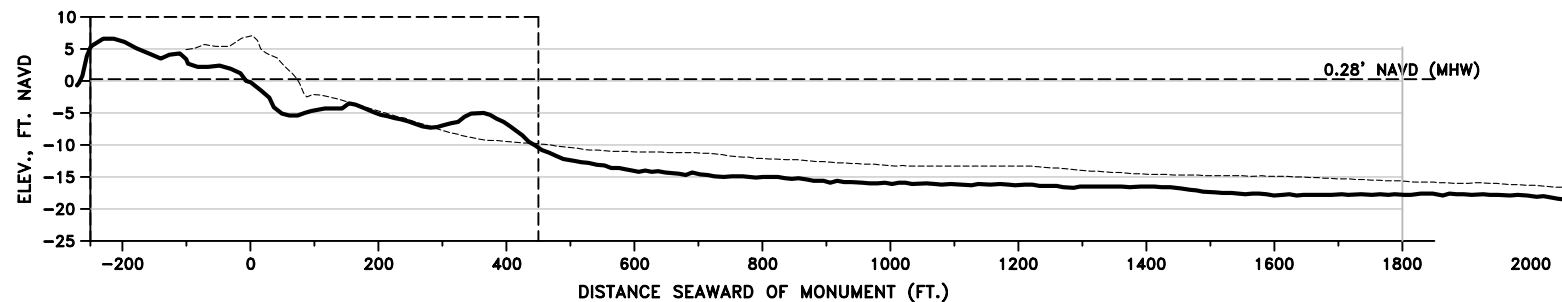
SURVEY LEGEND

----- 2022-09 PRE-IAN SDI
 ——— 2025-03 PRE-CON SDI

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SANIBEL ISLAND
 BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 04/01/25

FILE: SECTION

SCALE: SHOWN

JOB: 27008

DATUM: NAVD

FIGURE:

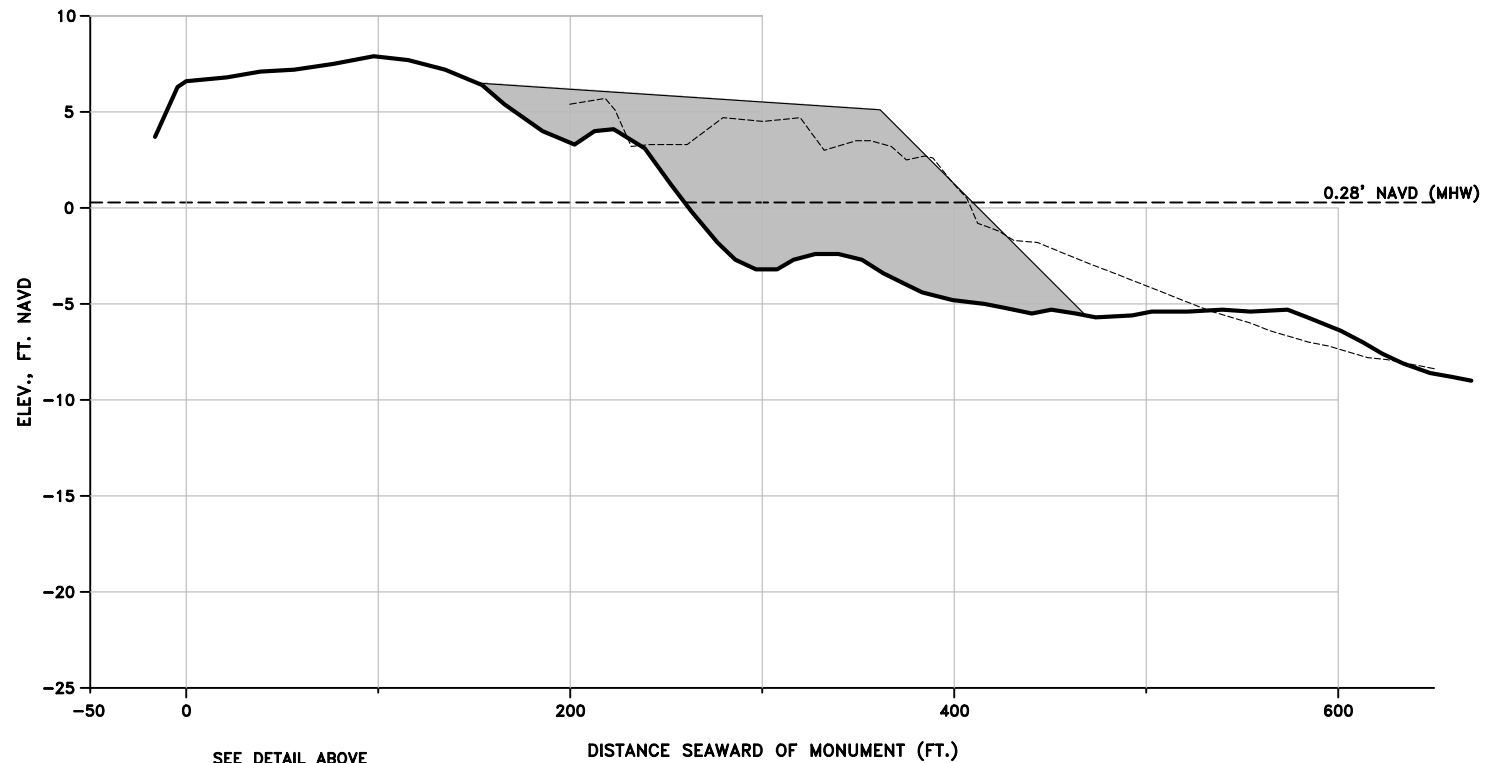
5679 STRAND COURT
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BEACH PROFILE R-118

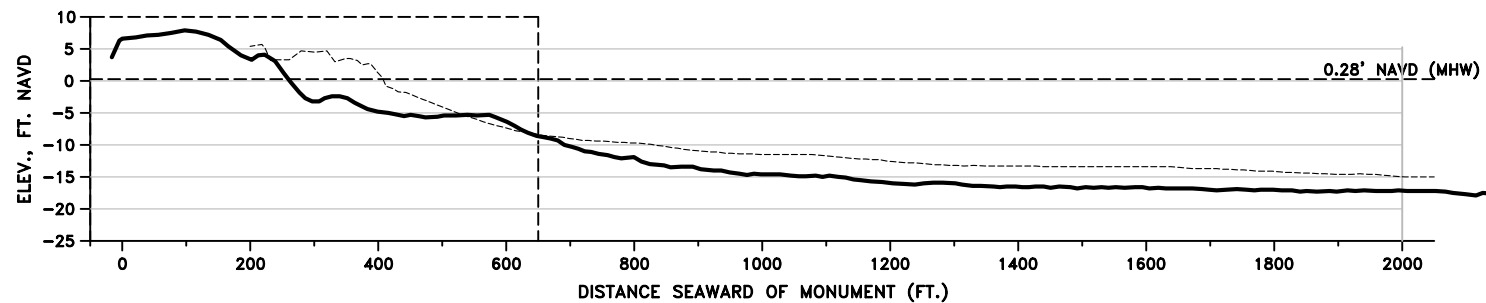
SURVEY LEGEND

----- 2022-09 PRE-IAN SDI
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SANIBEL ISLAND
 BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 04/01/25

FILE: SECTION

SCALE: SHOWN

JOB: 27008

DATUM: NAVD

FIGURE:

5679 STRAND COURT
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	Monument	Eff. Dist. (ft	CAD	Vol. (cy/ft)	Vol (cy)
	R111	1410	46623.2	19.1865	27,052.97
	R112	1007.5	15695.9	6.459218	6,507.66
	R113	1006.5	149574.1	61.55313	61,953.22
	R114	982	127703.0	52.55267	51,606.73
	R115	1154	132451.4	54.50675	62,900.79
	R116	1105	136868.3	56.3244	62,238.47
	R117	1077	106160.7	43.68753	47,051.47
	R118	545	139037.7	57.21716	<u>31,183.35</u>
		8287			350,494.66

Appendix D: *Hurricanes Debby, Helene and Milton Recovery Plan for Florida's Beach and Dune System (FDEP, March 11, 2025)*

Hurricanes Debby, Helene and Milton Recovery Plan for Florida's Beach and Dune System

**Florida Department of Environmental Protection
Office of Resilience and Coastal Protection**

March 11, 2025



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III. Summary

I. Introduction

Overview

This “Hurricanes Debby, Helene and Milton Recovery Plan for Florida’s Beach and Dune System” (Recovery Plan or Plan) is considered by the Florida Department of Environmental Protection (DEP) to be a preliminary planning document for recovery funding needs. Estimates contained in the Plan are based on information provided by local governments, their coastal engineering consultants, the Federal Emergency Management Administration (FEMA), Florida Department of Emergency Management (DEM) and DEP staff, which in some cases may be limited. As surveys or new information is obtained, this Plan may be updated to include such information. Additionally, it is important that this Plan be flexible to allow for adjustments in project funding based on new information and conditions that exist at the time the work will be contracted. Detailed planning and engineering tasks will be conducted for each project to formulate the most cost-effective design.

During the 2024 hurricane season, the State of Florida was impacted by three hurricanes: Hurricane Debby, major Hurricane Helene and major Hurricane Milton.

Hurricane Debby spawned from a tropical wave that crossed Cuba on Friday, Aug. 2. At 7 a.m. EDT Monday, Aug. 5, Hurricane Debby made landfall near Steinhatchee, Florida, as a category 1 hurricane with maximum sustained winds of 80 mph and a minimum central pressure of 979 millibars (28.91 inches).

At 11 a.m. Tuesday, Sept. 24, the National Hurricane Center (NHC) designated Tropical Storm Helene with maximum sustained winds of 45 mph. Thursday, Sept. 26, Hurricane Helene made landfall at about 11:10 p.m. just east of the mouth of the Aucilla River in Taylor County with maximum sustained winds of 140 mph and a central pressure of 938 millibars (27.70 inches) as a category 4 major hurricane.

Hurricane Milton was the second major hurricane to make landfall on Florida’s coastline in the 2024 hurricane season within a couple of weeks after Hurricane Helene. The system spawned from a tropical depression that formed over the southwestern Gulf of America on Saturday morning, Oct. 5. On Wednesday Oct. 9, at 8:30 p.m., with sustained winds of 120 mph, Milton made landfall near Siesta Key in Sarasota County as a category 3 hurricane. The storm’s path was tracked east across the state and then it entered the Atlantic Ocean where it became extratropical and eventually dissipated on Oct. 12.

The recovery of the beach and dune system is vital for providing protection to upland development (including infrastructure) to restore economic opportunities for local governments and for restoring habitat of threatened and endangered species.

Summary of Assessments

Hurricane Debby

DEP staff assisted in sand loss assessments of non-federal beach restoration and nourishment projects within impacted areas and included Manatee, Sarasota and Charlotte counties. These assessments included staff representing FEMA, DEM, local governments and their coastal consultants.

Additional data, information and assistance was provided to DEP staff by various local governments and their consultants.

Hurricane Helene

Immediately following the impacts of Hurricane Helene, damage assessment teams were dispatched to the affected coastal areas. The damage assessment teams conducted detailed damage assessments for Pinellas, Manatee, Sarasota, Lee and Collier counties. Additional data, information and assistance was provided to DEP staff by various state parks staff, county officials and various private coastal engineering firms.

DEP staff assisted in sand loss assessments of non-federal beach restoration and nourishment projects within impacted areas and included Manatee, Sarasota, Lee and Collier counties. Additional data and information on beach conditions was provided to DEP staff by various local governments and their consultants.

Hurricane Milton

Following Hurricane Milton, field staff from DEP's Tallahassee Office were not immediately deployed as much of the impacted region was difficult to navigate and because staff had recently returned from assessments of much of the same region impacted again by Hurricane Milton. DEP staff evaluated the costs and efficiencies of deploying several teams of staff vs. utilizing its contract with Camera Copters. Staff determined that flying high resolution aerial oblique videography and capturing still images from the aircraft would be more efficient while still providing the information necessary to conduct damage assessments.

DEP staff did conduct joint sand loss assessments of non-federal beaches with FEMA, DEM, local government representatives and their coastal consultants in the weeks following Hurricane Milton, in Nassau, St. Johns, Palm Beach, Collier, Lee, Charlotte, Sarasota and Manatee counties. Additional data and information on beach conditions was provided to DEP staff by various local governments and their consultants.

Additional information can be found on [DEP's Beaches Post Storm Reports page](#).

Utilization of DebrisTech Imagery and Topographic LiDAR Data

DEM entered in a contract with DebrisTech for various surveys and data collection involving impactful storm events. Prior to Hurricane Debby, DebrisTech collected 360' beach imagery of the anticipated impacted area. Following Debby's landfall DebrisTech once again collected this imagery and collected topographic LiDAR data of the beach and dune areas. This data was then collected following Hurricane Helene and again after Hurricane Milton. The data and imagery proved to be informative and useful in many of DEP's post storm assessments and evaluations. Continued contracts are anticipated for upcoming storm seasons and may be enhanced to include bathymetric LiDAR data collection. Utilization of such data may improve efficiencies and accuracy in post storm assessments, thereby expediting the restoration process in the future.

Summary of Recovery Activities and Methods

This Plan focuses only on the beach and dune systems in Gulf, Wakulla, Pinellas, Manatee, Sarasota, Charlotte, Lee, Collier, Palm Beach, Martin, St. Lucie, Indian River, Brevard, Volusia, Flagler and St. Johns counties that had moderate to major beach erosion. The report is organized by separating the Gulf of America and Atlantic coastlines, then by county, then by project or project area. This Plan does not include replacement cost estimates associated with any upland structures, roads, piers or bridges.

The Plan works to coordinate recovery efforts with long-term maintenance strategies, using both regular program appropriations and emergency funding assistance provided by federal, state and local sources to achieve the most efficient recovery of impacted beaches and dunes. For the purposes of this Plan, non-federal dollars are identified funds that would be requested for implementing this Recovery Plan via a special appropriation. Non-federal dollars are comprised of the cost share on a given project born by the State of Florida [either by Florida Department of Emergency Management (DEM) or DEP] and the local sponsor of the project. Below are overviews of regular and post storm funding opportunities.

DEP

Funding opportunities for management of Florida's critically eroded beaches is administered by the [Beach Management Funding Assistance \(BMFA\) Program](#). The program provides and manages grants to local governments (up to 75% of project costs) for planning and implementing beach and inlet management projects on the Gulf of America, Atlantic Ocean or Straits of Florida. The Recovery Plan takes into account the strategies of the DEP [Strategic Beach Management Plan \(SBMP\)](#), which is designed to identify long-term management strategies of the state's critically eroded beaches. Management activities conducted by local governments that are consistent with strategies identified in the SBMP are eligible for funding opportunities through the Local Government Funding Request (LGFR) process. The BMFA Program accepts funding requests on an annual basis from local governments and municipalities for beach and inlet management projects. **This Plan identifies funds needed in addition to those already allocated in agreements with local governments through the LGFR process.**

FEMA

FEMA administers a public assistance program to state and local governments to assist with storm recovery activities. A final cost determination is not available at this writing. For the purposes of this Plan, the assumed cost-share for projects receiving FEMA assistance is 75% FEMA, 25% state (DEM) and local. FEMA offers funding assistance for beach and dune restoration activities mainly under two program areas. A detailed guide to these programs can be found in the [Public Assistance Program and Policy Guide](#).

Category B: Emergency Protective Measures can provide a small volume of sand to prevent flooding to developed upland properties. To qualify, a property (public or private development) must be threatened by a five-year return interval storm event. Properties are evaluated on a case-by-case basis, with qualifying properties eligible to receive funding to construct a small berm or dune feature.

Category G: Permanent Work is intended to assist with the repair of public facilities. Qualifying non-federally authorized beach projects are eligible for replacement of the sand that was lost as a result of the storm.

U.S. Army Corps of Engineers (USACE)

The Shore Protection Program works directly with local governments to construct beach restoration projects for the primary purpose of protecting upland developed properties. After detailed feasibility studies, projects are individually authorized by Congress for construction and long-term maintenance. Authorized projects usually have an authorization period of 50 years, during which periodic beach nourishment is conducted to maintain the designed storm protection values. Under the program, the federal government can fund the majority of the total project costs. The remaining non-federal cost is the responsibility of the local sponsor and the state of Florida as cost-sharing partners. As a result of storm impacts, an authorized constructed project is eligible for Flood Control and Coastal Emergency (FCCE) funds to rebuild the project.

II. Beach and Dune Recovery Strategies

The beach and dune recovery recommendations in this Plan include volumetric loss determinations and replacement cost estimates that are based on the best available information and strategies. DEP staff corresponded with other state and local agencies involved with storm recovery activities. Cost estimates were developed with the assistance of local sponsors and through supporting documentation provided by engineering consultants. These recommendations were developed as a guide to develop a recovery plan, and if implemented, accelerate the natural recovery of impacted beach and dune systems.

Each proposed activity is presented by county with a listing of DEP Reference (R) monuments or specific project names and locations to identify project boundaries along the impacted shoreline. The storm recovery funds indicated are required in addition to any funding currently appropriated via the BMFA Program or requested in the LGFR process. Federally authorized projects that are expected to be maintained by USACE are not included in the plan as restoration is anticipated to be federally funded.

Projects not mentioned below were not requested for assistance. Agreements and funds applied to local sponsors below may be used for the work described in this Plan, or work that is consistent with the DEP SBMP, or applicable permits.

Gulf Coast Beaches

Gulf County

Cape San Blas, Stump Hole Nourishment, R-70.5 to R-73.6 and R-74.8 to R-106

This is a critically eroded section of shoreline managed by Gulf County. Although funding is partially in place for nourishment and construction of submerged breakwaters intended to supplement the performance of the beach nourishment project, impacts from Hurricane Helene resulted in additional losses of sand from the dune and beach. The county estimates that approximately \$10,340,000.00 in additional funds are needed to fully fund the nourishment project that is critically needed. Recommend funding at 100% non-federal costs of **\$10,340,000.00.**

Wakulla County

Mashes Sands County Park, Virtual Monument V-301 to approximately V-317

This is a shoreline managed by Wakulla County leased from the State of Florida. The county has conducted feasibility studies in the past to restore this critically eroding shoreline. Discussion reinitiated in 2024 to conduct an updated feasibility study and restore the shoreline. Impacts from Hurricane Helene have further exacerbated conditions at the park. Estimated costs for an updated feasibility study and implementing a selected plan are \$3,375,000.00. Recommend 100% non-federal funding to Wakulla County for the restoration of Mashes Sands at **\$3,375,000.00**.

Pinellas County

Sand Key, Treasure Island, and Long Key, R-56 to R-66, R-71 to R-109, R-126 to R-128, R-136 to R-143 and R-144 to R-147

These are stretches of historically federally authorized beaches. However, longstanding certification issues with the project jeopardize future maintenance by the USACE. Given uncertainties in future federal involvement and considering these beaches were impacted by three hurricanes in 2024, DEP recommends 100% non-federal cost-share. Based on survey data collected prior to Hurricane Debby and following Hurricane Milton, these reaches of shoreline lost approximately 649,000 cubic yards of sand from the dune and beach system. The estimated cost per cubic yard of authorized sand sources is \$65.41.

Recommend locally sponsored beach nourishment with 100% non-federal funding at an estimated cost of **\$42,451,090.00**.

Manatee County

Coquina Beach Nourishment Project, R-33 to R-41+305

The Coquina Beach Nourishment Project is managed by Manatee County. Based on pre- and post-beach width measurements, visual estimates of beach erosion, and survey data, it is estimated that approximately 210,500 cubic yards of sand was lost within the project template due to combined effects of Hurricanes Debby, Helene and Milton. The estimated cost per cubic yard of authorized sand sources is \$75.23.

Recommend nourishment to restore volumes lost due to storms. Estimated construction cost is \$15,835,915.00. Project may be FEMA Category G eligible.

FEMA eligible non-federal cost share based on FEMA 75% and 25% state/local share is **\$3,958,978.75**.

North End Longboat Key, R-42 to R-67

The north end of Longboat Key is comprehensively managed by the Town of Longboat Key in coordination with Manatee County. Recommendations are included below under the Longboat Key Nourishment Project.

Sarasota County

Longboat Key Nourishment, R-1 to R-29

The Longboat Key Nourishment Project is comprehensively managed by the Town of Longboat Key in coordination with Manatee and Sarasota counties. Estimated island wide losses within managed beach segments as a result of the combined effects of the 2024 hurricanes is 620,900 cubic yards of sand. The anticipated cost per cubic yard of authorized sand is \$44.00. Recommend nourishment to restore lost volumes of sand at an estimated construction cost of \$27,319,600.00, and funding of all non-FEMA eligible sand losses.

Non-federal cost share state/local share is **\$11,474,232.00.**

South Siesta Key Beach Nourishment Project, R-64 to R-77

The South Siesta Key Beach Nourishment Project is managed by Sarasota County. Based on pre- and post-beach width measurements and visual estimates of beach erosion, it is estimated there was approximately 110,000 cubic yards of sand lost due to the combination of the 2024 hurricanes.

Recommend nourishment to restore volumes lost due to storms. The estimated construction cost to replace lost volume is \$9,900,000.00. Project is FEMA Category G eligible.

FEMA eligible non-federal cost share based on FEMA 75% and 25% state/local share is **\$2,475,000.00.**

Manasota Key Beach Restoration and Nourishment, R-173.4 Sarasota County to R-1 Charlotte County

The Manasota Key Beach Restoration and Nourishment Project is managed jointly by Sarasota and Charlotte counties. Based on pre- and post-beach width measurements, visual estimates of beach erosion, and surveys, it is estimated that approximately 312,871 cubic yards of sand were lost to the combined effects of the 2024 Hurricanes in the Sarasota County portion of the project. However, only approximately 26% of these losses are FEMA eligible.

Recommend nourishment to restore volumes lost due to storms within the authorized construction templates. The non-FEMA eligible portion is estimated at 231,782 cubic yards. The FEMA eligible losses are estimated at 81,089 cubic yards. Estimated cost per cubic yard of authorized sand sources is \$81.29.

The FEMA eligible non-federal cost share based on FEMA 75% and 25% state/local share is **\$1,647,931.20**

The non-FEMA eligible estimated construction cost is **\$18,841,558.78.**

Charlotte County

Manasota Key Beach Restoration and Nourishment, R-173.4 Sarasota County to R-15.3 Charlotte County, Stump Pass State Park and Knight Island, R-9 to R-40.5

The Manasota Key Beach Restoration and Nourishment Project is managed jointly by Sarasota and Charlotte counties. Based on pre- and post-beach width measurements and visual estimates of beach erosion, and surveys it is estimated that approximately 1,019,000 cubic yards of sand were lost due to the combination of Hurricanes Helene and Milton in the Charlotte County portion of the project and includes a substantial breach within Stump Pass Beach State Park. Charlotte County has proposed to sponsor the closing of this breach.

Recommend nourishment to restore volumes lost due to storms. Estimated construction cost to replace non-FEMA eligible losses is **\$45,936,520.00**.

Lee County

Gasparilla Island State Park Nourishment Project, R-24 to R-26.5

The Gasparilla Island State Park Nourishment Project is managed by the Florida Park Service. The project is historically constructed in conjunction with the Gasparilla Island Shore Protection Project to save on dredge mobilization costs. The project has current funding available for nourishment, and construction is commencing soon. However, the Florida Park Service owns a seawall fronting private property that sustained catastrophic damage as a result of Hurricanes Helene and Milton. The Florida Park Service in consultation with its coastal consultant is proposing to temporarily repair the wall while planning and permitting is completed for a redesign of coastal protection measures. The repair, design and permitting and construction is currently estimated at \$15,000,000.00. The redesigned coastal protection structures would improve the coastal conditions of the area while providing the necessary upland protection for the private properties.

Recommend funding to DEP's Division of Recreation and Parks of the anticipated **\$15,000,000.00** for temporary and permanent fixes to the seawall.

Captiva Island, Lee County Shore Protection Project, R-83 to R-109

The Captiva Island, Lee County Shore Protection Project is a federally authorized project managed by the Captiva Erosion Prevention District (CEPD). The project is anticipated for nourishment in 2025, under the CEPD. Currently, there are uncertainties whether the project will remain federally designated and therefore would not qualify for FCCE funds. Further, because the project is still federally authorized, it is not eligible for FEMA recovery funds. Therefore, DEP is proposing 100% non-federal funds for nourishment of Captiva Island following the impacts of Hurricanes Helene and Milton. The funding for the upcoming nourishment is primarily through the legislatures funding of the 2022 Hurricanes Ian and Nicole Beach and Dune Recovery Plan. DEP is proposing to make up the gap in funds to restore the beach and dune from the impacts of Ian and Nicole to also account for impacts from Hurricanes Helene and Milton.

Based on initial surveys, it is estimated that project losses due to Hurricanes Helene and Milton are about 381,409 cubic yards of sand.

Recommend nourishment to include restoration of these volumes lost due to the 2024 storms. The estimated construction cost per cubic yard of sand from authorized sources is \$33.04. Project is not FEMA Category G eligible.

100% state/local share is **\$12,716,176.06.**

Sanibel North End Nourishment, R-110 to R-122

The North end of Sanibel Island is authorized for sand placement under the Captiva Island, Lee County Shore Protection Project's permit and under the Blind Pass Maintenance Dredging permit. Based on initial surveys it is estimated that this area of shoreline lost approximately 211,700 cubic yards of sand due to Hurricanes Helene and Milton.

Expected construction costs for nourishment is \$5,610,050.00. Because of federal cost share uncertainties, DEP recommends non-federal funds be provided for 100% of anticipated construction, minus the remaining funds from the grant agreement from Hurricanes Ian and Nicole of \$3,128,563.00 which equates to **\$2,481,487.00**

These values are based on preliminary data and are subject to updates.

Sanibel Island, R-122 to R-173.5

There are no engineered beaches on this segment of Sanibel Island eligible for FEMA Category G recovery. It is unclear if any reaches of shoreline will be eligible for FEMA Category B emergency sand placement. To assist Sanibel Island in restoring the beach and dune system following the impacts of Hurricane Ian, the City of Sanibel was granted non-federal funding for sand placement densities using a calculation of 6 cubic yards per foot of shoreline from R-122 to R-173.5. This equated to approximately 51,500 linear feet of shoreline and total of 309,000 cubic yards of sand. Based on project and regional comparisons, it was estimated that the cost per cubic yard of sand could be \$77. Given this, the City of Sanibel was provided with a total of \$23,793,000.00 in non-federal dollars to restore the beach and dune systems of the island following Hurricane Ian. Only \$5,471,727.00 remain available under this agreement.

Losses to the beach and dune resulting from Hurricanes Helene and Milton are estimated at 368,650 cubic yards. Recommend funding the replacement of these losses at 100% non-federal funding, which is estimated at \$28,386,050.00. Subtracting the remaining funds from the Ian and Nicole Agreement results in **\$22,914,323.00.**

These values are based on preliminary data and are subject to updates.

Estero Island Beach Restoration and Nourishment Project, R-174 to R-198 and R-203 to R-207

The Estero Island Beach Restoration and Nourishment Project is managed by the City of Ft. Myers Beach. Based on pre- and post-beach surveys, it is estimated there was approximately 113,140 cubic yards of sand lost due to the combination of Hurricanes Helene and Milton in the project area that are not FEMA eligible.

Post Hurricane Ian nourishment has recently completed, but losses from Hurricanes Helene and Milton remain due to the timing of contracting the construction effort.

Recommend funding losses not eligible for FEMA assistance in next nourishment at 100% state share.

Based on anticipated construction costs, 113,140 cubic yards of sand will equate to approximately **\$11,637,304.00**.

Lovers Key and Bonita Beach, Beach Nourishment Projects, R-214.5 to R-220.5 and R-226.5 to R-230

Lee County is the local sponsor for both beach fill segments. The county has a Management Agreement with DEP to maintain the beach on the Lovers Key State Park, and an Interlocal Agreement with the City of Bonita Springs to maintain Bonita Beach. Based on pre and post storm surveys, the losses resulting from Hurricanes Helen and Milton that are not FEMA eligible are estimated at 100,600 cubic yards of sand.

Recommend nourishment as scheduled and fund additional losses not funded under FEMA as 100% state share.

Based on anticipated construction costs, 100,600 cubic yards of sand will equate to approximately **\$3,972,694.00**.

South Bonita Beach, R-230 to R-239.25

This is a stretch of previously unmanaged beach prior to Hurricane Ian. The City of Bonita Beach with assistance from the Hurricanes Ian and Nicole Beach and Dune Recovery Plan Agreement is constructing a dune project. Losses resulting from Hurricanes Helene and Milton are estimated at 70,000 cubic yards. Based on construction bid advertisement proposals, the cost per cubic yard of sand is \$75.77.

Recommend dune restoration from R-230 to R-239.25, Due to uncertainties in federal funding, recommend 100% state share of **\$5,303,900.00**.

Collier County

Barefoot Beach, R-1 to R-9

This is a stretch of previously unmanaged beach prior to Hurricane Ian. Collier County is seeking assistance in restoring dune losses on this section of beach following the impacts of Hurricanes Helene and Milton.

Recommend dune nourishment from R-1 to R-9, to replace losses from Helene and Milton at an estimated 36,948 cubic yards of sand. Based on project cost comparisons this would equate to \$1,787,544.00. The project is likely eligible for FEMA assistance at 75% federal share. Recommend funding **\$446,886.06**.

Barefoot/Wiggins Pass, R-10 to R-22

This is a stretch of shoreline managed by Collier County. Estimated losses resulting from Hurricanes Helene and Milton are 152,000 cubic yards of sand. Estimated cost per cubic yard of sand from authorized sources is \$48.38. Recommend funding the non-federal portion of replacing these losses equating to **\$1,838,440.00**.

Vanderbilt Beach, R-23 to R-30.5

Vanderbilt Beach is managed by Collier County and is incorporated in the greater Collier County Nourishment Project. Based on pre- and post-storm surveys it is estimated this segment of beach lost 76,321 cubic yards of sand.

Recommend nourishment to restore volumes lost due to storms. Estimated construction cost is \$3,692,409.98. Project is FEMA assistance eligible. FEMA eligible non-federal cost share based on FEMA 75% and 25% state/local share is **\$923,102.50**.

Pelican Bay, R-30.5 to R-36

The Pelican Bay segment of Collier County is managed by Collier County and is incorporated in part in the greater Collier County Nourishment Project. Based on pre- and post-storm surveys it is estimated this segment of beach lost 45,438 cubic yards of sand and has areas in need of protective dunes.

Recommend nourishment to restore volumes lost due to storms. Estimated construction cost is \$2,198,290.44. Project is FEMA assistance eligible. FEMA eligible non-federal cost share based on FEMA 75% and 25% state/local share is **\$549,572.61**.

Park Shore, R-43.5 to R-54.5

Park Shore Beach is managed by Collier County and is incorporated in the greater Collier County Nourishment Project. Based on pre- and post-storm surveys it is estimated this segment of beach lost 103,048 cubic yards of sand.

Recommend nourishment to restore volumes lost due to storms. Estimated construction cost is \$4,985,462.24. Project is FEMA assistance eligible. FEMA eligible non-federal cost share based on FEMA 75% and 25% state/local share is **\$1,246,365.56**.

Naples, R-58 to R-79

This segment of shoreline is managed by Collier County and is incorporated in the greater Collier County Nourishment Project. Based on pre and post storm surveys it is estimated this segment of beach lost 101,293 cubic yards of sand.

Recommend nourishment to restore volumes lost due to storms. Estimated construction cost is \$4,900,555.34. Project is FEMA assistance eligible. FEMA eligible non-federal cost share based on FEMA 75% and 25% state/local share is **\$1,225,138.84**.

South Naples, R-79 to R-89

This is a stretch of previously unmanaged beach, prior to Hurricane Ian, and contains no engineered beaches eligible for FEMA Category G funding. Collier County is seeking assistance in restoring dune losses on this section of beach through FEMA.

Recommend dune restoration from R-79 to R-89, replacing losses resulting from Hurricanes Helene and Milton of 88,983 cubic yards of sand. Based on project cost comparisons this would equate to \$4,304,997.54. Assuming FEMA assistance, DEP recommends state share of **\$1,076,249.39.**

South Marco Island Beach Nourishment Project, R-144 to G-4

The South Marco Island Beach Nourishment Project is managed by Collier County and is eligible for FEMA Category G funding. Based on pre- and post-storm surveys it is estimated this segment of beach lost 80,000 cubic yards of sand.

Recommend nourishment to restore volumes lost due to storms. Estimated construction cost is \$4,548,000.00. FEMA non-federal cost share based on FEMA 75% and 25% state/local share is **\$1,137,000.00.**

Atlantic Coast Beaches

St. Johns County

Ponte Vedra Beach Restoration Project, R-1 to R-46.4

This is a new beach restoration project constructed in 2024. Estimated losses from Hurricane Milton are 300,000 cubic yards of sand. Based on an average cost per cubic yard of sand at \$30, the restoration of losses due to Hurricane Milton will be approximately \$9,000,000.00.

Recommend nourishment to restore volumes lost due to storms. Project is FEMA Category G eligible. FEMA eligible non-federal cost share based on FEMA 75% and 25% state/local share is **\$2,250,000.**

South Ponte Vedra Beach Restoration Project, R-76 to R-103.5

The South Ponte Vedra Beach Restoration project was initially constructed by St. Johns County in 2021/22. Based on pre-and-post beach surveys, it is estimated there was approximately 200,000 cubic yards of sand lost to Hurricane Milton.

Recommend nourishment to restore lost volumes. The estimated construction cost is \$6,000,000. Project is FEMA Category G eligible.

FEMA eligible non-federal cost share based on FEMA 75% and 25% state/local share is **\$1,500,000.00.**

Flagler County

Flagler County- Category B Dune Projects

Portions of North Flagler County outside of the previously constructed dune projects are in need of emergency dune placement as a result of Hurricane Milton. Estimated construction costs are 70,000 cubic yards of sand at an estimated \$75.00 per cubic yard. FEMA eligible non-federal cost share based on FEMA Cat B is 75% and 25% state/local share is **\$1,312,500.00**.

North Flagler County Dunes, R-2.3 to R-11.8, R-15.9 to 24.3 and R-47.9 to R-65

The North Flagler County Dune Project is managed by Flagler County. Based on pre- and post-storm surveys, it is estimated there was approximately 130,000 cubic yards of sand lost to Hurricane Milton.

Recommend dune nourishment to restore volumes lost due to storms. Estimated construction cost is \$9,750,000.00. Project is FEMA Category G eligible.

FEMA eligible non-federal cost share based on FEMA 75% and 25% state/local share is **\$2,437,500.00**.

Volusia County

There are currently no engineered beaches in Volusia County eligible for FEMA Category G recovery or FEMA Category B emergency sand placement following Hurricane Milton.

In order to assist Volusia County in restoring the beach and dune system following Hurricane Ian and Nicole, Volusia County received \$46,620,000.00 in grant agreements for initial repairs and for long-term management projects. Although the county's shoreline above and below mean high water lost approximately 2 million cubic yards of sand, it is expected that upcoming restoration projects will replace these losses. Given this, Volusia County responsibly declined requesting additional funds in response to Hurricane Milton at this time.

Brevard County

Brevard County Dunes — South Beaches, R-141 to R-213

The Brevard County Dunes — South Beaches Project is managed by Brevard County. Based on pre- and post-storm beach surveys, it is estimated there was approximately 62,000 cubic yards of sand lost to Hurricane Milton.

Recommend dune nourishment to restore volumes lost due to Hurricane Milton. Estimated construction cost is \$5,890,000. Project is FEMA Category G eligible.

FEMA eligible non-federal cost share based on FEMA 75% and 25% state/local share is **\$1,472,500.00**

Indian River County

Sector 3 Beach, R-20 to R-55

Indian River County manages Sector 3 beaches. Based on pre- and post-storm beach surveys, it is estimated there was approximately 322,400 cubic yards of sand lost due to Hurricane Milton.

Recommend nourishment to restore volumes lost due to storms. Estimated construction cost is \$16,952,839.01. Project is FEMA Category G eligible.

FEMA eligible non-federal cost share based on FEMA 75% and 25% state/local share is **\$4,057,758.00.**

St. Lucie County

Intermediate Dune Repairs in Ft. Pierce Shore Protection Project, R-34 to R-41 or St. Lucie South Beach Nourishment, R-98 to R-116

These are federally authorized beach projects managed by the USACE and St. Lucie County. The projects are federally authorized and are eligible for FCCE recovery funds and are not eligible for FEMA assistance. However, due to construction schedule uncertainties, St. Lucie County is requesting **\$4,238,209.75** in state, non-federal funds to construct a dune project to protect upland structures and restore habitat prior to the 2025 and/or 2026 hurricane seasons.

Martin County

MacArthur Dune Project, R-27 to R-34

This is a stretch of previously constructed but unmanaged beach and does not qualify as an engineered beach eligible for FEMA Category G funding. Martin County is seeking assistance in restoring dune losses on this section of beach under FEMA Category B funds.

Recommend dune restoration from R-27 to R-34. Based on a dune nourishment volume of approximately 4,500 cubic yards and the difference in eligible funds from FEMA, construction costs are estimated at \$180,855.00.

Recommend funding the non-federal share of **\$180,855.00.**

Palm Beach County

Coral Cove Dune Nourishment, R-1 to R-7.5

The Coral Cove Dune Nourishment Project is managed by Palm Beach County. Based on pre- and post-storm beach surveys, it is estimated that approximately 15,468 cubic yards of sand was lost due to Hurricane Milton which is not eligible for FEMA assistance.

Recommend dune nourishment to restore volumes lost due to the storm.

FEMA eligible non-federal cost share based on FEMA 75% and 25% state/local share is **\$925,759.80.**

Singer Island Dune Project, R-60.5 to R-65.7

Similar to the Coral Cove Project, the Singer Island Dune Nourishment Project is managed by Palm Beach County. Based on pre- and post-storm beach surveys, it is estimated there was approximately 17,765 cubic yards of sand lost due to Hurricane Milton that is not FEMA eligible.

FEMA eligible non-federal cost share based on FEMA 75% and 25% state/local share is **\$1,133,939.95.**

III. Summary

There are 35 projects or coastal reaches identified in the Plan. In total, the non-federal funds requested through this Recovery Plan is **\$242,477,972.24.**

It is important to note that the comparatively high funding amount is likely due to several factors. First, the Gulf Coast Region has seen an extremely active hurricane season for the previous three years, with some areas being impacted by four storms in two seasons. Secondly, federal funding is slow to become available and waiting for this funding to commence construction of beach and dune restoration efforts can leave communities more vulnerable for sometimes multiple hurricane seasons. Lastly, high construction mobilization costs are being noted throughout Florida. This is likely due to the high number of construction activities requiring dredge equipment throughout the east coast of the U.S., and the relatively high amount of work being advertised in Florida, which are driving the increased demand of dredge equipment.

All but one of the 35 project areas have prior history of sand placement or management activities to some extent. Comparatively, the Hurricanes Ian and Nicole Recovery Plan identified 48 project areas, but approximately 68% of the total funds being requested was being applied to previously unmanaged stretches of shoreline.

The funds in this Recovery Plan are being requested outside of the annual beach and inlet management funding.

Appendix E: H&M FEMA Cat B Memorandum



HUMISTON & MOORE ENGINEERS

COASTAL
ENGINEERING DESIGN
AND PERMITTING

5679 STRAND COURT
NAPLES, FLORIDA 34110
FAX: 239 594 2025
PHONE: 239 594 2021

September 3rd, 2025

Sent via E-mail

MEMORANDUM

To: Holly D. Milbrandt
Natural Resources Director, City of Sanibel
Holly.Milbrandt@mysanibel.com

From: Marc Damon, P.E.

Re: **Sanibel Island, FEMA CAT B Analysis - Hurricane Milton (2024)**
HM File No. 27-008 – Sanibel Island

The FEMA Emergency Public Assistance Program for CAT B allows assistance measures to areas affected by storms, for protection against significant additional damage to improved public or private property from an immediate threat such as a 5-year return storm. The program requires an analysis be prepared by a coastal engineer to establish eligibility. This memo presents the analysis prepared by Humiston & Moore Engineers (H&M) for Sanibel Island for the impacts caused by Hurricane Milton in 10/2024. The analysis was prepared following the recently updated FEMA guidelines for CAT B funding, dated 04/28/2025 and presented at a virtual meeting with FEMA review staff in August 2025.

The updated FEMA guidelines require that an eligible property be vulnerable to a 5-year return storm. The Total Water Level (TWL) needs to be computed and consists in the estimated 5-year return storm surge + the wave runup. Vulnerability is then determined if the bottom elevation of the lowest horizontal structural member is lower than the TWL and/or the property is located within the inundated zone as defined by FEMA see **Figure 1** below.

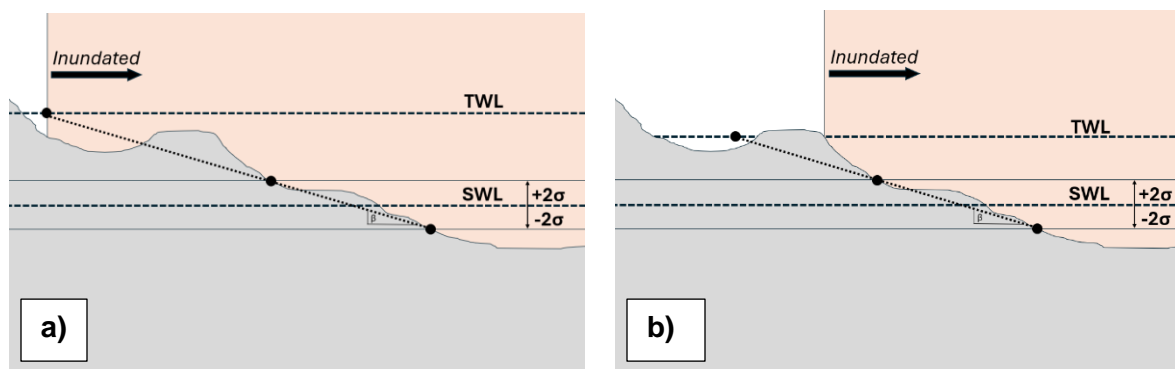


Figure 1 – FEMA definition of inundated area

- 5-year storm surge: the 5-year return surge was obtained from the FDEP “Inclusion Of Tropical Storms for the Combined Total Storm Tide Frequency Restudy for Lee County, Florida (2012)” with values of +3.5ft & +4.1ft NAVD88 at Profiles 2 & 4, for an average of +3.8ft NAVD88.

- **Wave runup:** the wave runup was obtained using the FEMA suggested approach consisting in the Stockdon (2006) empirical formula:

$$R_{2\%} = 1.1 \left(0.35\beta(H_s L_p)^{0.5} + \frac{[H_s L_p (0.563\beta^2 + 0.004)]^{0.5}}{2} \right).$$

$R_{2\%}$ = Wave runup exceeded by 2% of the waves

H_s = Deep water significant wave height

L_p = Deep water wavelength

β = Beach slope¹

The deep-water wave height H_s was obtained from the USACE Wind Hindcast Station (WIS) #ST73294 for a 5-year return event (event #4 in **Figure 2**) with **$H_s=2.29\text{m}$ (7.51ft)** from 2022 with a period **$T_p=7.5\text{s}$** .

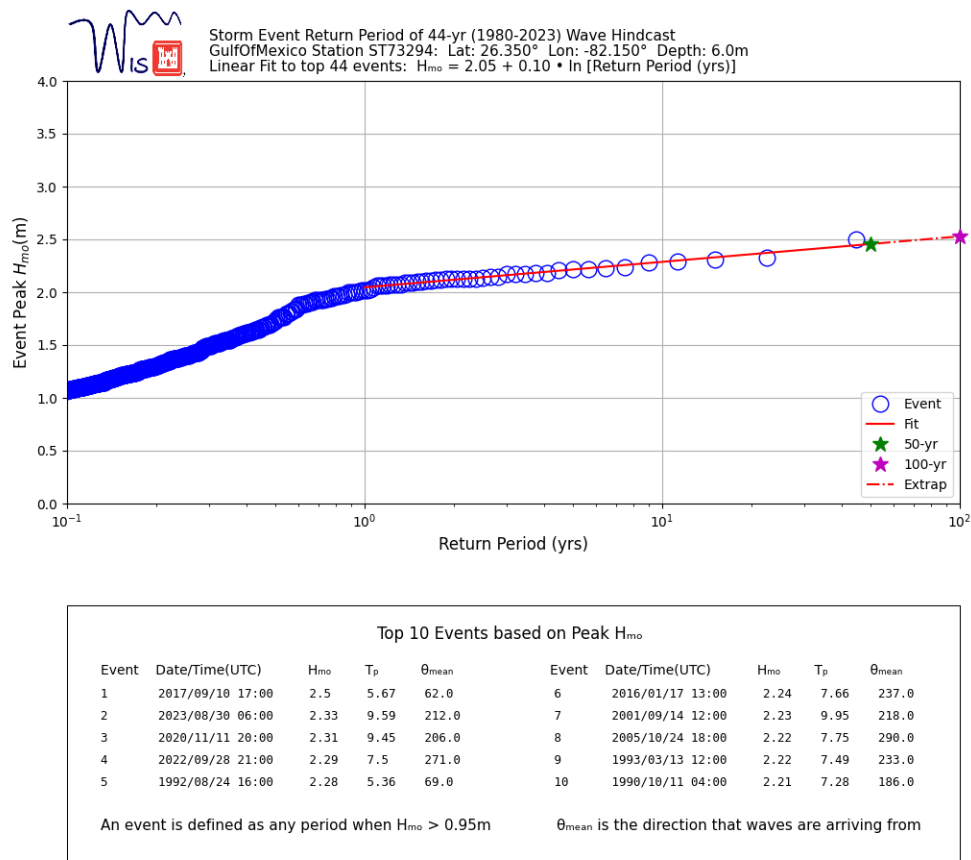


Figure 2 – USACE WIS – Extreme Event Statistics at Sanibel Island

The beach slope is in the runup equation directly impacts the area of inundation illustrated in **Figure 1**, and FEMA recommends measuring it between +/- 2 standard deviations. The most recent available year (2021) of tide records from the Naples Pier (closest NOAA station) was used to compute the standard deviation (0.8ft rounded to 1ft). The beach slopes for all DNR monuments were measured between +2ft & -2ft NAVD88 for the 03/2025 survey. An average

¹ Calculate based on post-disaster beach profile region +/- 2 standard deviations of the continuous water level around the SWL.

beach slope was also assessed along 4 sections of beach (**Figure 3**).

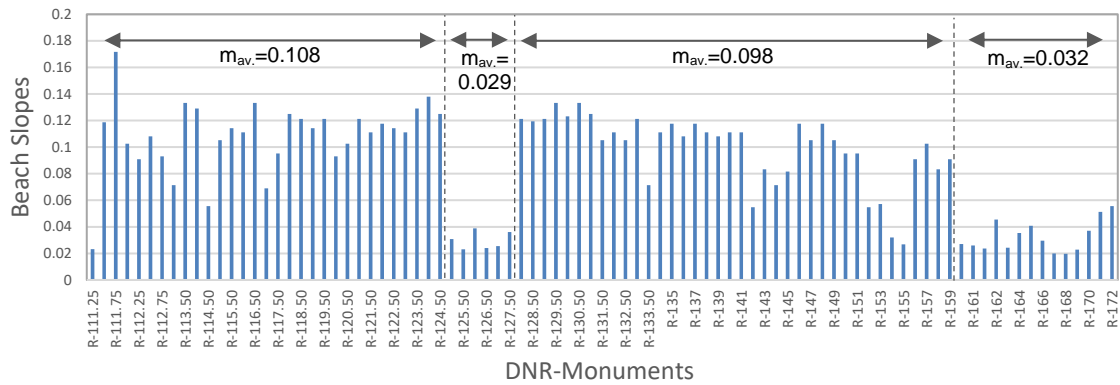


Figure 3 – Sanibel Island Computed Beach Slopes

The computed runup and TWL are presented in **Table 1** below. The computed runup is approximately 4ft for most of the island except for 2 areas with milder slopes (R-125 to R127.5 and R-160 to R-172) where values are close to 2ft. The computed TWL ranged from +8.3ft and 6ft NAVD88.

Table 1 – Sanibel Island Computed TWL

	5-yr WL	R2	TWL
R-111 to R-124.5	3.8	4.5	8.3
R-125 to R-127.5	3.8	2.2	6
R-128 to R-159	3.8	4.2	8
R-160 to R-172	3.8	2.3	6.1

Given that most structures on the island that were non-compliant with FEMA guidelines in terms of lowest floor elevation were destroyed during Hurricane Ian (2022), and that most of the shoreline is located within the FEMA Zone VE with base flood elevations ranging from +10ft to +12ft NAVD88. As such, there are not many structures that would be eligible under the new FEMA guidelines. The definition of TWL and inundation zone have become more restrictive and therefore, a structure must be low enough and close enough to the shoreline to be eligible. Any structures built after 1991 along the beach would be even higher per the state Coastal Construction Control Line design requirements referenced in Section 3109 of the Florida Building Code.

The area closest to meet eligibility is a limited section of the evacuation route along Sanibel Captiva Road at the north end of the Island by DNR Monument R-111 because of the high erosion rates and low elevation of the road. **Figure 4** below presents the analysis for R-111. While close to the road, the inundated zone would still be seaward and therefore would not qualify. This section of the road is protected by a seawall with a cap elevation at +7ft NAVD88 including a seaward toe-scour rock revetment.

Based on the review of the updated FEMA guidelines for CAT B funding and the post Milton survey data (03/2025), we do not believe this analysis supports eligibility for CAT B project at Sanibel Island.

Copy to: Joel Caouette, Coastal Biologist, City of Sanibel Natural Resources

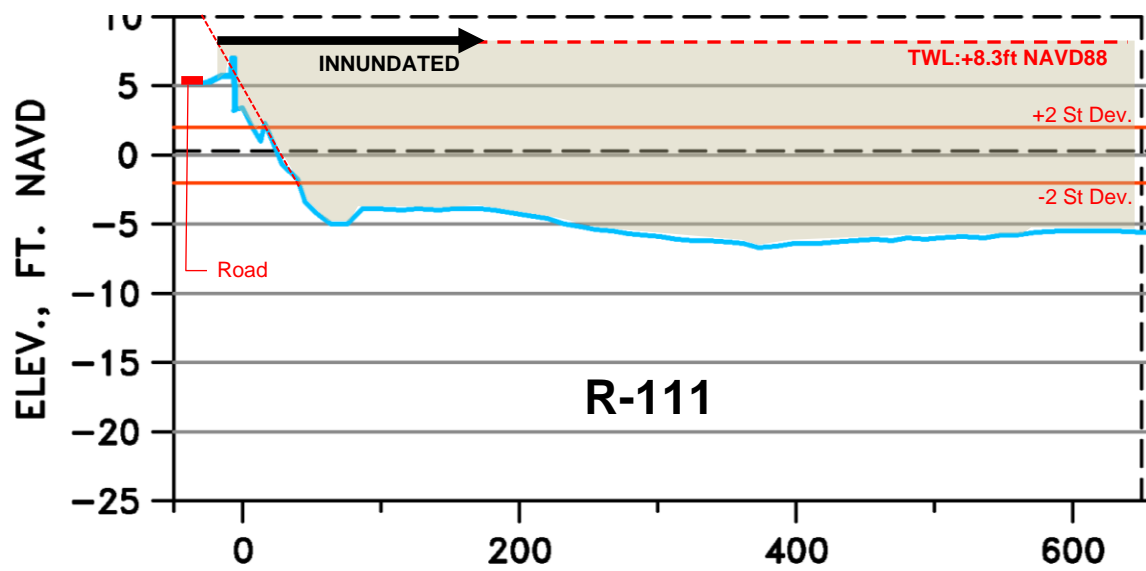
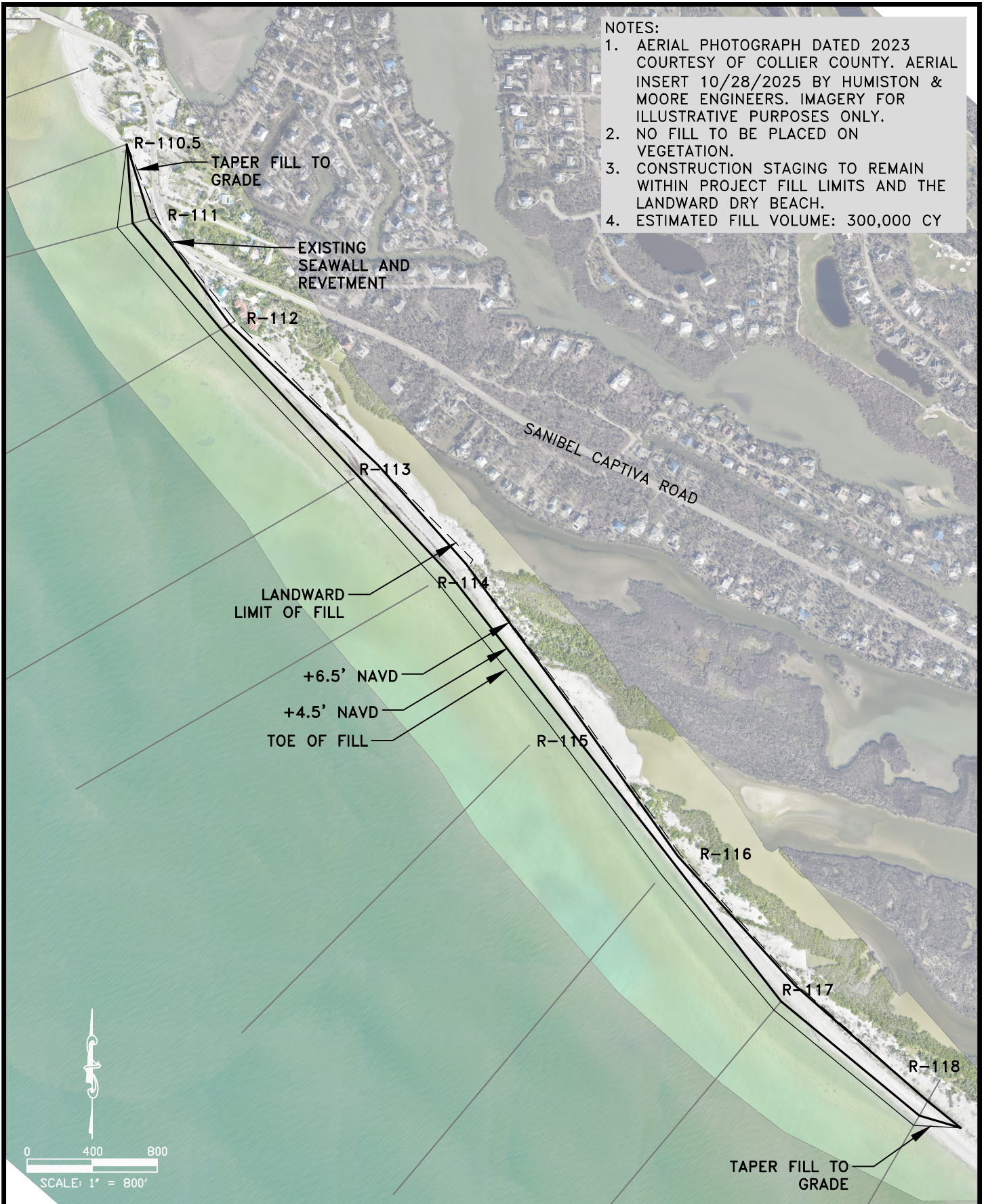


Figure 4 – Sanibel Island, Cat B Analysis @ R-111

NOTES:

1. AERIAL PHOTOGRAPH DATED 2023 COURTESY OF COLLIER COUNTY. AERIAL INSERT 10/28/2025 BY HUMISTON & MOORE ENGINEERS. IMAGERY FOR ILLUSTRATIVE PURPOSES ONLY.
2. NO FILL TO BE PLACED ON VEGETATION.
3. CONSTRUCTION STAGING TO REMAIN WITHIN PROJECT FILL LIMITS AND THE LANDWARD DRY BEACH.
4. ESTIMATED FILL VOLUME: 300,000 CY



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**NORTH SANIBEL ISLAND NOURISHMENT
SITE PLAN**

FOR: CITY OF SANIBEL

DATE: 11/03/25

FILE: PLAN

SCALE: SHOWN

JOB: 27008

DATUM: NONE

SHEET:

5679 STRAND COURT
NAPLES, FL 34110

FAX: (239) 594-2025

PHONE: (239) 594-2021

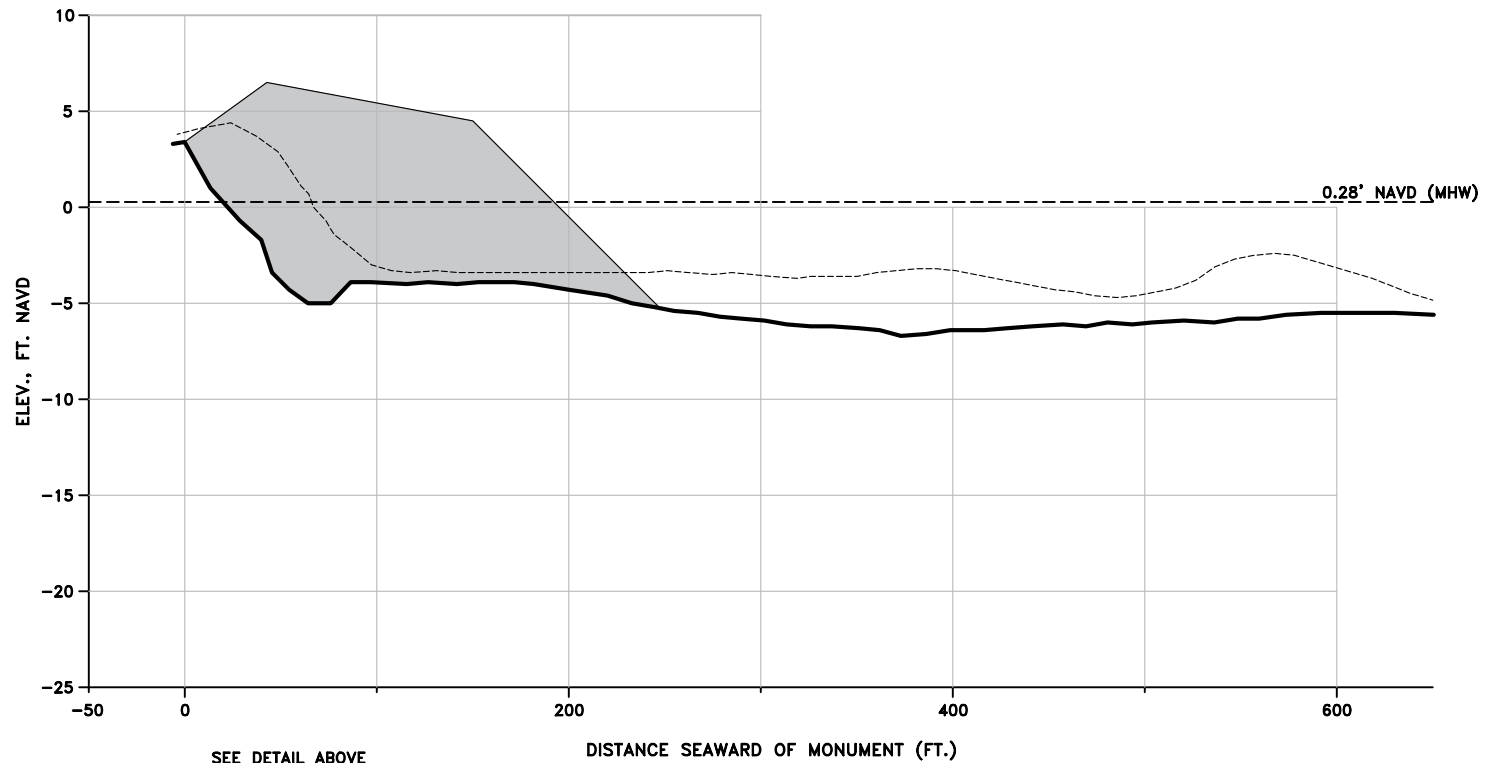
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BEACH PROFILE R-111 255°

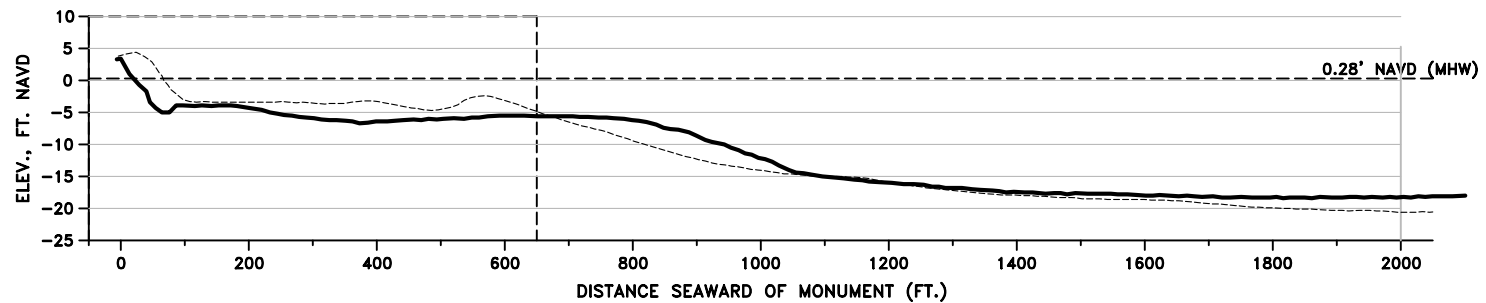
SURVEY LEGEND

----- 2022-09 PRE-IAN SDI
 ——— 2025-03 PRE-CON SDI

NEARSHORE DETAIL



SEE DETAIL ABOVE



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NORTH SANIBEL ISLAND NOURISHMENT BEACH PROFILE

FOR: CITY OF SANIBEL

DATE: 11/03/25

FILE: SECTION

SCALE: SHOWN

JOB: 27008

DATUM: NAVD

FIGURE:

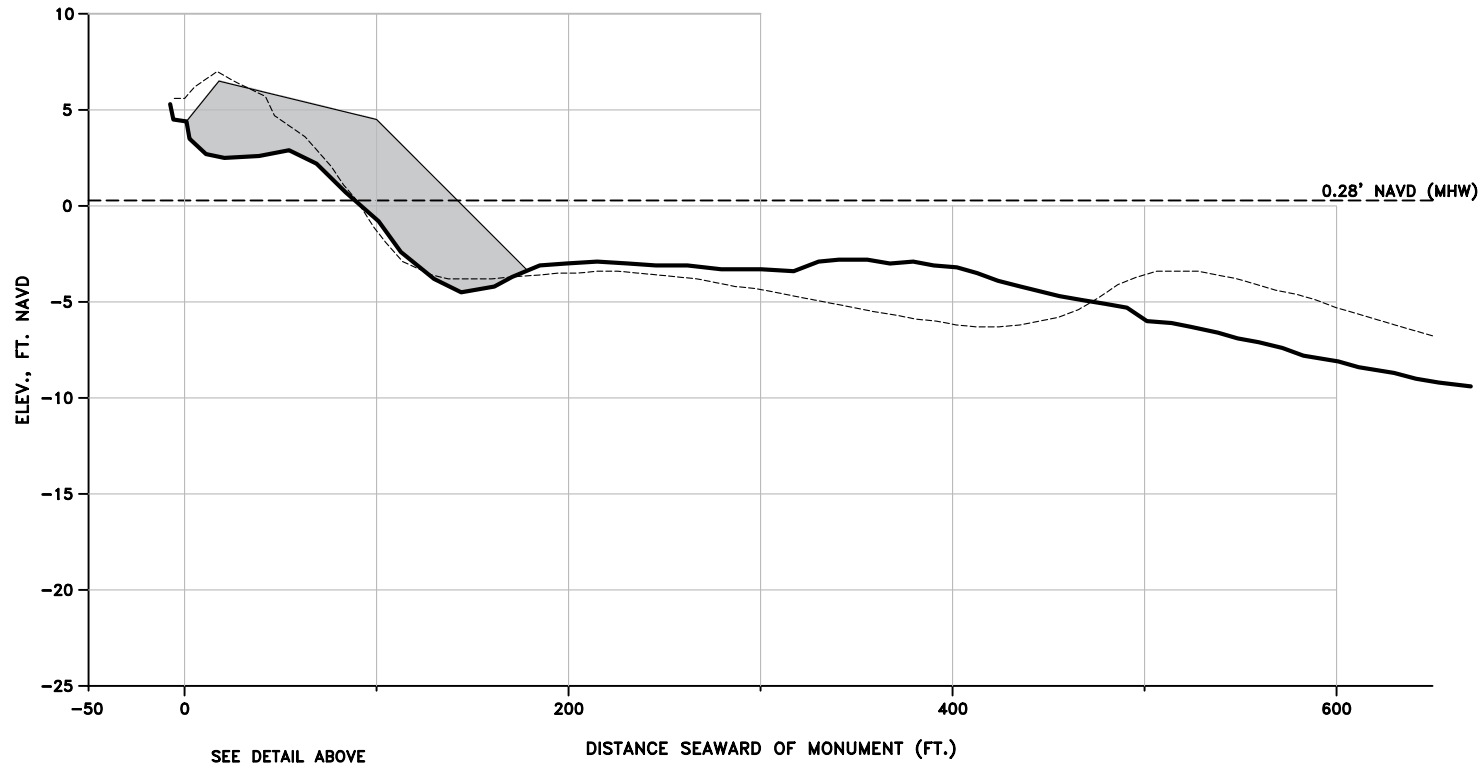
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BEACH PROFILE R-112

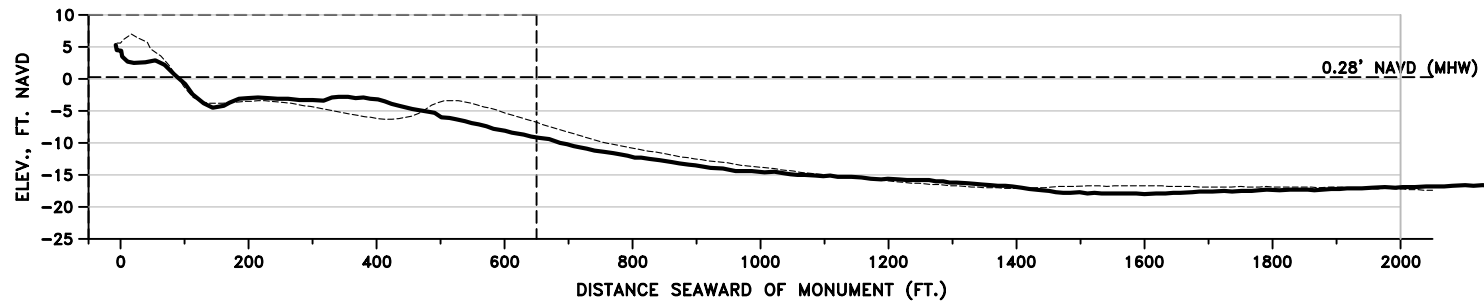
SURVEY LEGEND

----- 2022-09 PRE-IAN SDI
 ———— 2025-03 PRE-CON SDI

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FILE: SECTION

SCALE: SHOWN

JOB: 27008

DATUM: NAVD

FIGURE:

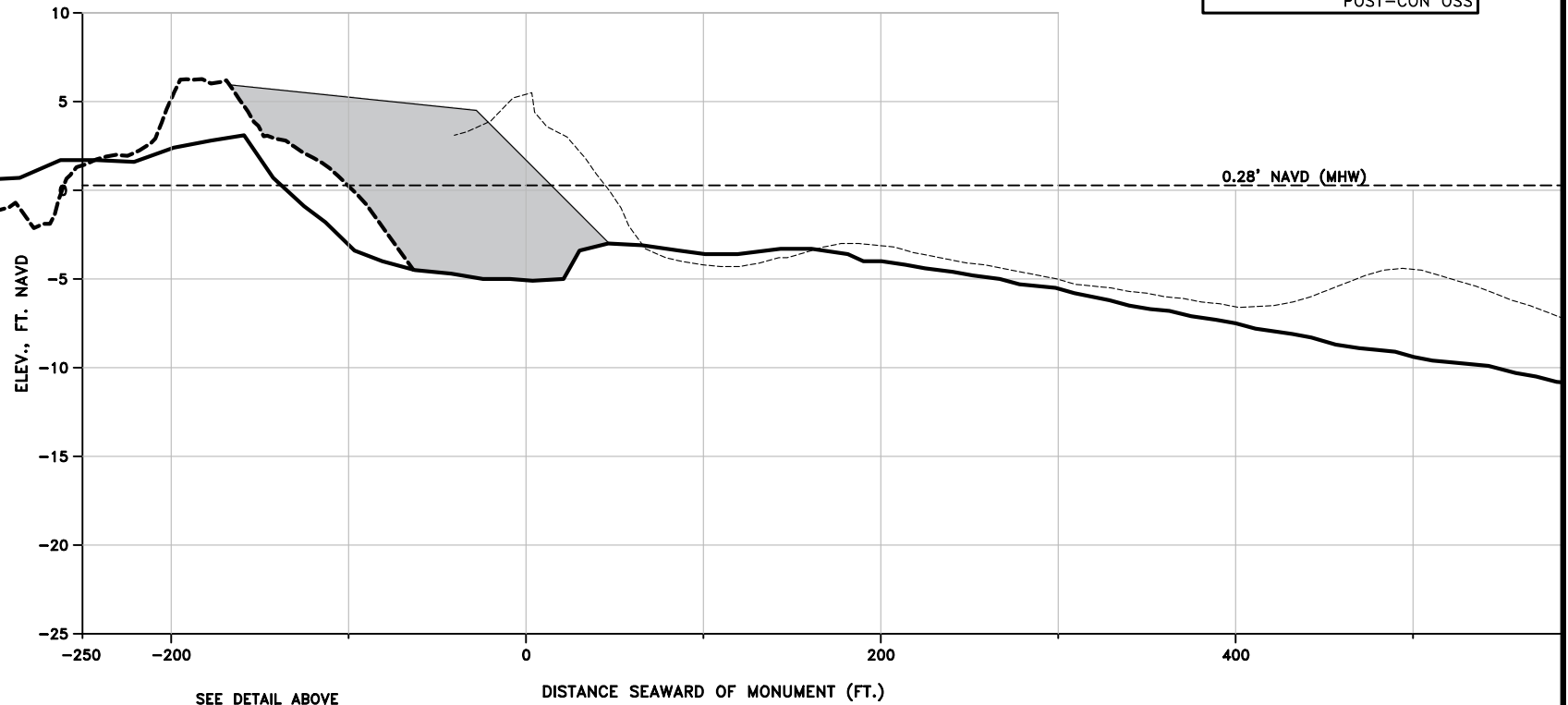
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BEACH PROFILE R-113

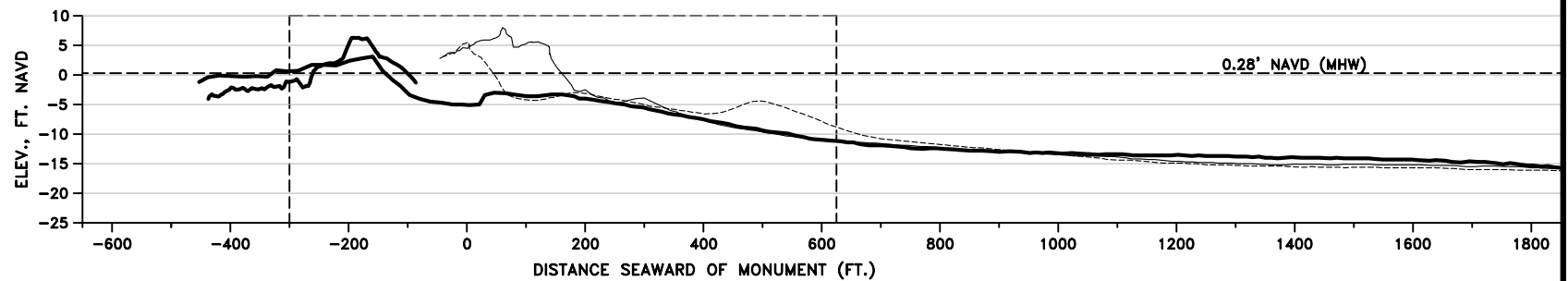
SURVEY LEGEND

- 2022-09 PRE-IAN SDI
- 2025-03 PRE-CON SDI
- 2025-04 CLAM BAYOU POST-CON OSS

NEARSHORE DETAIL



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SCALE: SHOWN

JOB: 27008

DATUM: NAVD

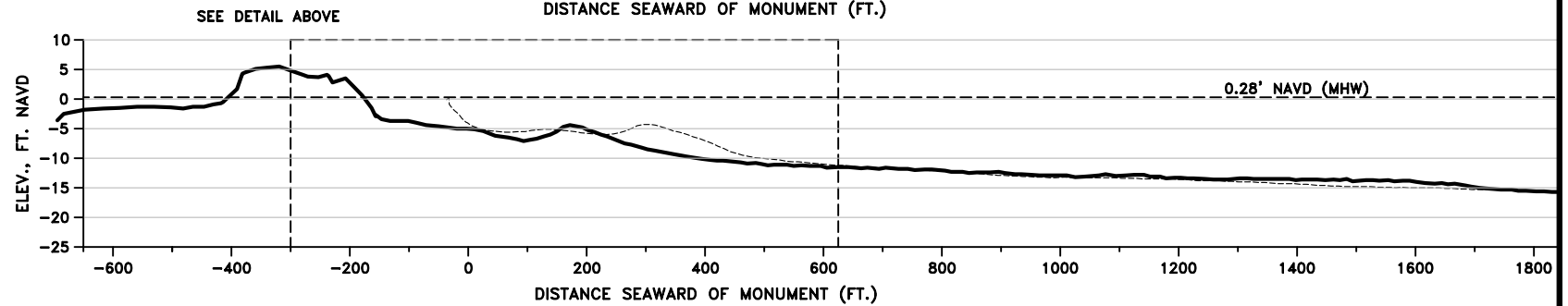
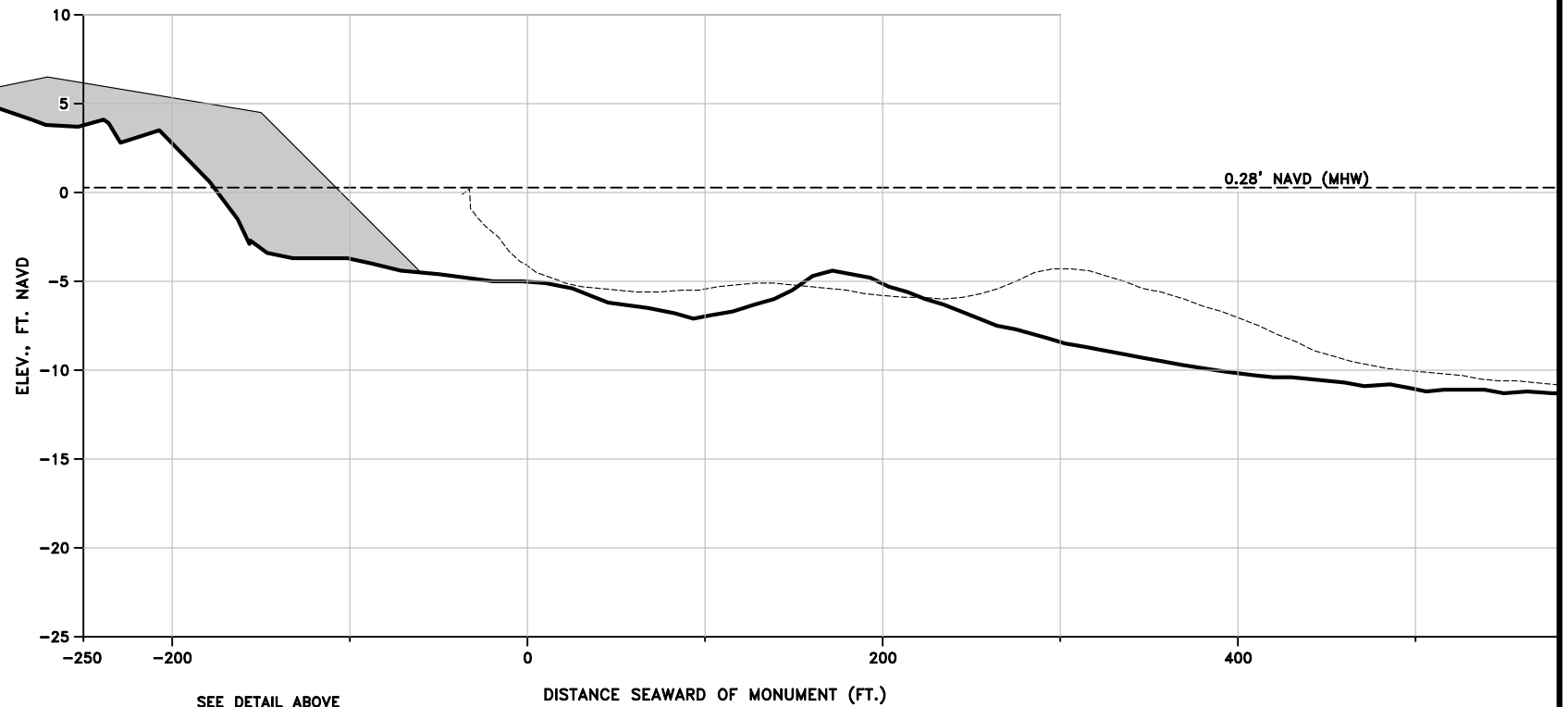
FIGURE:

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BEACH PROFILE R-114

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SCALE: SHOWN

JOB: 27008

DATUM: NAVD

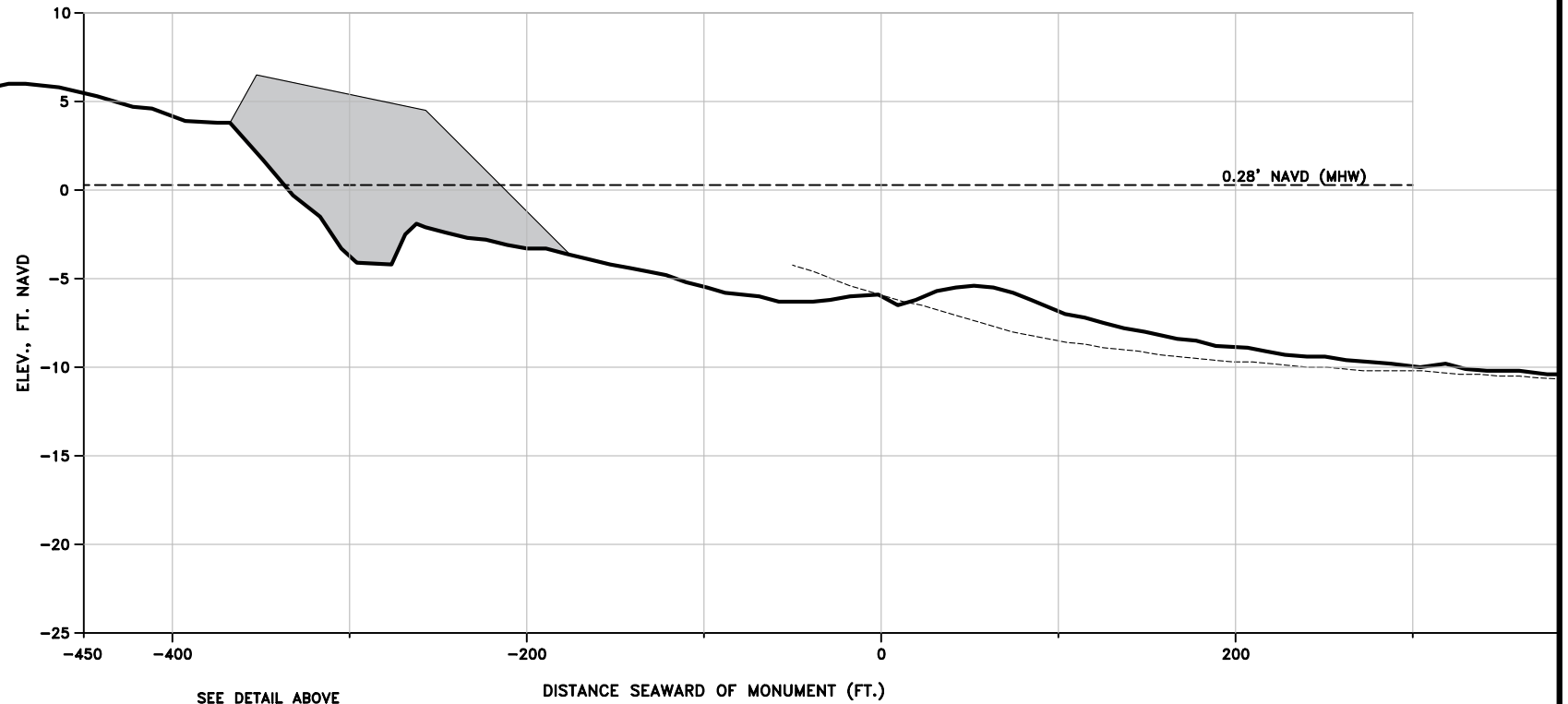
FIGURE:

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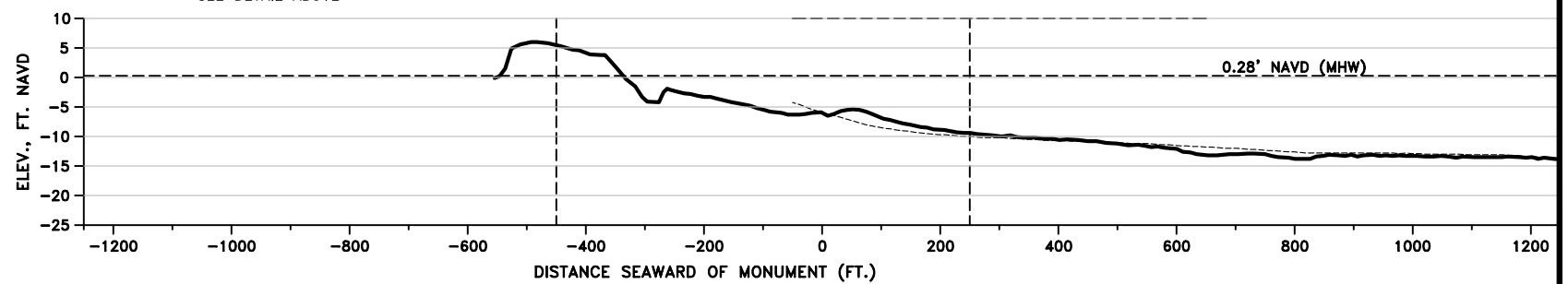
BEACH PROFILE R-115

SURVEY LEGEND		
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DATE: 11/03/25	FILE: SECTION	SCALE: SHOWN
JOB: 27008	DATUM: NAVD	FIGURE:

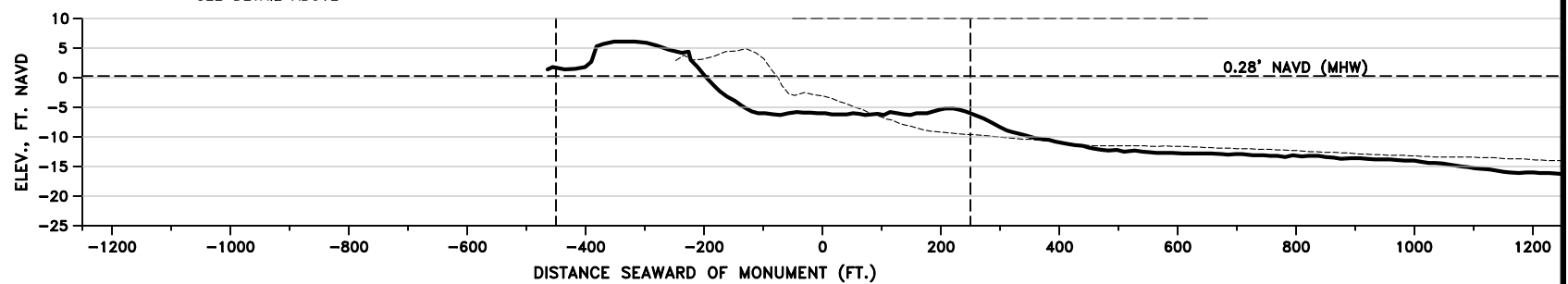
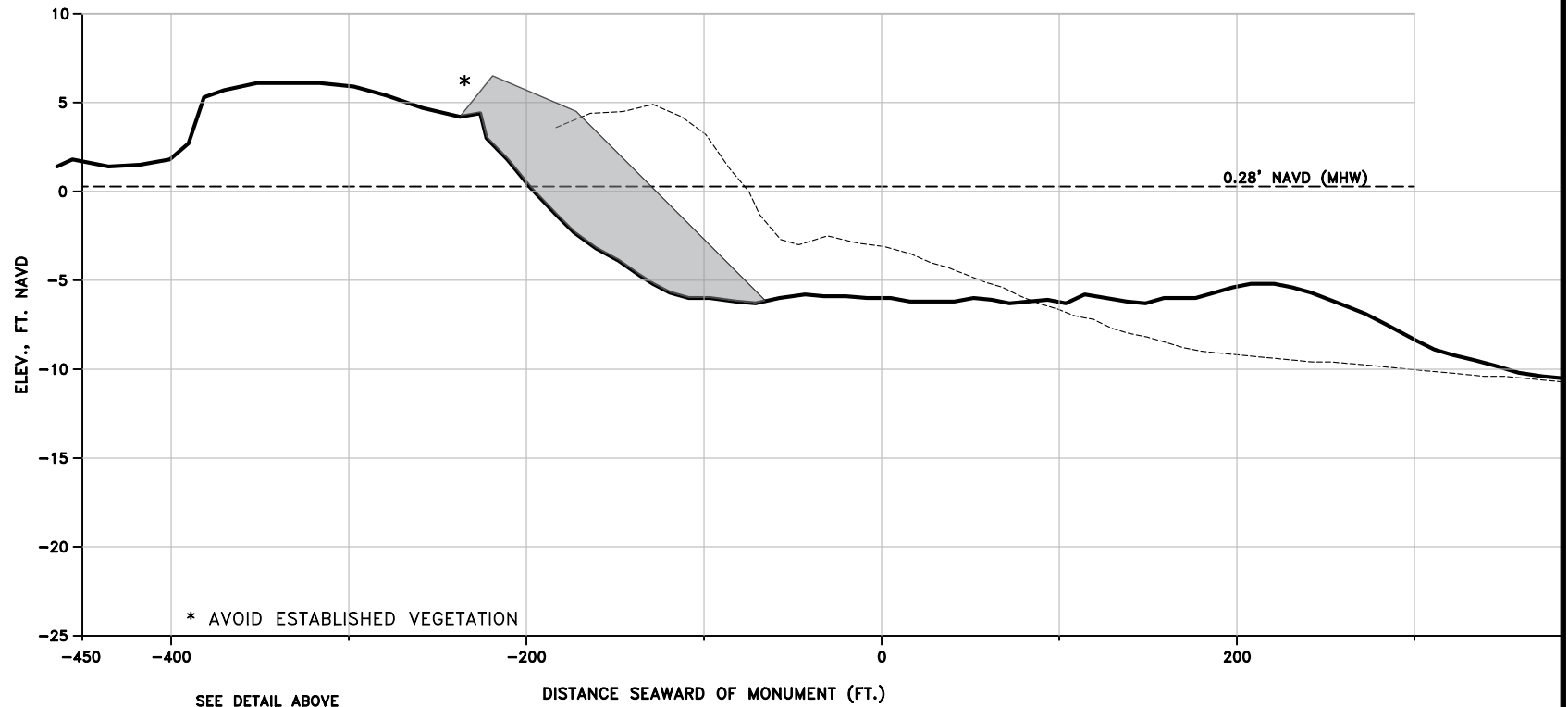
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BEACH PROFILE R-116

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DATE: 11/03/25

JOB: 27008

FILE: SECTION

DATUM: NAVD

SCALE: SHOWN

FIGURE:

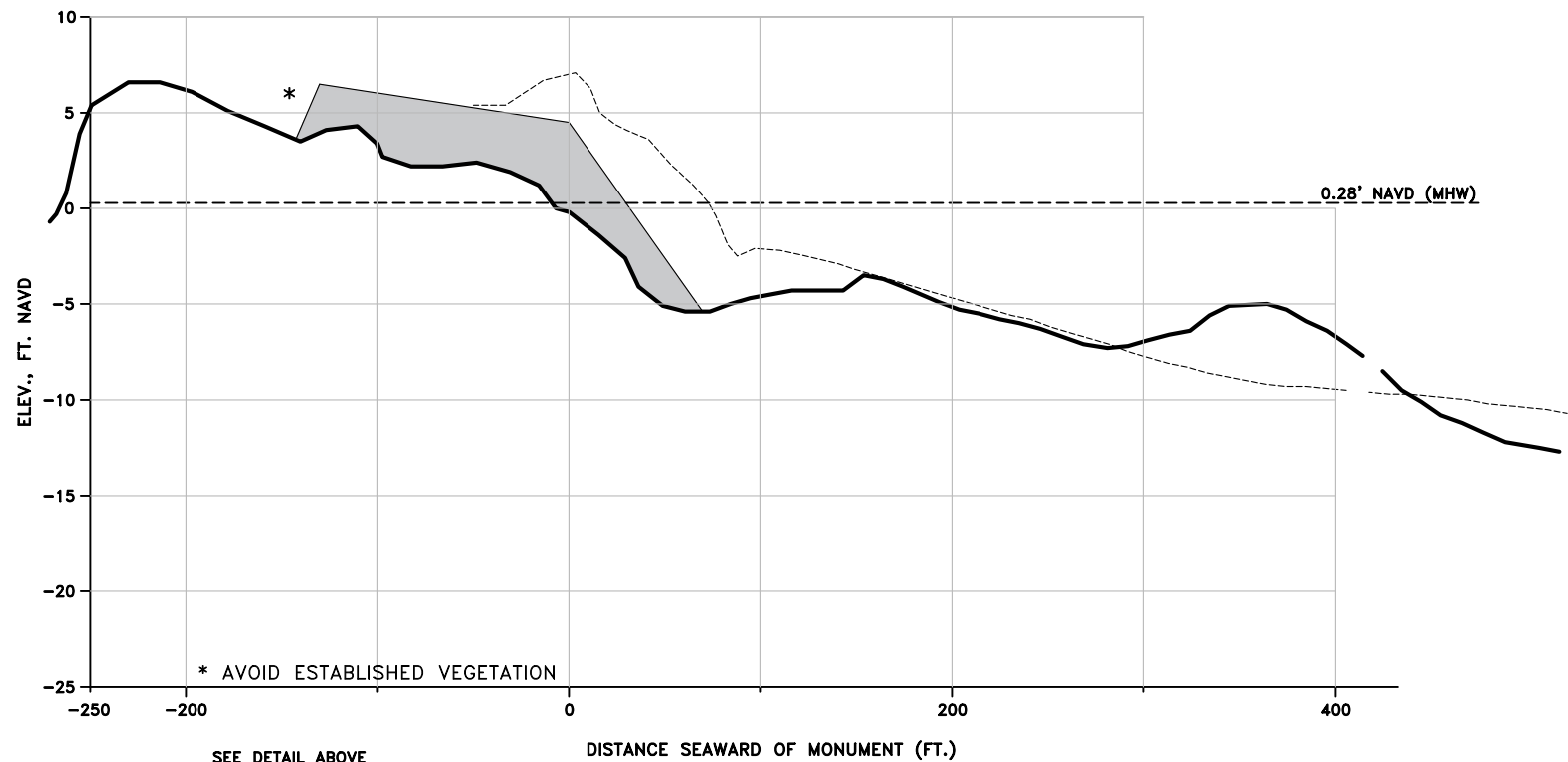
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BEACH PROFILE R-117

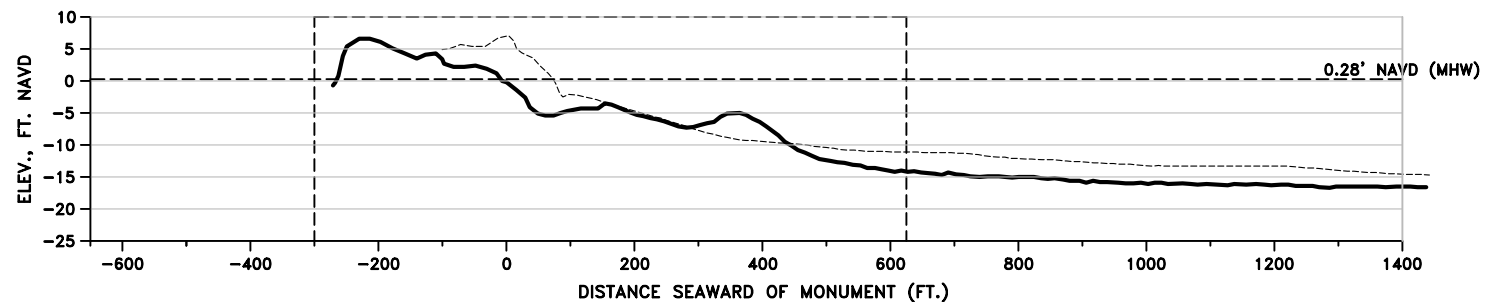
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NEARSHORE DETAIL



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JOB: 27008

FILE: SECTION

DATUM: NAVD

SCALE: SHOWN

FIGURE:

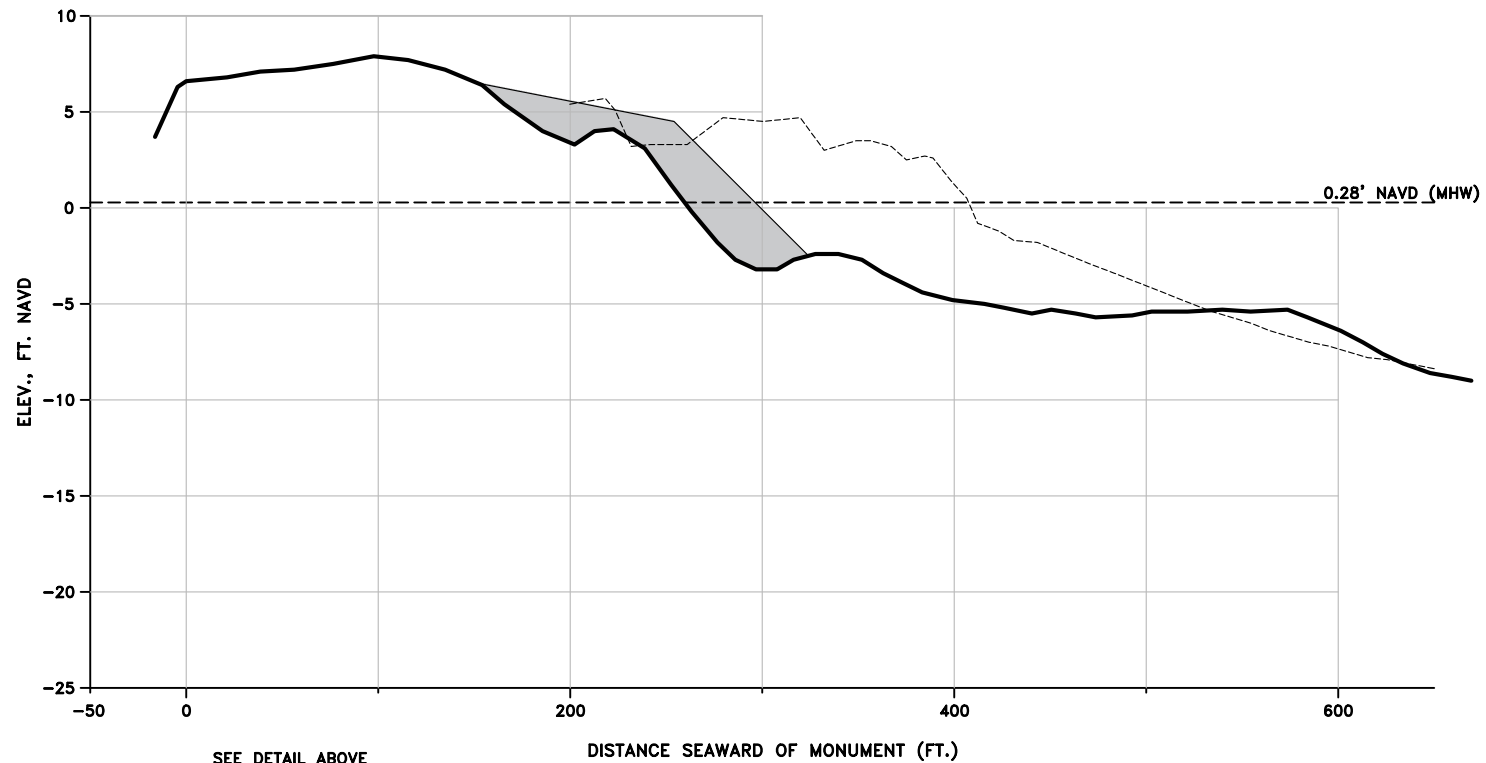
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BEACH PROFILE R-118

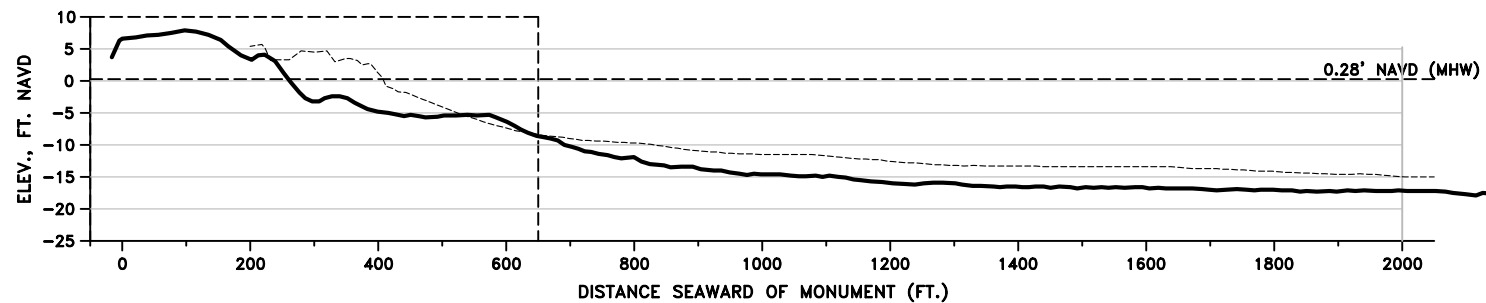
SURVEY LEGEND

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NEARSHORE DETAIL



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SCALE: SHOWN

JOB: 27008

DATUM: NAVD

FIGURE:

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AGREEMENT

THIS AGREEMENT is dated as of the 25 day of JULY, 2024, by and between the Captiva Erosion Prevention District (hereinafter called DISTRICT) and GREAT LAKES DREDGE AND DOCK LLC (hereinafter called CONTRACTOR).

DISTRICT and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

1. WORK.

CONTRACTOR agrees, at its own cost or expense, to provide all necessary labor, materials, equipment, supplies, services, machinery, tools, apparatus and other means of construction, including utility and transportation services, necessary to perform and complete in a proper and workman-like manner all the Work. Work shall be in full compliance with the requirements of the Contract Documents.

2. ENGINEER.

The Project has been designed by Aptim Coastal Planning & Engineering, LLC who is hereinafter called ENGINEER and who will assume all duties and responsibilities and will have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

3. CONTRACT TIME.

3.1 The Work shall be complete and ready for final payment in accordance with the General Conditions and the Information for Bidders.

3.2 Liquidated Damages. DISTRICT and CONTRACTOR recognize that time is of the essence of this Agreement and that DISTRICT will suffer financial loss if the Work is not complete within the time specified in Paragraph 3.1 above. They also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by the DISTRICT if the Work is not complete on time, and that such damages are not readily ascertainable. Therefore, the CONTRACTOR agrees to have deducted from his pay, liquidated damages in the amount of \$3000 per day for every day past the contract deadline the CONTRACTOR fails to complete, as a minimum, ninety-five percent (95%) of the project, based on volume.

3.3 Any changes or extensions of the Contract time will be handled in accordance with "Delays and Extension of Time" in the General Conditions.

4. CONTRACT PRICE. The Contract Price is \$26,672,050.00 (See, Bid Response Alternate C)

4.1 CONTRACTOR agrees to receive and accept payment based on the lump sums and unit prices set forth below on the Schedule of Bid Items, in full satisfaction and payment for doing all the Work contemplated and embraced by the Contract Documents and for all loss or damage arising out of the Work, or from the elements, or from any unforeseen difficulties or obstructions.

4.2 The estimated quantities set forth in the Schedule of Bid Items shall not be used to determine the payment due. Payment for unit prices shall be on the actual units used not estimated.

5. PAYMENT PROCEDURES.

The DISTRICT shall pay the CONTRACTOR pursuant to the procedures set forth in the General Conditions.

6. CONTRACTOR'S WARRANTIES AND REPRESENTATIONS.

In order to induce the DISTRICT to enter into this Agreement, CONTRACTOR makes the following warranties and representations:

6.1 CONTRACTOR has familiarized themselves with the nature and extent of the Contract Documents, work, locality, and with all local conditions and Federal, State and local laws, permit requirements, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the work.

6.2 CONTRACTOR has familiarized themselves with all local, State and Federal permits, easements and other approvals for this project, and will comply with all requirements pertaining to the construction of the project contained in the permits, easements and other approvals.

6.3 CONTRACTOR has carefully studied all reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which were relied upon by ENGINEER in the preparation of the drawings and Specifications and which have been identified in the General Conditions and Technical Provisions.

6.4 CONTRACTOR has made or caused to be made examinations, investigations, tests and studies of such reports and related data in addition to those referred to in Paragraph 6.3 as it deems necessary for the performance of the Work at the Contract price, within the Contract time and in accordance with the other terms and conditions of the Contract Documents; and no additional examinations, investigations, tests, reports or similar data are or will be required by CONTRACTOR for such purposes.

6.5 CONTRACTOR has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.

6.6 CONTRACTOR has given ENGINEER written notice of all conflicts, errors or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to Contractor.

6.7 CONTRACTOR represents that the time periods set forth in these documents are sufficient time to permit completion, with due regard to all conditions required and difficulties and delays incident to the Work.

7. CONTRACT DOCUMENTS.

The Contract Documents which comprise the entire agreement between the DISTRICT and CONTRACTOR are attached to this Agreement, made a part hereof and consists of the following:

7.1 This Agreement (pages IB-1 to IB-22, inclusive).

7.2 Performance Bond, identified as Exhibit 1 and consisting of 2 pages (pages IB-20 to IB-21, inclusive) in the Agreement.

7.3 Notice of Award.

7.4 General Conditions.

7.5 Technical and Environmental Provisions for Beach Fill.

7.6 Geotechnical Logs and Curves, and Permit in Appendices A-C.

7.7 Any amendments to the General Conditions or Technical Provisions issued prior to the bid deadline pursuant to Paragraph 3 in Information for Bidders.

7.8 Plans (Drawings), entitled "CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT," consisting of sheets numbered 1 through 21 inclusive.

7.9 Any Modification, including Change Order, duly executed after execution of Agreement.

7.10 Insurance policies and certificates of insurance as required under the General Conditions.

7.11 There are no Contract Documents other than those listed above in this Article 7. The Contract Documents may only be altered, amended or repealed by a duly executed written document.

8. PUBLIC RECORDS COMPLIANCE. Contractor agrees that, to the extent that it may "act on behalf" of the CEPD within the meaning of Section 119.0701(1)(a), Florida Statutes in providing its services under this Agreement, it shall:

8.1 Keep and maintain public records required by the public agency to perform the service.

8.2 Upon request from the public agency's custodian of public records, provide the public agency with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in this chapter or as otherwise provided by law.

8.3 Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the public agency.

8.4 Upon completion of the contract, transfer, at no cost, to the public agency all public records in possession of the contractor or keep and maintain public records required by the public agency to perform the service. If the contractor transfers all public records to the public agency upon completion of the contract, subject to applicable law and ethical rules, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the public agency, upon request from the CEPD's custodian of public records, in a format that is compatible with the information technology systems of the CEPD.

8.5 Pursuant to Section 119.0701(2)(a), Fla. Stat., **IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS, CAPTIVA EROSION PREVENTION DISTRICT, CEPD CLERK, AT (239)213-1015, NAPLES, FLORIDA 34102.**

9. PUBLIC RECORDS COMPLIANCE INDEMNIFICATION. Contractor agrees to indemnify and hold the CEPD harmless against any and all claims, damage awards, and causes of action proximately caused by the contractor's failure to comply with the public records disclosure requirements of Section 119.07(1), Florida Statutes, or by contractor's failure to maintain public records that are exempt or confidential and exempt from the public records disclosure requirements, including, but not limited to, any third party claims or awards for attorneys' fees and costs arising therefrom. Contractor authorizes the public agency to seek declaratory, injunctive, or other appropriate relief against Contractor in Collier County Circuit Court on an expedited basis to enforce the requirements of this section.

10. COMPLIANCE/CONSISTENCY WITH SECTION 768.28 FLA STAT. Any indemnification or agreement to defend or hold harmless by CEPD specified in the Agreement

shall not be construed as a waiver of CEPD's sovereign immunity and shall be limited to such indemnification and liability limits consistent with the requirements of Section 768.28, Fla. Stat. and subject to the procedural requirements set forth therein. Any other purported indemnification by CEPD in the Agreement in derogation hereof shall be void and of no force or effect.

11. NON-APPROPRIATION. The CEPD's performance and obligation to pay under this Agreement is contingent upon an appropriation during the CEPD's annual budget approval **and bond referendum** process. If funds are not appropriated for a fiscal year, then the Contractor shall be notified as soon as is practical by memorandum from the CEPD Manager or designee that funds have not been appropriated for continuation of the Agreement, and the Agreement shall expire at the end of the fiscal year for which funding has been appropriated notwithstanding any automatic renewal as may be provided in the Agreement. The termination of the Agreement at fiscal year-end shall be without penalty or expense to the CEPD, subject to the CEPD paying all invoices for services rendered during the period the Agreement was funded by an appropriation.

12. E-VERIFY COMPLIANCE. By entering into this Agreement, the Contractor is obligated to comply with the provisions of Section 448.095, Florida Statutes "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit to Contractor attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. Contractor agrees to maintain a copy of such affidavit for the duration of this Agreement. Failure to comply with this paragraph will result in the termination of this Agreement as provided in Section 448.095, Florida Statutes, as amended and Contractor will not be awarded a public contract for at least one (1) year after the date on which the Agreement was terminated. Contractor will also be liable for any additional costs to CEPD incurred as a result of the termination of this Agreement in accordance with this section. Contractor affirmatively states, under penalty of perjury, that in accordance with Section 448.095, Fla. Stat., Contractor is registered with and uses the E-Verify system to verify the work authorization status of all newly hired employees, that in accordance with such statute, Contractor requires from each of its subcontractors an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and that Contractor is otherwise in compliance with Sections 448.09 and 448.095, Fla. Stat.

13. COMPLIANCE/CONSISTENCY WITH SCRUTINIZED COMPANIES PROVISIONS OF FLORIDA STATUTES. Section 287.135(2)(a), Florida Statutes, prohibits a company from bidding on, submitting a proposal for, or entering into or renewing a contract for goods or services of any amount if, at the time of contracting or renewal, the company is on the Scrutinized Companies that Boycott Israel List, created pursuant to section 215.4725, Florida Statutes, or is engaged in a boycott of Israel. Section 287.135(2)(b), Florida Statutes, further prohibits a company from bidding on, submitting a proposal for, or entering into or renewing a contract for goods or services over one million dollars (\$1,000,000) if, at the time of contracting or renewal, the company is on either the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, both created pursuant to section 215.473, Florida Statutes, or the company is engaged in business operations in Cuba or Syria.

Accordingly, Contractor hereby certifies that Contractor is not listed on any of the following: (i) the Scrutinized Companies that Boycott Israel List, (ii) Scrutinized Companies with

Activities in Sudan List, or (iii) the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List. Contractor further hereby certifies that Contractor is not engaged in a boycott of Israel or engaged in business operations in Cuba or Syria. Contractor understands that pursuant to section 287.135, Florida Statutes, the submission of a false certification may subject Contractor to civil penalties, attorney's fees, and/or costs. Contractor further understands that any contract with CEPD for goods or services of any amount may be terminated at the option of CEPD if Contractor (i) is found to have submitted a false certification, (ii) has been placed on the Scrutinized Companies that Boycott Israel List, or (iii) is engaged in a boycott of Israel. And, in addition to the foregoing, if the amount of the contract is one million dollars (\$1,000,000) or more, the contract may be terminated at the option of CEPD if the company is found to have submitted a false certification, has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or has been engaged in business operations in Cuba or Syria.

14. PUBLIC ENTITIES CRIME OR CONVICTED VENDOR LIST. The Contract has a continuous duty to disclose to the CEPD if the Contractor or any of its affiliates as defined by Section 287.133(1) (a), Florida Statutes are placed on the convicted vendor list or the Antitrust Violator Vendor List. Contractor further agrees to not give access to an individual's personal identifying information if:

15. VENUE AND JURISDICTION. Notwithstanding any of other provision to the contrary, this Agreement and the parties' actions under this Agreement shall be governed by and construed under the laws of the state of Florida, without reference to conflict of law principles. As a material condition of this Agreement, each Party hereby irrevocably and unconditionally: i) consents to submit and does submit to the jurisdiction of the Circuit Court in and for Collier County, Florida for any actions, suits or proceedings arising out of or relating to this Agreement.

16. COMPLIANCE WITH ETHICS CODE. This Agreement is subject to Chapter 112, Florida Statutes and Contractor shall disclose the name of any officer, director, employee or other agent who is also an employee of the CAPTIVA EROSION PREVENTION DISTRICT. The Contractor shall also disclose the name of any CAPTIVA EROSION PREVENTION DISTRICT employee who owns, directly or indirectly, more than a five percent (5%) interest in the Contractor's or its affiliates, business entity.

17. DATA MANAGEMENT; NOTICE OF BREACH. Contractor shall cooperate with timely incident reporting, response activities/fact gathering, public and agency notification requirements, severity level assessment, after-action reports as provided in Section 282.3185 (5) & (6), Florida Statutes.

18. ENVIRONMENTAL AND SOCIAL GOVERNMENT AND CORPORATE ACTIVISM. Contractor is prohibited from giving preference to any subcontractor based on the subcontractor's social, political or ideological interests as mandated in Section 287.05701, Florida Statutes.

19. MISCELLANEOUS.

19.1 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party

sought to be bound; and specifically but without limitations, monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

19.2 DISTRICT and CONTRACTOR each binds itself, its partners, successors, assignees and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

19.3 The CONTRACTOR shall pay all costs and expenses that may be incurred by the DISTRICT (i) in enforcing compliance by the CONTRACTOR with the provisions of this Contract, or (ii) in defending any proceeding or suit brought against the DISTRICT for violation by the CONTRACTOR of any law or ordinance, or (iii) in defending any action or suit for which indemnification is required hereunder. If the DISTRICT shall be, or is made, a party to any litigation with respect to any matter arising out of, or related to, this Contract as to which the CONTRACTOR is at fault or responsible, the CONTRACTOR shall pay all judgments, decrees and costs, including reasonable attorney's fees, incurred by or imposed upon the DISTRICT in connection therewith.

19.4 Any notice required to be given under the Contract Documents shall be delivered in person or by registered or certified mail to the following:

If to the DISTRICT: John Wade, Chairman
Captiva Erosion Prevention District
11513 Andy Rosse Lane, Unit 4
Captiva, FL 33924

with a copy to: Ralf Brookes, Attorney
1217 E Cape Coral #107
Cape Coral, FL 33904

And: Aptim Coastal Planning & Engineering, LLC
6401 Congress Avenue, Suite 140
Boca Raton, FL 33487

If to the CONTRACTOR: (Business Address)

19.5 A waiver of a breach of any of the terms of this Agreement shall not be construed as a waiver of any subsequent breach. Any consent to delay in the performance of a contractual obligation shall apply only to the transaction in question and no others. Delay in enforcing a remedy does not constitute waiver of the right to a remedy.

19.6 The DISTRICT must have a signed contract to obtain bond financing for this project. If the bond financing is not obtained the DISTRICT has the option of declaring this contract null and void. (The DISTRICT has no reason to believe funding will not be obtained and has obtained funding for the previous project in a similar manner.)

IN WITNESS WHEREOF, the parties hereto have signed this Agreement. One copy each has been delivered to DISTRICT, CONTRACTOR, AND ENGINEER. All portions of the Contract Documents have been signed or identified by the DISTRICT and CONTRACTOR.

This Agreement will be effective on JULY 25, 2024.

CAPTIVA EROSION PREVENTION DISTRICT:

Signed by: John Wade III
Chairman John Wade
Captiva Erosion Prevention
District (CEPD)

Attest: Daniel Munt
Executive Director, Daniel Munt

Address for giving notices:

Captiva Erosion Prevention District

11513 Andy Rosse Lane, Unit 4

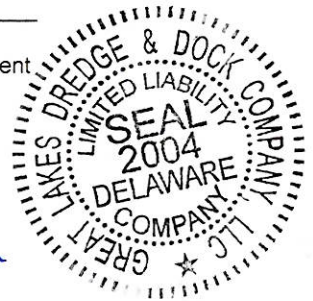
Captiva, Florida 33924

CONTRACTOR:

Lynn Nietfeld
(Name/Title) Lynn Nietfeld
Sr. Vice President

[CORPORATE SEAL]

Attest: Megquita Quinan
Megquita Quinan



Address for giving notices:

Great Lakes Dredge & Dock Co., LLC

9811 Katy Freeway, Suite 1200

Houston, TX 77024

License No. CGC1523447

Agent (if applicable): _____

Approved as to form and sufficiency,

DocuSigned by: [Signature]
0CDB79C95D79490
CEPD Attorney

**CAPTIVA ISLAND
BEACH RENOURISHMENT PROJECT**

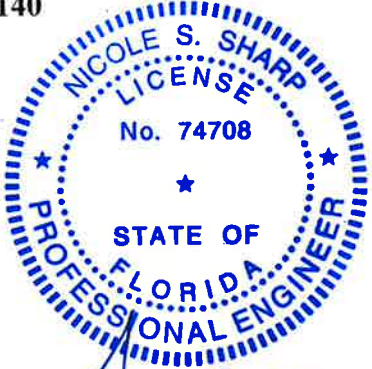
**BID INFORMATION, CONTRACT DOCUMENTS, FORMS,
GENERAL CONDITIONS, AND
TECHNICAL AND ENVIRONMENTAL PROVISIONS**

MARCH 2024

**CAPTIVA EROSION PREVENTION DISTRICT
11513 ANDY ROSSE LANE
3RD FLOOR, UNIT 4
CAPTIVA, FLORIDA 33924
(239) 472-2472**

CONSULTING ENGINEER:

**Aptim Coastal Planning & Engineering, LLC
6401 Congress Avenue, Suite 140
Boca Raton, FL 33487**



[Handwritten Signature] 3/1/24
Nicole S. Sharp, P.E. No. 74708

**CAPTIVA ISLAND
BEACH RENOURISHMENT PROJECT**

**BID INFORMATION, CONTRACT DOCUMENTS, FORMS,
GENERAL CONDITIONS, AND
TECHNICAL AND ENVIRONMENTAL PROVISIONS**

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INVITATION TO BID
CAPTIVA ISLAND
BEACH RENOURISHMENT PROJECT

1. The DISTRICT and Its Project

The Captiva Erosion Prevention District, a beach and shore preservation district duly organized under the Laws of Florida Chapter 2000-399 (hereinafter referred to as the “District”), will receive sealed bids from individuals, corporations, partnerships, and other legal entities authorized to do business in the State of Florida, to construct the CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT (the “Project”), as specified in this Invitation for Bid to include dredging and placement of beach fill from an offshore borrow source to renourish the beachfront along Captiva Island.

2. Bid Opening

Electronic bids will be received via DemandStar and publicly opened and read aloud in the Captiva Erosion Prevention District's (District) offices, 11513 Andy Rosse Lane, 3rd Floor, Unit 4, Captiva, Florida 33924, for the renourishment project at 2:00 p.m. on a date to be announced. The bid will be active for a bid period of at least 30 days for response.

ANY BIDS RECEIVED AFTER THE SPECIFIED TIME WILL NOT BE CONSIDERED.

3. The Work: Captiva Island Beach Renourishment Project Description

The beach renourishment project is located on the west coast of Florida on Captiva Island within Lee County. The project area is located between Florida DEP reference monuments R-84 and R-109 (Captiva Island). The project consists of the placement of approximately 800,000 cubic yards of beach fill along 4.85 miles of shoreline and rehabilitation of existing dunes. The contract calls for fill along the entire Gulf of Mexico shoreline of Captiva Island between Redfish Pass and Blind Pass and may include the restoration of dunes and vegetation. The total base bid volume may be updated within contract allowances post-award.

Fill placement shall be accomplished by hopper dredge(s), dredge/scow methods, or combination of these operations. Multiple pipeline routes are available for pump-out and a sand retention area has been designated for rehandling sediments between the borrow areas and the beach, if desired. Pipeline placement landward of the sand retention area is unrestricted. Multiple simultaneous dredges will be allowed at the Contractor's own discretion and risk. Construction using truck haul methods will not be permitted. The state permit is filed under Permit No. 0200269-009-JC.

There are two borrow areas approved for this project. Borrow Area VI-E is the selected source and contains 2,600,000 cubic yards of sand located approximately 8.3 nautical miles west of Captiva Island within three dredge areas identified on the Plans. Borrow Area III-

B is an alternate source and contains 725,000 cubic yards of sand located 8.7 nautical miles southwest of Captiva Island and is included on the Plans to be used only upon approval of the District. The borrow areas contain permit approved beach quality material with average mean grain sizes of 0.40 mm in Borrow Area VI-E and 0.32 mm in Borrow Area III-B.

4. Time of Completion

TIME IS OF THE ESSENCE IN CONSTRUCTING AND COMPLETING ALL ITEMS OF THE PROJECT.

The Work (i.e., dredging) shall start between October 1, 2024, and May 1, 2025, dependent upon construction window selected. Once commencement of dredging takes place, the Work shall be continuous and completed, accepted, and ready for use by completion date specified in the construction windows described below. Advanced notice of at least 70 days before commencement of beach fill placement activities will be required for any sea turtle monitoring. All Work must be completed no later than end date specified within each respective construction window. Three construction windows have been identified by the DISTRICT for consideration. The construction windows shall be between October 1, 2024 and January 1, 2025 (Bid Alternative A), between January 1, 2025 and April 30, 2025 (Bid Alternative B) or between May 1, 2025 and October 28, 2025 (Bid Alternative C). Separate bid schedules are provided for each option. Bidders are encouraged to submit pricing for all bid alternatives. The DISTRICT will determine the preferred construction timing option and then initiate contract negotiations with the lowest qualified bidder for that bid alternative.

5. Contract and Bid Documents

Definite plans and specifications will be available via the DemandStar bid portal upon advertisement. Only contractors who utilize this system will be able to obtain the bid package and addendums.

IT IS THE RESPONSIBILITY OF EACH VENDOR, PRIOR TO SUBMITTING ITS BID, TO CONTACT THE DISTRICT TO DETERMINE IF ADDENDA WERE ISSUED AND TO MAKE SUCH ADDENDA ARE PART OF ITS BID.

6. Deadline for Clarification Requests

The deadline to submit all questions, inquiries, suggestions, or requests concerning interpretation, clarification or additional information pertaining to the Invitation for Bids to the DISTRICT is 7 days prior to the bid opening date. Once advertised, questions about bid documents and bidding process should be sent via DemandStar.

7. Contract Addenda

The issuance of written addenda is the only official method whereby interpretation, clarification, or additional information can be given. E-mail delivery is preferred to submit Requests for Information (RFI). The DISTRICT shall not be responsible for oral interpretations given by any DISTRICT employee or representative, or any other person.

8. Bid Security and Bonds

Bid Guarantee at five percent (5%) of the total bid price is required at the time of the bid. A Performance and Payment Bond at one hundred percent (100%) of the contract price will be required for the successful bidder(s).

9. DISTRICT 's Reservation of Rights

The DISTRICT reserves the following rights: to waive technicalities or irregularities in bids at its discretion when in the best interests of the DISTRICT; to award the contract to the responsible bidder whose bid is determined by the DISTRICT to be in its best interest, and to reject any and all bids.

10. Inspection and Examination

The bidder shall, before submitting its bid, carefully examine the contract documents. The bidder shall also inspect the site of the proposed Work and familiarize itself with all local conditions affecting the Work. The successful bidder will be responsible for all errors in its bid, including those resulting from its failure to make a thorough investigation of the site and examination of the contract documents.

11. Withdrawal of Offers

Vendors may withdraw offers as follows: a) Mistakes discovered before the opening of a solicitation may be withdrawn by written notice for the bidder submitting the offer. This request must be received in the office designated for receipt of offers in the solicitation document prior to the time set for delivery and opening of the offers. A copy of the request shall be retained, and the unopened offer returned to that vendor; b) After the responses to a solicitation are opened or a selection has been determined, but before a contract signed, a vendor alleging a material mistake of fact may be permitted to withdraw its offer if: (1) the mistake is clearly evident on the solicitation document; or (2) the bidder submits evidence which clearly and convincingly demonstrates that a mistake was made.

REQUEST TO WITHDRAW AN OFFER MUST BE MADE IN WRITING AND APPROVED BY THE DISTRICT.

12. Irrevocable Offer

Any bid may be withdrawn up until the date and time set for opening the bid. Any bid not so withdrawn, upon opening, shall constitute an irrevocable offer for a period of 75 days to sell the District the goods and services set forth in the specifications until one or more of the bids have been duly accepted by the District.

13. Bid Expenses

All expenses for making bids to the DISTRICT are to be borne by the bidder.

14. Collusion

By offering a submission to this Invitation to Bid, the bidder certifies that they have not divulged, discussed, or compared its bid with another bidder, and has not colluded with any other bidder or parties to this bid whatsoever. Also, bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, that in connection with this joint bid:

- a. Any prices and/or cost data submitted have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices and/or cost data, with any other bidder or with any competitor;
- b. Any prices and/or cost data quoted for this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder, prior to the scheduled opening, directly or indirectly to any other bidder or to any competitor;
- c. No attempt has been made or will be made by the bidder to induce any other person or firm to submit or to not submit a bid for the purpose of restricting competition;
- d. The only person or persons interested in this bid, and principal or principals named therein and that no person other than therein mentioned has any interest in this bid or in the contract to be entered into; and
- e. No person or agency has been employed or retained to solicit or secure this contract upon an agreement or understanding or a commission, percentage, brokerage, or contingent fee excepting bona fide employees or established commercial agencies maintained by bidder for the purpose of doing business.

15. Bid Form

Bids must be submitted on attached forms, although additional pages may be attached. Bidders must fully complete all pages of the Bid Form. Bid Form must be executed by an authorized signatory who has legal authority to make the offer and bind the company. Bidders must fully comply with all specifications, terms, and conditions.

16. Mathematical Errors

In the event of multiplication/extension error(s), the unit price shall prevail. In the event of addition error(s), the extension totals will prevail. All bids shall be reviewed mathematically and corrected, if necessary, using these standards, prior to additional evaluation.

17. Permits

The State and Federal permits are contained in the appendix of the Technical Provisions.

INFORMATION FOR BIDDERS

1. DEFINITIONS.

1.1 Contract Documents All sections of the General Conditions, Technical Provisions, Environmental Provisions, Permits, Invitation to Bid, Information for Bidders, Bid Form Proposal, Bonds, Notice of Award, and any amendments to any of the aforementioned are essential parts of and shall be included in their entirety in the Contract between DISTRICT and the successful bidder. Collectively these documents will be referred to as the "Contract Documents."

1.2 CONTRACTOR refers to the bidder or bidders to whom the DISTRICT awards a contract for the performance of Work.

1.3 DISTRICT is the Captiva Erosion Prevention District.

1.4 ENGINEER is Aptim Coastal Planning & Engineering, LLC.

1.5 Work (or work) refers to the complete construction of the Captiva Island Beach Renourishment Project specified in the Contract Documents and includes all labor, material and equipment required to complete construction pursuant to the terms of the Contract Documents.

2. BONDS.

2.1 Bid Bonds. Each bidder shall submit with their bid a Bid Bond with good and sufficient surety or sureties acceptable to the DISTRICT, in the form of five percent (5%) of the bid price. The bid bond penalty may be expressed in terms of a percentage of the bid price or may be expressed in dollars and cents.

2.2 Damages. If the successful bidder fails to timely file the required Performance and Payment bond or certificates of insurance, or if the successful bidder fails to timely execute the Agreement, it will be difficult and impracticable to ascertain the damages the DISTRICT will sustain as a result of such failure. Therefore, bidder agrees to pay as damages and not as a penalty, the entire amount of the bid bond in full settlement of all damages.

2.3 Performance and Payment Bond. The CONTRACTOR agrees to execute and deliver within seven (7) days of receipt of "Notice of Award" a Performance and Payment Bond prepared on the applicable bond form in Exhibit 1 of the Agreement. The Bond may be in the form of a Surety Bond written through a local surety bond agency, satisfactory to the DISTRICT, or may be in the form of a cash Bond in the amount of one hundred percent (100%) of the Contract price. The Bond shall remain in force until completion of the project and will be conditioned upon the faithful performance of the Work in strict accordance with the Contract Documents and the completion of the same, free from all liens, and within the time limit stipulated in the Contract. The CONTRACTOR shall promptly pay all persons supplying him with labor and materials in the prosecution of the Work herein. The

said Bond shall be so worded as to make the Contract a part thereof and shall contain a clause providing the right of suit or action thereon in favor of each and every person, natural or artificial, for whose benefit said bond shall be executed as disclosed by the text of said Bond and Contract to the same extent as if the person or persons were the obligee therein specifically mentioned, and all such persons shall be held or deemed to be obligees thereof.

3. AMENDMENTS TO INVITATION PRIOR TO DATE SET FOR OPENING BIDS.

3.1 The right is reserved as the interest of the DISTRICT may require, to revise or amend the specifications, plans and/or drawings prior to the date set for opening bids. Such revisions and amendments, if any, will be announced by an amendment or amendments to this document. Copies of such amendments, as may be issued, will be furnished to all responsive bidders. If the revisions and amendments are of a nature which requires material changes in quantities or prices bid, or both, the date set for opening bids may be postponed by such number of days as, in the opinion of the DISTRICT, will enable bidders to revise their bids. In such cases, the amendment will include an announcement of the new date for opening bids.

3.2 Bidders are required to acknowledge receipt of all amendments on the Bid Form in the space provided. Failure to acknowledge all amendments in writing may result in rejection of the bid.

4. SUBMISSION OF BIDS.

4.1 Bids submitted on or before the day and time specified in the INVITATION TO BID will be opened by Captiva Erosion Prevention District located at 11513 Andy Rosse Lane, 3rd Floor, Unit 4, Captiva, Florida 33924.

4.2 Bids must be submitted via DemandStar, plainly marked "**BID FOR THE CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT**"

4.3 Bidders shall submit their price for the Work using the BID PROPOSAL and associated BID FORM furnished within this document. Bids shall be in the units specified for each item. All unit prices and lump sums shall include all expenses, overhead, profit, and any other costs necessary for completing the Work.

4.4 No deviations from the Contract Documents, inclusive of the Plans and Specifications, will be considered. The Bid shall be in strict compliance with the specifications set forth in the Contract Documents and associated addendums and the successful Bidder will be responsible for meeting those requirements.

4.5 Bids shall be accompanied by a list of all subcontractors that the bidder proposes to employ. Bidders should note the "Performance of Work by Contractor" and "Subcontractors" restrictions listed in paragraphs 4 and 9 of the General Conditions. Subcontractors shall not be changed without approval of the DISTRICT.

4.6 A bidder is expected to be fully informed of the requirements in all the Contract Documents and failure to do so is at its own risk. A bidder should not expect to secure relief on a plea of error.

5. CONSIDERATION OF BIDS AND AWARD OF CONTRACT.

5.1 If the Contract is awarded, the DISTRICT will accept the bid and award the Contract to the successful Bidder upon approval of the DISTRICT's Board and contract execution by the authorized District representative, by written notice to the successful Bidder.

5.2 Failure on the part of the successful Bidder to execute a Contract and deliver a valid Performance and Payment Bond within fourteen (14) days after the notice of acceptance shall be just cause for annulment of award and assessment of damages as specified in Paragraph 2.2.

5.3 The DISTRICT may then accept the bid of the next best evaluated bid or re-advertise for bid. If the bid of the next best Bidder is accepted, this acceptance shall bind such Bidder as though it were the original successful Bidder.

5.4 The bid decision will be based on the price of the Bid. The DISTRICT reserves the right to award the contract to other than the low Bidder for such reasons as acceptability of specific products or designs, delivery and/or performance times, warranties, past performance, unacceptable deviations or exceptions taken to the Contract Documents or degree of compliance with any other requirement of the Contract Documents. Further, the DISTRICT shall have the right to consider price, quality, time required for performance and qualifications of the Bidder in making the award.

5.5 The DISTRICT reserves the right to waive any and all irregularities and to reject all bids in the best interest of the DISTRICT or to award the Contract to the responsible Bidder whose bid is determined to be in the best interest of the DISTRICT.

6. PLANT AND EQUIPMENT SCHEDULE FOR BEACH FILL WORK.

6.1 A listing of the plant available to the bidder and proposed for use on the beach placement work shall accompany each bid for this item. No bidder will be considered whose plant, at the time of award, does not substantially meet the safety requirements of the United States Coast Guard and the Contract Documents. The "Plant and Equipment Schedule" included at the end of this "Information for Bidders" must be completed and included with the bid.

6.2 The method for completing the Work shall be fully described, listing the land-and water-based equipment to be used.

7. PERFORMANCE OF WORK BY CONTRACTOR.

Attention is invited to the requirements of Paragraph 4, "Performance of Work by Contractor" of the General Conditions. The successful bidder must furnish to the ENGINEER, within seven (7)

days after award, a list of the items of work which it will perform with its own forces and the estimated cost of those items unless it has submitted those items with its bid.

8. WORK BY SUBCONTRACTORS.

The required statement setting forth names and address of subcontractors, as referred to in Paragraph 10 "Subcontractors" of the General Conditions shall include information which will establish their technical and financial capabilities, past experience on similar Work, Work in progress either as a Prime Contractor or subcontractor and plant and equipment available to perform the Work subcontracted. Any leases or rental of equipment, machinery, etc., entered into by the successful bidder, shall be considered by the DISTRICT as subcontracts, and, as such, shall be subject to clauses in the General Conditions applicable thereto, and shall be binding on all subcontractors (including lessors and/or lessees for equipment, material, supplies, etc.), the same as if said clause were set forth fully in such subcontracts, leases, or rental agreements.

9. TIME OF COMPLETION.

THE TIME OF BEGINNING, CONSTRUCTING AND COMPLETING THE WORK IS OF THE ESSENCE.

9.1 Dredging shall commence between October 1, 2024, and May 1, 2025, after a written "Notice to Proceed." Once commencement of dredging takes place, the Work shall be continuous and completed, accepted, and ready for use. All Work must be completed no later than October 28, 2025.

9.2 Delays and extensions of time will be treated in accordance with the General Conditions and Technical and Environmental Specifications.

10. CONTRACT QUANTITIES.

Potential bidders are advised that the dredge and fill quantity may be adjusted by the DISTRICT in accordance with provisions of the General Conditions without renegotiation. The DISTRICT will not consider the terms of the contract as being satisfied unless the bid items are completed, and the beach is filled as shown on the plans and within the template shown on the plan sheets.

11. OBTAINING INFORMATION.

During the advertising period only, information concerning this invitation may be obtained as follows: mycepd@mycepd.com.

A pre-bid conference is scheduled for 1:00 p.m. the first Thursday following a full week of bid advertisement at the DISTRICT's office on Captiva Island and will also be available through an online video conferencing platform.

12. PRE-AWARD INFORMATION.

Each bidder is required to furnish information demonstrating the bidder's ability to perform the Work. A form is included with this "Information for Bidders" which must be completed and attached to the bid.

13. PERMITS.

The State and Federal permits are contained in the appendix of the Technical Provisions.

BID PROPOSAL

Proposal of _____(hereinafter called "Bidder"), a corporation, organized and existing under the Laws of the State of _____, a partnership, or an individual, to the Captiva Erosion Prevention District, Florida (hereinafter called " DISTRICT ").

Captiva Erosion Prevention District:

The bidder, in compliance with your "Invitation to Bid" for the "CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT," having examined the Information for Bidders, General Conditions, Technical Provisions, Plans, Contract and any amendments to the above and the site of the proposed Work, and being familiar with all the conditions surrounding the construction of the proposed project including the availability of materials and labor for the project, hereby propose to furnish all labor, plant, equipment, supplies and material, and to construct items of the project for which a bid price is indicated in accordance with the Contract Documents, within the time set forth therein, and at the prices stated below. **These prices are to cover all expenses, including overhead and profit, incurred in performing the Work required for each item bid under the Contract Documents, of which this proposal is a part.**

Enclosed is a Bid Bond in the amount of five percent (5%) of the total bid price. It is understood that upon award, this firm will execute and enter into contract with surety within seven (7) days of receipt of "Notice of Award" or this Bid Bond will be forfeited, not as a penalty but as liquidated damages for the cost and expense incurred should this firm fail to timely submit satisfactory surety or fail to comply with any other requirements of the Contract Documents. It is understood that if this firm is not awarded the contract, the Bid Bond will be returned.

The Bidder, if awarded a contract, hereby agrees to mobilize and commence operations under this contract between October 1, 2024, and May 1, 2025, dependent upon construction window selected. The Bidder also agrees that upon commencement of dredging, the Work shall be continuous and completed, accepted, and ready for use.

The CONTRACTOR will bear any costs, including mobilization and demobilization costs, arising from failure to complete the dredging prior to the contract deadline.

The Bidder agrees that damages to the DISTRICT for failure to timely complete the Work are not readily ascertainable. Therefore, bidder agrees that in the event it does not complete 95% of the dredging volume within the contract deadline, the DISTRICT may deduct from its final payment \$3000 for every day past the deadline until completion of Work, subject to Paragraph 32.6 and 33, of the General Conditions.

Bidders are required to acknowledge receipt of all amendments on the Bid Form in the space provided. Failure to acknowledge all amendments in writing may result in rejection of the bid.

Bidder acknowledges receipt of the following addendum:

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

Bidder agrees to perform all the Work in the manner and time prescribed in the Contract Documents for the prices set forth below (including overhead and profit) except as otherwise provided in Paragraph 11 of the General Conditions ("Changes in the Work"):

**BID ALTERNATIVE A – CONSTRUCTION WINDOW
CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT
Schedule of Bid Items**

BID FORM				
	No.	Units	Unit Price	Subtotal
Captiva Island				
A. Mobilization/Demobilization	1	LS		
B. Beach Tilling and Scarp Leveling	25,700	LF		
C. Turbidity Monitoring	1	LS		
D. Dredging and Placement of Beach and Dune Fill	800,000	CY		
E. Relocation Trawling Mobilization	1	LS		
F. Sea Turtle Relocation Trawling	8	Days		
G. Project Site Layout and Data Collection	1	LS		
H. Sea Oat Planting	800,000	EA		
I. Screening to Remove Unacceptable Material ¹	6,000	CY		
J. Hauling and Removal of Unacceptable Material ¹	600	CY		
K. Remediation of Non-Compliant Material ¹	1	AC		
Grand Total			\$	
Grand Total in Words:				

Note: ¹ Remediation, screening, hauling and removal of unacceptable are included as optional items of the Contract to be utilized per the specifications and only at the request of the DISTRICT.

**BID ALTERNATIVE B –CONSTRUCTION WINDOW
CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT
Schedule of Bid Items**

BID FORM				
	No.	Units	Unit Price	Subtotal
Captiva Island				
A. Mobilization/Demobilization	1	LS		
B. Beach Tilling and Scarp Leveling	25,700	LF		
C. Turbidity Monitoring	1	LS		
D. Dredging and Placement of Beach and Dune Fill	800,000	CY		
E. Relocation Trawling Mobilization	1	LS		
F. Sea Turtle Relocation Trawling	8	Days		
G. Project Site Layout and Data Collection	1	LS		
H. Sea Oat Planting	800,000	EA		
I. Screening to Remove Unacceptable Material ¹	6,000	CY		
J. Hauling and Removal of Unacceptable Material ¹	600	CY		
K. Remediation of Non-Compliant Material ¹	1	AC		
Grand Total			\$	
Grand Total in Words:				

Note: ¹ Remediation, screening, hauling and removal of unacceptable are included as optional items of the Contract to be utilized per the specifications and only at the request of the DISTRICT.

**BID ALTERNATIVE C – CONSTRUCTION WINDOW
CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT
Schedule of Bid Items**

BID FORM				
	No.	Units	Unit Price	Subtotal
Captiva Island				
A. Mobilization/Demobilization	1	LS		
B. Beach Tilling and Scarp Leveling	25,700	LF		
C. Turbidity Monitoring	1	LS		
D. Dredging and Placement of Beach and Dune Fill	800,000	CY		
E. Relocation Trawling Mobilization	1	LS		
F. Sea Turtle Relocation Trawling	8	Days		
G. Project Site Layout and Data Collection	1	LS		
H. Sea Oat Planting	800,000	EA		
I. Screening to Remove Unacceptable Material ¹	6,000	CY		
J. Hauling and Removal of Unacceptable Material ¹	600	CY		
K. Remediation of Non-Compliant Material ¹	1	AC		
Grand Total			\$	
Grand Total in Words:				

Note: ¹ Remediation, screening, hauling and removal of unacceptable are included as optional items of the Contract to be utilized per the specifications and only at the request of the DISTRICT.

The Bidder attests to their responsibility and capability for the execution of the work set forth in the Contract Documents; also to the responsibility and capability of any subcontractors to satisfy the requirements of the Contract Documents.

The undersigned bidder understands that the quantities of work as shown herein are approximate only and are subject to increase or decrease and offers to do the work whether increased or decreased, at the unit prices stated above, subject to the General Conditions.

Bidder understands that the DISTRICT reserves the right to reject any or all bids; to waive any technicalities, irregularities, and to award the contract to the responsible bidder whose bid the DISTRICT determines to be in its best interest.

Bidder agrees that this bid shall be good and may not be withdrawn for a period of sixty (60) calendar days after the scheduled closing time for receiving bids.

The bid security attached in the sum of _____
_____ (\$)

is to become the property of the DISTRICT in the event the Contract is not executed within the time above set forth, or in the event the Performance and Payment Bond is not properly executed and delivered as specified in the Information for Bidders, as liquidated damages for the delay and additional expense to the DISTRICT caused thereby.

Respectfully submitted,

(Corporation, Partnership or Individual)

By: _____
(Signature)

(Name and Title)

(Business address)

(City, State, zip code)

___ day of _____, 2024
(Date)

(Seal) - if bid is by a corporation.

CONTRACTOR QUALIFICATION.

The CONTRACTOR shall provide the dredge and all support vessels, labor, equipment, supplies, and materials to perform all operations in connection with excavating, transporting, placing, grading and tilling the beach fill, debris removal, and returning the project site to its pre-construction condition as required by the Contract Documents. In order for the CONTRACTOR to be deemed qualified and responsive, the following must be provided with the bid under cover labeled "BIDDER QUALIFICATIONS" or similar title:

- a) Bidder's proposed method of construction and overall schedule to demonstrate understanding of the Work and completion within the Contract time.
- b) The size and type of the dredge proposed for the Work that meets the minimum requirements provided in the Technical and Environmental Specifications.
- c) The additional equipment proposed to complete this project, to include barges, scows, boosters, cranes, bulldozers, loaders, excavators, etc.
- d) Qualifications and prior experience of bidder's key personnel, to include proposed project manager, superintendent, dredge operator, site engineer, etc.
- e) Experience with open Gulf of Mexico inlet (channel and ebb shoal) dredging.
- f) Description of last dredging project of this nature that the bidder completed.
- g) References for at least three (3) similar beach nourishment works within the previous five (5) years.
- h) Turbidity monitoring experience and qualifications for compliance with project permits.
- i) Scope of Work and resumes for the independent third-party turbidity monitoring to demonstrate that the staff and equipment is available to conduct the monitoring correctly.
- j) A copy of bidder's latest financial statement, including the names of banks or other financial institutions with which the bidder conducts business. If the financial statement is more than sixty (60) days old, a certificate should be attached stating the financial condition is substantially the same, or if not the same, the changes that have taken place. Such statement will be treated as confidential.
- k) List other present commitments including dollar value thereof, name of owner and estimated date of completion.
- l) List subcontractor the bidder proposes to use in performing the work. Note the restrictions contained in the General Conditions and Paragraph 8 of the Information for Bidders. Describe work to be performed by each subcontractor and estimated percentage of work of each item to be performed by subcontractor.

CLARIFICATIONS AND EXCEPTIONS

No deviations from the Contract Documents, inclusive of the Plans and Specifications, will be considered. Any clarifications or exceptions to the Contract Documents shall be made during the bid period and will be addressed through addenda. The Bid shall be in strict compliance with the specifications set forth in the Contract Documents and associated addendums and the successful Bidder will be responsible for meeting those requirements.

AGREEMENT

THIS AGREEMENT is dated as of the _____ day of _____, 20____, by and between the Captiva Erosion Prevention District (hereinafter called DISTRICT) and _____ (hereinafter called CONTRACTOR).

DISTRICT and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

1. WORK.

CONTRACTOR agrees, at its own cost or expense, to provide all necessary labor, materials, equipment, supplies, services, machinery, tools, apparatus and other means of construction, including utility and transportation services, necessary to perform and complete in a proper and workman-like manner all the Work. Work shall be in full compliance with the requirements of the Contract Documents.

2. ENGINEER.

The Project has been designed by Aptim Coastal Planning & Engineering, LLC who is hereinafter called ENGINEER and who will assume all duties and responsibilities and will have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

3. CONTRACT TIME.

3.1 The Work shall be complete and ready for final payment in accordance with the General Conditions and the Information for Bidders.

3.2 Liquidated Damages. DISTRICT and CONTRACTOR recognize that time is of the essence of this Agreement and that DISTRICT will suffer financial loss if the Work is not complete within the time specified in Paragraph 3.1 above. They also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by the DISTRICT if the Work is not complete on time, and that such damages are not readily ascertainable. Therefore, the CONTRACTOR agrees to have deducted from his pay, liquidated damages in the amount of \$3000 per day for every day past the contract deadline the CONTRACTOR fails to complete, as a minimum, ninety-five percent (95%) of the project, based on volume.

3.3 Any changes or extensions of the Contract time will be handled in accordance with "Delays and Extension of Time" in the General Conditions.

4. CONTRACT PRICE.

4.1 CONTRACTOR agrees to receive and accept payment based on the lump sums and unit prices set forth below on the Schedule of Bid Items, in full satisfaction and payment for doing all the Work contemplated and embraced by the Contract Documents and for all loss or damage arising out of the Work, or from the elements, or from any unforeseen difficulties or obstructions.

4.2 The estimated quantities set forth in the Schedule of Bid Items shall not be used to determine the payment due. Payment for unit prices shall be on the actual units used not estimated.

5. PAYMENT PROCEDURES.

The DISTRICT shall pay the CONTRACTOR pursuant to the procedures set forth in the General Conditions.

6. CONTRACTOR'S WARRANTIES AND REPRESENTATIONS.

In order to induce the DISTRICT to enter into this Agreement, CONTRACTOR makes the following warranties and representations:

6.1 CONTRACTOR has familiarized themselves with the nature and extent of the Contract Documents, work, locality, and with all local conditions and Federal, State and local laws, permit requirements, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the work.

6.2 CONTRACTOR has familiarized themselves with all local, State and Federal permits, easements and other approvals for this project, and will comply with all requirements pertaining to the construction of the project contained in the permits, easements and other approvals.

6.3 CONTRACTOR has carefully studied all reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which were relied upon by ENGINEER in the preparation of the drawings and Specifications and which have been identified in the General Conditions and Technical Provisions.

6.4 CONTRACTOR has made or caused to be made examinations, investigations, tests and studies of such reports and related data in addition to those referred to in Paragraph 6.3 as it deems necessary for the performance of the Work at the Contract price, within the Contract time and in accordance with the other terms and conditions of the Contract Documents; and no additional examinations, investigations, tests, reports or similar data are or will be required by CONTRACTOR for such purposes.

6.5 CONTRACTOR has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.

6.6 CONTRACTOR has given ENGINEER written notice of all conflicts, errors or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to Contractor.

6.7 CONTRACTOR represents that the time periods set forth in these documents are sufficient time to permit completion, with due regard to all conditions required and difficulties and delays incident to the Work.

7. CONTRACT DOCUMENTS.

The Contract Documents which comprise the entire agreement between the DISTRICT and CONTRACTOR are attached to this Agreement, made a part hereof and consists of the following:

7.1 This Agreement (pages IB-1 to IB-22, inclusive).

7.2 Performance Bond, identified as Exhibit 1 and consisting of 2 pages (pages IB-20 to IB-21, inclusive) in the Agreement.

7.3 Notice of Award.

7.4 General Conditions.

7.5 Technical and Environmental Provisions for Beach Fill.

7.6 Geotechnical Logs and Curves, and Permit in Appendices A-C.

7.7 Any amendments to the General Conditions or Technical Provisions issued prior to the bid deadline pursuant to Paragraph 3 in Information for Bidders.

7.8 Plans (Drawings), entitled "CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT," consisting of sheets numbered 1 through 21 inclusive.

7.9 Any Modification, including Change Order, duly executed after execution of Agreement.

7.10 Insurance policies and certificates of insurance as required under the General Conditions.

7.11 There are no Contract Documents other than those listed above in this Article 7. The Contract Documents may only be altered, amended or repealed by a duly executed written document.

8. PUBLIC RECORDS COMPLIANCE. Contractor agrees that, to the extent that it may "act on behalf" of the CEPD within the meaning of Section 119.0701(1)(a), Florida Statutes in providing its services under this Agreement, it shall:

8.1 Keep and maintain public records required by the public agency to perform the service.

8.2 Upon request from the public agency's custodian of public records, provide the public agency with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in this chapter or as otherwise provided by law.

8.3 Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the public agency.

8.4 Upon completion of the contract, transfer, at no cost, to the public agency all public records in possession of the contractor or keep and maintain public records required by the public agency to perform the service. If the contractor transfers all public records to the public agency upon completion of the contract, subject to applicable law and ethical rules, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the public agency, upon request from the CEPD's custodian of public records, in a format that is compatible with the information technology systems of the CEPD.

8.5 Pursuant to Section 119.0701(2)(a), Fla. Stat., **IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS, CAPTIVA EROSION PREVENTION DISTRICT, CEPD CLERK, AT (239)213-1015, NAPLES, FLORIDA 34102.**

9. PUBLIC RECORDS COMPLIANCE INDEMNIFICATION. Contractor agrees to indemnify and hold the CEPD harmless against any and all claims, damage awards, and causes of action proximately caused by the contractor's failure to comply with the public records disclosure requirements of Section 119.07(1), Florida Statutes, or by contractor's failure to maintain public records that are exempt or confidential and exempt from the public records disclosure requirements, including, but not limited to, any third party claims or awards for attorneys' fees and costs arising therefrom. Contractor authorizes the public agency to seek declaratory, injunctive, or other appropriate relief against Contractor in Collier County Circuit Court on an expedited basis to enforce the requirements of this section.

10. COMPLIANCE/CONSISTENCY WITH SECTION 768.28 FLA STAT. Any indemnification or agreement to defend or hold harmless by CEPD specified in the Agreement

shall not be construed as a waiver of CEPD's sovereign immunity and shall be limited to such indemnification and liability limits consistent with the requirements of Section 768.28, Fla. Stat. and subject to the procedural requirements set forth therein. Any other purported indemnification by CEPD in the Agreement in derogation hereof shall be void and of no force or effect.

11. NON-APPROPRIATION. The CEPD's performance and obligation to pay under this Agreement is contingent upon an appropriation during the CEPD's annual budget approval **and bond referendum** process. If funds are not appropriated for a fiscal year, then the Contractor shall be notified as soon as is practical by memorandum from the CEPD Manager or designee that funds have not been appropriated for continuation of the Agreement, and the Agreement shall expire at the end of the fiscal year for which funding has been appropriated notwithstanding any automatic renewal as may be provided in the Agreement. The termination of the Agreement at fiscal year-end shall be without penalty or expense to the CEPD, subject to the CEPD paying all invoices for services rendered during the period the Agreement was funded by an appropriation.

12. E-VERIFY COMPLIANCE. By entering into this Agreement, the Contractor is obligated to comply with the provisions of Section 448.095, Florida Statutes "Employment Eligibility," as amended from time to time. This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit to Contractor attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. Contractor agrees to maintain a copy of such affidavit for the duration of this Agreement. Failure to comply with this paragraph will result in the termination of this Agreement as provided in Section 448.095, Florida Statutes, as amended and Contractor will not be awarded a public contract for at least one (1) year after the date on which the Agreement was terminated. Contractor will also be liable for any additional costs to CEPD incurred as a result of the termination of this Agreement in accordance with this section. Contractor affirmatively states, under penalty of perjury, that in accordance with Section 448.095, Fla. Stat., Contractor is registered with and uses the E-Verify system to verify the work authorization status of all newly hired employees, that in accordance with such statute, Contractor requires from each of its subcontractors an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and that Contractor is otherwise in compliance with Sections 448.09 and 448.095, Fla. Stat.

13. COMPLIANCE/CONSISTENCY WITH SCRUTINIZED COMPANIES PROVISIONS OF FLORIDA STATUTES. Section 287.135(2)(a), Florida Statutes, prohibits a company from bidding on, submitting a proposal for, or entering into or renewing a contract for goods or services of any amount if, at the time of contracting or renewal, the company is on the Scrutinized Companies that Boycott Israel List, created pursuant to section 215.4725, Florida Statutes, or is engaged in a boycott of Israel. Section 287.135(2)(b), Florida Statutes, further prohibits a company from bidding on, submitting a proposal for, or entering into or renewing a contract for goods or services over one million dollars (\$1,000,000) if, at the time of contracting or renewal, the company is on either the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, both created pursuant to section 215.473, Florida Statutes, or the company is engaged in business operations in Cuba or Syria.

Accordingly, Contractor hereby certifies that Contractor is not listed on any of the following: (i) the Scrutinized Companies that Boycott Israel List, (ii) Scrutinized Companies with

Activities in Sudan List, or (iii) the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List. Contractor further hereby certifies that Contractor is not engaged in a boycott of Israel or engaged in business operations in Cuba or Syria. Contractor understands that pursuant to section 287.135, Florida Statutes, the submission of a false certification may subject Contractor to civil penalties, attorney's fees, and/or costs. Contractor further understands that any contract with CEPD for goods or services of any amount may be terminated at the option of CEPD if Contractor (i) is found to have submitted a false certification, (ii) has been placed on the Scrutinized Companies that Boycott Israel List, or (iii) is engaged in a boycott of Israel. And, in addition to the foregoing, if the amount of the contract is one million dollars (\$1,000,000) or more, the contract may be terminated at the option of CEPD if the company is found to have submitted a false certification, has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or has been engaged in business operations in Cuba or Syria.

14. PUBLIC ENTITIES CRIME OR CONVICTED VENDOR LIST. The Contract has a continuous duty to disclose to the CEPD if the Contractor or any of its affiliates as defined by Section 287.133(1) (a), Florida Statutes are placed on the convicted vendor list or the Antitrust Violator Vendor List. Contractor further agrees to not give access to an individual's personal identifying information if:

15. VENUE AND JURISDICTION. Notwithstanding any of other provision to the contrary, this Agreement and the parties' actions under this Agreement shall be governed by and construed under the laws of the state of Florida, without reference to conflict of law principles. As a material condition of this Agreement, each Party hereby irrevocably and unconditionally: i) consents to submit and does submit to the jurisdiction of the Circuit Court in and for Collier County, Florida for any actions, suits or proceedings arising out of or relating to this Agreement.

16. COMPLIANCE WITH ETHICS CODE. This Agreement is subject to Chapter 112, Florida Statutes and Contractor shall disclose the name of any officer, director, employee or other agent who is also an employee of the CAPTIVA EROSION PREVENTION DISTRICT. The Contractor shall also disclose the name of any CAPTIVA EROSION PREVENTION DISTRICT employee who owns, directly or indirectly, more than a five percent (5%) interest in the Contractor's or its affiliates, business entity.

17. DATA MANAGEMENT; NOTICE OF BREACH. Contractor shall cooperate with timely incident reporting, response activities/fact gathering, public and agency notification requirements, severity level assessment, after-action reports as provided in Section 282.3185 (5) & (6), Florida Statutes.

18. ENVIRONMENTAL AND SOCIAL GOVERNMENT AND CORPORATE ACTIVISM. Contractor is prohibited from giving preference to any subcontractor based on the subcontractor's social, political or ideological interests as mandated in Section 287.05701, Florida Statutes.

19. MISCELLANEOUS.

19.1 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party

sought to be bound; and specifically but without limitations, monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

19.2 DISTRICT and CONTRACTOR each binds itself, its partners, successors, assignees and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

19.3 The CONTRACTOR shall pay all costs and expenses that may be incurred by the DISTRICT (i) in enforcing compliance by the CONTRACTOR with the provisions of this Contract, or (ii) in defending any proceeding or suit brought against the DISTRICT for violation by the CONTRACTOR of any law or ordinance, or (iii) in defending any action or suit for which indemnification is required hereunder. If the DISTRICT shall be, or is made, a party to any litigation with respect to any matter arising out of, or related to, this Contract as to which the CONTRACTOR is at fault or responsible, the CONTRACTOR shall pay all judgments, decrees and costs, including reasonable attorney's fees, incurred by or imposed upon the DISTRICT in connection therewith.

19.4 Any notice required to be given under the Contract Documents shall be delivered in person or by registered or certified mail to the following:

If to the DISTRICT: John Wade, Chairman
Captiva Erosion Prevention District
11513 Andy Rosse Lane, Unit 4
Captiva, FL 33924

with a copy to: Ralf Brookes, Attorney
1217 E Cape Coral #107
Cape Coral, FL 33904

And: Aptim Coastal Planning & Engineering, LLC
6401 Congress Avenue, Suite 140
Boca Raton, FL 33487

If to the CONTRACTOR: (Business Address)

19.5 A waiver of a breach of any of the terms of this Agreement shall not be construed as a waiver of any subsequent breach. Any consent to delay in the performance of a contractual obligation shall apply only to the transaction in question and no others. Delay in enforcing a remedy does not constitute waiver of the right to a remedy.

19.6 The DISTRICT must have a signed contract to obtain bond financing for this project. If the bond financing is not obtained the DISTRICT has the option of declaring this contract null and void. (The DISTRICT has no reason to believe funding will not be obtained and has obtained funding for the previous project in a similar manner.)

IN WITNESS WHEREOF, the parties hereto have signed this Agreement. One copy each has been delivered to DISTRICT, CONTRACTOR, AND ENGINEER. All portions of the Contract Documents have been signed or identified by the DISTRICT and CONTRACTOR.

This Agreement will be effective on _____, 2024.

CAPTIVA EROSION PREVENTION DISTRICT:

CONTRACTOR:

Chairman
Captiva Erosion Prevention
District (CEPD)

(Name/Title)

[CORPORATE SEAL]

Attest: _____

Attest: _____

Address for giving notices:

Address for giving notices:

Captiva Erosion Prevention District

11513 Andy Rosse Lane, Unit 4

Captiva, Florida 33924

License No. _____

Agent (if applicable): _____

Approved as to form and sufficiency,

CEPD Attorney

EXHIBIT 1

PERFORMANCE AND PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS:

That _____, (insert full name and address of CONTRACTOR) hereinafter called CONTRACTOR, and _____, a Corporation of the State of _____ as surety, hereinafter called Surety, are held and firmly bound unto the CAPTIVA EROSION PREVENTION DISTRICT, in the amount of _____ DOLLARS (\$_____) for the payment whereof CONTRACTOR and Surety bind themselves, their heirs, executors, administrators, successors and assignees, jointly and severally, firmly by these presents.

WHEREAS, CONTRACTOR has by written agreement dated _____ entered into a contract for in accordance with Drawings and Specifications prepared by Aptim Coastal Planning & Engineering, LLC, which contract is by reference made a part hereof, and is hereinafter referred to as the CONTRACT.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if CONTRACTOR shall promptly make payments to all persons supplying Contractor labor, materials, and supplies, used directly or indirectly by the said CONTRACTOR, or subcontractors, in the prosecution of the work provided for in said Contract, then this obligation shall be null and void; otherwise, it shall remain in full force and effect. Whenever CONTRACTOR shall be declared by the DISTRICT to be in default under the CONTRACT, the District having performed DISTRICT's obligations thereunder, shall have the right to:

- (1) Complete the CONTRACT in accordance with its terms and conditions upon thirty (30) days written notice to the Surety, in which event the Surety shall pay the DISTRICT all costs incurred in the DISTRICT's taking over and completing the Contract; or
- (2) At the District's option, the DISTRICT may instead request that the Surety take over and complete the contract, in which event the Surety shall take reasonable steps to proceed promptly with completion no later than thirty (30) days from the date the DISTRICT notifies Surety of its intent that surety take over and complete the Contract.
- (3) Any suit under this bond must be instituted before the expiration of two (2) years from the date of which final payment under the CONTRACT falls due.

No right or action shall accrue on this Bond to or for the use of any person or corporation other than the DISTRICT named herein and those persons or corporations provided for by Section 255.05, Florida Statutes, or their heirs, executors, administrators, successors or assignees.

Signed and sealed this ____ day of _____, 20____

(Witness)

(Witness)

By _____
CONTRACTOR (Seal)

Its _____
(Title)

(Witness)

(Witness)

By _____
Surety (Seal)

Its _____
(Title)

PLANT AND EQUIPMENT SCHEDULE

The BIDDER is requested to state below the number and types of equipment proposed for use in the Project. This schedule shall include equipment owned/rented and/or operated by the BIDDER and by any subcontractor responsible for more than ten percent (10%) of the total work. Indicate on the form below if the equipment is owned or operated by the BIDDER or a subcontractor.

[illegible]

CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT

GENERAL CONDITIONS

CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT

GENERAL CONDITIONS

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CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT

GENERAL CONDITIONS

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APPENDICES

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CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT GENERAL CONDITIONS

1. PROJECT AREA.

The beach renourishment project is located on the west coast of Florida bordering the Gulf of Mexico on Captiva Island within Lee County. The project area encompasses approximately 4.85 miles of coastline between Florida DEP reference monuments R-84 and R-109 (Captiva Island).

2. COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK.

2.1 Beach Fill. The CONTRACTOR shall start dredging for construction of beach fill placement under the Contract between October 1, 2024, and May 1, 2025, after the Notice to Proceed is issued by the Captiva Erosion Prevention District (CEPD), hereafter referred to as DISTRICT, to the CONTRACTOR. The CONTRACTOR shall prosecute said Work diligently, and complete the entire Work in a continuous manner, ready for use unless modified by a change order. All Work must be completed no later than end date specified within construction window.

2.2 Definition of Work. For the purpose of the Contract Documents, “Work” is defined as any and all obligations, duties, and responsibilities necessary for the successful completion of the Captiva Island Beach Renourishment Project assigned to, or undertaken by, the CONTRACTOR under the Contract Documents, including all labor, materials, equipment, or other incidentals and the furnishing thereof. Additional definitions are provided at the end of the Supplemental General Conditions. The time stated for completion shall include removal of pipe from the beach, grading, tilling of the beach (if required), final clean-up of the premises and all repairs or restorations of facilities, structures, vegetation or any other item damaged by the CONTRACTOR or their subcontractor as a result of project construction activities.

3. CONTRACT DOCUMENTS.

3.1 The “Contract Documents” are listed as follows and include all provisions of the following: Invitation to Bid, Information for Bidders, Bid Form and Proposal, Contract Plans (Drawings), the Agreement, General Conditions, Technical and Environmental Provisions for Fill Placement, Permits and associated attachments (i.e., Biological Opinions), and any properly executed amendments to the above. The Contract Documents comprise the entire Agreement between the DISTRICT and CONTRACTOR concerning the Work. The Contract Documents may be altered, amended, added to, or deleted only by a written modification agreed upon by the DISTRICT and CONTRACTOR.

3.2 The Contract Documents are complementary; what is called for by one Contract Document is binding as if called for by all Contract Documents. Before undertaking the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. The CONTRACTOR shall promptly report, in writing, to the ENGINEER, any conflict, error, or discrepancy that the CONTRACTOR may discover. If, during the performance of the Work, the CONTRACTOR finds a conflict, error, or discrepancy in the Contract Documents, it shall report it to the ENGINEER, in writing, at once and before proceeding with the Work affected thereby. If any party discovers a conflict or discrepancy, the ENGINEER will determine what is technically correct. The CONTRACTOR shall not be liable to DISTRICT or ENGINEER for failure to report any conflict, error, or discrepancy in the Contract Documents he/she does not find unless CONTRACTOR had actual knowledge thereof or has demonstrated this by its action or should reasonably have known thereof.

3.3 Three (3) sets of contract plans (drawings) and specifications will be offered to the CONTRACTOR by the DISTRICT without charge along with digital versions of the documents in Acrobat (PDF) format. The CONTRACTOR shall make any additional sets it needs. The Work shall conform to the contract drawings entitled "Captiva Island Beach Renourishment Project," all of which form a part of these specifications and are available as described herein and in the Invitation to Bid.

3.4 It is the intent of the plans and specifications to describe a complete project to be constructed in accordance with the Contract Documents. Any Work that may reasonably be inferred from the plans or specifications as being required to produce the intended result shall be supplied whether or not it is specifically identified. Any questions concerning the plans and specifications or Work that may reasonably be inferred shall be provided, in writing, to the ENGINEER prior to construction of the project. Clarifications or interpretations of the Contract Documents shall be issued by the ENGINEER after receipt of written request for clarifications or interpretations from the CONTRACTOR. When words that have a well-known technical or trade meaning to describe work, materials, or equipment, such words shall be interpreted in accordance with such meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the code of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual or code in effect at the time of opening bids, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall change the duties and responsibilities of the DISTRICT, CONTRACTOR or ENGINEER, or any of their agents or employees from those set forth in the Contract Documents.

3.5 Omissions from the plans or specifications or the misdescription of details of Work, which are manifestly necessary to carry out the intent of the plans and specifications, or which are customarily performed, shall not relieve the CONTRACTOR from performing such omitted or misdescribed details of the Work but they shall be performed as if fully and correctly set forth and described in the Contract Documents. It is the responsibility of the CONTRACTOR to seek clarifications or interpretations from the ENGINEER, in writing, prior to initiating the Work if the CONTRACTOR has any doubt or questions concerning the Work. If requests for clarification or interpretations are not submitted in writing, there will be no obligation for the ENGINEER and DISTRICT to respond to the question.

3.6 Figures marked on plans shall, in general, be followed in preference to scale measurements. Large scale plans shall, in general, govern over small-scale drawings. The CONTRACTOR shall compare all drawings and verify the figures before laying out the Work and will be responsible for any errors that might have been avoided thereby.

3.7 Neither CONTRACTOR nor any subcontractor, manufacturer, fabricator, supplier or distributor shall have, or acquire any title to, or ownership rights in, any of the plans (drawings), specifications or other documents (or copies of any thereof) prepared by or bearing the seal of the ENGINEER; and they shall not reuse any of them on extensions of the project or any other project without written consent of the ENGINEER and specific written verification or adaptation by the ENGINEER.

3.8 The Captiva Island Beach Renourishment project plans come as one set of 21 sheets as follows:

3.8.1 Captiva Island Planview, cover page, and control; 14 pages

3.8.2 Profile Cross-sections, 5 pages

3.8.3 Borrow Areas VI-E and III-B and pipeline corridors and sand rehandling areas, 5 pages

3.9 **Precedence.** The contract documents comprise the entire agreement between the DISTRICT and CONTRACTOR for the Project. Should a conflict exist within the agreement and its exhibits, the precedence in order of authority is as follows: 1) Contract 2) Plans (computed dimensions govern over scaled dimensions), 3) Technical and Environmental Provisions, 4) Permits, and 5) Bid Schedule. The apparent silence of the Technical and Environmental Provisions as to any detail, or the apparent omission from them of a detailed description concerning any Work to be done and material to be furnished shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality, if reasonably available, is to be used, and interpretation of Technical and Environmental Provisions shall be made upon that basis.

3.10 Plans. When obtaining data and information from plans, actual figures and computed dimensions shall be used in preference to scaled dimensions.

4. PERFORMANCE OF WORK BY CONTRACTOR.

4.1 Contractor Participation in the Work. The CONTRACTOR shall perform on the site, and with its own organization, excluding subcontractors, beach nourishment (beach fill) work equivalent to at least seventy percent (70%) of the total amount of beach nourishment work to be performed under the contract. If during the progress of Work hereunder, the CONTRACTOR requests, in writing, a reduction in such percentage, and the ENGINEER determines that it would not be detrimental to the DISTRICT, the percentage of the beach nourishment work required to be performed by the CONTRACTOR may be reduced, provided written approval of such reduction is provided by the ENGINEER. The CONTRACTOR is responsible for providing and maintaining equipment which is in good working order for construction of the shore protection project.

4.2 Continuous Construction. The CONTRACTOR and its subcontractors shall maintain at the project site and on the job, the materials, equipment and personnel required to continuously construct all elements of the project. Under no circumstances will the CONTRACTOR remove its dredge, equipment, materials, subcontractors, and personnel from the project site without the written consent of the ENGINEER, unless one or more of the following occurs: the project is complete; weather or sea state conditions require movement from the project site; a condition exists which threatens the safety and welfare of personnel or threatens equipment; or the time frame provided for project construction in the State of Florida or Federal permits has expired.

4.3 Capacity. The CONTRACTOR shall meet the standards for capacity, productivity, and ability to maintain it throughout the time allotted for construction.

4.4 Assignment. Neither party to the Contract shall assign the Contract as a whole without the written consent of the other, nor shall the CONTRACTOR assign any monies due or to become due to it hereunder, without the previous written consent.

5. SIMULTANEOUS WORK BY OTHERS.

5.1 By DISTRICT. The DISTRICT shall have the right to perform or have performed by other contractors, in, about or near the work site or sites during the performance of Work by the CONTRACTOR, such other work as DISTRICT may desire.

5.2 Coordination. The CONTRACTOR shall make every reasonable effort to perform its Work hereunder in such manner as to enable both the Work under this Contract and such other Work by such other contractors to be completed without hindrance or

interference from each other. The CONTRACTOR shall afford other contractors reasonable opportunity for the execution of their Work and shall properly connect and coordinate its Work with the work of other contractors; shall keep itself informed of the progress and the detail of the Work of the other contractors; and shall notify the ENGINEER immediately of lack of progress or defective workmanship on the part of other contractors, where such delay or such defective workmanship will interfere with CONTRACTOR's own operations or the operations of its subcontractors.

Whenever there is interference with Work under contracts with the DISTRICT, the DISTRICT shall decide the manner in which Work shall proceed under each contract. The CONTRACTOR shall proceed at its own risk in the event the CONTRACTOR fails to obtain such prior direction from the DISTRICT. Failure of the CONTRACTOR to keep informed of the Work progressing at any other work site or sites and failure to give notice of lack of progress or defective workmanship by others shall be construed as acceptance by the CONTRACTOR of the status of other Work as being satisfactory for proper coordination with the CONTRACTOR's own Work.

5.3 Acceptance of Dependent Work. If the proper execution of any part of the Work to be performed by the CONTRACTOR hereunder depends upon any of such other Work, the CONTRACTOR shall inspect such other Work before beginning the dependent work and shall promptly advise the ENGINEER of any defects in such other Work. The CONTRACTOR's commencement of the dependent work without making such inspection and report shall, except as to defects not discoverable by reasonable inspection, constitute its acceptance of such other Work as fit and proper for the reception of such part of the CONTRACTOR's work as may depend upon it. Thereafter any cost incurred by CONTRACTOR as a result of such discoverable defects, including correction of such defects, shall be solely borne by the CONTRACTOR.

5.4 Work Damage Claims.

5.4.1 Damage by Another Party. If the CONTRACTOR's Work is damaged by another contractor not under its supervision or control, the CONTRACTOR shall repair the Work and make its claim directly with the party involved. If a conflict or disagreement develops between the CONTRACTOR and one of the other contractors concerning the responsibility for damage or loss to the CONTRACTOR's work, the conflict shall be resolved by whatever method both contractors agree upon, but such conflict shall not be cause for delay in the restoration of the damaged Work or in meeting the Work schedule and the CONTRACTOR shall restore the Work immediately.

5.4.2 CONTRACTOR Caused Damage. Should the CONTRACTOR, or its subcontractor, cause damage to the Work or property of any other contractor, the

CONTRACTOR shall, upon due notice, promptly attempt to settle with such other contractor by agreement, or otherwise resolve the dispute, as provided herein if the other contractor is under the direction and control for the DISTRICT, or by such method as the CONTRACTOR determines if the other contractor is not under the direction and control of the DISTRICT.

6. TECHNICAL DISPUTE RESOLUTION.

The CONTRACTOR shall perform the Work as specified by the Contract Documents. The ENGINEER will interpret the requirements of the technical portions of the Work. If the CONTRACTOR objects to the ENGINEER's decision, the CONTRACTOR shall, within 48 hours of receiving the ENGINEER's decision, notify the ENGINEER in writing of its objection thereto. The CONTRACTOR and ENGINEER will mutually attempt to resolve the issue; nevertheless, the ENGINEER's decision will be binding upon the CONTRACTOR.

6.1 Mediation and Arbitration. The laws of the State of Florida shall govern all provisions of this Agreement. The District will agree to either: (1) Court-ordered mediation pursuant to Florida Statutes Section 44.102 (2020), (2) Court-ordered, nonbinding arbitration pursuant to Florida Statutes Section 44.103 (2020), or (3) voluntary binding arbitration and voluntary trial resolution pursuant to Florida Statutes Section 44.104 (2020).

7. ENGINEER.

7.1 Technical Issues. The ENGINEER, in consultation with the DISTRICT, shall decide all technical issues of whatever nature that may arise relative to the interpretation of the technical portions of the Contract Documents, the Plans, surveys and beach fill volume measurements, and prosecution and fulfillment of this Contract, and as to the character, quality, amount and value of any Work done and materials furnished under this Contract.

7.2 ENGINEER and DISTRICT Access to the Work. The ENGINEER and DISTRICT shall have unlimited access to the dredge and beach fill disposal site, including all offsite staging and stockpile areas for laying out, measuring, and observing or administering the Contract Documents, and the CONTRACTOR shall provide requested assistance for doing so. The CONTRACTOR shall furnish, at the request of the ENGINEER or DISTRICT, suitable transportation from the shore to and from the various pieces of equipment, including the dredge, booster pumps, monitoring stations, barge to and from the beach fill area, or as required to administer the Contract Documents. The ENGINEER or its representative are to have free access to the materials and the Work at all times for measuring and observing, and the CONTRACTOR is to afford them all necessary facilities, transportation, safety protocols and assistance for doing so. The

presence or absence of the ENGINEER shall not relieve the CONTRACTOR of responsibility for the proper execution of the Work in accordance with the specifications. Should the CONTRACTOR refuse, or delay compliance with these requirements, the specific transportation may be furnished and maintained by the ENGINEER, and the cost deducted from any amount due or to become due the CONTRACTOR.

8. SUPERINTENDENT.

The CONTRACTOR shall propose, in writing to the ENGINEER and DISTRICT, the name and qualifications of the superintendent to receive the DISTRICT's instructions from the ENGINEER and to respond to questions from the ENGINEER. There will only be one superintendent. The DISTRICT and/or ENGINEER may reject the superintendent proposed by the CONTRACTOR. If the proposed superintendent is rejected, the CONTRACTOR will propose an alternate Superintendent. Said DISTRICT'S instructions, once received by the CONTRACTOR's superintendent, will be legally binding on the CONTRACTOR pursuant to this Contract. A superintendent of the CONTRACTOR shall be at the beach fill disposal area at all times during project construction or otherwise make themselves available to the ENGINEER at all times during project construction. Under no circumstances will project construction occur without the presence of a superintendent at the project site. An assistant superintendent can be proposed by the CONTRACTOR to cover for the superintendent during absences, but the assistant superintendent cannot change plans and agreements made by the superintendent with the ENGINEER and DISTRICT. The DISTRICT shall be notified prior to any absences of the superintendent. All changes to the superintendent role shall be submitted for review and approval by the DISTRICT.

9. PROJECT MANAGER.

The CONTRACTOR's Project Manager shall serve as a dedicated Community Liaison whose role it is to communicate with the members of the community, the DISTRICT and the ENGINEER on the progress of the project. The Community Liaison shall create a progress map weekly depicting work completed to date and anticipated work area(s) for the upcoming week. These maps should be provided to the DISTRICT and ENGINEER weekly during construction. During construction of the dune, the Community Liaison will, with the input of the ENGINEER and the DISTRICT, evaluate the need for dune construction and/or repair on a case-by-case basis and direct the CONTRACTOR's personnel to build dunes.

10. SUBCONTRACTORS.

10.1 Subcontractor Qualifications. The CONTRACTOR shall furnish within the bid documents the names of subcontractors proposed for any portion of the Work and provide appropriate information in the bid such as company experience, personnel experience, equipment, and references to verify the qualifications of the subcontractor to complete the assigned portion of the Work. The CONTRACTOR may use the subcontractors listed in

the bid to conduct the Work and shall identify the Work to be performed by the subcontractor.

10.2 Subcontractor Approvals. The CONTRACTOR shall not employ any subcontractor or other person or organization (including those who are to furnish the principal items of materials or equipment), whether initially or as a substitute, against whom the DISTRICT or ENGINEER may have a concern or objection. A subcontractor or other person or organization identified in the Bid and approved in writing by the DISTRICT or ENGINEER prior to signing the Contract will be deemed acceptable to the DISTRICT and the ENGINEER. Acceptance of any subcontractor, other person or organization by the DISTRICT and ENGINEER shall not constitute a waiver of any right of the DISTRICT or the ENGINEER to reject defective Work. If the DISTRICT or the ENGINEER, after due investigation, has a concern or objection to any subcontractor, other person or organization proposed by the CONTRACTOR before, or after signing the Contract, the CONTRACTOR shall submit an acceptable substitute. The CONTRACTOR shall not be required to employ any subcontractor, other person or organization against whom the CONTRACTOR has reasonable objection.

10.3 Subcontractor Acts on Omissions. The CONTRACTOR will be fully responsible for all acts and omissions of its subcontractors and of persons directly or indirectly employed by them, and of persons for whose acts any of them may be liable to, the same extent that it is responsible for the acts and omissions of persons directly employed by the CONTRACTOR.

10.4 Subcontractor Insurance Coverage. All subcontractors to the CONTRACTOR will have the same insurance coverage as the CONTRACTOR, unless waived in writing by the DISTRICT. An exception to this is any subcontractor conducting only tilling of the beach for which appropriate insurance shall be required by the CONTRACTOR. The CONTRACTOR will be responsible for monitoring the insurance requirements as described in this section and in the Invitation to Bid for all subcontractors and to assure that all subcontractors have the insurance required or shall provide the required insurance for the subcontractors.

10.5 No Subcontractor Contractual Relationship. Nothing in the Contract Documents shall create any contractual relationship between any subcontractor and the DISTRICT or ENGINEER on the part of the DISTRICT or ENGINEER to pay or to see to the payment of any monies due any subcontractor except as may otherwise be required by law. The DISTRICT may furnish to any subcontractor, to the extent practicable, evidence of amounts paid to the CONTRACTOR on account of specific Work done. The CONTRACTOR agrees to bind every subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of the DISTRICT.

10.6 Subcontractor Work. The divisions and sections of the Contract Documents and the identifications of any plans shall not control CONTRACTOR in dividing the Work among subcontractors or delineating the Work to be performed by any specific trade.

10.7 Binding Subcontractor to Contract Terms and Conditions. All Work performed for the CONTRACTOR by a subcontractor will be pursuant to an appropriate agreement between the CONTRACTOR and the subcontractor which specifically binds the subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of the DISTRICT and ENGINEER. A copy of the agreement between the CONTRACTOR and any subcontractor will be provided by the CONTRACTOR to the DISTRICT and the ENGINEER upon request.

11. CHANGES IN THE WORK.

The DISTRICT shall have the right, within the general scope of the Work and without notice to any surety or sureties of the CONTRACTOR, to make changes in the Work, including but not limited to changes in the Plans, Drawings, Technical Provisions, and Environmental Provisions pertaining to beach width, beach elevation, beach volume, beach length, environmental protection, contract time, contract price, in or to the method or manner of performance of the Work, in or to equipment materials, service or site, in or to the mode or manner of payment for the Work, or directing a change in the rate of performance of the Work. All changes, except in the case of emergencies endangering the safety of persons or property, shall be made by modification of the Contract Documents or by written Change Order duly executed by the DISTRICT, ENGINEER and CONTRACTOR.

11.1 Emergencies. In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, the CONTRACTOR, without special instruction or authorization from the ENGINEER or DISTRICT, is obligated to immediately act to prevent threatened damage, injury, or loss. Work necessary in connection with emergency changes shall be strictly limited to the minimum necessary to alleviate the immediate emergency; Work beyond such minimum shall be undertaken only pursuant to a properly issued Change Order received from the ENGINEER. The CONTRACTOR shall promptly comply with any and all written Change Orders issued by the ENGINEER, notwithstanding any disputes. No such change order shall be deemed to invalidate the Contract.

The CONTRACTOR shall give the DISTRICT and ENGINEER prompt written notice if the CONTRACTOR believes that any significant changes in the Work or variations from Contract Documents have been caused by the emergency. If the DISTRICT and ENGINEER determine that a change in the Contract Documents is required because of the action taken in response to an emergency, a change order will be issued to document the consequences of the changes or variations.

11.2 Equitable Adjustments. If any change ordered by the DISTRICT causes an increase or decrease in the amount of the Work, an equitable adjustment in the cost, or time required for performance of the Work may, upon the request of either party, be made in the contract price or time of performance or both. All claims of the CONTRACTOR for such adjustments, except in the case of emergency changes as described above, shall be made prior to the CONTRACTOR's commencement of performance of the changes on which they are based and, in any event, within ten (10) workdays following receipt of such Change Order, and if not made prior to such time, shall be conclusively deemed to have been waived.

11.2.1 Provided, however, for Unit Price Contracts, no equitable adjustment shall be made in the Contract Price for changes ordered by the DISTRICT that cause an increase or decrease in the amount of the Work that is less than or equal to twenty-five percent (25%) of the applicable quantity or quantities set forth in the Contractor's Proposal. An equitable adjustment may be made in the Contract Price for Unit Price Contracts if changes ordered by the DISTRICT cause the applicable quantity or quantities set forth in the CONTRACTOR's Proposal to be exceeded by more than twenty-five (25%). Such adjustment shall be only for that portion of work that exceeds one hundred and twenty-five percent (125%) or is less than seventy-five (75%) of the applicable quantity or quantities.

11.2.2 It is further provided, however, that no equitable adjustments shall be made in the contract price or time of performance for either Lump Sum or Unit Price Contracts if the change is expressly or reasonably implied by the Contract Drawings and Specifications or is incidental thereto, or if the Work becomes more difficult than the bid price would reflect, or if CONTRACTOR failed to protest, negotiate, comment or otherwise call to the DISTRICT's attention any omissions, ambiguities or conflicts in the Contract Documents that CONTRACTOR could have discovered prior to the submission of its bid or execution of the Contract Agreement.

11.3 Record of Extra Work. If extra Work is done pursuant to any changes ordered by the DISTRICT, the CONTRACTOR shall keep daily records of such extra Work, including daily records of extra Work done by subcontractors. The daily record shall include the names of laborers employed, the nature of the Work performed, and hours worked, materials and equipment incorporated, and machinery and equipment used, if any, in the prosecution of such extra Work. This daily record, to constitute verification that the Work was done, must be signed both by the CONTRACTOR's authorized representative and by the ENGINEER on a daily basis. A separate daily record shall be submitted for each Change Order. The CONTRACTOR's failure to keep such a record shall constitute a waiver of any claim for compensation for such Work. This does not apply to unit price/quantity items.

11.4 Adjustments for an Increase in Work in Excess of 25%. If any change ordered by the DISTRICT causes an increase in the amount of the Work above the 25% quantities specified above, then the DISTRICT and CONTRACTOR shall execute a written supplemental agreement covering the additional work. CONTRACTOR shall be responsible for ensuring that such additional work is covered under a performance and payment bond.

11.5 No Cost-Changes. Administrative and clarifying changes will be made verbally and in writing by the ENGINEER as needed. These changes will not increase the project's cost or time. If the CONTRACTOR believes a cost or time change is required, they should inform the ENGINEER in writing before the Work is started or within 3 days, whichever is less.

12. PHYSICAL DATA.

12.1 Information and Data. Information and data furnished or referred to in the Contract Documents are furnished for the CONTRACTOR's information. It is expressly understood that the DISTRICT or ENGINEER will not be responsible for the accuracy of the information and data, or for any interpretation or conclusion drawn therefrom by the CONTRACTOR. Likewise, the DISTRICT or ENGINEER will not be responsible for any information provided to the CONTRACTOR by any information agency or other party.

12.2 Borrow Areas. The physical conditions of the borrow area sand resources indicated on the drawings and in the specifications are the results of site investigations by remote sensing techniques, bathymetric surveys, jet probes and vibracore sediment sampler. When the indicated physical conditions are the result of site investigations by vibracore sediment sampler or probes, the sampling and probe locations are shown on the drawings. While the DISTRICT's remote sensing survey, bathymetric survey or vibracore sediment samples may be representative of subsurface conditions at their specific respective locations and vertical reaches, variations in the characteristic of the surface or subsurface materials are possible. Should any questions or discrepancies arise, the CONTRACTOR should independently confirm the conditions.

12.3 Weather Conditions. The project area may be affected by tropical storms and hurricanes primarily from June through November, and by stormy and/or rainy weather, including severe thunderstorms, during any time of the year. Wave activity can occur at any time. The CONTRACTOR shall be responsible for obtaining information concerning rain, wind, tide, and wave conditions that could influence dredging and disposal operations prior to making a bid. A list of publications containing climatological and meteorological observations and data for the project area is provided. Other publications or services may be available in addition to the following:

12.3.1 Local Climatological Data published by the National Oceanic and Atmospheric Administration (NOAA), <https://www.ncdc.noaa.gov/data-access/land-based-station-data/land-based-datasets/quality-controlled-local-climatological-data-qcled>. The NOAA Local Climatological Data (LCD) consist of hourly, daily, and monthly summaries for approximately 1,600 U.S. locations.

12.3.2 Historic Wave Information

National Oceanographic and Atmospheric Administration National Data Buoy Center; <https://www.ndbc.noaa.gov/>

12.4 Land Access to the Project Site. Land access to the project area is by State Road 867. The Sanibel Causeway (toll bridge) extends from the mainland at Punta Rassa to Sanibel Island. The Blind Pass Bridge connects Sanibel Island to Captiva Island providing access to Captiva Island. The CONTRACTOR is responsible for adhering to all weight and traffic regulations on all roadways. Information is available by contacting the Lee County Department of Transportation at (239-533-8580, <https://www.leegov.com/dot>). Access to the beach from the adjacent road shall be through the accesses designated in the Plans and specifications.

12.5 Staging Areas. The Captiva Erosion Prevention District will make space available for a moderate amount of equipment. A staging area will be located in parts of Alison Hagerup Beach and Turner Beach Park, as indicated on the plans. The use of Turner Beach Park may be available for a limited duration of the project and shall be coordinated with the DISTRICT prior to use. Advanced notification of the closure of Turner Beach Park shall be coordinated with DISTRICT and ENGINEER.

12.6 Boat Traffic. Boat traffic in the near vicinity of the project area will consist primarily of pleasure, diving, and fishing boats.

12.7 Local Inlets and Ports. Redfish Pass is located at the north end of the project area. Redfish Pass provides small vessel access to the Intracoastal Waterway from the Gulf of Mexico. Port Manatee in Palmetto, Florida (Tampa Bay) is the nearest major port facility. Blind Pass is presently open and located between R-109 and R-110; vessel access is restricted by the bridge that connects Captiva and Sanibel Islands. All inlets and ports are used at the CONTRACTOR's own risk.

12.8 Obstruction to Navigation. The CONTRACTOR will be required to operate in compliance with pertinent U.S. Coast Guard regulations and to conduct the Work in such a manner as to minimize any obstruction to navigation. If the CONTRACTOR's dredge or other floating equipment so obstructs any navigation channel as to make navigation difficult or endanger the passage of vessels, said dredge or equipment shall be promptly moved on the approach of any vessel to such an extent as may be necessary to afford a

practicable passage. Upon completion of the Work, the CONTRACTOR shall promptly remove the dredge and other floating equipment, as well as ranges, buoys, piles and other marks or objects placed in navigable waters or on shore. The CONTRACTOR shall issue a Notice to Mariners regarding the dredging and disposal operation immediately after the Notice to Proceed has been received. The CONTRACTOR shall adhere to all additional requirements in the General Conditions regarding obstruction to navigation.

13. SURVEY STANDARDS AND SURVEYOR QUALIFICATIONS.

The CONTRACTOR'S surveying personnel shall be duly qualified and experienced to perform all required surveys in a manner satisfactory to the DISTRICT and ENGINEER. The CONTRACTOR shall propose in writing, the name and qualifications of the surveyor proposed for the project. The DISTRICT may reject the surveyor. A surveyor registered in the State of Florida shall be responsible for and certify all survey work under his or her direction. The registered surveyor is not obligated to actually perform the surveys. All surveys shall be in accordance with professional standards and practices. Hydrographic surveys shall be performed in accordance with EM 1110-2-1003 dated November 30, 2013 entitled "HYDROGRAPHIC SURVEYING" and Florida Standards of Practice as presented in 5J-17 FAC. Survey notes shall be reduced to elevations, be neat, legible and in accordance with accepted practices and shall include the date performed, weather conditions, bench marks or monument used, name and title of each member of the survey party, and the name of the ENGINEER's representative present. Survey notes lacking information, illegible, or in error, will be returned to the CONTRACTOR for correction. Surveying instruments shall be checked for adjustment at least daily and such checks shall be recorded in survey notes and on the quality control sheet.

Commencement point for each profile shall follow the control listed within the plans. Topographic and Bathymetric surveys shall use Florida Department of Environmental Protection (FDEP) Division of Water Resource Management "A" monuments (indicated on the Construction Plans) or other National Geodetic Survey (NGS) published 2nd order or higher marks as a basis for survey control. Tabular listings of all horizontal and vertical control on all existing "A" monuments shall be obtained through either the FDEP web site or directly from the FDEP office.

All GPS radio base station control or range/azimuth system control shall be established or recovered from FDEP control monuments (typically "A" stations) and shall meet or exceed Geospatial Positioning Accuracy Standards, Range VIII. Designation, stamping, description, horizontal position, horizontal RMSE, elevation (in NAVD 88) and elevation RMSE shall be provided to the ENGINEER for all established base station control. The R-monuments are no longer maintained by the FDEP and should be re-verified by the CONTRACTOR if used for any part of the work. New or replaced FDEP and intermediate monuments shall be based on A-monuments. Two A-monuments in the project area are provided on the Construction Plans.

14. SURVEY CONTROL FOR HYDRAULIC FILL PLACEMENT.

14.1 Beach Fill Area Cross-Section. The CONTRACTOR may use any control deemed necessary for the layout of Work. The CONTRACTOR may establish any profile cross-sections deemed necessary for the layout of Work. Each profile line is to be surveyed on the azimuth indicated in the plans.

14.2 Contractor Acceptance of Survey Control. Florida Department of Environmental Protection (FDEP) beach monuments may be used for control, once the CONTRACTOR has verified the location and elevation of each FDEP beach monument. The profile commencement location coordinates and elevations for the work site are indicated on the Plans but shall be independently verified by the CONTRACTOR and his/her surveyor. The CONTRACTOR shall immediately contact the ENGINEER if any discrepancies are discovered in any of the information presented concerning all beach monumentation, including FDEP or intermediate monuments. The CONTRACTOR is encouraged to contact the ENGINEER for any assistance in locating survey control. If the ENGINEER is not contacted by the CONTRACTOR, it is understood that the CONTRACTOR agrees with all information presented in the Plans related to beach monumentation elevation and control information.

14.3 Surveyor. Utilizing the survey monuments, control data and elevations provided by the ENGINEER, and verified by the CONTRACTOR, the CONTRACTOR shall complete the layout of the Work and shall be responsible for all measurements that may be required for the execution of the layout of the Work, subject to such modifications as the ENGINEER may require to meet changed conditions or as a result of necessary modifications to the contract work. The CONTRACTOR will use a surveyor registered in the State of Florida. The licensed surveyor used by the CONTRACTOR will be responsible for all survey work and layout work and will certify all work.

14.4 Work Layout. The CONTRACTOR shall furnish, at their own expense, such stakes, templates, platforms, equipment, tools and material, and all labor as may be required in laying out any part of the Work from the survey monuments, control data and elevations provided by the ENGINEER, and verified by the CONTRACTOR, the cost of which is included in the line item for project site layout and data collection in the bid schedule. It shall be the responsibility of the CONTRACTOR to maintain and preserve all stakes and other markers unless and until they are no longer needed to construct the beach nourishment project. All temporary marking stakes (including grade stakes) placed by the CONTRACTOR shall be completely removed upon completion of the project. The baseline for compliance profiles shall be approved by the ENGINEER.

14.5 FDEP and Intermediate Beach Monuments. Permanent markers or monuments, such as FDEP or intermediate beach monuments for example, will not be disturbed,

damaged, or destroyed by the CONTRACTOR. Disturbed, damaged, or destroyed monuments will be replaced by the ENGINEER, at their discretion, and the expense of replacement will be deducted from any amounts due, or to become due, to the CONTRACTOR.

15. PAYMENT FOR HYDRAULIC BEACH FILL PLACEMENT, MOBILIZATION, AND DEMOBILIZATION.

15.1 Description. The Work specified in this Section consists of the preparatory work and operations in mobilizing for beginning work on the project, including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site, and for the establishment of temporary offices, buildings, utilities, traffic control, safety equipment and first aid supplies, sanitary and other facilities, as required by the Contract Documents and State and local laws and regulations. The costs of bonds and any required insurance and any other pre-construction expense necessary for the start of the work, excluding the cost of construction materials, shall also be included in this Section.

15.2 Mobilization. All costs connected with the mobilization and demobilization of all the CONTRACTOR's equipment and personnel directly related to beach fill placement, including the dredge and all other equipment, if used, will be paid for at the contract lump sum price for this item. Sixty percent (60%) of the lump sum price will be paid to the CONTRACTOR after completing the pre-construction beach survey requirements and after commencement of dredging and placement of a quantity of, at minimum, ten thousand (10,000) cubic yards of material on the beach and within the beach fill template. The remaining forty percent (40%) will be included in the final payment for work under this Contract. Payments for mobilization and all payment except the final payment will be subject to a five percent (5%) retainage until final acceptance of the project.

15.3 Cost Data. In the event the ENGINEER considers that the cost for mobilization does not bear a reasonable relation to the cost of the entire Work in this Contract, the ENGINEER may require the CONTRACTOR to produce cost data to justify this portion of the bid. The ENGINEER will utilize previously bid projects of a similar nature as a guideline to evaluate the mobilization/demobilization costs. Failure to justify such price to the satisfaction of the ENGINEER will result in payment of estimated mobilization costs, based on the evaluation of the ENGINEER, as determined by the ENGINEER at the completion of mobilization, and payment of the remainder of this item in the final payment under this Contract.

16. ACCEPTANCE AND PAYMENT FOR HYDRAULIC BEACH FILL PLACEMENT.

16.1 General. Other than costs for mobilization, demobilization, construction and monitoring, beach tilling, trawling; all other costs associated with the beach nourishment project including costs associated with, but not limited to, beach and hydrographic surveying and reporting, water quality monitoring, debris removal, clean-up, excavating, transporting, escarpment leveling, site restoration, and repairs, and constructing the hydraulic beach fill shall be included in the contract unit price per cubic yard on the Bid Form. The unit price shall also include all other items of overhead, profit, labor, material, and any other costs incidental to performing the Work.

16.2 Acceptance Sections. Acceptance sections are defined as the segment of beach lying between adjacent pay profile lines. Pay profiles will be spaced generally 100 feet apart with actual distance and location defined by the CONTRACTOR and approved by the ENGINEER. Unless otherwise directed by the ENGINEER, once fill placement begins in an acceptance section, the CONTRACTOR must complete that acceptance section before moving to an adjacent acceptance section. If construction within an acceptance fill section is paused due to delay in the work for any reason before completion of the after dredge (AD) surveys for the acceptance section, both profiles bounding the acceptance section shall be resurveyed for acceptance to demonstrate a complete acceptance section.

16.3 Profile Lines. The CONTRACTOR shall survey cross-sections at a 100-foot spacing plus all FDEP monuments and intermediate monuments.

16.4 Pre-Construction Survey. Pre-construction surveys will be conducted by the CONTRACTOR. The ENGINEER may modify the construction templates provided in the plans based on the pre-construction survey to achieve the contract volume. The pre-construction survey will include FDEP R-monuments extending from R-84 to R-109 and shall intermediate monuments R-84.6 and R-96+326 according to the published control and azimuth shown on the plans. The pre-construction survey of Captiva Island shall be completed prior to any fill placement and shall be conducted per permit requirements and per the requirements of the physical monitoring plan. Sanibel Island will not be surveyed as part of this Work. The CONTRACTOR will conduct a pre-construction survey of all borrow areas used for construction. This pre-construction survey will conform to all requirements identified in the General Conditions and Technical Specifications, as well as those requirements within the project permits and the Physical Monitoring Plan.

Profile surveys will extend seaward to the -14' NAVD contour, 2,000 feet from the shoreline or to the channel center, whichever is the greater distance. All Work activities and deliverables shall be conducted in accordance with the March 2004 Bureau of Beaches and Coastal Systems (BBCS) Monitoring Standards for Beach Erosion Control Projects, Sections 01000 - Beach Profile Topographic Surveying for Beach Erosion Control Projects and 01100 – Offshore Profile Surveying for Beach Erosion Control Projects.

16.5 Payment Surveys.

16.5.1 For the purposes of payment, the CONTRACTOR shall perform before dredge (BD) and after dredge (AD) surveys of the beach at 100-foot sections along the project beach. The CONTRACTOR will establish a baseline and initiation point for pay survey lines at 100-foot intervals; the baseline and proposed payment profile locations and spacing shall be submitted to the ENGINEER for review and approval prior to layout and data collection. The BD and AD surveys must be collected perpendicular to the CONTRACTOR's established baseline. The BD surveys shall be performed no earlier than one (1) week prior to placement and dressing of the fill. The BD survey may be used by the ENGINEER and DISTRICT to refine the design of fill placement during construction if deemed necessary by the DISTRICT. The fill template and volume may be revised at the ENGINEER's discretion using the BD survey results, as the beach conditions may vary from the permit required pre-construction survey as specified above. After Dredge (AD) surveys shall be made after placement of the fill and dressing/grading of the new beach. Loose, unconsolidated sand shall be avoided during after dredge surveys. If the pipeline is on the beach, survey measurements should be made away from the pipeline and not on the undressed sand in the vicinity. The profiles shall be surveyed on the same azimuths of the adjacent profiles of the CONTRACTOR established baseline and approved by the ENGINEER.

16.5.2 A sufficient number of points shall be taken along each line to ensure adequate description of all topographic features, and major breaks in slope, including dunes, beach berms, foreshore, and bar trough systems, with a maximum elevation difference of 1 foot between adjacent points and a maximum horizontal distance of 25 feet between adjacent points. When unusual site or geographical conditions exist, additional stations, ranges, and elevations shall be taken for greater definition. The product will be a continuous line representing the beach/ocean bottom profile. All topographic surveys within the pay template shall be performed with a rod and level, total station, or GPS-RTK equipment. Offshore surveys can use

the same or a sea sled or Coastal Research Amphibious Buggy (CRAB) survey.

16.5.3 Unless waived by the DISTRICT in each specific case, all surveys made by the CONTRACTOR shall be made in the presence of a representative of the DISTRICT. The CONTRACTOR shall notify the ENGINEER 24 hours in advance of each survey intended for payment purposes.

16.5.4 The DISTRICT reserves the right to make additional surveys as necessary for purposes of verification of surveys made by the CONTRACTOR. The DISTRICT may also make independent final surveys for acceptance.

16.6 Survey Discrepancy. If there is a discrepancy between surveys conducted by the CONTRACTOR and the ENGINEER, the respective surveyors will attempt to resolve the survey discrepancy. If the discrepancy cannot be resolved, the surveys conducted by the ENGINEER will be used to compute the fill volume for payment purposes.

16.7 Basis for Payment. Payment for beach fill placement will be based upon the volume of sand placed within the required template and allowable tolerances as computed from before dredge (BD) and after dredge (AD) surveys taken at 100-foot intervals along the beach. To be eligible for payment, the CONTRACTOR shall place a minimum of ninety-five (95%) percent of the required volume within an Acceptance Section and shall meet the minimum required template tolerance along the entire Section. No payment will be provided for fill placed above the template plus tolerance. The CONTRACTOR's bid shall account for any costs associated with profile selection, the azimuth of the profile lines, the profile measurement technique, and the payment volume calculation technique. The ENGINEER will verify the pay quantities provided by the CONTRACTOR based on after dredge surveys conducted by the CONTRACTOR and accepted by the ENGINEER. The CONTRACTOR's surveyor shall certify all surveys submitted for payment.

16.8 Computation of Payment Volumes. Computations of pay volumes shall be made by the CONTRACTOR and ENGINEER using survey data provided by the CONTRACTOR. Quantities of beach fill satisfactorily placed, and meeting beach fill design template requirements and volumes will be computed for payment by use of the average end-area method and before dredge (BD) and after dredge (AD) surveys of the beach. The distance between each pay profile line to be used for fill computation is the average perpendicular distance between each profile line. The distances between each pay profile line along the baseline shall be as close to 100-feet as practicable and shall be reviewed and accepted by the ENGINEER prior to starting Work. Pay profiles shall be surveyed perpendicular to the baseline. Payment will be provided for fill contained within the payment profile construction templates only, as shown on the Plans. No payment will be provided for fill placed above the template, or outside of the template, except as

indicated below. From the gross quantities so determined, the quantity of fill material lying outside the template plus tolerances shall be deducted and the net amount shall be the basis for payment.

16.9 Progress Payments. Monthly progress payments shall be based on completed Acceptance Sections which have been approved by the ENGINEER and the DISTRICT. The CONTRACTOR will be eligible for the initial progress payment when a minimum of 10,000 cubic yards of material has been completed and approved by the DISTRICT. Progress payments will not be made for partially completed Acceptance Sections. The CONTRACTOR shall submit to the DISTRICT and the ENGINEER for review, not more often than monthly, and Application for Progress Payment filled out and signed by the CONTRACTOR. The Application shall describe the Work completed and accompanied by such supporting documentation as is required by the Contract Documents and also as may reasonably be required by the ENGINEER.

16.10 Payment Survey Submittals (Before Dredge (BD) and After Dredge (AD) Surveys.

16.10.1 The CONTRACTOR shall submit survey field notes to the ENGINEER upon completion of each before dredge (BD) and after dredge (AD) survey to expedite review of each survey. All field notes, survey and volume computations, and the records used by the CONTRACTOR to compute the payment fill quantity shall be furnished to the ENGINEER with the Application for Progress or Final Payment. Failure to provide the specified information will delay recommendation and payment.

16.10.2 The CONTRACTOR shall prepare cross-sectional profiles immediately after each survey of both before dredge (BD) and after dredge (AD) survey conditions and make such drawings available to the ENGINEER and DISTRICT. These drawings shall also indicate the required design template and allowable tolerances.

16.10.3 Deliverables to the ENGINEER and DISTRICT shall include processed survey data of range, station, and elevation from each of the 100-foot pay profile lines electronically in ASCII format. Additional information to be provided to the ENGINEER and DISTRICT shall include field notes and a 1" = 200' plan view showing the CONTRACTOR's baseline and surveyed profile lines. The survey data submittal will include easting, northing, and elevation (XYZ) data as well.

16.11 Acceptance Timing and Acceptance Sections for Fill Placement. The notification of rejection or acceptance of a fill section will be based on written notification provided by the ENGINEER to the CONTRACTOR and DISTRICT after the ENGINEER

has reviewed the submitted survey data. After the survey data has been received by the ENGINEER, the ENGINEER will have four (4) days to review the data, consult with the DISTRICT, and prepare a written response if the section(s) have been accepted or rejected, and the reason for rejection if necessary. Acceptance sections are defined as the segment of beach lying between two immediately adjacent pay profile lines. Once fill placement begins in an acceptance section, it must be completed before moving to the adjacent acceptance section. Written notice will be provided by e-mail, if agreeable to all parties.

16.12 Fill Tolerances. Payment will be for hydraulic fill placed within the construction template only, plus tolerances. Any material placed above the template tolerance may be left in place at the discretion of the ENGINEER; however, this material will not be included in the pay quantities. The maximum vertical tolerance is 0.5 feet above and 0.5 feet below the template. Hydraulic fill placement must at least meet the 0.5-foot tolerance below the template everywhere on the constructed beach berm, and the minimum fill volume requirement. The CONTRACTOR shall fill any deficient section of beach to at least meet the below template tolerance everywhere on the constructed beach berm, and to a minimum of ninety-five (95%) percent of the fill volume for the acceptance section. The DISTRICT will withhold payment for acceptance sections that do not meet the minimum required hydraulic fill requirement until the required hydraulic fill placement and grading has been completed by the CONTRACTOR.

16.13 Compensatory Slope Adjustment. During placement of fill, wave conditions may adjust the slope of the placed fill beyond the fill template. In recognition of this natural phenomena, fill located seaward of the fill template slope may qualify for payment where such placed fill is (a) within the limits of the fill project area shown in the Plans, (b) below the mean high-water line, (c) contiguous to the fill template, (d) above the BD profile survey, and (e) measured within the AD profile survey. Compensatory slope volumes will be applied only to compensate for lost volume from the template slope below the mean high-water line. This volume will not be used to compensate for volume deficiencies within the fill template on the beach berm located landward of the mean high-water elevation on the template slope, or along other fill profiles identified on the Plans. This clause does not relieve the CONTRACTOR from grading the beach berm and slope as shown on the Plans. Compensatory fill volume shall not qualify for payment other than that portion of the volume that was relocated by natural forces seaward beyond the template slope shown in the Plans.

16.14 Maximum Template & Pay Volumes. The ENGINEER will compute the maximum payment volume based on the CONTRACTOR's before dredge (BD) survey of all the pay profiles. A table of maximum volumes, including the upper tolerance, will be provided to the CONTRACTOR. No payment will be due for volume placed in excess of the volume provided in the table. **The maximum pay volume will not exceed the volumes indicated on the Bid Form**, unless modified by a change order. The tolerance described

above should be used by the CONTRACTOR to avoid excessive fill placement but shall not be the basis for pay volumes in excess of those indicated on the Bid Form. Final quantity calculations will be computed by the ENGINEER using survey records and documents provided by the CONTRACTOR.

16.15 Payment for pre-construction, before-dredge (BD), and after-dredge (AD) surveys will be part of the cost for beach fill.

17. PAYMENT FOR PLACEMENT OF FILL MATERIAL FOR DUNE RESTORATION.

All costs connected with site preparation, debris removal, excavating, transporting, beach surveying and reporting, and placement of fill material for the purpose of dune restoration shall be the same as for the unit cost of beach fill placement.

18. PAYMENT FOR BEACH TILLING.

Payment for mobilization, demobilization, labor, materials, equipment, fuel, oil and all other appropriate costs in connection with tilling of the nourished beach shall be included in the lump sum price for beach tilling, subject to a five percent (5%) retainage until final acceptance of the project. No partial payments will be issued for this work item. The unit price is based on the linear footage measured alongshore of the project beach.

19. PAYMENT FOR BEACH SCARP ADJUSTMENT.

No progress payments will be made for beach dressing and beach scarp adjustments. Acceptance of the Work shall be determined by visual inspection performed by the ENGINEER or DISTRICT. Payment for mobilization, demobilization, labor, materials, equipment, fuel, oil, and all other appropriate costs in connection with dressing and scarp leveling of the renourished beach shall be paid for as part of the unit cost of sand on the Bid Form.

20. PAYMENT FOR VIBRATION INSPECTION AND MONITORING.

Payment for labor, materials, equipment, and all appropriate costs in connection therewith or incidental thereto for protection of existing structures from construction activities and monitoring (referred to vibration inspection and monitoring) shall be paid as part of the unit cost of sand placed for each reach.

21. RETAINAGE.

A retainage of five (5%) percent of the payment application amount shall be withheld from each payment for all line items within the bid schedule. Upon final acceptance and satisfaction of all

requirements of the Contract Documents, the withheld retainage shall be included in the final payment. The DISTRICT will consider a reduction in retainage request from the CONTRACTOR for those segments of the project as they are completed and accepted.

22. FINAL ACCEPTANCE AND PAYMENT.

22.1 Beach Escarpment Elimination Before Final Payment. At the completion of the entire fill placement and beach tilling, and prior to final payment, the CONTRACTOR will inspect the entire beach project area for the formation of sand escarpments. Any escarpments in the project area, independent of the escarpment height or the length, will be leveled or smoothed to eliminate the escarpment by the CONTRACTOR. The ENGINEER will observe the beach after leveling of escarpments.

22.2 Engineer's Recommendation for Final Payment. The ENGINEER's recommendation of final payment for beach fill placement will constitute a representation by the ENGINEER to the DISTRICT that in the opinion of the ENGINEER, the conditions precedent to the CONTRACTOR's being entitled to final payment as set forth in the Contract Documents have been fulfilled. If, on the basis of the ENGINEER's observation of the Work during construction and post-construction, review of survey information and payment volume calculations and the ENGINEER's review of the final Application for Payment and accompanying documentation the ENGINEER is satisfied that the Work has been completed and the CONTRACTOR has fulfilled all of its obligations under the Contract Documents, the ENGINEER will, within seven (7) days after receipt of the final Application for Payment, indicate in writing its recommendation for payment and present the application to DISTRICT. If the application and accompanying documentation are acceptable as to form and substance, the DISTRICT shall, within forty-five (45) days after receipt of the ENGINEER's recommendation for Final Payment, pay the CONTRACTOR the amount recommended by the ENGINEER or other such amounts deemed appropriate by the DISTRICT in consultation with the ENGINEER. Otherwise, the ENGINEER will return the application to the CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case the CONTRACTOR shall make the necessary corrections and resubmit the application.

22.3 Right to Refuse Recommendation for Payment. The ENGINEER may refuse to recommend the whole or any part of any payment if, in their opinion, such representations to the DISTRICT would be inaccurate. The ENGINEER may also refuse to recommend any payment because of subsequently discovered evidence or the results of subsequent observations, measurements, or tests, or nullify any such payment previously recommended to such extent as may be necessary in the ENGINEER's opinion to protect the DISTRICT from loss because:

22.3.1 The Work is defective, inconsistent with the project Plans and Specifications, or completed Work not accepted by the ENGINEER has been damaged requiring correction or replacement;

22.3.2 Written claims have been made against DISTRICT or its ENGINEER, or agents, or liens have been filed in connection with the Work;

22.3.3 The Contract price has been reduced because of modifications;

22.3.4 The DISTRICT has been required to correct defective Work or complete the Work;

22.3.5 The CONTRACTOR has not performed the Work in accordance with the Contract Documents;

22.3.6 The CONTRACTOR has failed to make payment to subcontractors, or for labor, materials, or equipment.

22.3.7 The CONTRACTOR is claiming additional placement of fill volume placement beyond that measured and calculated using the procedure established in the Contract Documents for computation of fill quantities for payment purposes.

22.3.8 The CONTRACTOR is claiming additional payment for any reason not previously agreed to by the DISTRICT.

22.3.9 The CONTRACTOR has not repaired damages caused by the operation of the CONTRACTOR or their subcontractors to the satisfaction of the DISTRICT and/or affected private property owner.

22.3.10 The final as-built or post-construction surveys indicate a lower volume.

22.4 Completion of all Work. Upon written notice from the CONTRACTOR that the Work is complete, the ENGINEER will observe the Work within five (5) days of receipt of the written notice from the CONTRACTOR and, if required, will notify the CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. The CONTRACTOR shall immediately take such measures as are necessary to remedy such deficiencies.

22.5 Application for Final Payment. After the CONTRACTOR has completed all such corrections to the satisfaction of the ENGINEER and DISTRICT and delivered any required quality control reports, water quality reports, data requested by the ENGINEER, guarantees, bonds, certificates of inspection, marked-up record documents, and all other

documents as required by the Contract Documents or ENGINEER, and after the ENGINEER has indicated that the Work is acceptable to the DISTRICT, the CONTRACTOR may make application for final payment. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents and such other data and schedules as the ENGINEER may reasonably require, together with complete and legally effective releases or waivers (satisfactory to DISTRICT) of all Liens arising out of or filed in connection with the Work. In lieu thereof and as approved by the DISTRICT, the CONTRACTOR may furnish the following set of documents: 1) receipts or releases in full; and 2) an affidavit of the CONTRACTOR providing warranties, covenants, and representation that the releases and receipts include all labor, services, material and equipment bills, and other indebtedness connected with the Work for which the DISTRICT or the DISTRICT's property might in any way be responsible; and 3) proof that all charges have been paid or otherwise satisfied; and 4) consent of the Surety to final payment. If any subcontractor, manufacturer, fabricator, supplier, or distributor fails to furnish a release or receipt in full, the CONTRACTOR may furnish a bond or other collateral satisfactory to the DISTRICT to indemnify the DISTRICT against any lien.

22.6 CONTRACTOR's Obligation to Complete Work. The CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents, and within time limitations, shall be absolute. None of the following will constitute either an acceptance of Work not in accordance with the Contract Documents or a release of the CONTRACTOR'S obligation to perform the Work in accordance with the Contract Documents: recommendation of any payment by the ENGINEER, issuance of a certificate of substantial completion, any payment by the DISTRICT to the CONTRACTOR under the Contract Documents, any use or occupancy of the Work of any part thereof by the DISTRICT, any act of acceptance by the DISTRICT or any failure to do so, the issuance of a notice of acceptability by the ENGINEER, any correction of defective Work by the DISTRICT. It is essential that sand be placed in all portions of the project area and the CONTRACTOR shall plan its operations accordingly.

22.7 Access to the Work. The DISTRICT shall have the right to exclude the CONTRACTOR from the Work after the date of completion, but the DISTRICT shall allow the CONTRACTOR reasonable access to complete or correct items.

22.8 Making and Acceptance of Final Payment. The making and acceptance of final payment shall constitute:

22.8.1 A waiver of all claims by the DISTRICT against the CONTRACTOR, except claims arising from unsettled liens, from defective Work appearing after project completion, or from failure to comply with the Contract Documents or the terms of any guarantees specified therein; however, final payment shall not

constitute a waiver by the DISTRICT of any rights in respect to the CONTRACTOR's continuing obligations under the Contract Documents.

22.8.2 A waiver of all claims by the CONTRACTOR against the DISTRICT other than those previously made in writing and still unsettled.

22.9 One Year Correction Period. If within one (1) year after the date of completion or such longer period of time as may be prescribed by law or by the terms of any applicable guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, the CONTRACTOR shall promptly, without cost to the DISTRICT and in accordance with the DISTRICT's written instructions, either correct such defective Work or, if it has been rejected by the DISTRICT, remove it from the site and replace it with non-defective Work. If the CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, the DISTRICT may have the defective Work corrected or the rejected Work removed and replaced, and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, shall be paid by the CONTRACTOR. These provisions do not apply to sediment erosion occurring within the project area following project completion and the ENGINEER'S acceptance of the Work.

23. USE OF COMPLETED PORTIONS.

The DISTRICT shall have the right to take possession of, and use, any completed or partially completed portions of the Work, prior to the completion of the entire Work. Such taking possession and use shall not be deemed an acceptance of any Work not completed in accordance with Contract Documents.

24. CONTRACTOR QUALITY CONTROL.

24.1 The CONTRACTOR is responsible for quality control and shall provide and maintain an effective quality control program.

24.2 Quality Control Reports (Appendix GC-1) shall be provided to the ENGINEER on a daily basis without exception.

24.3 The CONTRACTOR shall establish a quality control system to perform sufficient inspections and tests of all items of Work, including that of their subcontractors, and to ensure conformance to applicable provisions of the Contract Documents and plans with respect to the materials, workmanship, construction, finish, and functional performance and prevention of damages to natural resources, structures, and infrastructure. This control will be established for all construction except where the Contract provides for specific

DISTRICT or ENGINEER control by observation, tests, or other means. The CONTRACTOR's control system will specifically include the surveillance and tests required in the Technical Provisions.

24.4 The CONTRACTOR's quality control system is the means by which the CONTRACTOR is assured that the construction complies with the requirements of the Contract Documents, including all project permits. The controls shall be adequate to cover all construction operations and shall be keyed to the proposed construction sequence.

24.5 The CONTRACTOR's work supervisory staff may be used for quality control, supplemented as necessary by additional personnel for surveillance, by special technicians, or by testing facilities with the expertise to provide for the controls required by the Technical Provisions.

24.6 The CONTRACTOR shall furnish to the DISTRICT within seven (7) days prior to the pre-construction conference, a written Quality Control Plan that shall include the procedures, instructions, and reports to be used. This document will include as a minimum:

24.6.1 The quality control organization.

24.6.2 The number and qualifications of personnel to be used for this purpose.

24.6.3 Authority and responsibility of quality control personnel.

24.6.4 Methods of quality control including that for its subcontractor's work. The methods shall include items to be inspected, types of inspections, duties of personnel, and methods the CONTRACTOR proposes to use to assure quality Work.

24.6.5 Method of documenting quality control operations, inspection, and testing.

24.6.6 Safety inspection procedures including employees responsible for supervising accident prevention activities and insuring compliance with safety measures.

24.6.7 Medical emergency procedures, including employees responsible for supervision of medical emergencies.

24.6.8 Written instructions to the CONTRACTOR's representative responsible for quality control outlining their duties and responsibilities and signed by a responsible officer of the firm.

24.6.9 An Activity Hazard Analysis. (See 40.10).

24.6.10 A copy of daily Quality Control Report forms and other inspection documents that are to be furnished to the ENGINEER daily. A sample "Daily Quality Control Report" is included as an Appendix GC-1 to the General Conditions. This report will be used by the CONTRACTOR as the Daily Quality Control Report to be provided to the ENGINEER. The CONTRACTOR may substitute a different report format if: (1) it contains, at minimum, the same information and (2) it is approved, in writing, by the ENGINEER.

24.7 Unless specifically authorized by the ENGINEER, no construction will be started until the ENGINEER receives and acknowledges the CONTRACTOR's Quality Control Plan.

24.8 All compliance inspections will be recorded on the Daily Quality Control Report, including, but not limited to, the specific items required in each technical section of the Specifications. This form shall include records of corrective action taken and shall be furnished to the ENGINEER daily by 2:00 p.m. for the previous day's Work. The Daily Quality Control Report shall be filled out every day, regardless of whether Work is accomplished, starting on the first day of mobilization and ending on the last day of demobilization and furnished to the ENGINEER as required by the Contract Documents. Failure to provide Daily Quality Control Reports to the ENGINEER shall result in delay in payments to the CONTRACTOR until the Daily Quality Control Reports are received and are acceptable to the ENGINEER.

24.9 The Daily Quality Control Report shall include a plot of the dredge and cutterhead/drag arm location and depth as described in the Technical Provisions. Failure to provide this information may be grounds for stopping dredging until reporting is up to date.

24.10 If reoccurring deficiencies in an item or items indicate that the quality control system is not adequate, or reports are not being provided in a timely manner, the CONTRACTOR shall undertake such corrective actions as directed by the ENGINEER.

24.11 No separate payment will be made for CONTRACTOR quality control.

24.12 The CONTRACTOR shall be responsible for making such inspections survey and tests as may be necessary to assure compliance with all the requirements of the Contract Documents and application permits. Reports of all inspections, surveys and tests and remedial action shall be submitted to the ENGINEER in writing.

24.13 The ENGINEER reserves the right to utilize the CONTRACTOR's control testing laboratory, survey and other equipment to make spot tests and surveys, and to check the

CONTRACTOR's testing and survey procedures, techniques, and results (where applicable).

25. ENVIRONMENTAL MONITORING.

The CONTRACTOR shall be bound and obligated to implement an environmental protection program that satisfies all requirements of the Quality Control Plan and permits for the Work. The program shall be satisfactory to all appropriate government agencies and mutually agreed upon by the ENGINEER. The CONTRACTOR shall submit its plan for environmental protection to the DISTRICT at least four (4) days prior to the pre-construction conference. Environmental Monitoring shall include, but is not limited to, all water quality and construction related monitoring required by State and Federal permits for hopper dredging within the Gulf of Mexico. The State and Federal permits are included with the Environmental and Technical Specifications and contain specific conditions that the CONTRACTOR shall adhere to.

26. WATER QUALITY MONITORING BY THE CONTRACTOR.

The CONTRACTOR shall be bound and obligated to maintain the quality of the State's waters as stipulated in project permits and, in the Florida Administrative Code Rule 62-302 as they pertain to the Class III waters of this Work. All water quality monitoring shall be conducted by an independent third party subcontracted by the CONTRACTOR. The CONTRACTOR will be required to make inspections, measurements and observations required by those regulations and the FDEP permit in the vicinity of the dredge, the spoil site (beach), and at the sand rehandling area. This includes, but is not limited to, daily turbidity sampling at specified intervals with reports to the ENGINEER, following procedures stated in FDEP Permit No. 0200269-009-JC. If it is determined that the quality of the State's waters is not being maintained, the CONTRACTOR will, without delay, follow the procedures provided in the FDEP permit to address any violations. The water quality monitoring and reporting costs will be incorporated into the line item for Turbidity Monitoring in the Bid Form.

27. DREDGE CAPACITY AND CERTIFICATION.

27.1 Dredge Capacity. The CONTRACTOR agrees to keep on the job sufficient dredge equipment to meet the requirements of the Work. The dredge shall be in satisfactory operating condition, shall be reliable in its performance and capable of safely and efficiently performing the Work as set forth in the Contract Documents. The dredge(s) shall be of sufficient size and capacity to complete the Work in a timely manner, meeting or exceeding Contract Document requirements for the construction time period. The dredge(s) addressed in the bid questionnaire is the minimum size and capacity which the CONTRACTOR shall place on the job unless a different size and/or capacity dredge is approved by the ENGINEER in writing, and its listing thereon is not to be construed as an agreement on the part of the DISTRICT that it is adequate for the performance of the Work.

27.2 No Reduction in Dredge Capacity. No reduction in the capacity of the dredge employed on the Work shall be made except by written permission of the ENGINEER. The measure of the "capacity of the dredge" shall be its actual performance on the Work to which these specifications apply. The ENGINEER, at their discretion, may order a field test of the capacity of the dredge at the CONTRACTOR's expense. If the dredge, in the ENGINEER's opinion, is not of sufficient capacity to complete the Work in the contract time period, the ENGINEER may direct the CONTRACTOR to replace the dredge with a larger capacity dredge or bring an additional dredge.

27.3 American Bureau of Shipping Certification for Open Ocean Operation. The CONTRACTOR shall obtain any and all-American Bureau of Shipping (A.B.S.) and U.S. Coast Guard dredge certifications and/or approvals required for the project described herein, which allow for the open ocean operation of the dredge(s). A copy of the A.B.S. or U.S. Coast Guard certifications and approvals shall be made available to the DISTRICT and ENGINEER upon request, demonstrating that the plant proposed for use on the project is licensed and certified to conduct open water (Gulf of Mexico) work.

28. NOTICE TO MARINERS.

The CONTRACTOR shall issue a Notice to Mariners regarding the dredging and disposal operation immediately after the Notice to Proceed has been received. A copy of the Notice to Mariners shall be provided to the ENGINEER. Should the CONTRACTOR, during dredging operations, encounter any objects on the ocean bottom, which could be a hazard to navigation, he/she will notify the U.S. Coast Guard, any other pertinent agencies, and the ENGINEER immediately as to the location of said object and any other pertinent information necessary for the CONTRACTOR to put out a Notice to Mariners.

29. FLOATING PIPELINE BARRICADE REQUIREMENTS.

Installation of a barricade is required on all pipelines when such floating pipeline encounters land. The purpose of the barrier is to prevent access onto the floating pipeline from the beach.

30. CRANE AND DRAGLINE SAFETY REQUIREMENTS.

All cranes used in performing the Work set forth in these Specifications shall be equipped with geared boom hoists which require the application of power to raise and lower the boom or shall be otherwise equipped with mechanisms which will prevent the booms from being lowered by gravity. Cranes that are equipped with booms that can be lowered by either gravity or by power shall have the mechanisms or operating the booms by gravity made inoperative so that the booms cannot be lowered by gravity. The booms of all cranes and draglines shall also be equipped with shock absorbing type backstops to prevent them from overtopping.

31. STATE AND FEDERAL PERMITS, EASEMENTS AND LICENSES.

The DISTRICT has obtained the Florida Department of Environmental Protection (FDEP) permit and the U.S. Army Corps of Engineers permit. Any other licenses or approvals required for the prosecution of the Work shall be secured and paid for by the CONTRACTOR.

32. DELAYS AND EXTENSIONS OF TIME.

32.1 Delay in Commencing Dredging. For each day of delay in commencing dredging beyond the applicable start date listed in the General Conditions, the CONTRACTOR will forfeit a day of unavoidable delay, beyond the date for the entire Work to be complete and ready for use.

No Damage for Delay. No payment, compensation or adjustment of any kind, other than the extension of time provided for below, shall be made to the CONTRACTOR for damages because of hindrances or delays from any cause in the commencement, prosecution or completion of the Work resulting from the CONTRACTOR's or its agents negligence or non-compliance with the Contract Documents, or including but not limited to:

- (a) Acts of God, such as storms, wave events, hurricanes, tropical storms, tornadoes, earthquakes, floods, or extreme weather;
- (b) Changes in project sequence;
- (c) Project de-acceleration;
- (d) Lack of right-of-way or easement not within the direct control of the DISTRICT;
- (e) Lack of approvals;
- (f) Site conditions;
- (g) Presence and operation of other contractors;
- (h) Strikes, lockouts, labor or material shortages;
- (i) Fire;
- (j) Delay in transportation;
- (k) Omissions or errors in the Plans or Specifications;

wherein the CONTRACTOR can conclusively demonstrate that the act or omission clearly caused the delay.

Whether such hindrances or delays be avoidable or unavoidable, the CONTRACTOR agrees that it shall make no claim for, nor be entitled to, compensatory, acceleration, disruption damages or mitigation of liquidated damages, if any, or any other damages of any kind or nature for any such delays or hindrances. CONTRACTOR will accept in full satisfaction for such delays the extension of time set forth below as the bid documents allow. The no damage for delay provision of this paragraph shall include, but shall not be

limited to, increase in time-related costs, escalation in material costs, reduction in material volume, escalation in labor costs, additional equipment, effect on other contracts, increased premiums, lower labor productivity, lost alternative income, additional labor head count, additional premium time labor, additional supervision and demobilization and remobilization costs.

32.2 Avoidable Delays by the Contractor. Avoidable delays or hindrances in the commencement, prosecution or completion of the Work shall include all delays from any cause whatsoever that might have been avoided in the exercise of appropriate planning, care, prudence, foresight, or diligence on the part of the CONTRACTOR or its subcontractor. The following shall be deemed avoidable delays within the meaning of this Contract: delays in the prosecution of parts of the Work that may in themselves be unavoidable but do not necessarily prevent or delay the prosecution of other parts of the Work nor the completion of the whole Work within the time herein specified; reasonable loss of time resulting from the necessity of submitting Plans or surveys to the ENGINEER for review, from conducting surveys, measurements and inspections; and reasonable time loss from such interruptions as may occur in the prosecution of the Work on account of the reasonable interference of other contractors employed by the DISTRICT which do not necessarily prevent the completion of the Work within the time herein specified.

32.3 Unavoidable Delays. Unavoidable delays in the prosecution or completion of the Work under this Contract shall include all delays which may result through causes beyond the control of the CONTRACTOR, and which the CONTRACTOR could not have provided against by the exercise of care, prudence, foresight, or diligence. Orders issued by the DISTRICT increasing the amount of Work to be done by 25% or more, increasing the quantity of beach fill material to be furnished by 25% or more, lack of rights-of-way, and unforeseen delays in the completion of the Work of other contractors under contract with the DISTRICT may be considered unavoidable delays, so far as they necessarily interfere with the CONTRACTOR's completion of the whole Work.

32.4 Notice of Delays. Whenever the CONTRACTOR experiences any delay in the prosecution of the Work, the CONTRACTOR shall, immediately upon the occurrence of any event giving rise to a delay, and in any event no later than three (3) days after the onset of the delay, notify the ENGINEER in writing of the occurrence of such delay and its cause and probable length in order that the ENGINEER may determine whether the delay is to be considered avoidable or unavoidable, how long it continues, and to what extent the prosecution and completion of the Work are to be delayed thereby. The notice must also demonstrate that CONTRACTOR will or has used all reasonable means to minimize the delay and contain an estimate of the probable effect that such delay will have on the progress and final completion of the Work. Notification of occurrence of delay will not be considered unless submitted in WRITING.

32.5 Extensions of Time for Unavoidable Delays. For delays that are unavoidable, as determined by the DISTRICT or ENGINEER, the CONTRACTOR will be allowed, if it applies for the same in the notice, an extension of time beyond the time specified for completion in the Contract and as specified in an approved change order, proportionate to such unavoidable delay or delays, within which to complete the Contract and within time limitations contained in project permits. CONTRACTOR will not be charged because of any extension of time for such unavoidable delay, any liquidated damages or engineering and inspection costs as are charged in the case of avoidable delays. Extensions of time shall only apply to the type of work directly affected.

32.6 Remedies for Avoidable Delays. If (a) the Work called for under this Contract is not finished and completed by the CONTRACTOR, in accordance with all requirements, within the time specified for completion in the Contract, including authorized Change Orders or suspensions of Work not due to the CONTRACTOR's failure to perform according to the Contract Documents; or, (b) if at any time prior to the expiration of said time it should appear to the DISTRICT that the CONTRACTOR will be unable to finish and complete said Work as aforesaid within said time, then in that event the DISTRICT may terminate this Contract as provided in Section 33 (DISTRICT's Right to Terminate Contract). Alternatively, in the exercise of its sole and absolute discretion, DISTRICT may allow the CONTRACTOR to complete the Work, providing permits may be modified to extend the Work period, but charge to CONTRACTOR and deduct from the final payment due to the Work, engineering, inspection, legal and administrative expenses computed on the basis of a charge of three thousand (\$3,000.00) dollars per day until completion of the Work. Any mobilization/demobilization necessary to complete the Work will be done at the CONTRACTOR's expense. Notwithstanding an election made pursuant to this paragraph, the DISTRICT may thereafter terminate the Contract, as provided in Section 33, if DISTRICT is not adequately assured of prompt completion.

32.7 Time Extension for Unavoidable Delays for Severe Weather or Sea State. Time extension for delays for severe weather or sea state will be granted if:

32.7.1 A request is made in writing to the DISTRICT within 3 days of the delay.

32.7.2 It affects operations related to working in the Gulf of Mexico for sea state unavoidable delays.

32.7.3 The delay is substantiated, in writing and with data from an independent wave/weather source, within 7 days of the onset of the delay, to the satisfaction of the DISTRICT and ENGINEER.

32.7.4 The data indicates that weather or adverse sea state could not have

been anticipated or that the dredge had to be removed from the borrow area for safety reasons.

32.7.5 The ENGINEER agrees that the weather and/or sea state conditions and the number of days of extension requested are warranted and qualify for an extension of time and provides recommendation to the DISTRICT.

32.7.6 The DISTRICT agrees with the ENGINEER and grants the time extension.

32.7.7 If the CONTRACTOR does not follow the procedure detailed above, no time extension will be granted.

32.8 **Permit Time Extensions.** The permits are valid for year-round construction but have specific conditions that must be adhered to by the CONTRACTOR during certain times of year.

33. LIQUIDATED DAMAGES.

In case of failure on the part of the CONTRACTOR to commence beach fill placement within the specified time period, or to complete one hundred percent (100%) of the hydraulic beach fill placement work, based on hydraulic filling of the construction templates, within the time fixed in the Contract, the CONTRACTOR shall continue to completion. The CONTRACTOR shall pay the DISTRICT as liquidated damages, not as a penalty, the amount for liquidated damages of \$3,000 for each consecutive calendar day after the final completion date.

34. THE DISTRICT'S RIGHT TO TERMINATE CONTRACT.

34.1 **Termination for Cause.** If the CONTRACTOR fails to begin the Work under Contract within the time specified, or fails to perform the Work with sufficient workers and equipment or with sufficient materials to insure the prompt completion of said Work or shall perform the Work unsuitably, or cause it to be rejected as defective and unsuitable, or shall interrupt or stop the Work, or if the CONTRACTOR shall become insolvent or be declared bankrupt, or commit any act of bankruptcy or insolvency, or allow any final judgment to stand against them unsatisfied for a period of 48 hours, or shall make an assignment for the benefit of creditors, or from any other cause whatsoever shall not carry on the Work in an acceptable manner, the DISTRICT may give notice in writing to the CONTRACTOR and their Surety, of such delay, neglect or default, specifying the same. If the CONTRACTOR, within a period of seven (7) days after such notice, shall not proceed in accordance therewith, then the DISTRICT shall have full power and authority, without violating the Contract, to take the prosecution of the Work out of the hands of said CONTRACTOR, to appropriate or use any or all material as may be suitable and

acceptable; and may enter into an agreement for the completion of said Contract according to the terms and provisions thereof; or use such other methods as in its opinion shall be required for the completion of said Contract in an acceptable manner. All costs and charges incurred by the DISTRICT, together with the costs of completing the Work under Contract, shall be deducted from any monies due or which may become due to said CONTRACTOR. In case the expense so incurred by the DISTRICT shall be less than the sum which would have been payable under the Contract, if it had been completed by said CONTRACTOR, then CONTRACTOR shall be entitled to receive the difference, and in case such expense shall exceed the sum which would have been payable under the Contract, then the CONTRACTOR and the Surety shall be liable and shall pay to the DISTRICT the amount of said excess.

34.2 Termination for Convenience. The Contract may be terminated by the DISTRICT in whole or in part at any time, in the best interest of the DISTRICT. If the Contract is terminated before performance is completed, the Contractor will be paid only for that work satisfactorily performed for which costs can be substantiated. Such payment, however, may not exceed an amount which is the same percentage of the Contract price as the amount of work satisfactorily performed.

35. LIENS.

Neither the final payment nor any part of the retained percentage shall become due until the CONTRACTOR has delivered to the DISTRICT a complete release of all liens arising out of this Contract or receipts acknowledging in full in lieu thereof and an affidavit that so far as CONTRACTOR has knowledge or information the release and receipts include all the labor and materials for which a lien could be filed. The CONTRACTOR may, if any Subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the DISTRICT, to indemnify the DISTRICT against any claim. If any claim remains unsatisfied after all payments are made, the CONTRACTOR shall refund to the DISTRICT all monies that the DISTRICT may be compelled to pay in discharging such a claim, including all costs and reasonable attorney's fee.

36. LEGAL RESTRICTIONS AND TRAFFIC PROVISIONS.

The CONTRACTOR shall conform to all applicable laws, regulations, or ordinances with regard to labor employed, minimum wage, equipment certification, laws, hours of Work and their general operations. The CONTRACTOR shall so conduct their operations that they shall not close any thoroughfare nor interfere in any way with traffic on railway, highways, or on water, without the written consent of the proper authorities. The regulations the CONTRACTOR shall adhere to are those established by, but not necessarily limited to, the U.S. Coast Guard, Department of the Army, American Bureau of Shipping, Florida Department of Environmental Protection, Florida Department of Transportation, Marine Patrol, and Lee County.

Vehicle access to Captiva Island must cross the Sanibel Bridge and Causeway, which has a restricted weight limit and permit conditions. The permits are the CONTRACTOR's responsibility, and they may restrict the size and weight of vehicles.

37. PUMPING OF BILGES.

CONTRACTOR is cautioned that pumping oil or bilge water containing oil into navigable water or into areas that would permit the oil to flow into such waters, is prohibited by Section 13 of the Rivers and Harbors Act of 1899 approved March 3, 1899 (30 stat. 1152; 33 U.S. C. 407). Violation of this prohibition is subject to penalties provided for under the referenced act.

38. ELECTRICITY.

All electric current required by the CONTRACTOR shall be furnished at its own expense.

39. FIRE EXTINGUISHER-MOBILE CONSTRUCTION EQUIPMENT.

The CONTRACTOR is specifically required to provide a fire extinguisher on all mobile construction equipment that meets or exceeds an extinguisher rating of 20-B:C; which is equivalent to a 10-15 pound dry chemical extinguisher, compatible to the hazard involved, such as: combustible, flammable liquids and materials used in remote areas without access to other fire extinguisher equipment.

40. PROTECTION OF PROPERTY, WORK AND PERSONS.

40.1 Protection of Property. The CONTRACTOR shall, at its own cost and expense, support and protect all public and private property that may be encountered or endangered in the prosecution of the Work herein contemplated. The CONTRACTOR shall repair to its original condition and make good any damage caused to any such property by reason of its operation, to the satisfaction of the DISTRICT and any owner, before final payment is provided to the CONTRACTOR by the DISTRICT.

40.2 CONTRACTOR Responsibility. The CONTRACTOR shall at all times guard the Work site or sites and adjacent properties from any damage whatsoever in connection with this Contract whether arising from direct operations under this Contract, theft, vandalism or any cause whatsoever. The CONTRACTOR shall at all times protect its own Work from damage. The CONTRACTOR shall make good any and all loss, damage, or injury to the Work, whether arising from direct operations under this Contract, weather or sea conditions, theft, vandalism, or any cause whatsoever. The CONTRACTOR, however, will not be responsible for maintenance of beach sections previously accepted by the ENGINEER for payment. The CONTRACTOR will be responsible for beach tilling and

leveling of the beach escarpment after beach sections have been accepted by the ENGINEER.

40.3 Protection of Persons. The CONTRACTOR shall be accountable for any injuries or loss of life resulting from its operations. The CONTRACTOR shall be fully responsible for the protection and safety of all persons including members of the public, employees of the DISTRICT, the ENGINEER and his/her employees, and employees of other contractors or subcontractors, and marine turtle monitoring personnel in the area of the Work; and people on floating equipment such as the dredge or other vessels.

40.4 Risk of Loss. The Work and everything pertaining thereto shall be performed at the sole risk and cost of the CONTRACTOR from commencement until final payment by the DISTRICT. Any specific references contained in the Contract Documents, including the Plans, that the CONTRACTOR shall be responsible at its sole risk and cost for the Work or any part thereof are not intended to be, nor shall they be construed to be, an exclusive listing of the circumstances in which the CONTRACTOR bears the risk of loss, but rather they are intended only to be examples. The CONTRACTOR, however, will not be responsible for restoration of beach segments accepted by the ENGINEER for payment.

40.5 Weather Events and Other Risks. All loss or damage arising out of the nature of the Work, or from the action of the elements, or from weather events, hurricanes, tropical storms, or from any unusual obstruction or difficulty, or any other natural or existing circumstances either known or unforeseen, that may be encountered in the prosecution of the Work, shall be sustained and borne by the CONTRACTOR at its own cost and expense, including all fill placement which has not been accepted by the ENGINEER for payment.

40.6 No Claim Against DISTRICT or ENGINEER. The CONTRACTOR shall have no claim against the DISTRICT or ENGINEER because of delay or any damage or loss to the Work or CONTRACTOR's materials, equipment, or supplies due to simultaneous work by others. The CONTRACTOR shall be responsible for the complete restoration of damaged Work to its original condition complying with the Contract Documents. Notwithstanding any other provision of this Contract, this obligation shall exist without regard to the availability of any insurance, either of the DISTRICT, ENGINEER, or the CONTRACTOR.

40.7 Beach Erosion. The CONTRACTOR is not responsible for naturally occurring erosion of any accepted section of the beach fill after it has accepted for payment by the ENGINEER. The CONTRACTOR is responsible for maintaining the beach fill until it is accepted by the ENGINEER, and to avoid preventable damage to sections that have been accepted by the ENGINEER. Preventable damage to sections previously accepted by the ENGINEER will be repaired at the CONTRACTOR's expense. Damage considered to be preventable include washout due to leaks from the CONTRACTOR's pipelines and

mechanical damage caused by the CONTRACTOR's equipment, as examples. The CONTRACTOR is also responsible to grade and eliminate all beach scarps or cliffs in the entire fill area, regardless of ENGINEER acceptance, prior to being considered complete and eligible for final payment.

41. SAFETY REQUIREMENTS.

41.1 CONTRACTOR Responsibility for Safety. The CONTRACTOR shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. The CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:

41.1.1 DISTRICT personnel, the ENGINEER and ENGINEER's representatives, State and Federal personnel, the public, all employees, and subcontractors involved in the Work and all other persons who may be affected thereby.

41.1.2 All the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site.

41.1.3 Other property at the site or adjacent thereto, including trees, shrubs, lawns, natural vegetation, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

41.2 Compliance with Safety Laws. The CONTRACTOR shall comply with all applicable laws, ordinances, rules, regulations, and orders of any public body having jurisdiction over the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection and have at the work site at all times a dedicated safety and flag person. The CONTRACTOR shall notify owners of adjacent property and utilities when prosecution of the Work may affect them. All damage, injury, or loss to any property caused, directly or indirectly, in whole or in part, by the CONTRACTOR, any subcontractor or anyone directly or indirectly employed by any such subcontractor or person, or anyone for whose acts any such subcontractor or person may be liable, shall be remedied by the CONTRACTOR. The CONTRACTOR's duties and responsibilities for the safety and protection of the Work shall continue until such time as all the Work is completed and the ENGINEER has issued a notice to the DISTRICT and CONTRACTOR in accordance with Section 15 of the General Conditions that the Work is acceptable.

41.3 Familiarity with Safety Standards. The CONTRACTOR shall review the accident prevention clause of the Contract, the Corps of Engineers Manual, General Safety Requirements, EM 385-1-1, dated November 2014 (or most recent version), and all

changes and amendments thereto, and the latest Occupational Safety and Hazard Agency (OSHA) standards, to assure the CONTRACTOR has full knowledge of the personal protective equipment that must be provided to work-persons and is familiar with the safety standards applicable to the prevention of accidents during the construction of this project and shall comply with all applicable provisions.

41.4 Diving Plan. The CONTRACTOR shall submit as part of its written plan for quality control, a diving plan if diving is included as a part of the planned operations, at least seven (7) days prior to the pre-construction conference. This plan shall contain information specific to the diving operations to be performed. Submission of the plans does not constitute an endorsement on the part of the DISTRICT or ENGINEER that the CONTRACTOR's diving procedures are safe. The plan is intended to provide a method by which the CONTRACTOR demonstrates an awareness of diving standards. The intent of this requirement is to assure safe diving and particularly when emergencies, marine maintenance, or underwater problems occur which require diving. Additionally, the CONTRACTOR is to determine that placement of spuds, anchors, pipes, etc. will not impact hardbottom communities; a procedure which may require diving. All diving shall be conducted in accordance with the requirements of the most recent versions of the following documents:

41.4.1 U.S. Navy Diving Manual, Volume I and II (NAVSEA 0994-LP-001-9010 and NAVSEA 0094-LP-001-9020).

41.4.2 U.S. Army Corps of Engineers' Safety and Health Requirements Manual, EM 385-1-1. Section 30 Diving Operations.

41.4.3 29 CFR, Part 1910, Subpart T, OSHA Regulations.

41.5 Accident Prevention Plan. The CONTRACTOR is required to submit to the ENGINEER an accident prevention plan seven (7) days prior to the pre-construction conference. The accident prevention plan must be in accordance with all Federal safety standards as specified in EM 385-1-1 dated November 2014 (or most recent equivalent). Submission of the plan does not constitute an endorsement on the part of the DISTRICT or ENGINEER of the CONTRACTOR's accident prevention plan. The plan is intended to provide a method by which the CONTRACTOR demonstrates an awareness of Federal safety standards.

41.6 Hazard Communication. The CONTRACTOR shall comply with the requirements of OSHA 1910.1200, the Hazard Communication Standard. General requirements are as follows:

41.6.1 Provide a written program describing implementation method of the previously referenced standard. This shall be provided to the ENGINEER within seven (7) days prior to the pre-construction conference.

41.6.2 Ensure that the CONTRACTOR's personnel are informed about health and physical hazards associated with materials to be used.

41.6.3 Ensure that a hazardous material inventory is available to the DISTRICT upon request.

41.6.4 Ensure proper labeling of hazardous material containers.

41.6.5 Ensure Availability of a Material Safety Data Sheet on site.

41.7 Oil and Hazardous Material Spills and Containment. The CONTRACTOR shall ensure that all hazardous material spills are immediately reported to the proper authorities and to the DISTRICT. All hazardous material spills shall be immediately cleaned up in accordance with the U.S. Army Corps of Engineers' Safety and Health Requirements Manual, EM 385-1-1. In accordance with EM 381-1-1, the CONTRACTOR shall use suitable methods such as dikes or curbs to prevent the spread of hazardous materials from above ground storage tanks and piping in case of leakage.

41.8 Confined Space Entry.

41.8.1 The CONTRACTOR shall submit a confined space entry plan as part of its written proposal for accident prevention, as specified in Section 40.5. This plan shall satisfy the requirements specified in 29 CFR 1910.146, or its most recent version.

41.8.2 Confined space is any space having limited openings for entry and exit, not intended for continuous occupancy, and having unfavorable natural ventilation which could contain or produce dangerous concentrations of airborne contaminants or asphyxiants. Confined spaces may include but are not limited to storage tanks, holds of vessels, manholes, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, underground utility vaults, tunnels, pipelines, trenches, vats, and open top spaces more than 4 feet in depth such as pits, tubs, vaults and vessels, or any place with limited ventilation.

41.8.3 Prior to entering a confined space, the Work environment shall be tested by a competent person using properly calibrated approved equipment to determine the extent of potential hazards. If the atmosphere cannot be determined by testing, an immediately Dangerous to Life and Health situation shall be assumed (See 29 CFR

1910.134). The evaluation shall consider the potential for evolution of toxic substances as well as oxygen content. Testing for toxic substances shall be performed prior to each entry and on a continuous or frequent (as stipulated in the Confined Space Entry Procedure) basis while personnel are working in confined spaces.

41.9 Trench Safety Act (Florida Statutes Section 532.60 et seq.).

41.9.1 The Occupational Safety and Health Administration's excavation safety standards, 29 C.F.R.s. 1926.650 Subpart P are hereby incorporated as the State standard. The Department of Labor and Employment Security may, by rule, adopt updated or revised versions of those standards, provided that the updated or revised versions are consistent with the intent expressed in the Federal law and section 553.60 et seq., of the Florida Statutes, and are not otherwise inconsistent with State law. The CONTRACTOR shall comply with any Federal or State rule adopted as provided in the law, upon the rule's effective date.

41.9.2 On all parts of the Work that require trench excavation in which such excavation will exceed a depth of 4 feet, the CONTRACTOR shall submit to the DISTRICT a reference to the trench safety standards that will be in effect during the period of construction of the project and written assurance by the CONTRACTOR performing the trench excavation that such CONTRACTOR will comply with the applicable trench safety standards.

41.9.3 A CONTRACTOR performing trench excavation shall:

41.9.3.1 As a minimum, comply with the excavation standards that are applicable to a project.

41.9.3.2 Call Sunshine 811 prior to digging.

41.9.3.3 Adhere to any special shoring requirements, if any, of the State or other political subdivisions, which may be applicable to such a project.

41.9.3.4 If any geotechnical information is available, the CONTRACTOR performing trench excavation shall consider this information in the CONTRACTOR's design of the trench safety system that it will employ on the project. Nevertheless, the CONTRACTOR shall not depend on geotechnical information supplied by the DISTRICT or ENGINEER for the trench safety system but will conduct its own studies and investigations to satisfy any and all requirements for safety. This paragraph shall not require the ENGINEER to obtain geotechnical

information or to provide any evaluations, judgments, or other assessments concerning trench excavation or the trench safety system.

41.9.4 The cost of compliance with trench safety standards shall be included in the cost of all bid items that require trenching.

41.10 Activity Hazard Analysis. The CONTRACTOR is required to submit to the ENGINEER as part of its written plan for quality control an Activity Hazard Analysis. The Activity Hazard Analysis is outlined in U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, Section 01.A, Figure 1-2.

41.11 Safety Person Requirement.

41.11.1 The CONTRACTOR shall employ at the project site one, or more as needed, permanent Safety and Occupational Health person (Safety Officer) to manage the CONTRACTOR's accident prevention program. The Safety Officer shall be on duty during any work of a complex nature including, but not limited to, the relocation of utilities; all structural work; work on or around existing disposal area dikes; spoil placement on the beach; rock work; or when blasting or other potentially hazardous activities are occurring. The principal Safety Officer(s) shall report to and work directly for the CONTRACTOR's superintendent or the corporate safety office. The Safety Officer(s) shall have the authority to take immediate steps to correct unsafe or unhealthful conditions. The presence of the Safety Officer will not abrogate safety responsibilities of other personnel.

41.11.2 Qualifications for Safety Officer(s):

41.11.2.1 Shall have a degree in a technical or scientific field or safety in a four-year, or longer, program from an accredited school; or

41.11.2.2 Shall have at least 1 year of experience in safety and occupational health work.

41.11.3 Seven (7) days prior to the pre-construction conference, the CONTRACTOR shall submit to the DISTRICT, for approval, the name, and qualifications of the proposed Safety Officer(s) and a functional description of duties.

41.12 Hurricane and Severe Storm Plan. The CONTRACTOR shall submit a Hurricane and Severe Storm Plan to the DISTRICT within seven (7) days prior to the pre-construction conference. The CONTRACTOR shall continually monitor the NOAA marine weather broadcasts and avail themselves of such other local commercial weather

forecasting services as may be available. Submission of a Hurricane and Severe Storm Plan does not constitute an endorsement on the part of the DISTRICT or ENGINEER as to the adequacy of the plan. This plan shall include but not be limited to the following:

41.12.1 Time intervals before storms strike the project area when action will be taken and details of the actions to be taken. The plan should be specific as to what weather/wave conditions will require Work shutdown, removal of dredge, etc.

41.12.2 List of the equipment to be used on the job and its ability to handle adverse weather and wave conditions.

41.12.3 List of safe harbors or ports and the distance from the Work area to these harbors and the time required to move the equipment to these harbors or ports. Copies of letters of approval for the use of these safe harbors or ports (local authorities, U.S. Coast Guard, etc.) where applicable.

41.12.4 Method of securing equipment in high wave and/or storm conditions and/or in safe harbors or ports. Specifically addresses the conditions related to the dredge. Qualifications to the addressed include the number of anchors securing the dredge in high waves or a storm, and the conditions that require the assistance of a tug or other vessels to avoid dredge anchors being dragged in a storm, or to avoid anchor line breaking.

41.12.5 List of equipment to be utilized to make this move to safe harbors or ports (tugboats, work boats, etc.), to include the name and horsepower of this equipment. The plan will include only equipment capable of making the move to safe harbors or ports in adverse weather or sea conditions.

41.12.6 Methods of securing equipment not moved; i.e., vessels pipelines (floating or submerged), pumpout stations, etc.

41.12.7 Plan of evacuation to include interim measures; i.e., immediate reaction plans to be taken for all storm occurrences, particularly sudden/flash storms.

41.12.8 Operating procedures to be undertaken when critical dredge equipment fails during sudden and severe adverse weather conditions, to include breaking of spuds, swing wires, anchor wires, or other mooring equipment or facilities, or inability of tugs or similar vessels to secure the dredge.

42. INSURANCE.

The CONTRACTOR will not commence Work under a contract until all insurance under this section and such insurance coverage as might be required by the DISTRICT has been obtained, including insurance for subcontractors employed on the Work by the CONTRACTOR. The CONTRACTOR shall obtain, and submit to the DISTRICT prior to acceptance of Work but no later than within seven (7) days after issuance of a Notice to Proceed provided by the DISTRICT along with the signed Contract, at the CONTRACTOR's expense, the following minimum amounts of insurance (inclusive of any amounts provided by an umbrella or excess policy):

42.1 Workers' Compensation/Employers' Liability. The CONTRACTOR shall procure and maintain, for the life of this Contract, Workers' Compensation Insurance covering all employees with limits meeting all applicable State and Federal laws. This coverage shall include Employer's Liability with limits meeting all applicable State and Federal laws. This coverage shall extend to any subcontractor that does not have its own Workers' Compensation and Employer's Liability Insurance. Thirty (30) days' notice of cancellation is required and must be provided to the DISTRICT via Certified Mail.

42.2 Commercial General Liability. The CONTRACTOR shall procure and maintain, for the life of this Contract, Comprehensive General Liability Insurance. This coverage shall be on an "occurrence" basis. Coverage shall include Premises and Operations; Independent Contractors' Products and Completion Operations and Contractual Liability. This policy shall provide coverage for death, personal injury, or property damage that could arise directly or indirectly from the performance of this Contract.

The Minimum Limits of Coverage shall be three million dollars (\$3,000,000.00) per occurrence, Combined Single Limit for Bodily Injury Liability and Property Damage Liability with deductible of more than \$10,000.00 subject to approval by DISTRICT; such approval shall not be unreasonably withheld. Any deductibles or SIR on such policy shall be the sole responsibility of the CONTRACTOR.

The DISTRICT and Aptim Coastal Planning & Engineering, LLC must be named as additional insured unless Owners and Contractor's Protective Coverage is also provided or required. Thirty (30) days written notice must be provided to DISTRICT and Aptim Coastal Planning & Engineering, LLC, via Certified Mail in the event of cancellation.

42.3 Business Automobile Liability. The CONTRACTOR shall procure and maintain, for the life of the Contract, Business Automobile Liability Insurance.

The minimum limits of coverage shall be one million (\$1,000,000.00) per occurrence, Combined Single Limit for Bodily Injury Liability and Property Damage Liability. This coverage shall be an "Any Auto" or "Comprehensive Form" type policy.

In the event the CONTRACTOR does not own any vehicles, the DISTRICT will accept the hired and non-owned coverage in the amounts listed above. In addition, the DISTRICT will require an affidavit signed by the CONTRACTOR indicating the following:

_____ does not own any vehicles.
"Company Name"

In the event we acquire any vehicles throughout the term of this Contract,
_____ ("Company Name") agrees to purchase "Any Auto" or "Comprehensive Form" coverage as of the date of acquisition.

"Contractor's Signature"

42.4 Owners and Contractors Protective Liability Coverage. All contractors doing Work with a bid price of more than \$500,000.00 must include an Owners and Contractors Protective Liability Policy. DISTRICT will be listed as the named insured on the Policy. The liability limit must be combined single limits of not less than \$1,000,000.00. This must be on an Occurrence Form. Thirty (30) days written notice must be provided to the DISTRICT via Certified Mail in the event of cancellation.

42.5 Marine Liability Insurance. To protect against damage by CONTRACTOR's vessels on water, the minimum limits of coverage shall be six million dollars (\$6,000,000.00) per occurrence, Combined Single Limit for Bodily Injury and Property Damage Liability.

The CONTRACTOR agrees that prior to beginning operations under the terms of this Contract, it will secure the insurance coverage provided above and will cause to be issued by CONTRACTOR's insurance carrier an endorsement on such policies naming the DISTRICT (Captiva Erosion Prevention District) and ENGINEER (Aptim Coastal Planning & Engineering, LLC) as additional insured under such contract of insurance and shall deliver said endorsements to the DISTRICT and ENGINEER. The DISTRICT shall be notified thirty (30) days in advance by the insurance companies that a policy will expire or be terminated. A copy of all insurance policies shall be delivered to the DISTRICT prior to the pre-construction conference with the required the DISTRICT and ENGINEER endorsements.

42.6 Supplemental Provisions.

42.6.1 The insurance coverage and conditions afforded by this policy(s) shall not be suspended, voided, canceled, or modified, except after thirty (30) days prior written notice by Certified Mail, Return Receipt Requested, has been given to the DISTRICT by CONTRACTOR. In addition, Notice(s) of Cancellation according to policy provisions shall also be provided.

42.6.2 Certificates of Insurance meeting the specific required provision specified within this Contract shall be forwarded to the DISTRICT and approved prior to the start of any work or the possession of any DISTRICT property.

43. COMPLIANCE WITH EQUAL OPPORTUNITY LAW.

During the performance of this Contract, the CONTRACTOR agrees, as follows:

43.1 The CONTRACTOR will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The CONTRACTOR will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include but not be limited to the following: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; CONTRACTOR agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this non-discrimination clause.

43.2 The CONTRACTOR will, in all solicitations or advertisements for employees placed by or on behalf of the CONTRACTOR, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

43.3 The CONTRACTOR will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the CONTRACTOR's commitments under this section and shall post "said notice" in conspicuous places available to employees and applicants for employment.

43.4 The CONTRACTOR will comply with all provisions of Executive Order 11246 of September 24, 1965, as amended, and of the rules, regulations, and relevant orders of the Secretary of Labor.

43.5 The CONTRACTOR will furnish all information and reports required by Executive Order 11246 of the Secretary of Labor, or pursuant thereto, and will permit access to their books, records and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

43.6 In the event of the CONTRACTOR's noncompliance with the non-discrimination clauses of this Contract or with any of the said rules, regulations or orders, this Contract may be canceled, terminated or suspended in whole or in part and the CONTRACTOR may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, as amended, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, as amended, or by this rule, regulation or order of the Secretary of Labor, or as otherwise provided by law.

43.7 The CONTRACTOR will include the portion of the sentence immediately preceding subparagraph (a) and the provisions of subparagraphs (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations or orders of the Secretary of Labor issued pursuant to Section 204 of the Executive Order 11246 of September 24, 1965, as amended, so that such provisions will be binding upon each subcontractor or vendor. The CONTRACTOR will take such action with respect to any subcontract or purchase order as the DISTRICT may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event a CONTRACTOR becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the DISTRICT, the CONTRACTOR may require the United States to enter into such litigation to protect the interests of the United States. The CONTRACTOR further agrees that it will be bound by the above Equal Opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, that if the CONTRACTOR so participating is a State or local government, the above Equal Opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in Work on or under the Contract. The CONTRACTOR agrees that it will assist and cooperate actively with the DISTRICT and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the Equal Opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency in the discharge of the agency's primary responsibility for securing compliance. The CONTRACTOR further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 25, 1965, as amended with a CONTRACTOR debarred from or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the Equal Opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the

Executive Order. In addition, the CONTRACTOR agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: cancel, terminate or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under this program with respect to which the failure or refusal occurred until satisfactory assurance of future compliance has been received from such CONTRACTOR; and refer the case to the Department of Justice for appropriate legal proceedings.

43.8 The CONTRACTOR shall comply with federal requirements of 2 CFR § 200.

44. ENERGY POLICY AND CONSERVATION ACT.

To the extent applicable, the CONTRACTOR will comply with the mandatory standards and policy relating to energy efficiency which are contained in the state energy conservation plan issues in compliance with the Energy and Policy Conservation Act.

45. INDEMNIFICATION.

The CONTRACTOR shall meet all requirements as set forth in the "Information For Bidders".

46. PERFORMANCE AND PAYMENT BONDS.

The successful bidder shall furnish performance and payment bonds in the form set forth in the "Invitation to Bid".

47. TAXES.

The DISTRICT is exempt from Federal Excise and State Sales Taxes; (FL Sales Tax Exempt Cert. No. 85-8012582601C-4); therefore, the bidder is prohibited from delineating a separate line item in their bid for any sales or service taxes. Nothing herein shall affect the bidder's normal tax liability.

48. PRE-CONSTRUCTION CONFERENCE.

After the Contract is awarded and before construction operations are started, the CONTRACTOR shall meet with the ENGINEER and DISTRICT at the DISTRICT's office (11513 Andy Rosse Lane, Captiva, Florida 33924) or by video conference call, to discuss the permits, and the Project. This shall be referred to as a pre-construction conference. The meeting shall develop mutual understanding relative to details of the system, including the forms to be used for recording the quality control operations, inspections, daily reports, administration of the system and the interrelationship of the CONTRACTOR, ENGINEER, and DISTRICT and their respective inspectors.

49. PERMIT AGENCY CONFERENCE.

A meeting will be held with the ENGINEER, DISTRICT, CONTRACTOR, marine turtle license holder, shorebird monitor, appropriate State and Federal agencies and any other individuals as required in compliance with project permit requirements, to discuss permit conditions. This meeting may be separate from the pre-construction conference and will be held on Captiva Island or by video conference call. This meeting will cover physical construction items but not administrative or contract requirements.

50. DIFFERING SITE CONDITIONS.

The CONTRACTOR shall promptly, but in no event more than seven (7) days, and before the conditions are disturbed, give a written notice to ENGINEER of 1.) Subsurface or latent physical conditions at the site which differ materially from those indicated in this Contract; or 2.) Unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.

The ENGINEER shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the CONTRACTOR's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause and the Contract modified in writing accordingly.

No request by the CONTRACTOR for an equitable adjustment to the contract under this clause shall be allowed, unless the CONTRACTOR has given the written notice required; provided, that the time prescribed for giving written notice may be extended by the DISTRICT. No request by the CONTRACTOR for an equitable adjustment to the contract for differing site conditions shall be allowed if the condition could have been discovered using ordinary due diligence or if made after Final Payment under this Contract.

51. DEFINITIONS.

51.1 Acceptance Section – Acceptance sections are defined as the segment of beach lying between two immediately adjacent pay profile lines.

51.2 Addenda – Written or graphic instruments, explanations, interpretations, changes, corrections, additions, deletions, or modifications of the Contract Documents issued prior to the opening of Bids which clarify, correct or change the bidding documents or the Contract Documents.

51.3 Application for Payment – The form accepted by ENGINEER which is to be used by CONTRACTOR in requesting progress or final payments and which is to include such supporting documentation as is required by the Contract Documents.

51.4 Bid – The offer or proposal of the bidder submitted on the prescribed form setting forth the prices for the Work to be performed, properly signed or guaranteed.

51.5 Bonds – Bid, Performance and Payment bonds and other instruments, which protect against loss due to inability, failure or refusal of the CONTRACTOR to perform the work, specified in the contract documents.

51.6 Change Order – A document recommended by ENGINEER which is signed by the CONTRACTOR and the DISTRICT which authorizes an addition, deletion, or revision in the Work, or an adjustment in the Contract Price or Contract Time, issued on or after the execution of the Agreement.

51.7 Contract Documents – Invitation to Bid, Information for Bidders, Bid Proposal (*including: Schedule of Bid Items, Plant and Equipment Schedule, Pre-award Information, List of Subcontractors Proposed for Use in this Work, Clarifications and Exceptions*), Bid Bond, Agreement, Performance and Payment Bond, General Conditions, Technical and Environmental Provisions – Beach Fill, Permits, Plans, and *Addenda and Change Orders executed pursuant to the Contract Documents*.

51.8 Contract Price – The total monies payable by the DISTRICT to the CONTRACTOR under the terms and conditions of the Contract Documents.

51.9 Contract Time – The number of successive calendar days stated in the Contract Documents for the completion of the Work.

51.10 CONTRACTOR – The person, firm, or corporation with whom the DISTRICT has executed the Agreement to furnish the Work called for in the Contract Documents.

51.11 Date of Completion – Calendar date when all Work has been completed in compliance with Contract Documents, the CONTRACTOR has repaired all damage or injury to the work site, cleaned up the work site, and demobilized all equipment and personnel from the project area.

51.12 Day – A calendar day of 24 hours measured from midnight to the next midnight, including Saturdays, Sundays, and holidays and regardless of weather.

51.13 Defective Work – Work that is unsatisfactory, faulty, or deficient; or that does not conform to the Contract Documents; or that does not meet the requirements of any

inspection, reference standard, test, or approval referred to in the Contract Documents; or Work that has been damaged prior to the ENGINEER's recommendation of final payment.

51.14 DISTRICT – Captiva Erosion Prevention District, Florida and its authorized and legal representatives, the public entity with whom the CONTRACTOR has entered into the agreement and for whom the Work is to be provided.

51.15 ENGINEER – Aptim Coastal Planning & Engineering, LLC and Coastal Protection Engineering LLC, or its authorized agents, inspectors or representatives acting within the scope of duties entrusted to them by the DISTRICT.

51.16 Lump Sum Price Work – Work to be paid for on the basis of a single payment to accomplish a Work task.

51.17 Notice to Proceed – The written notice issued by the DISTRICT, or its agents, to the CONTRACTOR authorizing the CONTRACTOR to proceed with the Work.

51.18 Permits – State and Federal approvals to conduct the Work, including conditions and requirements that must be adhered to by the CONTRACTOR.

51.19 Plans (drawings) – The drawings, plans, maps, profiles, diagrams, and other graphic representations which show character, location, nature, extent and scope of the Work, which have been prepared or approved by ENGINEER and which are considered part of the Contract Documents.

51.20 Specifications – Those portions of the Contract Documents consisting of the general requirements and written technical descriptions of products and execution of the Work.

51.21 Subcontractor – An individual, firm, or corporation having a direct contract with the CONTRACTOR or with any other subcontractor for the performance of a part of the Work at the site.

51.22 Surety – Any person, firm or corporation which is bound by bid or contract bond with and for the CONTRACTOR.

51.23 Unit Price Work – Work to be paid for on the basis of unit prices.

51.24 Work – Any and all obligations, duties and responsibilities necessary to the successful completion of the Project assigned to or undertaken by the CONTRACTOR under the Contract Documents, including all labor, materials, equipment and other incidentals and the furnishing thereof.

51.25 Written Amendment – A written amendment of the Contract Documents, signed by the DISTRICT and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the non-engineering or non-technical rather than strictly Work-related aspects of the Contract Documents.

APPENDIX GC-1

Daily Quality Control Report Form

DAILY CONTRACTOR QUALITY CONTROL REPORT

Date: _____ Report No. _____
(Report is due by 2:00 p.m. of the following day)

PROJECT: Captiva Island Beach Renourishment Project

WEATHER: (Clear) (P. Cloudy) (Cloudy) TEMP. Min. Max.

Wind Speed _____ mph Direction _____

Wave Height at:

Borrow Site _____ feet

Beach disposal _____ feet

Wave Direction _____

LOCATION OF DISCHARGE: _____ feet south from R-Monument (Station _____)

DRESSING OPERATIONS COMPLETE TO: _____

CONTRACTOR/SUB-CONTRACTOR and area of responsibility:

1. Work Performed Today: (Indicate location and description of work performed. Provide beach fill advance over last 24 hours. Attach dredge position printouts and plot to this report.)
2. Results of Surveillance: (Include satisfactory work completed or deficiencies with action to be taken.)
3. Water Quality Monitoring: Was water quality and other environmental monitoring conducted today in compliance with project permit requirements of the Florida Department of Environmental Protection Permit No. 0200269-009-JC and water quality protection laws, and the results provided to the ENGINEER (Yes/No)? _____
4. Verbal Instructions Received: a. (List any instructions given by the ENGINEER, construction deficiencies, retesting required, etc., with action to be taken.) List comments or instructions received from regulatory or law enforcement agencies.

5. Remarks: (Cover delays and any conflicts in Plans, specifications or instructions.)
6. Safety Inspection: (Report violations observed; corrective instructions given; and corrective actions taken.)
7. Equipment Data: (Indicate items of major construction equipment and boats other than hand tools at job site and whether or not used and if operable.)
8. Dredge Status: (Name, is the dredge working, not operating due to weather/sea state, or is it under repair?)
9. Avoidance of Overdredging: Do you certify that the dredge has excavated within the limits of the borrow areas, as shown in the Plans (Yes/No)? _____. Also, do you certify that the borrow area has not been excavated below the limit as shown in the Plans (Yes/No)? _____
10. Progress Summary:

Beach Fill	This Day	To Date
Worked Hours		
Downtime Hours (Explain Below)		
Length of Discharge Advance on Beach (Ft.)		
Volume Pumped (Estimated c.y.)		
Linear % Completed		

Explanation of Downtime – Beach Fill:

CONTRACTOR's Verification: The above report is complete and correct, equipment used, and works performed during this reporting period are in compliance with the contract drawings and specifications except as noted above.

CONTRACTOR's Approved Authorized Representative

Note: This form must include continuous plots of dredge locations and depths.

CAPTIVA ISLAND
BEACH RENOURISHMENT PROJECT
TECHNICAL AND ENVIRONMENTAL PROVISIONS

CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT

TECHNICAL AND ENVIRONMENTAL PROVISIONS

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Appendix D USACE Permit No. SAJ-1994-03952 (SP-MMB) December 9, 2015 with
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Appendix D2 USFWS Programmatic Piping Plover Biological Opinion (May 22, 2013)

Appendix D3 NMFS Gulf Regional Biological Opinion (2003, Revisions: 2005, 2007)
(Available Online)

CAPTIVA ISLAND BEACH RENOURISHMENT PROJECT

TECHNICAL AND ENVIRONMENTAL PROVISIONS - BEACH FILL PLACEMENT

PART I: GENERAL

1. CAPTIVA ISLAND RENOURISHMENT PROJECT.

The beach renourishment project is located on the west coast of Florida on Captiva Island within Lee County. The project area is located between Florida DEP reference monuments R-84 and R-109 (Captiva Island). Beach fill placement will consist of dredging of approximately 795,000 cubic yards of beach fill on 4.85 miles of beach on Captiva Island in Lee County, Florida. There are two borrow areas approved for this project. Borrow Area VI-E is the primary selected source and contains 2,600,000 cubic yards of beach quality material located approximately 8.3 nautical miles west of Captiva Island as shown on the Plans. Borrow Area VI-E has an average mean grain size of 0.40 mm.

Borrow Area III-B is an alternate source and contains approximately 725,000 cubic yards of sand with a mean grain size of 0.32 mm and located 8.7 nautical miles southwest of Captiva Island and is to be used only at the direction of the DISTRICT.

2. SCOPE.

The CONTRACTOR shall provide the dredge and all support vessels, labor, equipment, supplies, and materials to perform all operations in connection with excavating, transporting, placing, grading and tiling the beach as required by the Contract Documents. The DISTRICT is prepared to pay for a beach fill volume measured on the beach based on the bid quantity or as modified by change order. The CONTRACTOR will not be paid for any volume in excess of the quantity measured within the fill template, inclusive of fill tolerances, unless a written change order is prepared by the ENGINEER and approved by the DISTRICT.

3. SUBMITTALS AND NOTIFICATIONS.

The CONTRACTOR will provide the following submittals and notifications to the ENGINEER and/or DISTRICT at the appropriate times:

3.1 Quality Control Plan. At least seven (7) days prior to the contract pre-construction conference, the CONTRACTOR shall submit an Environmental Protection Plan acceptable to the DISTRICT and ENGINEER.

3.2 Contact List. At least seven (7) days prior to the contract pre-construction conferences, the CONTRACTOR shall submit a list of project personnel, including subcontractors, and their telephone, email address, telefax, and other numbers by which key personnel can be reached for purposes of notification and other matters discussed in the Contract Documents. Nevertheless, the CONTRACTOR remains responsible for all

Work and shall be the point of contact and in responsible charge of the subcontractor(s) during the duration of the Work.

3.3 List of Subcontractors. At least seven (7) days prior to the contract pre-construction conference, the CONTRACTOR shall submit and Environmental Protection Plan acceptable to the DISTRICT and ENGINEER.

3.4 Independent Turbidity Monitoring. The CONTRACTOR shall submit, as part of the Bid, the names, qualifications, and a scope of work for an independent third-party turbidity monitoring subconsultant to be used on the project in accordance with the permit requirements. In advance of construction commencement, these qualifications will be sent by the ENGINEER to FDEP for approval as a prerequisite for a FDEP Notice to Proceed. The FDEP may require additional information such as the turbidity meter calibration and a draft turbidity sampling map for review and approval for which the CONTRACTOR shall supply upon request.

3.5 Accident Prevention Plan. At least seven (7) days prior to the contract pre-construction conference, the CONTRACTOR shall submit and Environmental Protection Plan acceptable to the DISTRICT and ENGINEER.

3.6 Environmental Protection Plan. At least seven (7) days prior to the contract pre-construction conference, the CONTRACTOR shall submit and Environmental Protection Plan acceptable to the DISTRICT and ENGINEER.

3.7 Hurricane and Severe Storm Plan. At least seven (7) days prior to the contract pre-construction conference, the CONTRACTOR shall submit and Environmental Protection Plan acceptable to the DISTRICT and ENGINEER.

3.8 Dredge Mobilization/Demobilization Notice. The CONTRACTOR shall notify the ENGINEER and DISTRICT of the date the dredge(s) and other equipment will be mobilized and demobilized.

3.9 Order of Work and Project Schedule. The CONTRACTOR shall prepare and submit, as part of the Bid, a proposed order of work and project schedule for review by the ENGINEER and DISTRICT. If the project will extend into sea turtle nesting season, the CONTRACTOR shall provide at least 70 days' notice prior to commencing beach fill activities. If awarded, the CONTRACTOR's order of work and project schedule shall be finalized in written form and provided to the ENGINEER a minimum of seven (7) days prior to the contract pre-construction conference. No Work on site shall begin until the schedule is approved by the ENGINEER and DISTRICT. Approval by the ENGINEER and DISTRICT indicates an acknowledgment and not an endorsement of the CONTRACTOR's means and methods.

3.10 Request for Clarification of Interpretation of Contract Documents

3.11 Notification of Pre-Construction Beach and Borrow Area Surveys. The CONTRACTOR shall notify the ENGINEER and DISTRICT seven (7) days prior to survey event.

3.12 Survey Deliverables. The site layout and before dredge (BD) and after dredge (AD) surveys for pay will be provided.

3.13 Notification of Beach Monumentation Discrepancies. The CONTRACTOR shall notify the ENGINEER and DISTRICT of any discrepancies found during the survey of the project monumentation.

3.14 Quality Control Reports. The CONTRACTOR shall provide a daily quality control report of the progress of the work.

3.15 Notification of Unsuitable Material. The CONTRACTOR shall notify the ENGINEER of the discovery of any unsuitable material within the borrow area or fill area.

3.16 Notification of Pipeline Leaks. The CONTRACTOR shall notify the ENGINEER and DISTRICT of any submerged pipeline leaks.

3.17 Grade Stake Log and Recovery Plan. After the Notice to Proceed is issued and at least seven (7) days prior to the contract pre-construction conference, the CONTRACTOR shall submit a Grade Stake Recovery Plan acceptable to the ENGINEER and DISTRICT. The plan shall outline the steps that the CONTRACTOR will implement to recover all the stakes used on the project. This plan shall include the use of an inventory log that will be made available for review by the ENGINEER. Upon completion of the project, the CONTRACTOR shall furnish a final grade stake log to the ENGINEER and DISTRICT.

3.18 Application for Progress Payment

3.19 Plan View Drawings from Pre-Construction Borrow Area Surveys

3.20 Notice of Completion of Work

3.21 Application for Final Payment

3.22 Qualification of Environmental Monitors (on-board sea turtle, sea turtle relocation trawling). The CONTRACTOR shall submit the name and qualification of all environmental monitors to be used on the project to the ENGINEER at least seven (7) days prior to the permit pre-construction conference.

3.23 General Notifications. The CONTRACTOR shall provide the following notifications at appropriate times, if applicable:

- (a) Notification of Plans/Specifications Discrepancy
- (b) Notification of Cultural Resource Discovery
- (c) Notification of Misplaced Material
- (d) Notification of Survey Discrepancy
- (e) Notification of Occurrence of Delays in Work
- (f) Project Milestones
- (g) Claims and Disputes
- (h) Reports of All Inspections, Surveys, Tests, and Remedial Actions

3.24 Other Submittals. The Contract Documents may require other submittals.

Further details on submittals and notifications are provided in the contract and herein.

4. ORDER OF WORK, PROJECT SCHEDULE, AND ACCEPTANCE SECTIONS.

4.1 Order of Work and Project Schedule. The CONTRACTOR shall provide a written order of work outline and project schedule to the ENGINEER and DISTRICT a minimum of seven (7) days prior to the pre-construction meeting. The project schedule shall be updated weekly during construction and submitted with the Quality Control report each Tuesday so that local property owners can plan for the CONTRACTOR's activity. The project schedule shall indicate, at a minimum, start of work, start of discharge to the beach, construction period, start of excavation, hydraulic fill placement completion date, beach tilling, and completion of all work. The CONTRACTOR shall propose the order in which the work will be performed, including the anticipated progression of fill placement throughout the project area. Fill placement will begin on Captiva Island in the northern reach unless otherwise changed by the DISTRICT. **An intended order of work outline and draft project schedule shall be provided with the Bid for DISTRICT and ENGINEER awareness.**

4.2 Acceptance Sections. Acceptance sections are defined as the portion of the nourished beach lying between two immediately adjacent pay profile lines, as indicated in the General Conditions. Once fill placement begins in an acceptance section, it must be completed before moving to the adjacent acceptance section, unless the ENGINEER approves moving to another acceptance section. Pay profiles will be spaced generally 100 feet apart along an azimuth perpendicular to the baseline station with actual distance and location defined by the CONTRACTOR and approved by the ENGINEER.

5. PUMPING OF BILGES AND OTHER OVERBOARD DISCHARGES.

CONTRACTORS are cautioned that pumping oil or bilge water containing oil into navigable water or into areas, which would permit the oil to flow into such waters, is prohibited by Section

13 of the Rivers and Harbors Act of 1899 approved March 3, 1899 (30 Stat. 1152; 33 U.S.C. 407). Violation of this prohibition is subject to penalties provided for under the referenced Acts.

6. STORAGE OF CONSTRUCTION PLANS AND CONTRACT DOCUMENTS.

A minimum of one (1) complete set of construction Plans and Contract Documents (with permits) shall be kept in the construction site field office, the surveyor and survey crew shall have at least one set, and at least one set shall be maintained on the dredge at all times during project construction.

7. PAYMENT.

7.1 Mobilization and Demobilization. All costs associated with the mobilization and demobilization of beach fill construction related equipment shall be included in the lump sum cost for each required mobilization and demobilization. The cost will be broken down by percentages as described in the General Conditions.

7.2 Beach Fill. All costs associated with the compliance of all sections and associated subsections of the Technical Provisions, except where specifically noted shall be included in the unit cost for beach fill placement. This shall include, but not be limited to Character of Material, Excavation, Transport of Excavated Material, Layout of Work for Hydraulic Beach Fill Placement, Construction Surveys, Hydraulic Beach Fill Placement, Work Area, Protection of Existing Structures from Construction Activities, Noise Control, Damages, Submittals and Notifications, Order of Work, Project Schedule, Acceptance Sections, Final Clean Up, Nighttime Operations, and Pumping of Bilges.

7.3 Structure Inspection and Vibration Monitoring. All costs associated with the pre- and post-project structure inspection and vibration monitoring shall be included in the unit cost of beach fill where vibration monitoring.

7.4 Beach Dressing. All costs associated with beach dressing and grading shall be included in the unit cost for beach fill.

7.5 Pre-Construction Survey. A pre-construction survey shall be performed by the CONTRACTOR prior to the start of construction.

7.6 Turbidity and Environmental Monitoring. All cost associated with CONTRACTOR required turbidity and environmental monitoring by the permits during construction shall be included in this bid item.

7.7 Relocation Trawling. Mobilization for trawling will be paid separately from environmental monitoring. The bid quantities will be used to establish unit prices.

PART II: MATERIALS

8. CHARACTER OF MATERIAL.

8.1 Character of Material Within the Borrow Areas. Beach fill placement will consist of dredging of approximately 795,000 cubic yards of beach fill on 4.85 miles of beach on Captiva Island in Lee County, Florida. There are two borrow areas approved for this project. Borrow Area VI-E is the primary selected source and contains 2,600,000 cubic yards of beach quality material located approximately 8.3 nautical miles west of Captiva Island as shown on the Plans. Borrow Area VI-E has an average mean grain size of 0.40 mm.

Borrow Area III-B is an alternate source and contains approximately 725,000 cubic yards of sand with a mean grain size of 0.32 mm and located 8.7 nautical miles southwest of Captiva Island and is to be used only at the direction of the DISTRICT.

The descriptions are provided in the Appendix A of this section and only describe the materials obtained from these investigations. The CONTRACTOR shall be solely responsible for any interpretation or conclusions drawn there from.

8.2 Potential Differing Borrow Area Characteristics. The characteristics of the materials in the two borrow areas may be as generally indicated by the sediment boring logs and grain size distribution curves attached hereto as Appendix A. The material found in each of the borrow area core borings (vibracores) is indicative only of material at that discrete location. The CONTRACTOR should be aware that it is possible for material of differing characteristics to be present in the borrow area, including material differing from that contained in the vibracores.

PART III: EXECUTION

9. EXCAVATION.

9.1 General. Two offshore borrow areas have been designated for use in the project with priority given to Borrow Area VI-E. The Plans for the borrow areas are referenced to the datum described on the Plan Sheets. Excavation shall be by cutterhead suction, dustpan suction dredge, hopper dredge, or a method proposed by the CONTRACTOR and approved by the ENGINEER with pumpout. Multiple simultaneous dredges will be allowed at the CONTRACTOR's own discretion and risk. Construction using truck haul methods will not be permitted. All subsequent specifications referring to a "cutterhead" or "hopper" shall also be applicable to other dredges. Failure to repair leaks or change the method of operations which has resulted in spillage that exceeds turbidity and water quality standards during the loading or any overflow during transport to the placement sites will require suspension of dredging.

9.2 Borrow Area Dredging Order. The borrow areas are to be dredged in an order specified by the ENGINEER. Borrow Area VI-E is estimated to have sufficient volume to construct the project and has been identified for use in a priority manner. Borrow Area VI-E shall be exhausted before moving on to Borrow Area III-B. Borrow Area III-B is included as an alternate source and is not to be used without explicit written approval of the DISTRICT.

9.3 Borrow Area Excavation Limitations. No dredging will take place outside of the borrow area limits as shown in the Plans. No dredging will exceed the permitted maximum depth of excavation as shown on the drawings. Either event represents a violation of the contract and of permits for the project. The CONTRACTOR will be required to certify in each Daily Quality Control Report that excavation occurred within the horizontal and vertical limits of the Plans. The ENGINEER will deduct quantities of sand dredged outside of and/or below the allowable dredge depths from pay quantities. The CONTRACTOR will be required to pay for any costs, fines or other expenses related to dredging outside of the borrow area limits or permit violations resulting from CONTRACTOR negligence in complying with permits for the project, and to remove unacceptable material from the beach fill. If the CONTRACTOR does not pay all costs, fines or other expenses related to dredging outside of the borrow area limits and/or for permit violation and/or remove unacceptable material from the beach fill, the DISTRICT will deduct from payments due to the CONTRACTOR from the DISTRICT, or may be recovered from the CONTRACTOR's bond to cover all costs, fines, or expenses related to excavating outside of borrow area limits and/or deeper than allowed within the borrow area. The final survey depth of the borrow area will be the basis for determining violations of this provision.

9.4 Dredge Location Control.

9.4.1 Continuous Electronic Positioning on the Dredge. The CONTRACTOR is required to have in continuous operation, on the dredge, electronic positioning equipment that will accurately and continuously compute and plot the horizontal and vertical position of the dredge, dragheads or cutterhead. A geographic positioning system, Differential Global Positioning System (DGPS), or equivalent, shall be used to maintain precise positioning of the dredge. Whenever dredging operations are underway, including dredging, discharging, and transiting, the location of the dredge shall be continuously monitored. The positions shall be monitored and recorded at an interval not exceeding one (1) minute. All horizontal positions shall be reported in feet in Florida State Plane Coordinate System, West Zone, North American Datum of 1983 (NAD 83). The position and elevation (with respect to vertical datum NAVD) of the bottom of the dragheads and the dredge cut shall also be continuously monitored and recorded. The operator shall have visual controls that depict the location and depth of the draghead at all times. The electronic positioning equipment shall be calibrated, maintained, and operated so that the maximum error for the fixes recorded do not exceed the tolerances in the horizontal position (± 3 feet) or vertical position (± 0.1 foot). The location of the master antenna on the dredge and distance and direction

from the master antenna to the dragheads shall be reported in the initial Quality Control Report. All vertical measurements shall be tide corrected with real-time tide recordings and reported in feet relative to NAVD. The use of predicted tides to make correction will not be accepted. Fixes in the form of processed and tide corrected Northing, Easting and Elevation (X,Y,Z) data, and the accompanying plots, shall be furnished to the ENGINEER and DISTRICT daily as part of the Quality Control Reports.

9.4.2 Daily Quality Control Report and Dredge Cutterhead Location. Daily Quality Control Reports provided to the ENGINEER shall include northing, easting and elevation data and plan view and cross-section plots of the previous day's dredge cutterhead locations and show the borrow area limits. The format of the plot may be subject to approval by the Permittee's ENGINEER. All payments to the CONTRACTOR may be withheld by the DISTRICT until all the required information is provided to the ENGINEER.

9.4.3 Borrow Area Check Surveys. The CONTRACTOR shall provide surveys as part of the Daily Quality Control Report that demonstrates the limits of sediment removal that occurs each day. The surveys are required as part of the normal course of work as additional assurance of compliance with the project permits, Plans and Specifications. The surveys shall be tide corrected and provided as raw digital data (i.e. X,Y,Z), and in cross-section and plan view plots or other graphical format proposed by the CONTRACTOR that is acceptable to the ENGINEER. The surveys shall be collected at a spacing sufficient to demonstrate compliance with project permits.

9.4.4 Borrow Area and Hardbottom Buoys. Prior to bringing dredging equipment to the project site, the CONTRACTOR shall establish lighted marker buoys that meet U.S. Coast Guard standards along the perimeter of borrow areas. In addition, buoys will be placed to indicate hardbottom areas within 500 feet of the borrow areas and sand retention areas. The buoys shall also be equipped with radar reflectors. The buoys shall be set at the borrow area corners. The lighted buoys shall be maintained in the proper location, floating in the upright position, and in working order by the CONTRACTOR throughout the duration of the project. Electronic positioning shall be employed to set the buoys, and to check the positional integrity of the buoys on a daily basis. The results of these checks shall be reported daily in the Quality Control Reports. The CONTRACTOR shall be responsible for the issuance of all required Notice-to-Mariners prior to initiating construction. If the CONTRACTOR's can prove their electronic positioning is reliable and all borrow areas and hardbottom are mapped within the CONTRACTOR's navigation software, the ENGINEER will consider a request to discontinue the buoy requirement.

9.5 Uniform Excavation. To the greatest extent practicable, all excavation shall be performed in a uniform and continuous manner so as to avoid creating multiple holes, valleys, or ridges within the borrow areas. Each borrow area shall be dredged to

maximize the removal of sand from each sub-area of the borrow area. The sides of the borrow area shall be bench cut within the permitted limits to promote the formation of a 1V:6H slope.

9.6 Unsuitable Material. If unsuitable material is encountered in the borrow area, the CONTRACTOR shall immediately cease dredging and change the location of the dredge in order to avoid the inclusion of unsuitable material in the beach fill as defined by 62B-41.007, Florida Administrative Code:

62B-41.007 (2) (j) To protect the environmental functions of Florida's beaches, only beach compatible fill shall be placed on the beach or in any associated dune system. Beach compatible fill is material that maintains the general character and functionality of the material occurring on the beach and in the adjacent dune and coastal system. Such material shall be predominately of carbonate, quartz or similar material and shall conform to the requirements detailed in the FDEP approved Sediment QA/QC plan.

The location of the unsuitable material encountered within the borrow area shall be noted on the CONTRACTOR's Daily Quality Control Report. The next section provides greater detail concerning the removal of rock, rubble, or debris in the borrow area.

9.7 Encountering Rock, Rubble, or Debris in the Borrow Area. The CONTRACTOR shall continuously monitor the fill material for the presence of rocks in the material. The State of Florida requires that rock larger than three-fourths (3/4) inch in diameter shall not be placed on the beach. **If Rock, Rubble, or any other debris is encountered during dredging, the CONTRACTOR shall immediately cease operation and relocate to another portion of the borrow area to eliminate rock.** The CONTRACTOR shall immediately notify the ENGINEER verbally, and report the encounter with the rock, rubble, or debris on the Quality Control Report, providing the location in State Plane Coordinates of the area of rock, rubble, or debris within the borrow area and the location of the end of the discharge pipe. The ENGINEER will have the authority to require the CONTRACTOR to avoid pockets of poor-quality material in the borrow area, based on the ENGINEER's judgment of the quality of the material, should any poor-quality material be encountered during the dredging of either borrow area. Large banks of silt and mud shall be avoided if found and shall be reported as unsuitable material.

9.7.1 Noncompliant Material Remediation and Removal. Screening at the beach disposal site is not a requirement of the Work. Nevertheless, remediation and removal of noncompliant material is included as an optional item of the Contract to be utilized only at the ENGINEER's direction to address the potential of noncompliant material occurring within the borrow area. If noncompliant material is placed on the beach from within the approved borrow area limits, screening for remediation and removal may be required by the DISTRICT. If screening is required for remediation purposes, the method by which the CONTRACTOR

removes oversized material shall be of their own design and shall be submitted to the ENGINEER for information purposes prior to commencement of work. All noncompliant material must be disposed of at a legal location at the CONTRACTOR's own discretion per the costs established in the Bid Form. This provision does not exclude the CONTRACTOR from meeting the sediment quality requirements specified herein and established in the project permits. Likewise, the bid prices for implementing this provision shall not apply to any noncompliant material dredged from outside the approved borrow area limits, for which the CONTRACTOR will be held responsible to remediate, remove, and dispose of at a legal location at the CONTRACTOR's own cost. Crushing or burial of rock or shell and dispersing in the fill material shall not be allowed in any circumstance.

- 9.7.2 Beach Fill Quality Control.** The CONTRACTOR shall continuously ensure beach fill material is in compliance with the FDEP Sand Rule, Florida Administrative Code 62B- 41.007(2)(j), contract requirements and permit conditions. The CONTRACTOR shall characterize the nature of the sediments dredged from the borrow area and placed along the project shoreline in the Daily QCR. If directed by the ENGINEER, the CONTRACTOR shall acquire the equipment and personnel necessary to remediate the beach fill area.
- 9.7.3 Compliance Criteria for Beach Fill Material.** Beach fill material shall meet the requirements of the FDEP approved project Sediment QC/QA Plan and shall conform to the compliance values presented on the plan for the respective project area. Beach fill material shall be clean sediment from the permitted source and free of unacceptable materials, such as debris, asphalt, rocks greater than $\frac{3}{4}$ inch in diameter, clay balls, and other organics, oil, pollutants and any other foreign materials. Any unacceptable material remaining in the fill shall be removed and disposed of by the CONTRACTOR as approved by the ENGINEER.
- 9.7.4 Beach Fill Observation and Sampling.** Beach fill observation shall be performed by the CONTRACTOR at all times during which beach fill material is being placed. The CONTRACTOR shall have on-site personnel to visually monitor the material being placed on the beach and capable of identifying deviations in sediment quality as specified in the Sediment QC/QA Plan, at the active placement location. The selected individual shall have training or experience in beach renourishment, construction inspection and testing and be knowledgeable of the contract requirements and permit conditions. The observer shall remain in constant radio contact with the dredge and shall report encounters with noncompliant materials to the dredge operator. Should any beach fill material not comply with the compliance criteria stated above, the CONTRACTOR shall collect samples of said material at an interval of no greater than 100 feet

throughout the noncompliant area and notify the ENGINEER immediately. If the expanse of noncompliant material exceeds the compliance criteria as stated in the Sediment QC/QA Plan, the ENGINEER shall be notified immediately, and the CONTRACTOR shall cease borrow area excavation operations and take necessary actions to avoid further discharge of noncompliant material with possible remediation. If requested by the ENGINEER, the collected samples of noncompliant beach sediments shall be analyzed by the CONTRACTOR for grain size distribution, silt content, Munsell Color, carbonate content, and percent visual shell by a certified laboratory at no cost to the DISTRICT using the methods outlined in the Sediment QC/QA Plan.

- 9.7.5 Determination of Aerial Extent of Noncompliant Beach Fill.** In the event of encountering noncompliant beach fill, the CONTRACTOR shall follow procedures to determine aerial extent and remediation specified in the Sediment QC/QA Plan and implement the Beach Fill Observation and Sampling provision above. The total square footage and volume of the noncompliant material shall be determined, and a site map shall be prepared depicting the location of all samples and the boundaries of all areas of noncompliant fill. Once the CONTRACTOR has the results of the sediment investigation, the ENGINEER shall be notified immediately and provided the information. Notification shall include the map with the aerial extent and volume of all areas of noncompliant beach fill material.
- 9.7.6 Remediation and Removal of Noncompliant Beach Fill.** If the ENGINEER determines remediation is required, the CONTRACTOR shall remediate. The method by which the CONTRACTOR remediates shall be of their own design and shall be conducted to ensure compliance of the material placed. The ENGINEER shall be notified of the CONTRACTOR's remediation method before the CONTRACTOR proceeds with remediation. All noncompliant material must be disposed of at a legal location at the CONTRACTOR's own discretion. Compensation for Remediation and Removal of Noncompliant Beach Fill will be paid at the unit rates established in the Bid Form for work directed by the ENGINEER as follows:
- 9.7.7 Remediation of Noncompliant Material.** Remediation through the actions of blending, grading, pushing, and mixing as further specified in the Sediment QC/QA Plan will be paid per surface area (square foot or acre) of beach remediated as directed by the ENGINEER.
- 9.7.8 Screening to Remove Unacceptable Material.** Should material screening be required to remove unacceptable material from the beach fill, the work will be paid by cubic yard of material processed by screening operations as directed by the ENGINEER.

9.7.9 Hauling and Disposal of Unacceptable Material. Should screening operations result in unacceptable material that must be hauled away and disposed as directed by the ENGINEER, the quantity will be paid by cubic yard of unacceptable material removed and evidenced by certified documentation (haul tickets, waste disposal records, etc.).

9.7.10 Remediation and Removal Costs. Any costs for remediation and removal actions performed by the CONTRACTOR without the ENGINEER's explicit direction will be borne solely by the CONTRACTOR. The CONTRACTOR shall provide to the ENGINEER all plots, data, and information required by the Sediment QC/QA plan for reporting.

9.8 Sediment QA/QC Plan. The CONTRACTOR shall follow the FDEP approved Sediment QA/QC plan for the project.

9.9 Compliance Criteria for Beach Fill Material. The CONTRACTOR shall continuously visually monitor the material being placed on the beach. Beach fill material shall meet the FDEP approved Sediment QA/QC Plan and shall conform to compliance values presented in the plan for the respective project area.

9.10 Preservation of Historical, Archeological, and Cultural Resources. If during construction activities, the CONTRACTOR observes items that may have historical or archeological value, the CONTRACTOR shall immediately cease all activities that may result in the destruction of these resources and shall prevent his/her employees and subcontractors from trespassing on, removing, or otherwise damaging such resources. Such observations shall be reported immediately to the ENGINEER so that appropriate authorities may be notified, and a determination made as to their significance and what, if any, special disposition of the finds should be made. The CONTRACTOR shall report any observed unauthorized removal or destruction of such resources by anyone to the ENGINEER and appropriate State of Florida authorities. The CONTRACTOR will relocate from the borrow area and resume construction of the beach nourishment project, and not return to the site in question until State authorities have rendered judgment concerning the potential resources.

9.11 Signal Lights. The CONTRACTOR shall display signal lights and conduct his/her operations in accordance with the General Regulations of the Department of the Army and U.S. Coast Guard governing lights and day signals to be displayed by towing vessels with tows on which no signals can be displayed, vessels working on wrecks, dredges and vessels engaged in laying cables or pipes or in submarine or bank protection operations, lights to be displayed on the dredge pipeline and day signals to be displayed on vessels of more than 65 feet in length moored or anchored in a fairway or channel and the passing by other vessels or floating plant working navigable channels, as approved by the Secretary of the Army and Commandant, U.S. Coast Guard. (33 C.F.R. 80.18 – 8-31a; 33 C.F.R. 95.51 – 95.66; 33 C.F.R. 9.22 – 90.36; 33 C.F.R. 82 and C.G. Pub. 169, Navigational Rules, International-Inland dated May 1, 1977) (DAR 7-603.33).

9.12 Misplaced Material, Plant Machinery, Equipment, or Appliance. Should the CONTRACTOR, during the progress of the Work, lose, discard, throw overboard, sink, or misplace any material, plant, machinery, equipment, or appliance, which in the opinion of the ENGINEER should be removed, the CONTRACTOR shall recover and remove the same with utmost dispatch. The CONTRACTOR shall give immediate notice, which description and location of such material, plant, machinery, equipment, or appliance to the ENGINEER or inspector. Should the ENGINEER or the DISTRICT discover such material, plant, machinery, equipment, or appliance, the ENGINEER or DISTRICT may locate through electronic means or buoy the material, plant, machinery, equipment, or appliance, and may notify the CONTRACTOR of its location. Removal of the material, plant, machinery, equipment, or appliance shall be the responsibility of the CONTRACTOR, and the CONTRACTOR will pay for cost of removal. Should the CONTRACTOR refuse, neglect, or delay compliance with the above requirements, such material, plant, machinery, equipment, or appliance may be removed by the DISTRICT, and the cost of such removal may be deducted from any money due or to become due to the CONTRACTOR or may be recovered under his bond. The liability of the CONTRACTOR for the removal of a vessel wrecked or sunk without fault or negligence shall be limited to that provided in Sections 15, 19, and 20 of the River and Harbor Act of March 3, 1909 (33-U.S.C. 410 et. seq.), or most recent version, if any.

9.13 Hardbottom Communities Protection. Hardbottom communities exist offshore Lee County. Hardbottom communities are located near each borrow area and within the sand retention area. There is a 750 ft buffer from hardbottom shown in the Plans, which precludes dredge operations in a few small areas along the borrow area borders. The buffer shall be 750 ft for sand stockpile/rehandling operations as well, if utilized. As in all areas in southwest Florida, extreme care must be taken to avoid hardbottom damage. The CONTRACTOR shall avoid contact with any and all hardbottom communities. The CONTRACTOR shall not anchor, place spuds, lay pipeline or place any other object on the hardbottom areas. The location of known hardbottom areas is provided in the Plans for the convenience of the CONTRACTOR; however, the CONTRACTOR shall not depend solely on the mapped hardbottoms. It will be the responsibility of the CONTRACTOR to utilize divers and/or any other means to ensure that there are no hardbottom formations in the area prior to placing pipes, spuds, anchors, cables, drag arms or any other objects on the bottom. The CONTRACTOR shall only use the offshore pipeline corridors shown in the Plans and permits to maintain pipeline within the cleared areas. Pipeline corridors exist seaward of the cleared area offshore boundary, shown in the Plans and permits and the area is cleared shoreward of this line except for marked hardbottom areas and their buffers. The CONTRACTOR shall ensure pipelines are not placed on hardbottoms. It will be solely the responsibility of the CONTRACTOR to avoid all hardbottom formations and hardbottom biological communities other than those located within the construction templates for fill placement.

9.13.1 Fines for Hardbottom Damage. Encroachment on, or contact with, hardbottom communities located outside of the fill template by anchors, cables, pipes, spuds, drag arms, cutterhead or any other dredge equipment is strictly

prohibited. The CONTRACTOR will be responsible for any and all fines, or legal expenses, or hardbottom repairs or mitigation requirements, or any other related costs or expenses in the event the CONTRACTOR has damaged hardbottom communities in the project area.

9.13.2 Pushing or Towing Floating Equipment. When entering or exiting the Captiva Island project area with non-propelled floating equipment (dredge, barges, etc.), the CONTRACTOR shall directly push, or tow with short polypropylene (floating) lines, all equipment that is not self-propelled when within the 60-foot depth contour. No cables, equipment or other objects shall sag or hang over the side of the dredge, any barges or tugs, or any other vessels, floating pipelines, pontoons or floating equipment. All cables and lines used for the project must be floating cables or lines. These measures are required to avoid hardbottom damage from sagging cables or other objects.

9.13.2.1 Floating Equipment. All floating equipment movement shall be minimized over the hardbottom areas.

9.13.2.2 Control of Mobilization and Demobilization of Floating Equipment. Mobilization and demobilization of all floating equipment (dredges, tugs, pushboats, crewboats, floating pipelines, barges, derrick barges, anchor barges, SCOTS buoys, etc.) to and from the project site shall be controlled by the CONTRACTOR to avoid contact with any and all hardbottom formations.

9.13.2.3 Non-Propelled Floating Equipment. While in the vicinity of hardbottom areas, including all areas east of the -60-foot NAVD contour, the CONTRACTOR shall directly push or tow with polypropylene (floating) lines all floating equipment that is not self-propelled.

9.13.2.4 Anchoring of Floating Equipment. The CONTRACTOR shall anchor or moor his floating equipment in approved areas only. Approved areas include: the two borrow areas and adjacent scanned bottom, the previously used borrow area, the sand rehandling areas, pipeline corridors and the cleared area east of the boundary shown on the Plans. The CONTRACTOR may propose additional anchorage areas to the DISTRICT who will review and, if acceptable, approve the areas for use.

9.13.3 Dredge Mobilization/Demobilization to Project Area.

9.13.3.1 Graphic Plot of Dredge Movements. Mobilization and demobilization to, and from, the project site will be controlled by the CONTRACTOR to avoid contact with, or passage over, any and all hardbottom formations. In addition to assistance from the ENGINEER, the CONTRACTOR may utilize available data which includes mapping of

some hardbottom formations to avoid passing over hardbottom formations with any equipment. Nevertheless, avoidance of damage to hardbottoms is the responsibility of the CONTRACTOR. The CONTRACTOR shall initiate the use of the electronic positioning system, including plots, when the dredge is within five (5) miles of the borrow site or within the 60-foot depth contour (NAVD) during project mobilization, whichever occurs first. Position fixes in State Plane Coordinates at 1-minute intervals will be provided along with graphic plots while mobilizing or demobilizing to the project site, with any and all equipment. The positioning and recording equipment shall continuously record during demobilization until the dredge is five (5) miles from the borrow area or in deeper water than the 60-foot depth contour (NAVD). This applies to major equipment such as jack up barges.

9.13.3.2 Engineer Observation of Mobilization. The CONTRACTOR must notify the ENGINEER and DISTRICT at least five (5) calendar days prior to the date the dredge and other equipment will be mobilized and demobilized to and from the project area. The CONTRACTOR shall also advise the ENGINEER prior to pushing or towing the dredge within five (5) miles of the borrow site and the ENGINEER must be on site to observe during mobilization and demobilization of the dredge within the 60-foot depth contour (NAVD). It will be the responsibility of the CONTRACTOR to provide sufficient notice to the ENGINEER to allow for the ENGINEER to observe CONTRACTOR mobilization to the project site from the dredge. Under no circumstances will the CONTRACTOR mobilize within the 60-foot depth contour (NAVD) without verbal approval from the ENGINEER, after the ENGINEER is on site to observe the mobilization process. It will be the CONTRACTOR's responsibility to allow sufficient time for the ENGINEER to reach the project site and for the CONTRACTOR transport of the ENGINEER to the dredge. There shall be no anchoring of the dredge or any attendant equipment (vessels, barges, etc.) outside of the limits of the borrow areas, adjacent scanned region and corridors.

9.14 Sea Turtle Monitoring on Hopper Dredges. The CONTRACTOR may conduct sea turtle monitoring and relocation trawling while using the hopper dredge. Requirements are summarized in the Department of the Army Permit and referenced Terms and Conditions from the NMFS Gulf Regional Biological Opinions contained in Appendix D to the Contract Documents. The amount of relocation trawling cannot be predicted beforehand; therefore, eight days (8) are included in the bid to establish a daily rate.

9.15 Environmental Capabilities. Hopper overflow at the borrow sites during loading will be permitted only to the extent that turbidity and water quality standards described in the Environmental Protection Provisions and Permits are met. The CONTRACTOR shall limit the hopper dredge to partial loads, if necessary, to meet turbidity and water quality

requirements permitted at the borrow sites. No overflow or spillout will be permitted during transport to the placement sites. Failure to repair leaks or change the method of operations which has resulted in spillage that exceeds turbidity and water quality standards during loading or any overflow during transport to the placement sites will require suspension of dredging. The prevention of overflow or spillage shall be a pre-requisite to the resumption to dredging.

The CONTRACTOR and the observer shall be able to conduct all activities required in Appendix D without the assistance of the ENGINEER or DISTRICT. All costs to conduct these activities shall be included in the unit cost of sand or trawling.

9.16 Dredge Mobilization/Demobilization Notification. The CONTRACTOR must notify the ENGINEER and DISTRICT five (5) days in advance of the date the dredge and other equipment will be mobilized and demobilized to and from the project area.

9.17 Vessel to Shore Transfers.

9.17.1 Docking Facilities. For shore to vessel and vessel to shore transfers, no boat ramp is provided. It is the responsibility of the CONTRACTOR to find docking facilities. It is the responsibility of the CONTRACTOR to acquire the required permission to use their selected docking sites. Furthermore, the CONTRACTOR shall be responsible for any damages caused by the use of any site for landing and transfers and shall maintain navigation through all navigable waterways and boat ramps. The CONTRACTOR shall use any landing site, transfer area, or staging area at his/her own risk.

9.17.2 Local Inlets. Blind Pass is located between Captiva and Sanibel Islands and is currently open but has shallow depths and a low bridge. Redfish Pass is navigable to small vessels, and may be used, at the sole risk and discretion of the CONTRACTOR. The vessels must not block navigation channels leading to bay side of Captiva Island, the Intracoastal Waterway, or adjacent to private docks located along the perimeter of Pine Island Sound.

10. TRANSPORT OF EXCAVATED MATERIALS.

10.1 Hydraulic Placement of Fill. All fill shall be placed hydraulically unless directed by the ENGINEER. Dune and scarp repair fill shall use hydraulic placement to the maximum extent feasible. The method of transport of the hydraulic placement will be at the discretion of the CONTRACTOR; however, methods and equipment will have to comply with all permit, production, and environmental requirements.

10.2 Pipeline Transport of Fill. If a pipeline is used to transport fill material, the pipeline seaward of the beach landing shall be submerged except at the dredge, monobuoy (if required), and/or boosters (if required).

10.3 Pipeline Placement. The CONTRACTOR shall avoid areas of the beach outside the fill placement area or designated work and staging areas. No construction activity, including pipeline placement, shall occur in any vegetated areas.

10.4 Pipeline Leaks. The CONTRACTOR shall keep all pipelines for hydraulic plants in good condition and maintain a tight discharge pipeline at all times. The joints shall be so constructed as to preclude spillage and leakage. Pipeline leaks and breaks shall be promptly reported to the ENGINEER and properly repaired. No discharging shall occur with a leak in the pipeline. The CONTRACTOR shall transport the ENGINEER and the DISTRICT to the leak repair site for visual inspection if so requested by the ENGINEER or DISTRICT. Failure to repair leaks or change the method of operation which is resulting in leakage that creates sedimentation over the hardbottoms or exceeds turbidity and water quality standards during transport to discharge site will result in suspension of dredging operations and require prompt repair or change of operation to prevent leakage as a pre-requisite to the resumption of dredging.

10.5 Submerged Pipeline. In the event the CONTRACTOR elects to submerge pipeline, the pipeline shall rest on the bottom, and the top of the submerged pipeline and any anchor securing the submerged pipeline shall be no higher than the project depth for any navigation channel in which the submerged pipeline is placed. Should the CONTRACTOR elect to use a pipeline material which is buoyant or semi-buoyant, such as PVC pipe or similar low density materials, the CONTRACTOR shall securely anchor the pipeline to prevent the pipeline from lifting off the bottom under any conditions. The CONTRACTOR shall make daily inspections of the submerged pipeline to ensure buoyancy has not loosened the anchors. The CONTRACTOR shall retrieve all anchors when the submerged pipeline is removed. The location of the entire length of submerged pipeline shall be marked with signs, buoys, lights and flags conforming to U.S. Coast Guard regulations. No pipelines shall be placed on hardbottoms or within any identified buffer zones. The CONTRACTOR shall employ the approved pipeline corridors as shown in the plans.

10.6 Floating Pipeline. Should the CONTRACTOR's pipeline not rest on the bottom, it will be considered a floating pipeline and shall be visible on the surface and clearly marked. In no case will the CONTRACTOR's pipeline be allowed to fluctuate between the surface and the bottom or lie partly submerged except where the pipeline descends from the dredge to a submerged pipeline. Lights shall be installed on the floating pipeline in compliance with U.S. Coast Guard requirements and for safety. The lights shall be supported either by buoys or by temporary piling, provided by the CONTRACTOR.

10.7 Pipeline Landing Barricade Requirements. Installation of a barricade is required on all pipelines which encounter land on Captiva Island. The purpose of the barricade is to prevent public access onto the pipeline landing.

10.8 Pipeline Condition. Pipe used for the project shall not shed loose rust or plastic pieces or chips which may be incorporated onto or into the existing beach or fill. Rust or plastic pieces or chips shall be immediately removed from the beach.

10.9 Pipeline Landing. The location of the pipeline landing is unrestricted within the permitted project area. The CONTRACTOR shall inform the DISTRICT and Engineer of the planned location of the landing within their bid submittal.

10.10 Pipeline Corridors. The pipeline corridors and cleared pipeline areas are shown in the Drawings for the project. Pipeline to the beach seaward of the cleared pipeline area shall not be placed in any other location than the corridors shown in the Drawings because of the potential presence of hardbottom. Pipeline that is placed landward of the cleared line may be placed as desired within the cleared area, avoiding hardbottom. It is the CONTRACTOR's responsibility to ensure that the pipeline is not placed on hardbottom areas other than those acknowledged to be covered by the beach nourishment project or within the pipeline corridors. The DISTRICT will provide the CONTRACTOR with a CAD drawing of the corridors so that the CONTRACTOR can position the pipelines. The CONTRACTOR shall coordinate the placement of the pipeline with the DISTRICT.

10.11 Sand Retention Areas. A cleared sand rehandling/retention area is shown on the permit drawings and designated in the Plans. The cleared sand retention area offshore of the beach nourishment project site is to allow the CONTRACTOR space to rehandle and/or stockpile sediments between the borrow areas and the beach, if desired. The areas are located roughly offshore of R-85 to R-116. Should the CONTRACTOR choose to utilize the sand retention area to rehandle or stockpile sediments from the borrow areas, the following conditions apply:

10.11.1 The CONTRACTOR shall notify the ENGINEER in writing that the retention area will be used for rehandling and/or stockpiling sediments. The requested sand retention area shall be limited to the size needed for the CONTRACTOR's operation and approved by the ENGINEER. This notification shall include a pre-construction bathymetric survey of the site to record the pre-use condition of the seafloor. In consultation with the ENGINEER, the CONTRACTOR shall coordinate and conduct the biological monitoring protocols listed in the State permit prior to use, if needed. During construction monitoring will be the CONTRACTOR's responsibility, and the DISTRICT will perform everything thereafter.

10.11.2 Upon completion of all rehandling activities, the CONTRACTOR shall furnish the ENGINEER a post-construction bathymetric survey of the site as evidence that the site has not exceeded permit conditions, and the results of all biological monitoring.

10.11.3 All conditions pertaining to dredging in the borrow areas as listed elsewhere in the Contract Documents, including but not limited to depth of

excavation, shall apply to dredge operations within the sand retention areas. The maximum depth of excavation when rehandling stockpiled material is the seafloor existing prior to the CONTRACTOR's use.

10.11.4 The CONTRACTOR shall avoid contact with all hardbottom communities, which may exist in and around the sand retention areas. All provisions pertaining to hardbottom communities listed elsewhere in the Contract Documents shall apply.

10.12 Scows and Vessels. All scows and vessels shall be kept in good condition, the coamings repaired and the pockets provided with proper door or appliances to prevent leakage of material.

10.13 Floating Pipeline Barricade Requirements. Barricades shall be installed on all floating pipelines 12 inches in diameter and larger where such floating pipeline encounters land. The purpose of the barrier is to prevent access onto the floating pipeline from the beach by unauthorized personnel.

10.14 Sand Ramps. The CONTRACTOR is required to build sand ramps at least 15 feet wide over the shore pipe at a minimum of 300-foot intervals or at the locations below. The distance between sand ramps shall not exceed 300 feet. Upon removal of the pipe, the beach in the area of the ramps shall be leveled and dressed.

10.14.1 Fronting all lifeguard towers.

10.14.2 All major private and public beach access points (walkways or otherwise).

10.14.3 Other locations required by the DISTRICT.

11. LAYOUT OF WORK FOR HYDRAULIC BEACH FILL PLACEMENT.

11.1 Layout of Work for Beach Fill Placement. The CONTRACTOR shall provide at his/her own expense all stakes, templates, platforms, equipment, tools, materials, and labor as may be required in laying out any part of the Work. The CONTRACTOR shall utilize Florida Department of Environmental Protection (FDEP) survey monuments and control data shown in the Plans to establish a construction baseline and pay profile locations at approximately 100 feet on center. The CONTRACTOR will establish a baseline and initiation point for pay survey lines at 100-foot intervals; the baseline and proposed payment profile locations and spacing shall be submitted to the ENGINEER for review and approval prior to layout and data collection. The BD and AD surveys must be collected perpendicular to the CONTRACTOR's established baseline. In addition, surveys at the R-monuments must be collected prior to beach placement according to the published control and azimuth shown on the Plans. If the CONTRACTOR elects to establish temporary beach marks (TBMs) through the work site, they shall be established by a closed loop of levels from a permanent beach mark, a line of levels between two

permanent bench marks or using GPS RTK procedures. Work layout may be subject to modifications by the DISTRICT to meet changed conditions or as a result of other required modifications to the Work. The layout of the Work shall be made from the cross-sections and not the plan views in the Contract Drawings. The CONTRACTOR may use any other control and establish any profile cross-sections deemed necessary for the layout of Work.

11.2 CONTRACTOR Acceptance of Survey Control. The FDEP R-monument location coordinates and elevations for the Work site are indicated on the Plans but are no longer maintained by FDEP and shall be independently verified by the CONTRACTOR and their surveyor. The CONTRACTOR shall immediately contact the ENGINEER if any discrepancies are discovered in any of the information presented concerning all beach monumentation, including FDEP or intermediate monuments. If the CONTRACTOR does not contact the ENGINEER, it is understood that the CONTRACTOR agrees with all information presented in the Plans related to beach monumentation elevation and control information.

11.3 Disturbing Monuments. The CONTRACTOR shall not disturb permanent markers or monuments and shall be responsible to maintain and preserve all monuments, stakes and other markers established by the DISTRICT unless and until authorized to remove them. If such markers are disturbed and/or destroyed by the CONTRACTOR, or through CONTRACTOR negligence, prior to their authorized removal, they may be replaced at the discretion of the DISTRICT, and the expense of replacement will be deducted from any amounts due or to become due the CONTRACTOR.

11.4 Intermediate Monuments. These monuments are located halfway between FDEP monuments. Their most recent locations are shown on the Plans where applicable. It has been several years since the location of the intermediate monuments were verified. The CONTRACTOR shall find and verify the existing intermediate monuments or reestablish a new intermediate monument on-line with the original if required for use in executing the work.

11.5 Grade Stakes. Grade stakes left in the beach after beach nourishment construction can present a safety hazard to beach visitors. Any and all stakes used in the beach fill area in surveying or any other component of the project shall be composed of metal conduit pipe to facilitate in the recovery of the stakes. Stakes consisting of wood, plastic or other materials will not be acceptable. The CONTRACTOR is to remove all grade stakes from each completed section immediately after the section has been completed. Upon completion of construction in an area, the CONTRACTOR shall conduct a search using a suitably sensitive metal detector to find each and every stake placed by the CONTRACTOR in the area. The search and removal of all the stakes shall be certified by the CONTRACTOR. The CONTRACTOR will not be eligible for payment until the CONTRACTOR certifies that all grade stakes in completed sections have been removed. Sections of beach upon which the search for, and removal of, stakes is complete shall be documented in the Quality Control Reports. Any grade stakes left in the beach will be the sole responsibility and liability of the CONTRACTOR. Any injuries

to people which may occur because grade stakes were left in the beach by the CONTRACTOR will be the responsibility and the liability of the CONTRACTOR. If the CONTRACTOR fails to remove grade stakes in a timely manner, the DISTRICT may have the stakes removed and deduct the cost from the CONTRACTOR's final payment.

11.5.1 Grade Stake Log. The CONTRACTOR shall prepare and maintain a log to inventory the grade stakes used on the project. The log shall include information concerning the location, installation, and recovery of all grade stakes. The CONTRACTOR shall make this log available for review by the ENGINEER upon request. Upon completion of the project, the CONTRACTOR shall furnish the log to the ENGINEER.

12. HYDRAULIC PLACEMENT OF BEACH FILL.

12.1 General. All sand excavated from the borrow area shall be transported to, and hydraulically deposited on the beach within the lines, grades and cross sections shown in the Plans, except as may be modified by change order or other provisions of the Technical Provisions. The CONTRACTOR shall maintain and protect the fill in a satisfactory condition at all times until final completion and acceptance of the Work. The CONTRACTOR will receive no payment for any fill (sand), which is not contained within the limits of the hydraulic fill template, inclusive of fill tolerances, shown in the Plans. The CONTRACTOR must place a minimum of ninety-five (95%) percent of the design volume between pay profiles lines and achieve minimum fill tolerance everywhere in the project area in order to be considered for payment of that section, unless otherwise indicated by the ENGINEER in writing. The payment volume shall not exceed the volume identified in the Bid Form.

12.1.1 Construction Beach Berm Elevation, Beach Slope, and Project Terminus. The Drawings and Contract Documents for the project require the construction of a beach berm with an elevation varying from 4.5 feet (NAVD) at the berm crest to 6.5 feet (NAVD) at the landward limit of fill and construction beach slope of 1 foot vertical to 10 feet horizontal to the waterline. Dunes will be constructed on an as-needed basis. The dunes shall have a similar elevation to the adjacent dunes. It is anticipated that the dune crest elevations will be between 10.0 and 12.0 feet NAVD with a 1:5 slope to the berm. Dune scarp repair at areas or fill placement areas will be identified by the ENGINEER and the CONTRACTOR's Project Manager in the field and will consist of sand at a 1:5 slope from the top of the scarp (vegetation line) to the beach) and may be modified from what is shown in the construction plans. The CONTRACTOR shall construct a beach fill terminus at R-84 and R-109 as indicated in the Plans.

12.2 Debris Removal. Prior to placement of fill, the CONTRACTOR shall remove from the site of the Work all snags, driftwood and similar debris lying within the foundation limits of the beach fill section. All material removed shall be disposed of in an appropriate and legal manner and at the expense of the CONTRACTOR.

12.3 Fill Placement Requirements. The excavated material shall be placed and brought to rest on the beach to the lines, grades, and cross-sections indicated on the drawings, unless otherwise provided for herein or directed by the ENGINEER. The beach is subject to changes and the elevations on the beach at the time the Work is done may vary from estimated quantities and elevations shown in the Plans. The CONTRACTOR is to place the hydraulic fill on the beach in such a manner as to establish a uniform beach between adjacent pay profile lines. Sections of the beach located between pay profiles will not be underfilled.

12.4 Fill Placement Restrictions. The fill shall extend landward to the existing elevation contour that matches the berm crest elevation unless features such as dunes, vegetation, buildings, or bulkheads, for example, prohibit fill placement. If a bulkhead or revetment extends to the design berm elevation or above, the fill shall terminate at the bulkhead or revetment. If the top of the bulkhead or revetment is below the design berm crest elevation, then the fill shall taper landward (using a 1V on 5H slope) to one (1) foot below the crest of the bulkhead or revetment to prevent overtopping. Fill shall terminate at the edge of the vegetation line, without burying it. Fill shall be placed around and over groins and revetments, to meet design elevation.

12.5 Fill Under Structures on Pile. Fill shall not be placed beneath buildings located on pilings. At the discretion of the DISTRICT, fill may be stockpiled by the CONTRACTOR adjacent to buildings on pilings for mechanical placement under the buildings. The private property owner, or the DISTRICT, will conduct the mechanical sand placement in this instance. If applicable, the CONTRACTOR shall be advised on the volume required in the stockpile and will receive the appropriate unit payment for stockpiled fill.

12.6 Control of Fill. The CONTRACTOR shall make every effort to retain placed fill within the beach fill template. Temporary longitudinal dikes are required by permit, and spreader and pocket pipe shall be used as necessary to prevent gulying and erosion of the beach and hydraulic fill, to retain the hydraulic fill on the beach within the limits of the hydraulic fill template cross-section, and to control water turbidity. The pipeline discharge will be located no closer than 25 feet from any structure to avoid potential undermining of the structure, or at a distance deemed safe by the CONTRACTOR. Dikes or mounds shall be constructed parallel to the waterline to direct the pipeline discharge longitudinally along the beach, to avoid transverse gulying direct from the discharge point to the ocean, and to build the construction berm. The ENGINEER may direct the CONTRACTOR to extend dikes, if necessary, to control turbidity or beach erosion. No undrained pockets shall be left on the nourished beach upon completion of the work. The CONTRACTOR shall not permit spoil water to flow landward of the fill section, or water to pond between the hydraulic fill and upland. The CONTRACTOR shall protect existing drainage and operations. Any material, permitted to flow into or restrict the flow of an existing ditch, canal, or drainpipe, shall be promptly removed. Structures within the fill section shall be protected by the CONTRACTOR to prevent damage thereof by the CONTRACTOR's operations.

12.7 Uniform Beach. The filled beach between the pay profiles shall be graded, dressed, and uniform in dimension. Beach sections between pay profiles shall be filled to a minimum ninety-five (95%) percent of the volume based on the fill templates shown in the Plans, to the minimum tolerance everywhere, should not differ substantially from the filled cross-section at the adjacent fill profile lines. The constructed beach contour lines between pay profiles, including the beach berm break, will be approximately parallel and straight, indicating that the CONTRACTOR constructed a uniform (non-cusped) beach between the profile lines to the appropriate elevation and width.

12.8 Underfilling Between Pay Profile Lines. If the ENGINEER or DISTRICT observe or believe they have observed underfilling of the beach between pay profile lines, the ENGINEER or DISTRICT may request an additional survey to be conducted by the CONTRACTOR at the CONTRACTOR's expense. If found to be deficient, the CONTRACTOR shall place additional hydraulic fill until the beach is uniform in appearance and dimensions between pay profile lines, provides straight beach berm break between pay profile lines, provides a minimum of ninety-five (95%) percent of the design hydraulic fill volume, and meets the minimum tolerance at all locations in the acceptance section in order to qualify for payment of that section. Fill will not be obtained from adjacent areas of the beach or from upland sources to remedy underfilling.

12.9 Dressing the Renourished Beach. Upon completion of all filling operations within an acceptance section, and **prior to surveying for payment**, the fill shall be graded and dressed with a dragged pipe so as to eliminate any undrained pockets, ridges, and depressions in the hydraulic beach fill surfaces. The CONTRACTOR is to grade and dress the hydraulic fill on the beach in such a manner as to establish a uniform berm width and slope between adjacent pay profile lines. The bank or scarp caused by wave erosion to the berm shall be graded down to a slope not steeper than one (1) foot vertical to ten (10) feet horizontal to the water's edge. The CONTRACTOR is responsible to grade down any and all beach scarps or sand cliffs in the entire restored beach berm until the CONTRACTOR has demobilized from the project site. The project site will not be considered complete, nor the CONTRACTOR eligible for final payment until all beach scarps/sand cliffs in the entire project area are graded.

12.10 Right to Vary Beach Design Dimensions. The ENGINEER reserves the right to vary the width or grade of the berm from the lines and grades shown on the Plans due to changes in beach conditions. The hydraulic beach fill cross-sections shown in the Plans are for the purpose of estimating the amount of hydraulic fill needed and will be used by the ENGINEER in making any change in the lines and grades.

12.11 Tolerances. Payment will be for hydraulic fill placed within the construction template, inclusive of fill tolerances, as shown in the Plans. The maximum vertical tolerance for acceptance is 0.5 feet below the neat-line template and 0.5 feet above the neat-line template. Hydraulic fill placement shall at least meet the 0.5 feet tolerance below the fill template everywhere and the minimum fill volume requirement. Unless approved by the ENGINEER, hydraulic fill placement shall, at minimum, not exceed the 0.5-foot tolerance below the template anywhere. The DISTRICT or ENGINEER will be

authorized to require the CONTRACTOR to refill any deficient section of beach to be at the minimum 0.5 feet below the template and shall meet the minimum fill volume requirement of ninety-five (95%) percent of the fill volume for the acceptance segment. The DISTRICT will withhold payment for those sections of beach (segments between pay profiles) that do not meet the minimum hydraulic fill requirement until the appropriate hydraulic fill placement and grading has been completed by the CONTRACTOR. An acceptance section is the area between pay profiles.

12.12 Maximum Pay Volume. The maximum pay volume is the volume indicated on the bid form or modified by change order. The pay volume will not exceed this value, inclusive of fill placement tolerances. The tolerances are provided to allow the CONTRACTOR to account for inaccuracies in construction and control the placement of excessive volumes to meet specifications.

12.13 Misplaced Materials. If any material is deposited other than in places designated or approved, the CONTRACTOR may be required to remove such misplaced material and redeposit it where directed by the ENGINEER or DISTRICT, at the CONTRACTOR's expense. This will include materials in the borrow area on the ocean bottom or within inlets.

12.14 Dune and Dune Scarp Repair. Construction of dunes will be on an as-needed basis and follow the rules described above. The dune scarp repair is not included on the Plans, but sand volume will be eligible for payment under the 1:5 slope between the beach and top of scarp.

12.15 Restrictive Barrier. The CONTRACTOR shall be required to erect, maintain, and move as necessary, a restrictive barrier around the discharge of his/her hydraulic pipeline or any other active work area where Work may present a safety hazard to the public. In the vicinity of the discharge, the barrier shall be constructed so as to prevent the public from approaching the discharge from any direction closer than 250 feet, or to provide an area sufficient in size for the safe progression of the Work. The CONTRACTOR shall post signs in a conspicuous manner stating: “**DANGER – HIGH PRESSURE DISCHARGE FROM DREDGE**” or more restrictive per the CONTRACTOR’s own safety program and plans.

12.16 Dedicated Safety and Flag Person. The CONTRACTOR shall have a dedicated safety and flag person on site at all times, whose sole responsibility is preventing the public from entering the Work area and directing beach traffic.

13. BEACH TILLING AND SCARP REMOVAL.

13.1 Tilling and Dressing the Beach. The CONTRACTOR shall till the completed beach fill from the landward limit of fill or toe of dune to the mean high water line upon completion of each island. The tilling shall be by use of a tracked vehicle (bulldozer, loader, or equivalent) by pulling (rear mount) or pushing (front mount) a rake with the tines modified to a length of 36 inches or more and spaced approximately 12 to 18 inches

apart. Tilling will be to a minimum depth of 36 inches throughout the newly placed beach seaward to the visible high water mark. Following tilling, the beach shall again be dressed by dragging a pipe lengthwise over the beach. The pipe may be positioned immediately behind the tilling tines to allow for a single operation of tilling and dressing.

13.2 Beach Escarpment Elimination. The CONTRACTOR shall be responsible for grading all escarpments that form along the project area until final acceptance of the Work. Any escarpment that exceeds 18 inches in height for a distance of 100 feet shall be leveled to the natural beach contour. The ENGINEER will observe the beach after leveling of escarpments to ensure that all escarpments have been leveled in compliance with permits.

14. DUNE PROTECTION AND RESTORATION.

14.1 Protection of Existing Dune and Vegetation. It is the responsibility of the CONTRACTOR to place fill only within the template specified by the Plans. Any fill placed outside of the template may damage and/or endanger surrounding plants and wildlife and may violate permit requirements. The CONTRACTOR will be solely responsible for any permit violations and damage caused.

14.2 The dunes shall be rebuilt on an as-needed basis as identified in the field by the ENGINEER and the CONTRACTOR's Project Manager. Payment for sediment placement within the dunes will be included within the total fill volume identified in the Bid Form, unless placement of additional volume is authorized by a change order.

14.3 Dune re-vegetation is included as part of this contract to be determined by The ENGINEER and the CONTRACTOR in the field. The dune re-vegetation will be paid per the CONTRACTOR's identified unit cost in the Bid Form. The CONTRACTOR shall submit a dune vegetation plan seven (7) days prior to the pre-construction conference.

15. SURVEYS.

15.1 General. In addition to the before and after dredge (BD and AD) surveys required for the purpose of payments, the CONTRACTOR will conduct a pre-construction survey of the beach fill area and the borrow areas according to the guidance provided in the project permits and FDEP Approved Physical Monitoring Plan. Beach profiles will be conducted at R-monuments between R-84 and R-109 in addition to intermediate surveys to be conducted at R-84.6 and R-96+326. The surveys will be collected along the azimuths identified in the Plans and associated with the FDEP R-monuments. The permit required post-construction survey will be performed by the DISTRICT.

15.2 Surveyor. The surveyor used by the CONTRACTOR must be a registered land surveyor in the State of Florida and shall certify (sign and seal) all survey work.

15.3 Construction Baseline. Pay profiles will be spaced generally 100 feet apart along an azimuth perpendicular to the baseline station with actual distance and location defined by the CONTRACTOR and approved by the ENGINEER prior to the start of construction.

15.4 Payment Surveys. Payments will be based on the results of the comparison of before dredge (BD) and after dredge (AD) surveys conducted by the surveyor on the dressed beach along the pay profiles established by the CONTRACTOR along the construction baseline. The ENGINEER will verify the pay quantities provided by the CONTRACTOR based these surveys. Payment surveys shall be performed and certified by a registered land surveyor employed by the CONTRACTOR. The CONTRACTOR shall notify the DISTRICT and the ENGINEER in advance when the payment surveys will be conducted.

15.4.1 Before Dredge Survey. Before dredge (BD) surveys will be conducted by the CONTRACTOR at the spacing and location of pay profile lines, which are generally 100 feet apart. BD surveys will be conducted to a minimum distance of 100 feet beyond or seaward of the construction toe of fill. The BD survey will be used as the baseline for volumetric payment for the beach nourishment project. The fill template may be revised at the ENGINEER's discretion using the BD survey results.

15.4.2 After Dredge Survey. After dredge (AD) surveys shall not be conducted until the beach has been dressed to provide a level and uniform beach surface, removing all depressions, gullies, or other features in the beach which may affect the accuracy of the survey and the volume computation. The AD pay survey shall be conducted prior to tilling the beach.

15.5 Survey Field Notes Submittal. The CONTRACTOR shall submit survey field notes to the ENGINEER upon completion of each BD or AD survey to expedite review of each survey. All field notes, survey and volume computations, and the records used by the CONTRACTOR to compute the payment fill quantity shall be furnished to the ENGINEER with the Application for Progress or Final Payment. Failure to provide the specified information will delay recommendation and payment.

15.6 Survey Error or Volume Computation Discrepancy. If there is an error or discrepancy in the survey conducted by the CONTRACTOR which affects the payment volume, the CONTRACTOR and the ENGINEER's surveyors will attempt to resolve the survey discrepancy or error. If the discrepancy or error cannot be resolved, the ENGINEER will compute the fill volume for payment purposes. Likewise, if there is an error or discrepancy concerning the payment volume computation, the ENGINEER and CONTRACTOR will attempt to resolve the issue. Nevertheless, the volume determined to be correct by the ENGINEER shall be the volume used for payment purposes.

15.7 Fill Section Rejection. The notification of rejection of a fill section will be based on notification to the CONTRACTOR from the ENGINEER. After the survey data has

been received by the ENGINEER, the ENGINEER will have five (5) days to review the data and prepare a written response if a section has been rejected, and the reason for rejection.

15.8 Survey Requirements. All beach profile surveys shall be conducted by either differential leveling techniques or with RTK GPS technology to a minimum distance of 100 feet seaward of the termination of the construction toe of fill. The CONTRACTOR shall close all level loops; the closure shall be less than 0.04 feet. All onshore points shall be within ± 1 foot of the established profile line.

15.9 Profile Line Azimuth and Measurements. Pay Profile line surveys shall be conducted along the azimuth indicated in the CONTRACTOR's established baseline. A sufficient number of points will be taken along each line to ensure adequate measurements of the entire profile line including topographic features, and major breaks in slope, beach berms, foreshore, and intersection of the fill with the bottom, with a maximum elevation difference of approximately 1 foot between adjacent points. Data points shall be taken at a spacing of not more than 10 feet. The product shall be a continuous line representing the entire beach fill profile plus 100 feet seaward of the construction toe of fill.

15.10 Beach Survey Deliverables to the Engineer. Deliverables to the ENGINEER shall include processed and tide corrected survey data of easting, northing and elevation from each of the pay stations in ASCII format provided digitally (via email, FTP or flash drive) and illustrated in cross-sections on digital or hard copy plots. Cross-section plots shall show the survey, the construction template, the upper and lower tolerance and the mean high-water line. Additional information to be provided to the ENGINEER shall include any corrections and field notes.

15.11 Before and After Dredge Borrow Area Survey. The pre-construction survey of the borrow area will serve as the before dredge (BD) survey of the borrow area will be conducted by the CONTRACTOR in accordance with all survey standards established herein. Following collection of the pre-construction survey of the borrow area, and prior to excavation of the fill, the CONTRACTOR's estimate of available material within the borrow area shall be provided to the ENGINEER along with the survey data. The data shall be collected on uniform (i.e., 100 foot spacing) stations along a baseline established by the CONTRACTOR sufficient for volume determinations. The borrow area has been established by permit and will not be revised with the pre-construction/BD survey data, although the available volume may vary. The DISTRICT will conduct the after dredge (AD) survey of the borrow area. The CONTRACTOR shall notify the DISTRICT and the ENGINEER in advance when the pre-construction (BD) surveys will be conducted.

15.12 Borrow Area Survey Deliverables to the Engineer. Deliverables to the ENGINEER shall include processed tide corrected survey data of easting, northing and elevation in ASCII format provided digitally (via email, FTP or flash drive) and illustrated in cross-sections on digital or hard copy plots. Cross-section plots shall show the survey, the permitted after dredge and overdepth elevations shown on the Plans.

Additional information to be provided the ENGINEER shall include any corrections and field notes.

15.13 Survey Documentation. All survey work shall be documented, and copies supplied to the ENGINEER. The surveys may be conducted in the presence of the ENGINEER or their representative, at the option of the ENGINEER. The CONTRACTOR shall provide three (3) days advance notice to the ENGINEER prior to conducting surveys for payment.

16. WORK AREA.

16.1 General. The construction and borrow area limits available to the CONTRACTOR for accomplishing the work are shown in the Plans. Construction access to the beach will be as shown in the Plans. The CONTRACTOR shall accomplish the Work in such a manner to minimize disruption to road traffic on the island, and in the vicinity of the project. The CONTRACTOR will be required to exclude the public for safety purposes from the work areas in the immediate vicinity of the hydraulic fill placement, grading and transporting operations, or any other area that may be dangerous to the public. The CONTRACTOR will minimize the areas closed to the public. The storage areas shall be kept neat and orderly, enclosed with temporary fencing, and in a manner supporting the public safety.

16.2 Construction Access and Staging Areas. The CONTRACTOR shall limit construction access and staging area to the locations and extents shown in the Plans or as approved by the DISTRICT. The DISTRICT has not identified any upland staging areas but will help the CONTRACTOR coordinate requests with appropriate authorities for partial use of park parking areas. The CONTRACTOR can stage within the fill limits on the beach, limited as described in the permits. The CONTRACTOR shall exercise caution when operating in the access, staging and all other Work areas and driving on the beach with vehicles or equipment and operating in staging areas. The beach and adjacent areas are used heavily by the public throughout the year. The CONTRACTOR shall cordon off and/or fence the access and staging areas to prohibit public access. The access and staging areas shall be kept neat, orderly, and in a safe manner. All access and staging areas shall be restored to the pre-construction condition upon project completion at the cost of the CONTRACTOR. In the event infrastructure (such as walkways, sidewalks, fences, vegetation, etc.) is temporarily removed or relocated or there is unauthorized damage to vegetation and/or facilities by the CONTRACTOR, the CONTRACTOR shall restore all damage to structures and natural features to pre-construction condition or better. The CONTRACTOR will not receive final payment until all damage is restored to the satisfaction of the DISTRICT and Lee County. If additional access and staging areas are needed, they shall be procured by and at the expense of the CONTRACTOR if the staging areas must be restored to the pre-construction condition upon project completion at the cost of the CONTRACTOR. If additional staging areas are needed, they shall be procured by and at the expense of the CONTRACTOR.

16.3 Damages. All damages to private or public property resulting from the CONTRACTOR's operations shall be repaired by the CONTRACTOR at the CONTRACTOR's expense. The ENGINEER and DISTRICT shall determine if repairs are required and the DISTRICT or OWNER of the damaged property will determine if the property has been repaired to its previous condition, before the CONTRACTOR receives approval of repairs (see General Conditions). The CONTRACTOR will reimburse the DISTRICT for the cost of any damages at the staging area, including, but not limited to equipment, access gate, seawall and other related facilities, or the amount will be deducted from the final payment due the CONTRACTOR.

16.4 The CONTRACTOR will provide access to and use of a temporary working space at the project site for the ENGINEER if requested. The space will consist of a desk, chair, internet access and air-conditioning at a minimum, equivalent to that used by the CONTRACTOR staff on site. The CONTRACTOR shall provide transportation for the ENGINEER along the island or to/from the dredge as needed for observation duties. Providing space on the CONTRACTOR's crew boat or shuttle will accomplish this objective most of the time.

16.5 Crane and Dragline Safety Requirements. All cranes used in performing the Work set forth in these specifications shall be equipped with geared boom hoists which require the application of power to raise and lower the boom or shall be otherwise equipped with mechanisms which will prevent the booms from being lowered by gravity. Cranes that are equipped with booms that can be lowered by either gravity or by power shall have the mechanisms for operating the booms by gravity made inoperative so that the booms cannot be lowered by gravity. The booms of all cranes and draglines shall also be equipped with shock absorbing type backstops to prevent them from overtopping.

17. PUBLIC SAFETY.

The CONTRACTOR shall provide and maintain barricades, warning signals, and a flag person as required by local, State or Federal regulations or as required at the discharge site to ensure public safety. If the CONTRACTOR is not able to keep and maintain the public at a safe distance from construction activity, the CONTRACTOR is to notify the DISTRICT and request assistance in controlling public access to the active construction site.

18. PROTECTION OF EXISTING STRUCTURES FROM CONSTRUCTION ACTIVITY.

18.1 Damages to Existing Structures. The CONTRACTOR shall be responsible for determining and documenting the pre-construction condition of existing structures and vegetation located between beach monuments R-84 and R-109, and for performing a post-construction verification inspection of those structures previously inspected. Pre-construction structure condition documentation will include video and/or photographic documentation of all structures. Copies of the pre-construction structure condition video and or photography will be provided to the DISTRICT prior to the start of construction.

The CONTRACTOR shall assume all responsibility for damages to existing structures within and bordering the project boundaries as a result of construction activities. This includes, but is not limited to, damages as a result of equipment impact and vibration due to operation of equipment.

18.2 Vibration Impact Distance (VID). The CONTRACTOR or his/her vibration control specialist shall be responsible for determining the minimum distance from existing structures that vibration producing equipment may safely operate without causing damages to structures. Only the CONTRACTOR's construction equipment, which could create vibrations sufficient to damage structures, should be considered in this determination. For construction, the VID may change for different areas of the project Work depending on local area and structure conditions as determine by the CONTRACTOR. Factors to be considered in setting the minimum safe distance and VID for the project area include but are not limited to: (1) local foundation conditions; (2) changes in structural loads and water levels due to beach fill placement; (3) structural foundation design; (4) structural condition including construction materials and existing stresses; and (5) magnitude, frequency, and duration of predicted vibrations. The CONTRACTOR shall consider any other factors, in addition to those listed, which may affect the structures due to vibration. The CONTRACTOR shall assume all responsibility for damages to existing structures within and bordering the project boundaries as a result of project activities.

18.3 Post-Construction Structural Inspection/Evaluation. After completion of work, the CONTRACTOR shall be responsible for conducting a post-construction inspection/evaluation of structures and vegetation. Documenting procedures shall be identical to those performed under the pre-construction inspection/evaluation. Any changes or deviation from the pre-construction conditions in any structure or vegetation shall be identified and described clearly in the inspection documentation. The CONTRACTOR shall be responsible for remedying any damage resulting from construction activities to any structural features adjacent to the project. Copies of all documentation shall be provided to the DISTRICT within seven (7) days of the post-construction inspection/evaluation.

19. BEACH FILL NIGHTTIME OPERATIONS.

Nighttime is defined as the period of time from sunset to sunrise. During nighttime beach fill operations, the CONTRACTOR shall utilize the minimum lighting that is necessary to accomplish the work and comply with all OSHA and permit sea turtle protection requirements. The CONTRACTOR shall shield or orient the lights to minimize the amount of light to the work area. The CONTRACTOR shall minimize noise, so as not to disturb residents living along the beach in the project area. Beach tilling and re-dressing will be limited to daylight hours only. The CONTRACTOR is strongly encouraged to conduct required heavy equipment beach work during daylight hours only to the maximum extent feasible.

20. FINAL CLEAN-UP.

Final clean-up will be as required by the General Conditions and shall include the removal of the CONTRACTOR's plant and all equipment or materials either for disposal or reuse. Plant and/or equipment or materials to be disposed of shall only be disposed of in a manner and at locations approved by the DISTRICT. Unless otherwise approved in writing by the DISTRICT, the CONTRACTOR is not permitted to abandon pipelines, cables, pipeline supports, pontoons, or other equipment or materials in the disposal area, pipeline access areas, water areas, underwater in the Gulf of Mexico or in any harbors, passes or inlets, or other areas adjacent to the Work site. Any stakes or other markers placed by the CONTRACTOR must be removed as a part of the final clean-up. All stakes, including grade stakes, placed during the fill operation shall be completely removed and shall not be left buried in the fill.

21. CONSTRUCTION PLANS AND DOCUMENTS.

A minimum of one (1) complete set of construction Plans and Contract Documents (with permits) shall be kept in the CONTRACTOR'S field office; on the dredge and at the dump shack at all times during project construction. Additional sets of Plans, if required, will be copied at the CONTRACTOR's expense.

22. QUALITY CONTROL REPORTING REQUIREMENTS.

The CONTRACTOR will be required to prepare a daily Quality Control Report, and copies shall be furnished to the ENGINEER on a daily basis, by 2:00 p.m. of the following day of each day's report. Reports will be provided from the first day of mobilization to the last day of demobilization including site clean-up. An example copy of the Daily Quality Control report is appended to the General Conditions. The CONTRACTOR may substitute his/her own quality control report format if: (1) it contains, at minimum, all of the information required by the format example in the General Conditions and (2) the CONTRACTOR'S quality control report format is approved by the ENGINEER. Each day's Quality Control Report shall include continuous dredge and cutterhead or suction head location plots.

23. NOISE CONTROL.

23.1 Hauling and Excavating Equipment. All hauling and excavating equipment, including dredges, used on this Work shall be equipped with satisfactory mufflers or other noise abatement devices. The CONTRACTOR shall conduct his/her operations to comply with all Federal, State, and local laws pertaining to noise. The use of horns, whistles, signals, and handling of dredge pipelines shall be held to the minimum necessary in order to ensure as quiet an operation as possible while maintaining safety on the job site.

23.2 Booster Pump Noise Control. Booster pumps used for this Work shall be equipped with satisfactory mufflers and/or other sound abatement devices to reduce engine noise. A sound barrier will be constructed landward of booster pumps in order to absorb noise or reflect noise waterward or upward. The siting of such noisy equipment

shall be approved by the DISTRICT prior to use. The CONTRACTOR shall conduct their operations to comply with all Federal, State, and local laws pertaining to noise.

24. DAMAGES.

All damages to private or public property resulting from the CONTRACTOR's operations shall be repaired by the CONTRACTOR at the CONTRACTOR's expense. The DISTRICT shall determine if repairs are required and the DISTRICT or owner of the damaged property will determine if the property has been repaired to its previous condition, before the CONTRACTOR receives approval of repairs. The CONTRACTOR will not receive final payment until all damages to private or public property resulting from the CONTRACTOR's operations are repaired as required.

PART IV: ENVIRONMENTAL PROTECTION PROVISIONS

25. SCOPE.

This section addresses the prevention of pollution and other environmental damage as the result of construction operations under this contract and for those measures set forth in the Technical Provisions. For the purpose of this specification, pollution and other environmental damage are defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to persons; or degrade the utility of the environment for aesthetic, cultural, and/or historical purposes, or damage/destroy hardbottom habitats such as reef formations. The control of pollution and damage requires consideration of air, water, land and the marine environment and includes management of construction activities, visual aesthetics, noise, solid waste, radiant energy, and radioactive materials, as well as other pollutants. The CONTRACTOR shall fulfill these specifications at the CONTRACTOR's expense.

26. QUALITY CONTROL.

The CONTRACTOR shall establish and maintain quality control for environmental protection for all items set forth herein. The CONTRACTOR shall record on Daily Quality Control reports any problems in complying with laws, regulations and ordinances, as well as project permits, and corrective action taken.

27. PERMITS AND BIOLOGICAL OPINIONS.

The CONTRACTOR shall comply with all requirements under the terms and conditions set out in all permits applicable to the Work. Copies of project permits and Terms and Conditions from USFWS and NMFS Biological Opinions are provided in Appendix B to this document. Specifically, the CONTRACTOR will familiarize himself/herself with general and specific conditions contained in the Florida Department of Environmental Protection (FDEP) Permit No. 0200269-009-JC dated December 11, 2014 and U.S. Army Corps of Engineers (USACE) Permit No. SAJ-1994-03952 (SP-MMB) dated December 9, 2015. Any other licenses, easements or

approvals required, including, but not limited to those that may be required by the Captiva Erosion Prevention District (CEPD), and Lee County, shall be secured and paid for by the CONTRACTOR. Copies of both permits are provided in Appendix B and are a part of the Contract Documents.

The CONTRACTOR shall follow the applicable Terms and Conditions in the following Biological Opinions (BO) that are incorporated by reference in the USACE permit: U.S. Fish and Wildlife Service (USFWS) BO for red knots, dated May 5, 2015; USFWS Statewide Programmatic Biological Opinion (SPBO) for sea turtles, dated March 13, 2015; USFWS Programmatic Piping Plover Biological Opinion (P3BO) for piping plovers, dated May 22, 2013; National Marine Fisheries Service (NMFS) BO dated November 10, 2015; and the NMFS Gulf Regional Biological Opinion (GRBO). Terms and Conditions of these BOs are attached in Appendix B, and complete versions are available upon request.

The CONTRACTOR shall follow the *Sea Turtle and Smalltooth Sawfish Construction Conditions* (NMFS 2006), Standard Manatee Conditions for In-Water Work (FWC, 2011), and Standard Protection Measures for the Indigo Snake (USFWS, 2013). These documents are provided in Appendix B.

28. SUBCONTRACTORS.

Assurance of compliance with all sections of the contract by subcontractors will be the responsibility of the CONTRACTOR, including compliance with all environmental permit requirements.

29. NOTIFICATION.

The ENGINEER will notify the CONTRACTOR and the Captiva Erosion Prevention District (CEPD), hereafter referred to as DISTRICT, of any observed noncompliance with the aforementioned Federal, State, or local laws or regulations, permits and other elements of the CONTRACTOR's environmental protection plan. Nevertheless, it remains the sole responsibility of the CONTRACTOR to comply with all applicable Federal, State or Local laws or regulations, permits and all elements of the environmental protection plan. The DISTRICT will determine what action will be taken and such response will be transmitted to the CONTRACTOR by the ENGINEER, which may include stopping construction of the project until the CONTRACTOR complies with the environmental protection plan. It will also be the CONTRACTOR's responsibility that all subcontractors shall comply with all applicable laws, regulations, permit requirements and all elements of the environmental protection plan.

30. TURBIDITY CONTROL AND WATER QUALITY MONITORING.

30.1 CONTRACTOR Conducts Water Quality Monitoring. The CONTRACTOR shall be bound and obligated to maintain the quality of the State's waters as stipulated in Chapter 62-302 of the *Florida Administrative Code*. The CONTRACTOR will conduct water quality monitoring procedures with an independent third party subcontractor as defined in the permits for the project, the

qualifications for whom shall be supplied with the Bid to comply with the FDEP Permit, Specific Condition 5e. Payment for water quality monitoring and reporting shall be included in the project construction bid under the line item for Turbidity Monitoring. The CONTRACTOR will also provide the ENGINEER with daily water quality monitoring reports immediately after completion of the water quality analysis if there are any violations and no later than with the daily report in all other cases.

- 30.2 Water Quality Monitoring Procedures.** The permits for the project require water quality monitoring to occur during project construction, which the CONTRACTOR will provide in strict accordance with Specific Condition 35 of the FDEP permit. For example, the permit provides the water quality monitoring program to be conducted three times daily at least four (4) hours apart during all dredging and filling operations. The turbidity meter shall be calibrated by the manufacturer within one year prior to the beginning of the project, with written documentation submitted to the ENGINEER. The meter shall be calibrated as required prior to each use or otherwise in accordance with manufacturer recommendations. Reports, including all information required by the FDEP permit, shall be provided to the ENGINEER on a daily basis. The CONTRACTOR shall develop a map suitable for reporting the location of testing for each monitoring site: beach, borrow area and sand retention area, in a format that is acceptable to the FDEP. Sampling shall be conducted while the highest project-related turbidity levels are crossing the edge of the mixing zone. Since turbidity levels can be related to pumping rates, the dredge pumping rates shall be recorded, and provided to the Department upon request. The compliance samples and the corresponding background samples shall be collected at approximately the same time, i.e., one shall immediately follow the other.
- 30.3 Water Quality Violations.** The CONTRACTOR is to follow all requirements concerning water quality as provided by permits for the project. In the event of a turbidity violation, the CONTRACTOR will take immediate corrective action indicated in project permits which could include stopping work, changing construction or environmental protection methods, relocation of the dredge in the borrow area, reporting violation to the ENGINEER or other action. Construction activities may not resume until water quality has returned to within standards (as provided by the FDEP permit).
- 30.4 Reporting.** The ENGINEER, using CONTRACTOR water quality monitoring data and maps, will provide all reporting to the Department of Environmental Protection.
- 30.5 Water Quality Monitoring By The CONTRACTOR.** The CONTRACTOR shall be bound and obligated to maintain the quality of the State's waters as stipulated in project permits and in the *Florida Administrative Code* Rules 62-312 and 62-302 as they pertain to the Class III waters and this Contract. The CONTRACTOR will be required to make inspections, measurements and

observations required by those regulations and the FDEP permit in the vicinity of the dredge and at the spoil site (beach). This includes, but is not limited to, turbidity sampling with reports to the ENGINEER, following procedures stated in FDEP Permits (Appendix B). If it is determined that the quality of the State's waters is not being maintained, the CONTRACTOR will, without delay, follow the procedures provided in the FDEP permit. **The CONTRACTOR will provide the names and qualifications of their monitoring team with the Bid submittal.** This notification is a prerequisite for receiving a permit notice to proceed from FDEP. Monitors shall meet qualifications described in the State permits.

31. PROTECTION OF ENVIRONMENTAL RESOURCES.

The environmental resources within the project boundaries and those affected outside the limits of permanent work under this contract shall be protected during the entire period of this contract. The CONTRACTOR shall confine his/her activities to areas defined by the Plans and Specifications. Environmental protection shall be as stated in the following subparagraphs.

31.1 Protection of Land Resources. Prior to the beginning of any construction, the ENGINEER and CONTRACTOR's Project Manager shall identify any known resources, such as vegetation, to be preserved within the CONTRACTOR's work area, which is defined as the beach seaward of the vegetation line. The CONTRACTOR shall not remove, cut, deface, injure, or destroy land resources including sand dune or berm vegetation, trees, shrubs, vines, grasses, top soil, and land forms without direct written permission from the DISTRICT. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. Where such special emergency use is allowed, the CONTRACTOR shall provide effective protection for land and vegetation resources at all times as defined in the following paragraphs. The CONTRACTOR will be responsible for the replacement of any damaged or destroyed vegetation, to the satisfaction of the DISTRICT or ENGINEER. Failure to replace damaged or destroyed vegetation by the CONTRACTOR will result in replacement by the DISTRICT; cost of replacement will be deducted from monies due to the CONTRACTOR, or from monies which will be due to the CONTRACTOR by the DISTRICT.

31.1.1 Work Area Limits. Isolated areas (if any) within the work area which are to be saved and protected shall also be identified by the ENGINEER and marked or fenced by the CONTRACTOR. All monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, the marks shall be visible. The CONTRACTOR shall convey to all subcontractors and personnel the purpose of marking and/or protection for all necessary objects.

31.1.2 Protection of Landscape. Trees, shrubs, vines, grasses, land forms, and other landscape features within the work area to be preserved shall be identified by the ENGINEER, and clearly delineated by the CONTRACTOR, by marking, fencing, or wrapping with boards, or any other techniques approved by the ENGINEER. Unless otherwise approved by the ENGINEER, no trees, shrubs, vines, grasses or other vegetation will be harmed or destroyed by the CONTRACTOR for any purpose. The CONTRACTOR is to avoid all vegetation located above the vegetation line.

31.1.3. Hydraulic Fill Placement. To avoid damage, no fill will be placed hydraulically within 25 feet of dunes, seawalls, structures, or vegetation by direct pipeline discharge. Mechanical or manual means shall be used to place such material.

31.1.4. Retardation and Control of Runoff. Runoff from the construction site shall be controlled by the CONTRACTOR by the construction of diversion ditches, benches and berms to retard and divert runoff to protected drainage courses, and any measures required by areawide Plans approved under paragraph 208 of the Clean Water Act. Dikes will be constructed above the water line and maintained in continuous repair to allow partial settling of fine materials from dredging. The ENGINEER can require the CONTRACTOR to extend dikes up to 500 feet in length if it is deemed necessary for retardation and control of runoff. The extension of dikes, if required, will be provided by the CONTRACTOR at no additional cost. No runoff shall drain landward of the fill area shown on the Plans.

31.1.5 Temporary Excavations. Embankments for plant and/or work areas shall be controlled to protect adjacent areas from despoilment.

31.1.6 Disposal of Solid Wastes. Solid wastes (including clearing debris) shall be placed in containers, which are emptied on a regular schedule. The CONTRACTOR will empty containers when three-quarters full and will avoid overflow conditions. All handling and disposal shall be conducted to prevent contamination. No steel, cables, wire, pipe, drums **or any other debris** shall be permitted to be disposed overboard into the waters of the Gulf of Mexico or any other body of water. Disposal of solid wastes or debris in the Gulf of Mexico is a violation of State and Federal laws. If such debris is found, the debris shall be removed by the CONTRACTOR at his own cost, or the cost of removal deducted from the CONTRACTOR's final payment.

31.1.7 Disposal of Chemical Waste. Chemical waste shall be stored in corrosion resistant containers, removed from the work area and disposed of in

accordance with Federal, State, and local regulations. The CONTRACTOR shall perform all maintenance of equipment, including but not limited to refueling, filter changes, and replacement of hydraulic lines in a manner so as not to contaminate soils, ground or surface waters, or any other natural resources.

31.1.8 Disposal of Discarded Materials. Discarded materials other than those, which can be included in the solid waste category, will be handled by the CONTRACTOR as directed by the ENGINEER or the DISTRICT.

31.2 Protection of Fish and Wildlife Resources. The CONTRACTOR shall keep construction activities under continued surveillance, management, and control to minimize interference with, disturbance to, and damage of fish and wildlife. Species that require specific consideration, as well as measures for their protection, will be addressed in the CONTRACTOR's Environmental Protection Plan prior to the beginning of project construction.

31.2.1 Sea Turtles. If project construction occurs during a portion of the sea turtle nesting season (May 1 to October 31), construction pipes shall be placed parallel to shore whenever possible, and as far landward as possible without impacting the dune system, structures, or access points. To minimize adverse effects to sea turtles, nighttime lighting will comply with permit conditions for the project and include lowering, screening and shielding lights where possible. All temporary storage of pipes or equipment shall be off the beach whenever possible, or as far landward as possible without impacting the dune system, structures or access points. The CONTRACTOR shall comply with all measures outlined in the permits, Biological Opinions (BO), and “SeaTurtle and Smalltooth Sawfish Construction Conditions” (NMFS, 2006) for sea turtle protection regarding construction procedures, beach lighting, and dates of construction. The CONTRACTOR shall provide endangered species monitors on all hopper dredges and conduct sea turtle relocation trawling as required by the FDEP permit and NMFS Gulf Regional Biological Opinion (GRBO).

31.2.2 Manatee Protection. In order to ensure that manatees are not adversely affected by construction activities, the CONTRACTOR shall comply with all manatee protection measures outlined in the permits, BOs, and “Standard Manatee Conditions for In-Water Work” (FWC, 2011). These documents are provided in Appendix B of the Technical Specifications.

31.2.3 Hardbottom Resources. The CONTRACTOR shall protect all hardbottom resources (reefs) during all phases of the project and maintain the required 750 ft buffer around hardbottom resources surrounding the borrow areas, as stated in the Contract Documents.

31.2.4 Shorebirds. Breeding season varies by species. Most species have completed the breeding cycle by September 1, but flightless young may be present through September. The following dates are based on the best available information regarding ranges and habitat use by species for this site: February 15 - September 1. The CONTRACTOR shall comply with all seabird and shorebird protection measures outlined in the permits and BOs, which are provided in Appendix B of the Technical Specifications.

31.2.5 Smalltooth Sawfish. In order to ensure that smalltooth sawfish are not adversely affected by construction activities, the CONTRACTOR shall comply with all smalltooth sawfish protection measures outlined in the permits, BOs, and “Sea Turtle and Smalltooth Sawfish Construction Conditions” (NMFS, 2006). These documents are provided in the appendices of the Technical Specifications.

31.2.6 Florida Panther. In compliance with project permits and BOs for hauling of sand from an upland mine, the CONTRACTOR shall restrict all truck traffic (loaded or unloaded) inside or immediately adjacent to panther focus areas to daylight hours to reduce the potential for panther collisions.

31.2.7 Eastern Indigo Snake. In order to ensure that eastern indigo snakes are not adversely affected by construction activities, the CONTRACTOR shall comply with all protection measures outlined in the permits, BOs, and “Standard Protection Measures for the Eastern Indigo Snake” (USFWS, 2013). These documents are provided in the appendices of the Technical Specifications (USACE Permit).

31.2.7 Bald Eagle. Nesting season is from October 1 to May 15 each year. If eagles are present within the project area, specific protections and monitoring may be needed when work is occurring adjacent to an active nests.

31.3 Protection of Air Resources. The CONTRACTOR shall keep construction activities under surveillance, management, and control to minimize pollution of air resources. All activities, equipment, processes, and work operated or performed by the CONTRACTOR in accomplishing the specified construction shall be in strict accordance with the applicable air pollution standards of the State of Florida (Florida Statute, Chapter 403 and others) and all Federal emission and performance laws and standards.

31.4 Protection of Sound Intrusions. The CONTRACTOR shall keep construction activities under surveillance, and control to minimize damage to the environment by noise. If booster pumps are used on the beach, the CONTRACTOR shall provide adequate muffler systems and erect a sound barrier to deflect noise in the waterward direction and away from buildings.

- 31.5 Dispensing of Fuel.** Secondary containment, which is capable of holding at minimum 110% of the tank contents, must be provided by the CONTRACTOR for each fuel storage tank. Fuel dispensers shall have a 4-foot square, 16-gauge metal pan with borders banded up and welded at corners right below the bibb. Edges of the pans shall be 8-inch minimum in depth to ascertain that no contamination of the ground takes place. Pans shall be cleaned by an approved method immediately after every dispensing of fuel and wastes disposed of offsite in an approved area. Should any spilling of fuel occur, the CONTRACTOR shall immediately contain the spill and contact the appropriate local authorities. The CONTRACTOR will be solely responsible for any fines, penalties or other legal activities related to fuel spills.
- 31.6 Temporary Sanitary Facility.** The CONTRACTOR shall supply and maintain, at minimum, one (1) temporary sanitary facility for the use of land based employees and subcontractors at each separate construction site. The facility shall be conveniently located in the vicinity of the beach disposal operation, but away from residential buildings along the coastline. The facility shall be removed at the end of the project.
- 31.7 Storage of Lubricants.** All lubricants and other potential liquid pollutants shall be stored in sealed, non-corrosive containers. Individual containers shall be stored in metal pans with borders banded up and welded at the corners right below the bibb. Pans shall be deep enough to prevent contamination of the ground. Pans shall be kept clean of all spillage or leakage.

32. POST CONSTRUCTION CLEAN-UP.

The CONTRACTOR shall clean-up any area used for construction to the satisfaction of the ENGINEER and DISTRICT.

33. RESTORATION OF LANDSCAPE DAMAGE.

The CONTRACTOR shall restore all landscape features damaged or destroyed during construction operations outside the limits of the approved work areas. Such restoration shall be in accordance with a plan submitted for approval by the ENGINEER. This Work will be accomplished at the CONTRACTOR's expense. Final payment to the CONTRACTOR shall not occur until the ENGINEER and the DISTRICT are satisfied with the CONTRACTOR's effort to restore landscape or any other damage caused by the CONTRACTOR or his/her subcontractors.

34. MAINTENANCE OF POLLUTION CONTROL FACILITIES.

The CONTRACTOR shall maintain constructed facilities and portable pollution control devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

35. TRAINING OF CONTRACTOR PERSONNEL IN POLLUTION CONTROL AND ENVIRONMENTAL PROTECTION.

The CONTRACTOR shall train all subcontractors and personnel in all phases of environmental protection. Personnel and subcontractors will be familiar with permit requirements, and with the necessity of protection of all habitats, including offshore hardbottom communities. The training shall include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of facilities to insure adequate and continuous environmental pollution control. Quality Control and supervisory personnel shall be thoroughly trained in the proper use of monitoring devices and abatement equipment, and shall be thoroughly knowledgeable of Federal, State, and local laws, regulations, and permits as listed in the Environmental Protection Plan submitted by the CONTRACTOR. Quality Control personnel will be identified in the Quality Control Plan submitted in accordance with the General Conditions.

36. FUEL OIL TRANSFER OPERATIONS.

In accordance with the U.S. Coast Guard regulations (33 CFR 156.120, or as revised or updated), couplings used in fuel oil transfer operations on any vessel with a capacity of 250 or more barrels of oil (or fuel) shall be either a bolted or full-threaded connection; or a quick-connect coupling approved by the Commandant; or an automatic back-pressure shutoff nozzle used to fuel the vessel. An executed fuel oil transfer (Declaration) form signed by the tanker person shall be completed for each refueling operation. The U.S. Coast Guard shall also be notified prior to any refueling.

37. ENVIRONMENTAL PROTECTION PLAN.

Within fifteen (15) calendar days after the date of Notice of Award and prior to the Notice to Proceed to the CONTRACTOR, the CONTRACTOR shall submit in writing an Environmental Protection Plan to the ENGINEER. The Notice to Proceed will not be issued until the Environmental Protection Plan is reviewed and acknowledged by the ENGINEER. Approval of the CONTRACTOR'S plan will not relieve the CONTRACTOR of his/her responsibility for adequate and continuing control of pollutants and other environmental protection measures. The Environmental Protection Plan shall include but not be limited to the following:

37.1 A list of Federal, State, and local laws, regulations, and permits concerning environmental protection, pollution control, and abatement that are applicable to the CONTRACTOR'S proposed operations and the requirements imposed by those laws, regulations, and permits.

37.2 Methods for protection of features and habitats to be preserved within authorized work areas. The CONTRACTOR shall prepare a listing of methods to protect resources needing protection, i.e. all vegetation, trees, shrubs, vines, grasses and ground cover, landscape features, air and water quality, fish and wildlife, soil, historical, archeological and cultural resources, manatees, and all marine hardbottom areas.

37.3 Procedures to be implemented to provide the required environmental protection and to comply with the applicable permits, laws and regulations. The CONTRACTOR shall provide written assurance that immediate corrective action will be taken to correct pollution of the environment due to accident, natural causes or failure to follow the procedures set out in accordance with the Environmental Protection Plan.

37.4 Drawings showing locations of any proposed temporary excavations or embankments for haul roads, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials.

37.5 Environmental monitoring plans for the jobsite, including land, water, air and noise monitoring.

37.6 Oil spill prevention.

37.7 Oil spill contingency plan.

37.8 A hardbottom protection and avoidance plan.

37.9 A marine (sea) turtle protection plan.

37.10 A manatee protection plan.

37.11 Smalltooth sawfish protection plan.

37.12 A Florida panther protection plan.

37.13 Eastern indigo snake protection plan.

37.14 Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas.

37.15 The location of the solid waste disposal area.

37.16 Shorebird Management Plan.

37.17 A statement as to the person who will be responsible for implementation of the Environmental Protection Plan. The CONTRACTOR personnel responsible shall report directly to the CONTRACTOR'S top management and shall have the authority to act for the CONTRACTOR in all environmental protection matters.

37.18 A statement acknowledging that the CONTRACTOR is responsible for environmental protection, including all the CONTRACTOR's personnel and subcontractors.

37.19 The Environmental Protection Plan will be dated and endorsed by the individual of top management in charge of the construction.

APPENDIX A
2000 VIBRACORE LOGS

APPENDIX B
SEDIMENT QA/QC PLANS

APPENDIX C

**FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
JOINT COASTAL PERMIT NO. 0200269-009-JC**

APPENDIX C1
PERMIT DRAWINGS

APPENDIX C2

FWC REGIONAL BIOLOGIST CONTACT INFORMATION

APPENDIX D

USACE PERMIT NO. SAJ-1994-03952 (SP-MMB) DECEMBER 9, 2015

APPENDIX D1

**USFWS STATEWIDE PROGRAMMATIC BIOLOGICAL OPINION
(MARCH 13, 2015)**

APPENDIX D2

**USFWS PROGRAMMATIC PIPING PLOVER BIOLOGICAL OPINION
(MAY 22, 2013)**

APPENDIX D3

**NMFS GULF REGIONAL BIOLOGICAL OPINION
(2003, REVISIONS: 2005, 2007)
(AVAILABLE ON-LINE)**

**NMFS GULF REGIONAL BIOLOGICAL OPINION
(2003, REVISIONS: 2005, 2007)**

<https://www.fisheries.noaa.gov/content/endangered-species-act-section-7-biological-opinions-southeast>



June 8, 2015

Judie Zimomra, City Manager
City of Sanibel
800 Dunlop Road
Sanibel, Florida 33957

Dear Ms. Zimomra,

I am pleased to let you know that the Board of Commissioners of the Captiva Erosion Prevention District favorably considered your request in your letter to me of May 7, 2015, to piggyback on the CEPD state and federal permits to allow emergency renourishment of a portion of northern Sanibel. The Board asked that I continue the dialogue with the City, agreeing that a cooperative effort to protect the Sanibel Captiva Road is a worthwhile goal. We understand that this cooperative effort will save the City the substantial costs of obtaining its own permits.

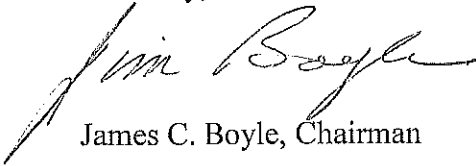
We have started discussions with our CEPD consulting engineers and the CEPD attorney, and briefly with the City staff as well, to identify what issues might be involved and how we might proceed. As Section 13 of its enabling legislation allows the CEPD to enter into contracts to assist a municipality in the county in an erosion prevention program, it is logical that any assistance be conducted through an interlocal agreement. Such an interlocal agreement can ensure that various issues such as compliance with the CEPD's permit requirements as to specifications, conditions, project monitoring responsibilities, and the like can be addressed. The term of the interlocal agreement possibly could extend for the term of our permits, or 15 years. The agreement should also address issues such as necessary indemnities, and reimbursement to the CEPD of any costs for the contract. In that regard, you should be aware that the CEPD enabling legislation prohibits the CEPD from using the funds of the District collected in the County in connection with the performance of such assistance services; however, the CEPD can be reimbursed for those costs. We anticipate that issues such as these can be discussed between the City and CEPD as the next step in a cooperative effort.

Our further initial thoughts are that the interlocal agreement can act as an "umbrella" for the CEPD Board's specific authorization to conduct particular emergency renourishment projects on a case by case basis, such as the City's proposed project that gave rise to our discussions. We have consulted with the FDEP about its requirements for the process to authorize the use of the CEPD permits by the City. At this time, we are advised that an exchange of letters of authorization between the City and the CEPD, copied to the FDEP, should be sufficient. The letters must detail the proposed activity and the necessity for the City to act, and acknowledge

the relevant responsibilities and expectations in the permits and contracts between CEPD and the FDEP. We will be continuing our discussions with the FDEP as well.

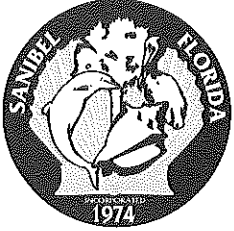
We look forward to working with you and the City representatives as we continue our dialogue. If you agree with our approach, we will direct our attorney to work with the City attorney on the interlocal agreement. Please feel free to contact me with any questions.

Sincerely,

A handwritten signature in cursive script, appearing to read "Jim Boyle".

James C. Boyle, Chairman

Cc. David Jensen
Henry A. Kaiser
Doris Holzheimer
Michael Mullins
Kathleen Rooker
Nancy Stroud
Kevin Ruane
James Evans



City of Sanibel

800 Dunlop Road
Sanibel, Florida 33957-4096

www.mysanibel.com

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ADMINISTRATIVE	472-3700
BUILDING	472-4555
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FINANCE	472-9615
LEGAL	472-4359
NATURAL RESOURCES	472-3700
RECREATION	472-0345
PLANNING	472-4136
POLICE	472-3111
PUBLIC WORKS	472-6397

November 10, 2015

Mrs. Kathleen Rooker
Post Office Box 365
Captiva, Florida 33924

Re: Interlocal Agreement

Dear Mrs. Rooker:

Please find the original Interlocal Agreement the City Council approved November 03, 2015. This is the Interlocal Agreement that I emailed about earlier today asking that Mr. Boyle execute. I also asked that the original be mailed back to the City so the Legal Department could record as an emailed copy was not acceptable to record.

Thank you again for your help in this matter. Please contact me with any questions at (239) 472-3700.

Respectfully,

Pamela Smith, MMC
City Clerk

PBS/tlj

Enclosures

15-115

**INTERLOCAL AGREEMENT
BETWEEN CAPTIVA EROSION PREVENTION DISTRICT
AND
THE CITY OF SANIBEL**

THIS INTERLOCAL AGREEMENT is made and entered into this 3 day of November, 2015, by and between the **CAPTIVA EROSION PREVENTION DISTRICT**, a political subdivision of the State of Florida, hereinafter referred to as "CEPD," and the **CITY OF SANIBEL**, a municipal corporation, hereinafter referred to as the "City."

WHEREAS, Part 1 of Chapter 163, Florida Statutes, authorizes public agencies as defined therein to enter into Interlocal Agreements in order to jointly exercise any power, privilege or authority that such agencies share in common and that each might exercise separately; and

WHEREAS, Ch. 2000-399, Laws of Florida authorizes the CEPD to enter into agreements with municipalities and other political subdivisions; and

WHEREAS, CEPD is a beach and shore preservation district with statutory authority to develop and execute plans for beach and shore preservation; and

WHEREAS, City is a municipal corporation with statutory and home rule authority to develop and execute plans for beach and shore preservation; and

WHEREAS, CEPD has applied for and received a state permit and has applied for and is anticipating approval of a federal permit to allow beach re-nourishment for areas including Captiva, in the unincorporated area of Lee County, and a portion of northern Sanibel within the City of Sanibel; and

WHEREAS, the City has requested that CEPD allow the City of Sanibel to "piggyback" or conduct necessary emergency beach re-nourishment in the area of northern Sanibel under the authority of, and in accordance with, the CEPD state and federal permits and under the terms and conditions of this Interlocal Agreement; and

WHEREAS, CEPD is willing to grant such authority under the terms and conditions of this Interlocal Agreement;

NOW THEREFORE, in consideration of the foregoing and the mutual covenants contained herein and other good and valuable consideration, acknowledged by CEPD and the City to be sufficient and received, CEPD and the City hereby agree as follows:

SECTION 1. The Recitals as set forth above are true and correct and are hereby incorporated into the terms of this Agreement as if fully set forth below.

SECTION 2. CEPD applied for a Florida Department of Environmental Protection (DEP) permit to periodically restore and nourish the beach of Captiva Island and to nourish the beach at the northern portion of Sanibel Island. Pursuant to such application, CEPD has received a Consolidated Joint Coastal Permit and Sovereign Submerged Lands Authorization as DEP Permit Number 0200269-009-JC (hereinafter the "DEP Permit") (attached as Attachment 1 to this Agreement). CEPD has applied for an Army Corps of Engineers permit for the same Captiva Island and northern Sanibel Island beach re-nourishment authorization and such permit application is currently being processed (hereinafter the "Army Corps Permit") (the DEP permit and

Army Corps permit are hereinafter referred to collectively as the "Agency Permits").

SECTION 3. Upon final approval and issuance of the Army Corps permit, CEPD hereby agrees to and authorizes the City to conduct work and engage in beach re-nourishment activities pursuant to the authority of the Agency Permits issued to CEPD in accordance with the terms and conditions of the Agency Permits and the procedures, terms, requirements and conditions set forth in this Interlocal Agreement.

SECTION 4. For each project where the City determines that it is necessary to conduct emergency beach re-nourishment within the City and within the geographical area encompassed by the Agency Permits, the City shall prepare and submit to CEPD a written description of the proposed City project which shall include, at a minimum, the following:

- a) A description of the purpose of the proposed project;
- b) A description of the geographical area within which the proposed project shall occur;
- c) The timeframe within which the proposed project is intended to be commenced, conducted and finalized;
- d) An estimate of the cost of the proposed project, if available;
- e) A copy of any supporting documents which have been prepared for the City by its contractors, agents or consultants which describe the proposed project or support the need for the proposed project; and
- f) Any additional information or supporting documents which the City determines may be of use to CEPD in evaluating the proposed project.

SECTION 5. Upon receipt of the information on the proposed City project described in Section 4 above, CEPD shall have a period of thirty (30) days to review the information and provide a written decision as to whether the City is authorized to proceed with the proposed project under the authority of CEPD's Agency Permits. CEPD shall use its best efforts to provide such authorization for proposed City projects provided, however, the City understands that each project shall be submitted by the City and reviewed by CEPD on a case by case basis and CEPD is not required to provide authorization for the City to conduct its project under the authority of CEPD's Agency Permits unless specifically approved, in writing, by CEPD for the proposed project.

SECTION 6. Upon approval, in writing, by CEPD of the specific City beach re-nourishment project proposed, the City shall comply with all permit conditions and reporting requirements required by CEPD's Agency Permits. The City shall copy CEPD, through its designated contact person as set forth in this Interlocal Agreement, on all correspondence and written communications relating to the City project and relating to any matter which would or may relate to the CEPD's Agency Permits, the conditions thereof or the status or progress of the City project. Such communications or correspondence copied to CEPD shall specifically include communications with any state or federal agency, the City's contractors or consultants or the general public with respect to the City's project. The City shall provide adequate and continuous engineering inspection and progress reports showing the work completed throughout the construction of the project and make such reports available for inspection at the reasonable request of the CEPD. Additionally, the City shall notify CEPD, in writing, upon the completion of each City beach re-nourishment project as determined by the City.

SECTION 7. City shall be responsible for all costs and expenses associated with every beach re-nourishment project conducted by the City and such costs shall include, but shall not be limited to, the costs of consultants, experts, contractors, materialmen and materials, transportation and hauling costs, traffic control, safety notifications and barriers, and any costs associated with any claim that the City has failed to adhere to the

applicable Agency Permit requirements, including any remediation or other activities that may be required by DEP or the Army Corps of Engineers.

SECTION 8. In the event that any differences or disputes arise as a result of the terms or conditions of this Agreement, CEPD and the City shall attempt to resolve such matters in the following manner and order:

- a) As expeditiously as possible through the CEPD Executive Director and the City's Director of Natural Resources;
- b) As expeditiously as possible through the CEPD Executive Director and the Sanibel City Manager;
- c) As expeditiously as possible through the CEPD Board and the Sanibel City Council;
- d) Through any legal remedy available to the parties.

SECTION 9. The City agrees to pay to CEPD, within thirty (30) days of a written invoice, for costs and expenses paid by CEPD for the following:

- a) The CEPD approved cost and expenses of engineers, environmental consultants, attorneys or other consultants or professionals deemed necessary by CEPD to review or evaluate any beach re-nourishment project proposed by the City, up to a maximum of \$10,000 per City project;
- b) Attorney's fees incurred by CEPD and directly related to the preparation or review of this Interlocal Agreement up to a maximum of \$5,000;
- c) At the time CEPD authorizes, in writing, the City to operate under the authority of CEPD's Agency Permits for a specific City project, CEPD shall notify the City, in writing, if any costs as described above can be reasonably anticipated to exceed the amounts set forth above. The City, in its sole discretion, shall decide whether or not to proceed with or continue with any proposed City beach re-nourishment project provided, however, any CEPD costs already incurred for review and evaluation of a proposed City project shall be due and payable in accordance with the terms of this Agreement whether or not the proposed City project is undertaken by the City.

SECTION 10. The term of this Agreement shall be from the date of execution by both parties through the current expiration date of the DEP permit which is December 11, 2029.

SECTION 11. The designated contact persons for CEPD and for the City are listed below and any communication, correspondence, notice or other contact of any type sent to the persons designated below shall constitute communication, correspondence, notice or contact for purposes of CEPD and the City, as applicable.

CONTACT FOR CEPD:

Name: Kathleen Rooker
Administrator
Captiva Erosion Prevention District
Address: 11513 Andy Rosse Lane #4
Captiva, Fl. 33924
Email: Kathleen@mycepd.com

CONTACT FOR CITY:

Name: Judith A. Zimomra
City Manager
City of Sanibel
800 Dunlop Road
Sanibel, Florida 33957
Email: judie.zimomra@mysanibel.com

SECTION 12. This Agreement, and the rights and obligations of CEPD and the City, shall be governed by, construed under, and enforced in accordance with the laws of the State of Florida.

SECTION 13. Nothing contained in this Agreement shall be construed to provide, nor is intended to give, any rights or benefits to any person, entity or third party of any type, other than to CEPD and the City. All rights, benefits, duties and responsibilities set forth and/or undertaken pursuant to this Agreement are for the sole and exclusive benefit of CEPD and the City and for no other person or entity.

SECTION 14. Subject to the limitations as set forth in Section 768.28, Florida Statutes, City shall defend, hold harmless and indemnify CEPD from and against any and all claims, actions, damages, liability, cost and expense, including those arising from bodily injury, death and/or property damage or any other lawful expense, including, but not limited to, attorney's fees and court costs, brought by third parties arising from the act or omission of the City, its agents, employees or contractors during the performance of this Agreement. The provisions of this paragraph are not intended to abrogate the sovereign immunity of the City beyond that set forth in Section 768.28, Florida Statutes.

SECTION 15. This Agreement constitutes the entire agreement between the parties pertaining to the subject matter hereof, and supersedes all prior and contemporaneous agreements, understandings, negotiations and discussions of the parties, whether oral or written, and there are no warranties, representations or other agreements among the parties in connection with the subject matter hereof, except as specifically set forth in this Agreement.

IN WITNESS WHEREOF, the Parties hereto have caused these presents to be executed on the day and year first written above.

CITY OF SANIBEL
City Council

ATTEST:
City Clerk
City of Sanibel
By: Pamela Smith
Pamela Smith
OFFICIAL
CITY OF SANIBEL
SEAL
INCORPORATED NOV. 5, 1974
FLORIDA

By: Kevin Ruane
Kevin Ruane, Mayor

Approved As To Form:

By: Kenneth B. Cuyler
Kenneth B. Cuyler, City Attorney

ATTEST:

By: Kathleen Booker
Name: Kathleen Booker
Title: Administrator

CAPTIVA EROSION PREVENTION DISTRICT

By: Jim Boyle
Name: Jim Boyle
Title: Chairman