Draft Construction and Operations Plan Addendum for the Phase 2 Offshore Export Cable Corridor South Coast Variant

Appendices

April 2022

Submitted by
Park City Wind LLC

Submitted to
Bureau of Ocean Energy Management
45600 Woodland Rd
Sterling, VA 20166

Prepared by
Epsilon Associates, Inc.

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Appendix C

Essential Fish Habitat Assessment

New England Wind Phase 2 Offshore Export Cable Corridor South Coast Variant

Essential Fish Habitat Assessment Addendum

Prepared for:

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April 2022

APPENDIX C ESSENTIAL FISH HABITAT ASSESSMENT ADDENDUM

1.0 Introduction

New England Wind is the proposal to develop offshore renewable wind energy facilities in Bureau of Ocean Energy Management (BOEM) Lease Area OCS-A 0534 along with associated offshore and onshore cabling, onshore substations, and onshore operations and maintenance (O&M) facilities. New England Wind will be developed in two Phases: Phase 1 (also known as Park City Wind) and Phase 2 (also known as Commonwealth Wind). Four or five offshore export cables (two for Phase 1 and two or three for Phase 2) will transmit electricity generated by the wind turbine generators (WTGs) to onshore transmission systems (see Figure 1.0-1). Park City Wind LLC, a wholly owned subsidiary of Avangrid Renewables, LLC, is the Proponent and will be responsible for the construction, operation, and decommissioning of New England Wind.

The Proponent has identified an Offshore Export Cable Corridor (OECC) for the installation of the offshore export cables (see Figure 1.0-1). The OECC travels north from Lease Area OCS-A 0534 along the eastern side of Muskeget Channel towards landfall sites in the Town of Barnstable, Massachusetts. The expected grid interconnection point for both Phases of New England Wind is the West Barnstable Substation. While the Proponent intends to install all Phase 2 offshore export cables within this OECC, the Proponent has identified two variations of the OECC that may be employed for Phase 2: the Western Muskeget Variant (which passes along the western portion of Muskeget Channel) and the South Coast Variant (which connects to a potential second grid interconnection point; see Figure 1.0-1). These variations are necessary to provide the Proponent with commercial flexibility should technical, logistical, grid interconnection, or other unforeseen issues arise during the Construction and Operations Plan (COP) review and engineering processes.

The Proponent has submitted a COP that describes the OECC and both potential Phase 2 OECC variants, with accompanying data and analysis for the OECC and the Western Muskeget Variant. The purpose of this COP Addendum and associated appendices, including this Essential Fish Habitat (EFH) Assessment, is to provide the data and analysis supporting the South Coast Variant in federal waters for New England Wind. Specifically, this EFH Assessment provides information on EFH within the South Coast Variant. This EFH Assessment incorporates, by reference, the analyses in Appendix III-F EFH Assessment (Appendix III-F) of COP Volume III and is focused on describing impacts that are unique to the South Coast Variant. Accordingly, descriptions of impacts that are associated with the OECC or its Variants more generally, and that are not specific to the South Coast Variant, are not repeated in this EFH Assessment. See Appendix III-F of COP Volume III for a detailed description of EFH and Habitat Areas of Particular Concern (HAPCs).

1.1 *Overview of the Phase 2 OECC South Coast Variant*

As shown in Figure 1.0-1, the South Coast Variant diverges from the OECC at the northern boundary of Lease Area OCS-A 0501 and travels west-northwest to the state waters boundary near Buzzards Bay. From the Southern Wind Development Area (SWDA)[1] boundary (excluding the two separate aliquots that are closer to shore) through federal waters to the state waters boundary, the South Coast Variant is approximately 79 km (42 NM) in length and approximately 720 m (2,360 ft) in width. To allow additional cable length for turns and micro-siting of the cable within the corridor, the maximum length of each cable within this variation of the OECC (from the SWDA boundary to the state waters boundary) is ~84 km (~45 NM).[1] An additional length of offshore export cable within the SWDA (up to ~34–42 km [~18–23 NM] per cable) will be needed to reach the Phase 2 ESP(s). Thus, the maximum length of each Phase 2 offshore export cable that employs the South Coast Variant is 118–126 km (64–68 NM) between the state waters boundary and the ESP(s). If three Phase 2 offshore export cables use the South Coast Variant, the maximum total length of the Phase 2 offshore export cables within federal waters (assuming three cables) is ~362 km (~196 NM).

At the state waters boundary, the South Coast Variant broadens to a "Phase 2 South Coast Variant Offshore Routing Envelope" that indicates a region within Buzzards Bay where the Phase 2 offshore export cable(s) may be installed before making landfall along the southwest coast of Massachusetts within the Offshore Routing Envelope. If it becomes necessary to employ the South Coast Variant and a second grid interconnection point is secured, the Proponent understands that BOEM would conduct supplemental review of those portions of the South Coast Variant not otherwise considered in the final environmental impact statement.

The South Coast Variant is included in the COP to provide the Proponent with the commercial flexibility required should technical, logistical, grid interconnection, or other unforeseen issues arise during the COP review and engineering processes that preclude one or more Phase 2 export cables from interconnecting at the West Barnstable Substation. If the South Coast Variant is used for Phase 2, there will be either (1) one export cable installed in the South Coast Variant and two export cables installed in the OECC, (2) two export cables installed in the South Coast Variant and one export cable installed in the OECC, or (3) three export cables installed in the South Coast Variant.

1 New England Wind will occupy all of Lease Area OCS-A 0534 and potentially a portion of Lease Area OCS-A 0501 in the event that Vineyard Wind 1 does not develop "spare" or extra positions included in Lease Area OCS-A 0501 and Vineyard Wind 1 assigns those positions to Lease Area OCS-A 0534. For the purposes of the COP, the SWDA is defined as all of Lease Area OCS-A 0534 and the southwest portion of Lease Area OCS-A 0501, as shown in Figure 1.0-1.

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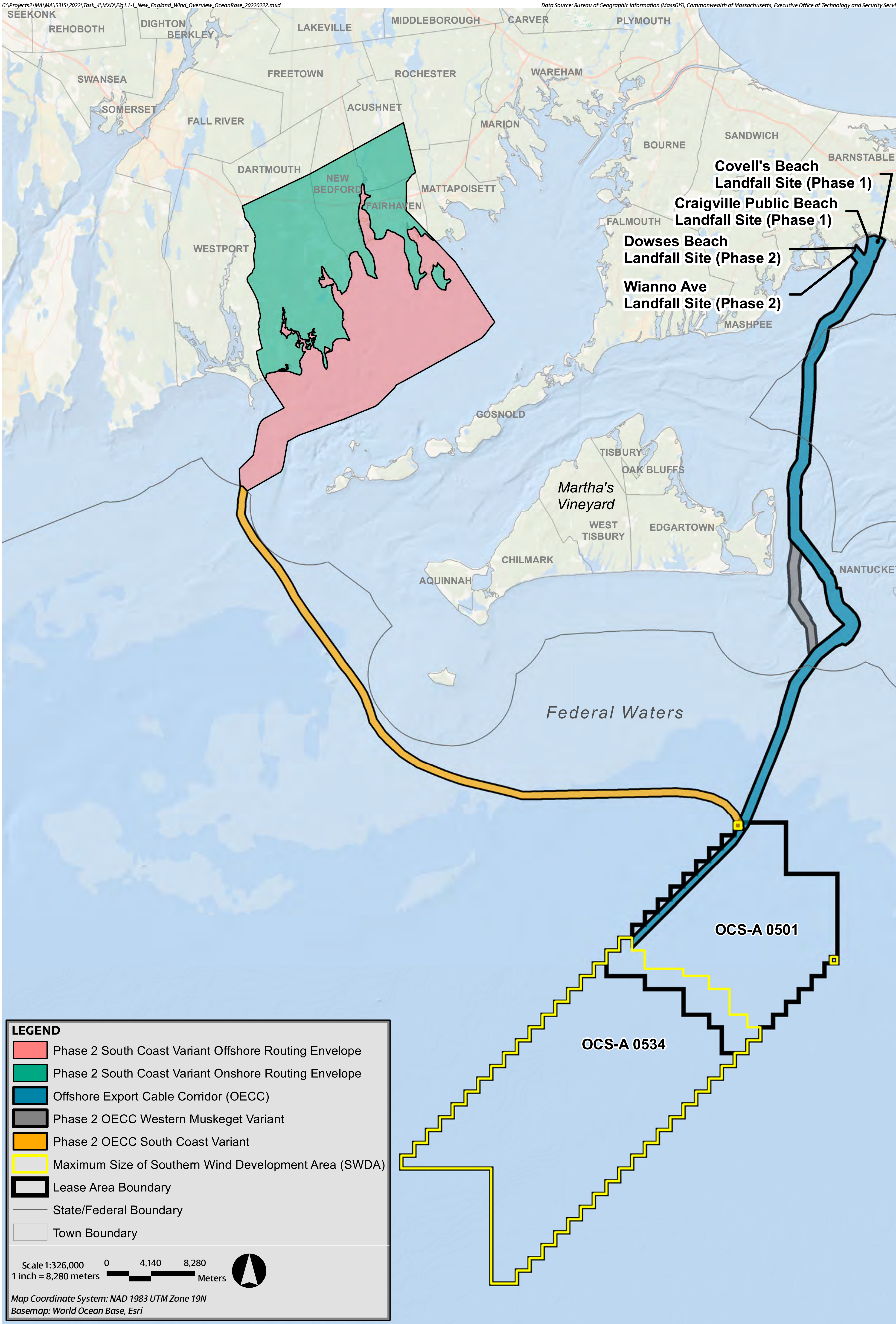
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



New England Wind

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Figure 1.0-1

New England Wind Overview

2.0 Description of the Affected Environment

The South Coast Variant diverges from the OECC at the northern boundary of Lease Area OCS-A 0501 and travels west-northwest to the state waters boundary near Buzzards Bay. The OECC is the surveyed area identified for routing the offshore export cables and is described in Appendix III-F of COP Volume III.

Habitat along the South Coast Variant was evaluated utilizing approximately 2,138.4 km (1,154.6 mi) of geophysical trackline data; 62 benthic grab sample stations with 122 grabs; 75 vibracores; and 62 underwater video transects collected in the fall of 2021. As described in Section 5.2 of Appendix A of the COP Addendum, potential sensitive habitat boundaries were classified and mapped based on the NMFS Recommendations for Mapping Fish Habitat (2021). NMFS (2021) requires the following habitat areas to be mapped:

- Soft Bottom habitats (i.e. mud and/or sand);
- Complex habitats (i.e. SAV, shell/shellfish, and/or hard bottom substrate);
- Heterogeneous Complex habitats (i.e. mix of soft and complex stations within a delineated area);
- Large Grained Complex habitats (e.g. large boulders); and
- Benthic Features (i.e. ripples, megaripples, and sand waves).

As described in Section 5.2 of Appendix A of the COP Addendum, to classify habitat boundaries according to NMFS (2021), multibeam, side scan, and backscatter data were used to define seafloor composition based on the acoustic reflectivity, which is a function of the bottom texture, roughness, slope, relief, and sediment grain size. Benthic grab samples, vibracores, and video transects were sampled to ground-truth acoustic data. Both benthic grab samples and video transects were classified using the NMFS-modified Coastal and Marine Ecological Classification Standard (CMECS) system through grain-size analysis for grab samples and visual estimation using a grid placed over the image so the percentages of relevant substrate could be determined where necessary (see Table 2.0-1 for South Coast Variant examples and Appendix III-F of COP Volume III for additional examples from New England Wind). All ground-truthing samples (grabs, video, and vibracores) were then assigned a final classification of Soft or Complex. Some video transects were designated as Complex Mix if the transect traversed both soft and complex bottom habitats.

As noted in Section 5.2 of Appendix A of the COP Addendum, the definition of Complex in the NMFS (2021) mapping recommendations has a small grain size threshold (greater than 2 mm) and low composition threshold (greater than 5% gravel), making it a very conservative classification system. Therefore, many ground truthing samples are classified as Complex, potentially more so than if other classification systems such as Auster (1998) or USCS had been used. Many of the samples that are considered Complex, such as those in the Gravelly Group, have low percentages of gravel (5 to 30%) and a small grain size of Pebbles/Granules (2 to 64 mm). Areas with this low percentage of gravel and small grain size such as those to the east of Southwest Shoal, though classified as Heterogeneous Complex Habitats, do not have the same habitat values as areas with a higher quantity and larger gravel such as those within dense boulder fields and moraines. Because the NMFS habitat classifications are broad enough to include these varying levels of habitat values within the Complex and Heterogeneous Complex Habitat categories, habitat areas that have lower habitat value are classified as Complex or Heterogeneous Complex Habitat.

Delineated habitat boundaries were assigned one of four habitat categories: Complex, Heterogeneous Complex, Large Grained Complex, or Soft Bottom based on classification of ground-truthing samples within those areas. Where there was no difference in sonar data over a large area, or the only difference was bedform fields, ground-truthing was used to refine boundaries. Sonar-delineated boundaries that bordered other boundaries of the same habitat category were kept as separate boundaries (i.e. not merged) to illustrate differences in sonar data that showed potentially different ground types (i.e. variation in quantity of type of Complex habitat). Benthic Features, including bedforms, were delineated using vertically-exaggerated multibeam and side scan sonar data. Additionally, larger scale characterizations of the Massachusetts Wind Energy Area (MA WEA) from Guida et al. (2017) were used to describe the regional setting. Large scale maps of bottom habitats and benthic features located within the South Coast Variant, developed following NMFS (2021), are presented in Annex I.

Table 2.0-2 summarizes the benthic habitat classification for the South Coast Variant in federal waters (from the SWDA boundary to the state waters boundary) and the OECC (from the SWDA boundary to the Phase 2 landfall site(s) in Barnstable, Massachusetts). If the South Coast Variant is used for Phase 2, there will be either (1) one export cable installed in the South Coast Variant and two export cables installed in the OECC; (2) two export cables installed in the South Coast Variant and one export cable installed in the OECC; or (3) three export cables installed in the South Coast Variant.

Soft Bottom habitats are the most common along the South Coast Variant and make up approximately 84% of the entire corridor (Table 2.0-2). Large stretches of Soft Bottom habitat were found in the northern and southern portions of the South Coast Variant (Figure 2.0-1 through Figure 2.0-3; Annex I). These areas typically contain a sandy surficial layer that is either highly mobile and comprised of migrating bedforms or flat and stable, mostly void of active sediment transport features.

Complex Habitat, defined as hard bottom substrates, hard bottom with epifauna or macroalgae cover, and vegetated habitats (NMFS 2021), was identified along approximately 7% of the South Coast Variant, primarily in one patch in the middle of the South Coast Variant near Southwest Shoal located southwest of Nomans Island (Figure 2.0-2; Annex I). Ground-truthing determined most of the Complex Habitat to be Gravelly Sand or Sandy Gravel (Table 2.0-1). Several areas Southwest of Nomans Island contained coarse deposits and hard bottom (Gravel Pavement and Boulders) with various encrusting organism communities, though this was found to be fairly rare (Fugro 2022). Large boulders (greater than 4 m in size) are present within portions of the South Coast Variant, but in very low quantities as compared to smaller boulders, which are more abundant. The large boulders are either intermixed with smaller boulders in boulder fields or present as isolated boulders in sandy areas. Areas with large boulders were not in dense enough quantities to warrant classification of Large Grained Complex because they did not cover 50% or more of the seafloor in a delineated area. Therefore, areas where large boulders on sand are present have been classified as either Complex or Heterogeneous Complex habitat and no Large Grained Complex habitat was designated in the South Coast Variant. Additionally, no rock outcrops were present in the South Coast Variant. Visual data found that attached macroalgae was commonly present along the South Coast Variant especially near the middle and nearshore end of the corridor (Fugro 2022).

Heterogeneous Complex habitat includes areas in which ground-truthing revealed mixed patches of both Complex and Soft Bottom habitat (NMFS 2021). This type of habitat was found in roughly 9% of the South Coast Variant, located near the middle portion of the South Coast Variant and scattered in small patches near the state waters boundary in the northern portion of the South Coast Variant (Figure 2.0-1 & Figure 2.0-2; Annex I). These habitats mostly included areas with small grained coarse material and/or low percentages of gravel Large Grained Complex habitat is defined as delineated areas where ground truthing or sonar data showed rock outcrops or abundant large boulders.

Table 2.0-1 Examples of CMECS defined substrates captured during 2021 underwater video and benthic grab sampling throughout the South Coast Variant of New England Wind

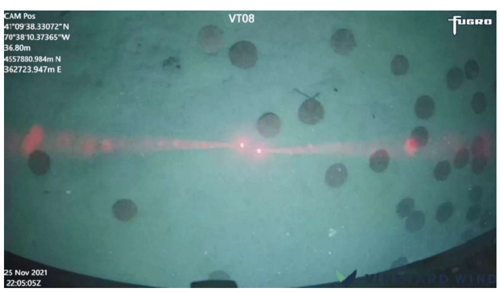
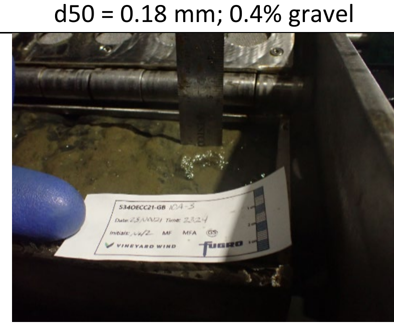
CMECS Substrate and NMFS (2021) Designation	Underwater Video	Grab Sample
Fine/Very Fine Sand; Soft Bottom	 VT08	 534OECC21-GB12C-1 d50 = 0.18 mm; 0.4% gravel
Gravelly Muddy Sand; Complex	(See Grab Sample for Example Image)	 534OECC21-GB10A-3 d50 = 0.2; 5.2% gravel

Table 2.0-1 Examples of CMECS defined substrates captured during 2021 underwater video and benthic grab sampling throughout the South Coast Variant of New England Wind (Continued)

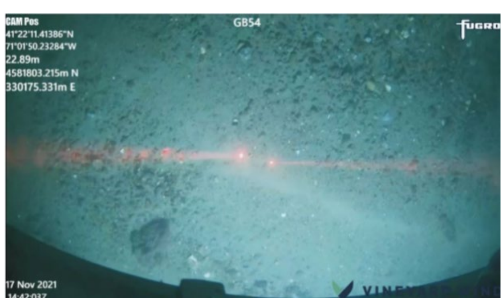
CMECS Substrate and NMFS (2021) Designation	Underwater Video	Grab Sample
Gravelly Sand; Complex	 VT36	 534OECC21-GB20B-2 d50 = 0.82 mm; 7.1% gravel
Medium Sand; Soft Bottom	 VT15	 534OECC21-GB44A-2 d50 = 0.28 mm; 0.1% gravel
Boulder; Complex	 VT41	(See Underwater Video for Example Image)
Sandy Gravel; Complex	 534OECC21-GB54C	 534OECC21-GB54A-1 d50 = 1.29 mm; 36.9% gravel

Table 2.0-1 **Examples of CMECS defined substrates captured during 2021 underwater video and benthic grab sampling throughout the South Coast Variant of New England Wind (Continued)**

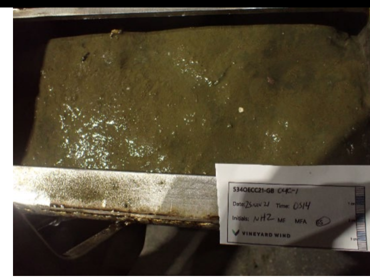
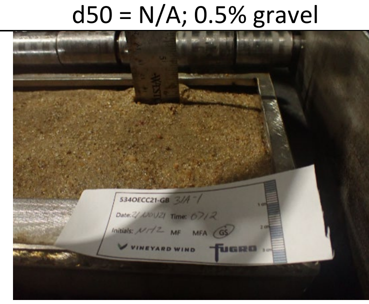
CMECS Substrate and NMFS (2021) Designation	Underwater Video	Grab Sample
Sandy Mud; Soft Bottom	(See Grab Sample for Example Image)	 534OECC21-GB04C-1 d50 = N/A; 0.5% gravel
Very Coarse/Coarse Sand; Soft Bottom	(See Grab Sample for Example Image)	 534OECC21-GB31A-1 d50 = 0.61 mm; 4% gravel

Table 2.0-2 Benthic Habitat Classification in the OECC and South Coast Variant of New England Wind

Habitat Type	Offshore Export Cable Corridor[1]			South Coast Variant[2]		
	Km^2	Acres	%	Km^2	Acres	%
Complex	7.9	1,956	9	4.0	986	7
Heterogeneous Complex	25.0	6,171	30	5.3	1,312	9
Large Grained Complex	0.04	10	<0.1	0	0	0
Soft Bottom	50.6	12,511	61	48.0	11,867	84

Notes:

1. The Offshore Export Cable Corridor includes habitat types within the corridor that travels from the SWDA northward along the eastern side of Muskeget Channel toward landfall sites in the Town of Barnstable.
2. The Phase 2 OECC South Coast Variant includes habitat types within the corridor that traverses from the SWDA boundary to the state waters boundary near Buzzards Bay.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

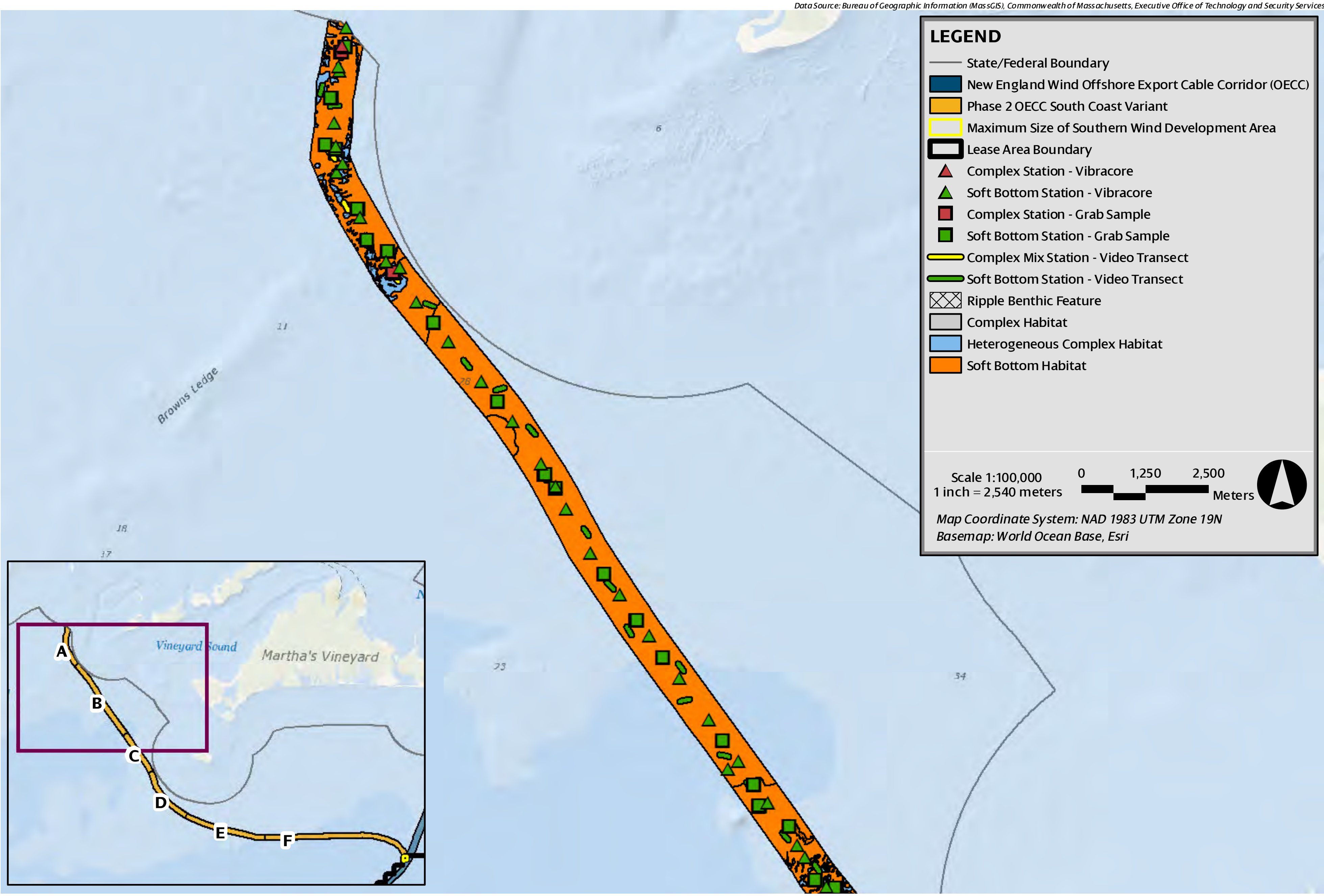


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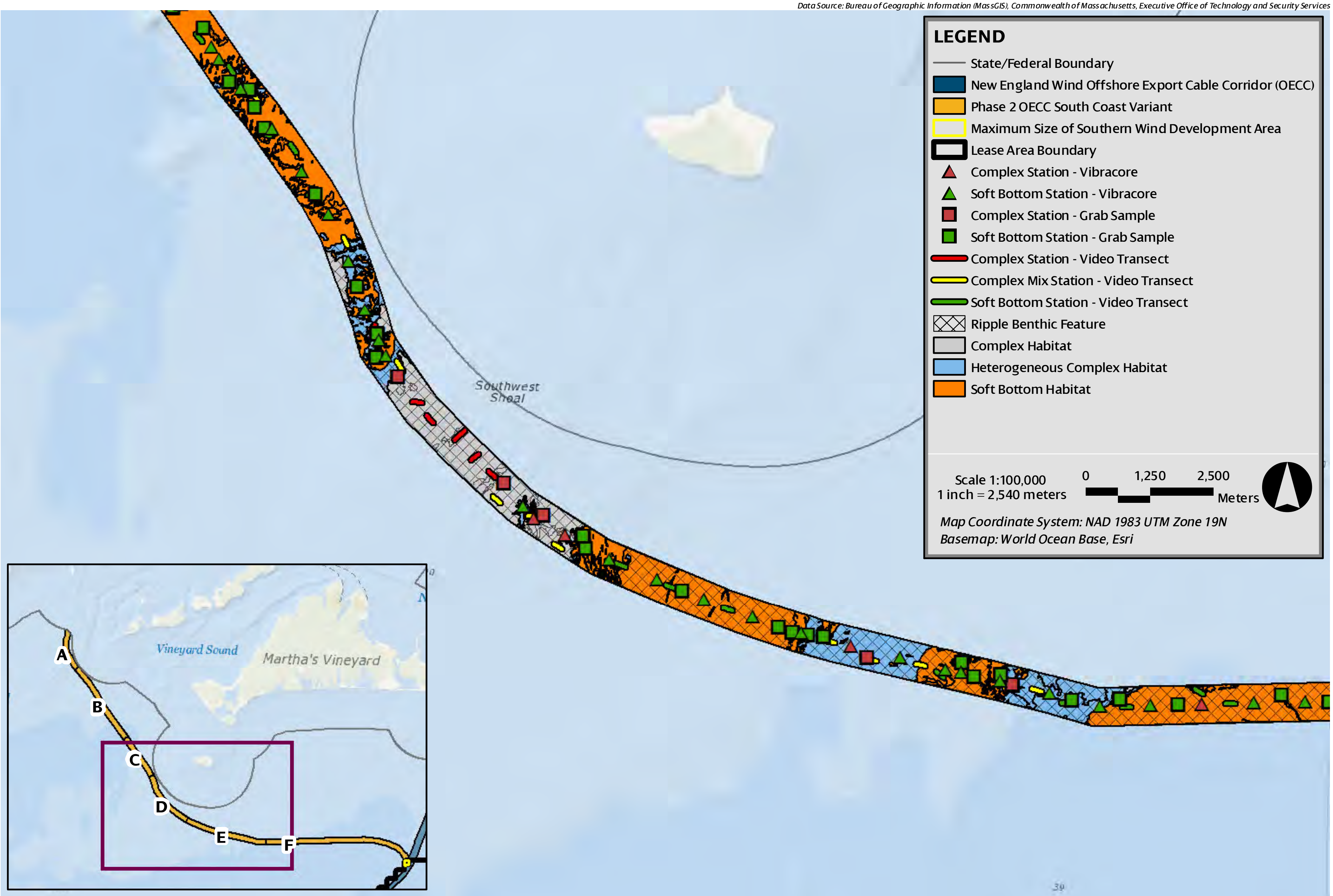
Figure 2.0-2

Habitat Types, Benthic Features, and Ground-truth Sample Locations in the Northern Portion of the South Coast Variant Following NMFS Recommendations for Mapping Essential Fish Habitat (2021)



New England Wind
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Figure 2.0-2

Habitat Types, Benthic Features, and Ground-truth Sample Locations in the Central Portion of the South Coast Variant Following NMFS Recommendations for Mapping Essential Fish Habitat (2021)

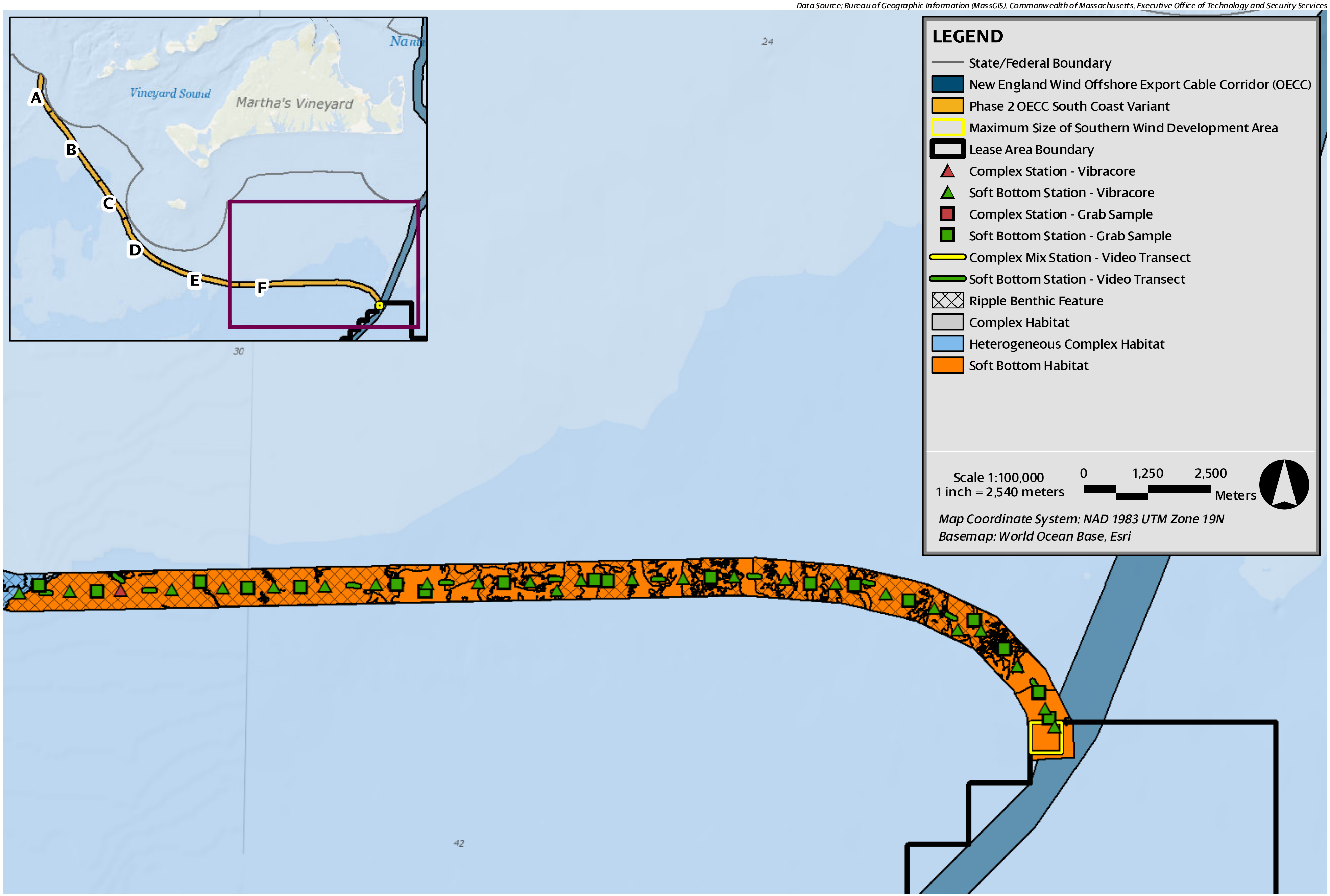

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Figure 2.0-3

Habitat Types, Benthic Features, and Ground-truth Sample Locations in the Southern Portion of the South Coast Variant Following NMFS Recommendations for Mapping Essential Fish Habitat (2021)

3.0 EFH Designations in the South Coast Variant

The EFH designations described in this section correspond to those currently accepted and designated by the New England Fishery Management Council, Mid-Atlantic Fishery Management Council, South Atlantic Fishery Management Council, and NOAA Highly Migratory Species Division (NEFMC 2017). Many EFH designations are determined for each cell in a 10' latitude by 10' longitude square grid in state and federal waters. The South Coast Variant intersects seven cells (Figure 3.0-1)

EFH is designated for 36 fish species within the South Coast Variant (Table 3.0-1). Both substrate and water habitats are cited as EFH within the South Coast Variant. HAPC is also designated for Atlantic cod (*Gadus morhua*; Figure 3.0-2) and summer flounder (*Paralichthys dentatus*) and overlaps with the South Coast Variant. EFH and HAPC designations described for individual species are in the Appendix III-F of COP Volume III, along with descriptions of the importance of the various habitats present. Juvenile bluefish EFH is the only EFH that is present in the South Coast Variant, but not already present in the OECC and SWDA EFH assessments. Therefore, a description of the juvenile bluefish EFH is provided in this EFH Assessment.

Table 3.0-2 provides a summary of the seasonal presence of each life stage of the EFH species within the South Coast Variant.

Bluefish

Bluefish (*Pomatomus saltatrix*) EFH is designated in the South Coast Variant for the juvenile and adult life stages. Juveniles are pelagic once their fins are fully developed allowing them to migrate into nearshore estuarine habitats from late May to early June. Juvenile bluefish have appeared in Massachusetts inshore trawl surveys in June and catch increases through August and September. No winter occurrences of juveniles have been observed in trawls (Shepherd and Packer 2005). The juveniles begin a southerly migration from the estuaries beginning in October (McBride et al. 1995). Adult bluefish inhabit pelagic waters in and north of the Middle Atlantic Bight for much of the year; however, they make seasonal migrations south in the winter (Shepherd and Packer 2005). Bluefish opportunistically forage on regionally and seasonally abundant fish species.

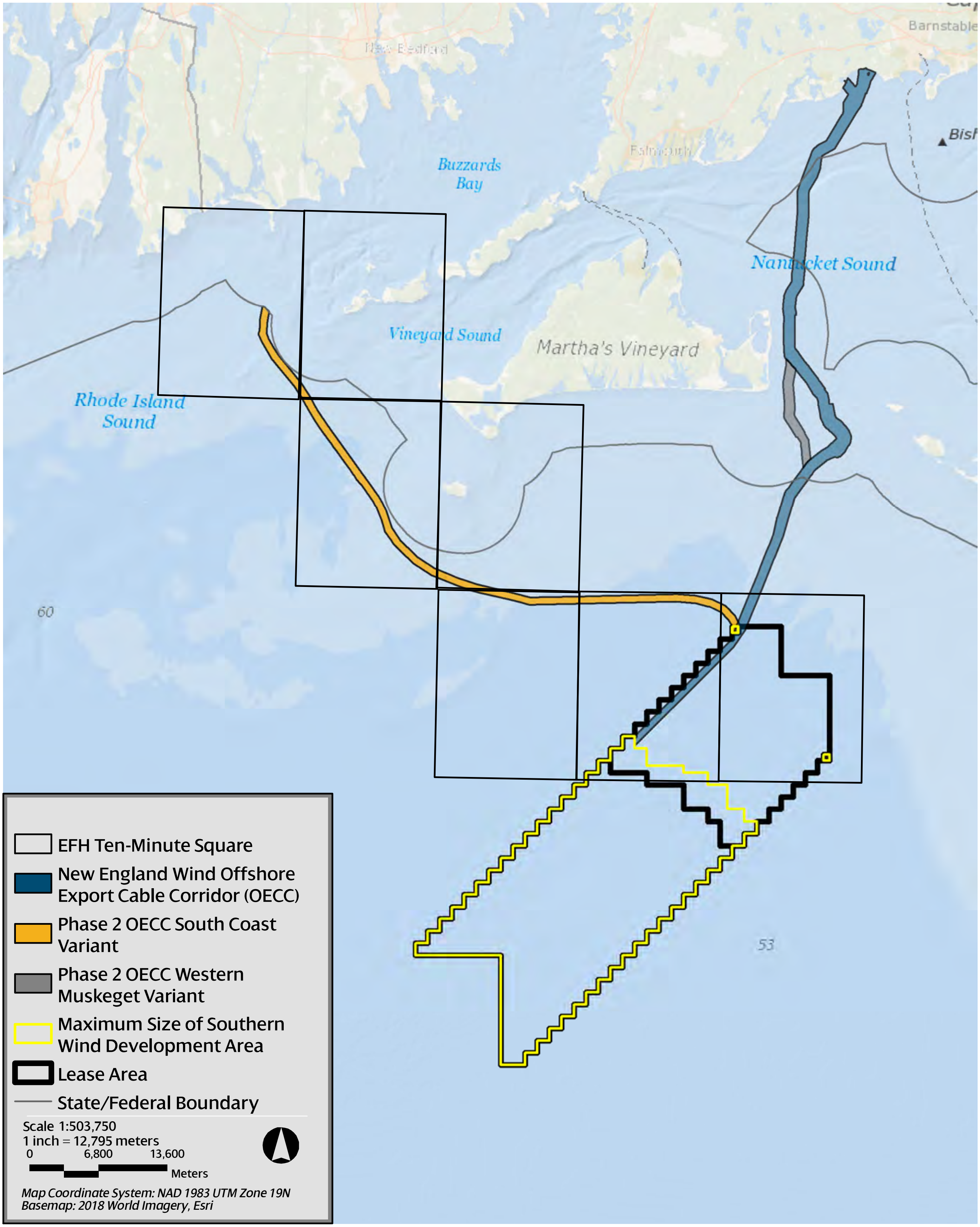

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Figure 3.0-1
EFH Grid Units as Designated by NOAA Fisheries that Intersect with the South Coast Variant

Table 3.0-1 EFH Designated Species in the Phase 2 OECC South Coast Variant of New England Wind. C = Complex Habitat; S = Soft Bottom Habitat; HC = Heterogeneous Complex; P = Pelagic

Species	Eggs	Larvae/ Neonate[1]	Juveniles	Adults	Species also present in SWDA and/or OECC	HAPC
American plaice (*Hippoglossoides platessoides*)		P			X	
Atlantic albacore tuna (*Thunnus alalunga)*	-	-	P	P	X	
Atlantic bluefin tuna *(Thunnus thynnus)*[3]			P	P	X	
Atlantic butterfish *(Peprilus triacanthus)*	P	P	P	P	X	
Atlantic cod *(Gadus morhua)*	C	C	C	C	X	X
Atlantic herring *(Clupea harengus)*	HC	P	P, HC	P, HC	X	
Atlantic mackerel *(Scomber scombrus)*	P	P	P		X	
Atlantic skipjack tuna *(Katsuwonus pelami)*				P	X	
Atlantic surf clam *(Spisula solidissima)*	-	-	S	S	X	
Atlantic yellowfin tuna (*Thunnus albacares*)			P	p	X	
Black sea bass *(Centropristis striata)*			C, HC	C, HC	X	
Blue shark (*Prionace glauca)*	-	P	P	P	X	
Bluefish *(Pomatomus saltatrix)*			P	P	X	
Dusky shark *(Carcharhinus obscurus)*[2, 3]	-	P	P	P	X	
Haddock *(Melanogrammus aeglefinus)*	C, S	P			X	
Little skate *(Leucoraja erinacea)*	-	-	S, HC	S, HC	X	

Table 3.0-1 EFH Designated Species in the Phase 2 OECC South Coast Variant of New England Wind. C = Complex Habitat; S = Soft Bottom Habitat; HC = Heterogeneous Complex; P = Pelagic (Continued)

Species	Eggs	Larvae/ Neonate[1]	Juveniles	Adults	Species also present in SWDA and/or OECC	HAPC
Longfin inshore squid *(Loligo pealeii)*	S, HC	-	P	P	X	
Monkfish *(Lophius americanus)*	P	P	S, HC	S, HC	X	
Northern shortfin squid *(Illex illecebrosu)*				P	X	
Ocean pout *(Macrozoarces americanus)*	C	-	S, HC	S, HC	X	
Ocean quahog *(Artica islandica)*	-	-	S, HC	S, HC	X	
Pollock (*Pollachius virens)*	P	P	S, HC		X	
Red hake *(Urophycis chuss)*	P	P, S, HC	S, HC	S	X	
Sand tiger shark (*Carcharias taurus*)[3]	-	-	HC	HC	X	
Sandbar shark *(Carcharhinus plumbeus)*	-	-	P	P	X	
Scup *(Stenotomus chrysops)*			S, HC	S, HC	X	
Silver hake (*Merluccius bilinearis*)	P	P		S	X	
Spiny dogfish (*Squalus acanthias*)	-	-	S, HC	S, HC	X	
Summer flounder (*Paralichthys dentatus*)	S, P	P	S, HC	S, HC	X	X
White hake (*Urophycis tenuis*)		P	P, S, HC		X	
White shark (*Carcharodon carcharias)*[2]	-	P	P	P	X	
Windowpane flounder (*Scophthalmus aquosus*)	P	P	S	S	X	

Table 3.0-1 EFH Designated Species in the Phase 2 OECC South Coast Variant of New England Wind. C = Complex Habitat; S = Soft Bottom Habitat; HC = Heterogeneous Complex; P = Pelagic (Continued)

Species	Eggs	Larvae/ Neonate[1]	Juveniles	Adults	Species also present in SWDA and/or OECC	HAPC
Winter flounder (*Pseudopleuronectes americanus*)	S, HC	S, HC	S, HC	S, HC	X	
Winter skate (*Leucoraja ocellata*)	-	-	S, HC	S, HC	X	
Witch flounder (*Glyptocephalus cynoglossus*)	P	P			X	
Yellowtail flounder (*Limanda ferruginea*)	P	P	S	S	X	

Notes:
1. Shark species emerge from egg cases fully developed and are referred to as neonates.
2. Indicates EFH designations are the same for all life stages or designations are not specified by life stage.
3. Indicates Species of Concern.
4. "-" indicates EFH has not been designated for this life stage or the life stages are not relevant to that species life cycle.

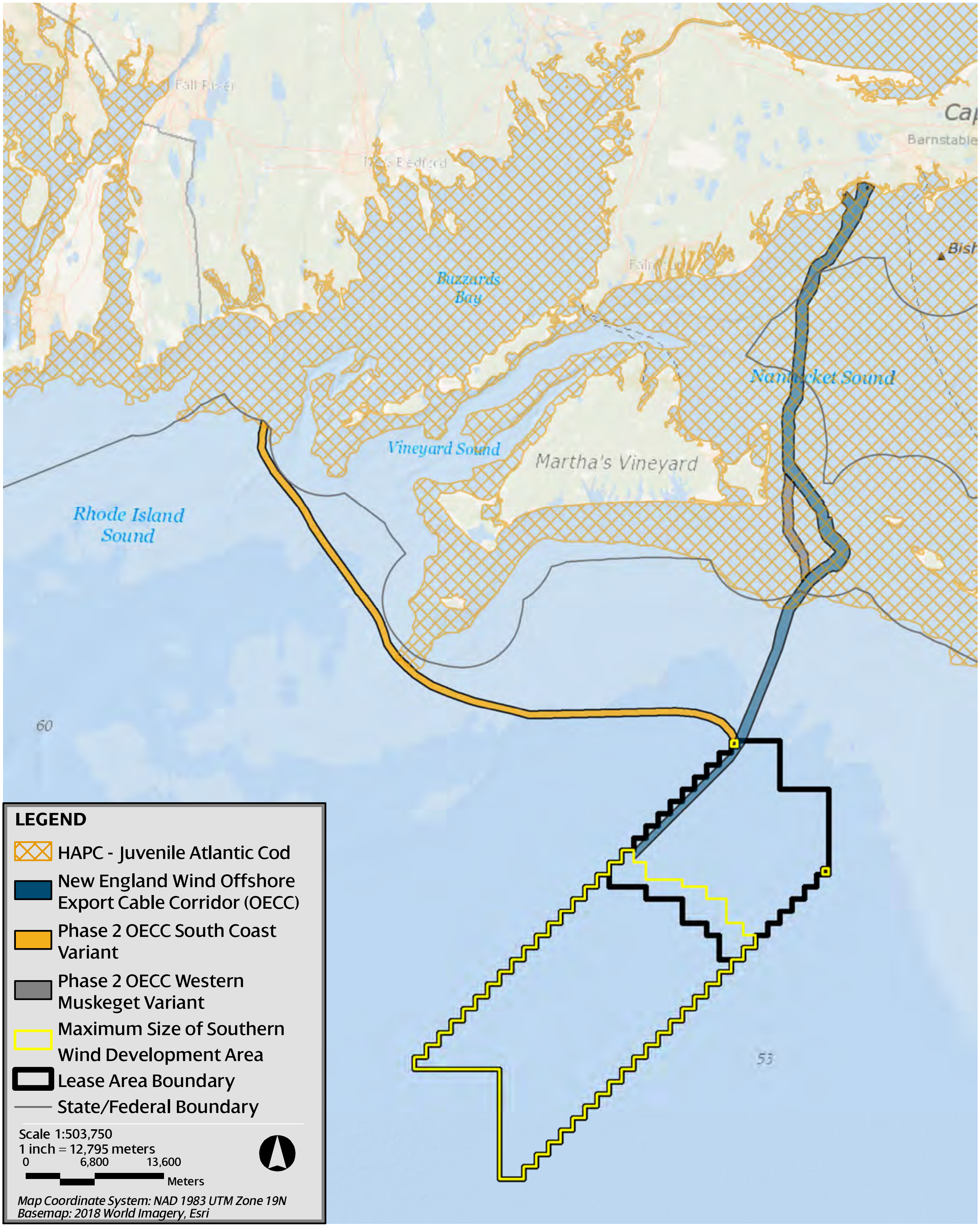

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Figure 3.0-2

Habitat Area of Particular Concern for Juvenile Atlantic Cod (Gadus morhua) as Designated by the New England Fishery Management Council (NEFMC)

Table 3.0-2 Annual Presence of Each Life Stage of EFH Species in the South Coast Variant[1]

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
American plaice (*Hippoglossoides platessoides*)			L	L	L	L	L					
Atlantic albacore tuna (*Thunnus alalunga*)[2]						J	J	J A	J A	J A		
Atlantic bluefin tuna (*Thunnus thynnus*)[2]							J A	J A	J A	J A	J A	
Atlantic butterfish (*Peprilus triacanthus*)[2]	J A	J A	E J A	E J A	E J A	All	All	All	L J A	L J A	L J A	J A
Atlantic cod (*Gadus morhua*)[2]	E J A	E J A	All	All	All	J A	J A	J A	E J A	E J A	E J A	E J A
Atlantic herring (*Clupea harengus*)[2]	All	All	All	All	A	A	A	All	All	All	All	All
Atlantic mackerel (*Scomber scombrus*)[2]	A	A	A	E L A	All	All	J A	J A	A	A	A	A
Atlantic skipjack tuna (*Katsuwonus pelami*)[2]					J A	J A	J A	J A	J A	J A	J A	
Atlantic surf clam (*Spisula solidissima*)[2]	All	All	All	All	All	All	All	All	All	All	All	All
Atlantic yellowfin tuna (*Thunnus albacares*)[2]						J A	J A	J A	J A			
Black sea bass (*Centropristis striata*)[2]				J A	All	All	All	All	All	All	L J A	J A
Blue shark (*Prionace glauca*)					J A	J A	J A	J A	J A	J A		
Bluefish (*Pomatomus saltatrix*)[2]						J A	J A	J A	J A	J A		
Dusky shark (*Carcharhinus obscurus*)						J A	J A	J A	J A			
Haddock (*Melanogrammus aeglefinus*)[2]	L J A	L J A	All	All	All	L J A	L J A	J A	J A	J A	J A	J A
Little skate (*Leucoraja erinacea*)[2]	All	All	All	All	All	All	All	All	All	All	All	All
Longfin inshore squid (*Loligo pealeii*)[2]	All	All	All	All	All	All	All	All	All	All	All	All
Monkfish (*Lophius americanus*)[2]	J A	J A	All	All	All	All	All	All	All	J A	J A	J A
Northern shortfin squid (*Illex illecebrosu*)[2]	A	A	A	A	A	A	A	A	A	A	A	A
Ocean pout (*Macrozoarces americanus*)	All	All	L J A	L J A	L J A	J A	J A	J A	J A	J A	All	All
Ocean quahog (*Artica islandica*)[2]	All	All	All	All	All	All	All	All	All	All	All	All
Pollock (*Pollachius virens*)[2]	EL	EL		J	J	J	J	J	J		E	EL
Red hake (*Urophycis chuss*)[2]	J A	J A	J A	J A	All	All	All	All	All	All	All	L J A
Sand tiger shark (*Carcharias taurus*)					N J	N J	N J	N J	N J			

Table 3.0-2 Annual Presence of Each Life Stage of EFH Species in the South Coast Variant[1] (Continued)

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sandbar shark (*Carcharhinus plumbeus*)						J A	J A	J A	J A			
Scup (*Stenotomus chrysops*)[2]					All	All	All	All	L J A	L J A		
Silver Hake *(Merluccius bilinearis)*[2]	All	All	All	All	All	All	All	All	All	All	All	All
Spiny dogfish (*Squalus acanthias*)[2]	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
Summer flounder *(Paralichthys dentatus)*[2]	All	All	E J A	E J A	E J A	J A	J A	J A	L J A	All	All	All
White hake (*Urophycis tenuis)*[2]						E J	E J	E J	E J	E J	J	
White shark *(Carcharodon carcharias)*[3]					J A	J A	J A	J A	J A	J A	J A	
Windowpane flounder *(Scophthalmus aquosus)*[2]	J A	J A	J A	J A	J A	J A	All	All	J A	J A	J A	J A
Winter flounder *(Pseudopleuronectes americanus)*[2]	J A	E J A	All	All	All	All	L J A	J A	J A	J A	J A	J A
Winter skate (*Leucoraja ocellata*)[2]	J	J	J A	J A	J A				J A	J A	J A	J
Witch flounder *(Glyptocephalus cynoglossus)*[2]	L J A	L J A	All	All	All	All	All	All	All	All	L J A	L J A
Yellowtail flounder *(Limanda ferruginea)*[2]	J A	J A	J A	E J A	All	All	L J A	J A	J A	J A	J A	J A

Notes:

1. E=Eggs, L=Larvae, N=Neonate, J=Juvenile, A=Adult, All=All life stages potentially present throughout the year.
2. Species of commercial or recreational importance.
3. Indicates EFH designations are the same for all life stages or designations are not specified by life stage.

4.0 Potential Impacts of New England Wind

Appendix III-F of COP Volume III provides a detailed EFH assessment of potential impacts associated with the OECC. This EFH Assessment incorporates by reference the analyses in Appendix III-F of COP Volume III and is focused on describing impacts that are unique to the South Coast Variant. Accordingly, descriptions of impacts that are associated with the OECC or its Variants more generally and that are not specific to the South Coast Variant are not repeated in this EFH Assessment. Specifically, for a list of impact producing factors and a description of potential impacts related to increased sound exposure, electromagnetic fields, cable maintenance, additional O&M impacts, and decommissioning, please refer to Appendix III-F COP Volume III.

4.1 Habitat Alteration

If the South Coast Variant is used for Phase 2, there will be either (1) one export cable installed in the South Coast Variant and two export cables installed in the OECC, (2) two export cables installed in the South Coast Variant and one export cable installed in the OECC, or (3) three export cables installed in the South Coast Variant. Permanent habitat alteration may occur from the potential installation of cable protection (if required), which alters habitat through the addition of artificial hard substrate. Temporary habitat disturbance may occur from cable installation, anchoring, the potential dredging of the tops of sand waves in certain locations, and the limited use of jack-up vessels for cable splicing.

The estimated maximum area of potential temporary and permanent impact to benthic habitat in the South Coast Variant are presented in Table 4.0-1. Values are primarily based the percentage of each habitat type in the South Coast Variant and should be considered approximate since the specific locations of permanent and temporary impacts (such as placement of cable protection and location of any needed dredging) are highly dependent upon the ongoing export cable engineering process and the final selected cable routes.

Section 6.6 of COP Volume III provides an assessment of potential impacts from sediment deposition associated with the OECC and discusses the 1 mm (0.04 in) threshold for demersal eggs and 20 mm (0.8 in) threshold for shellfish used for impact assessment. Additional modeling (COP Addendum Appendix B) of cable installation in the South Coast Variant indicated that deposition of 1 mm (0.04 in) or greater (i.e., the threshold of concern for demersal eggs) was constrained to within 200 m (656 ft) from the cable centerline. There was no deposition at or above 5 mm; thus, no impact is expected for shellfish. At these deposition thicknesses, there are limited areas with potential temporary or permanent negative impacts to the hard-bottom habitats and associated sessile or immobile species or life stages.

Table 4.0-1 New England Wind Approximate Maximum Area of Potential Temporary (Temp.) and Permanent (Perm.) Impacts to Benthic Habitat during Construction within the Phase 2 OECC South Coast Variant.

Habitat Type	1 Cable in South Coast Variant (federal waters only) + 2 Cables in OECC Through Eastern Muskeget [1]				2 Cables in South Coast Variant (federal waters only) + 1 Cable in OECC Through Eastern Muskeget [1]				3 Cables in South Coast Variant (federal waters only)				3 Cables in OECC Through Eastern Muskeget[2]			
	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.
	Km^2		Acres		Km^2		Acres		Km^2		Acres		Km^2		Acres	
Complex	0.09	0.08	23	21	0.10	0.12	24	30	0.10	0.15	24	38	0.09	0.04	23	11
Heterogeneous Complex	0.19	0.04	47	10	0.15	0.03	37	6	0.11	0.01	27	3	0.23	0.06	58	14
Large Grained Complex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Soft Bottom	1.12	0.02	276	4	1.08	0.01	266	3	1.03	0	255	1	1.13	0.03	280	7

Notes:

1. The area of impacts to habitat type varies with the specific export cable alignment selected. The one or two Phase 2 export cable alignments used in this analysis have the greatest estimated impacts within the South Coast Variant. If a different cable alignment was selected, impacts to habitats may vary slightly.
2. This scenario was added to this table for reference only in order to compare the Phase 2 OECC South Coast Variant impacts (from the SWDA boundary to the state waters boundary) to the Phase 2 OECC impacts (from the SWDA boundary to the landfall sites in Barnstable, Massachusetts).

4.2 Suspended Sediments and Water Withdrawals

Appendix III-F of COP Volume III provides an assessment of potential impacts from suspended sediments and water withdrawals associated with the SWDA and OECC and discusses the 10 mg/L and 100 mg/L thresholds used for impact assessment. Additional sediment dispersion modeling (COP Addendum Appendix B) of cable installation in the South Coast Variant indicated that concentrations of suspended sediments above 10 mg/L extended up to a maximum of 0.9 km (0.5 NM) from the cable centerline. Most of the sediment settled out in less than three hours, with only a small area (0.2 km^2) remaining above the 10 mg/L threshold at the three-hour mark. All sediments settle out of suspension within six hours; thus, concentrations over the short duration do not exceed the potential lethal or sublethal impact thresholds for fish and invertebrates.

Direct mortality of planktonic life stages could potentially occur via water withdrawals for cable installation and dredging vessels during construction of the South Coast Variant. Mortality of organisms entrained in water withdrawal pumps is expected to be 100% because of the physical stresses associated with being flushed through a pump system and potential temperature changes (USDOE MMS 2009). The BOEM DEIS (2018) for Vineyard Wind 1 determined that impacts from entrainment of finfish and invertebrates and their planktonic stages during construction would be moderate but would not have population-level effects. Water withdrawals for installation of up to three offshore export cables within the South Coast Variant can be estimated using the following assumptions:

- Cable installation occurs at a rate of up to 120 m/hr (394 ft/hr). The final installation speed will be specific to the contractor and cable installation equipment and may be different than listed here. A speed of 120 m/hr (394 ft/hr) is used to provide a general estimate of water usage.
- A jetting technique uses 11,300–45,000 liters per minute (3,000–12,000 gallons per minute) of water
- The maximum total length of offshore export cables for the South Coast Variant (from the SWDA boundary to the state waters boundary) is 362 km (196 NM).

Under these assumptions, water withdrawal volumes for the installation of three cables within the South Coast Variant (federal waters only) are expected to be approximately 2.1–8.2 billion liters (0.6–2.2 billion gallons).

4.3 Avoidance, Minimization, and Mitigation Measures

Several mitigation measures will be employed to avoid and minimize potential impacts to EFH within the South Coast Variant. These measures include the following:

- ♦ The location of the South Coast Variant was developed based upon careful consideration of multiple technical, environmental, and commercial factors. In particular, the location of the South Coast Variant was chosen in order to consolidate infrastructure with other commercial wind developments (i.e., for much of its length, the South Coast Variant parallels the proposed Mayflower Wind offshore export cable corridor), which helps to minimize environmental impacts.

- Offshore export cable installation will avoid important habitats and those considered HAPC, such as eelgrass beds and hard bottom sediments, if feasible. It may not be feasible to avoid all hard bottom sediments but the Proponent will work to identify technically feasible cable routes that avoid or minimize impacts to hard bottom sediments and avoid or minimize the need for cable protection.

- The Proponent has modeled simulations of several possible export cable installation methods and will prioritize the least environmentally harmful cable installation technique (see Appendix III-A of COP Volume III and Appendix B of the COP Addendum).

- Where feasible and considered safe, use mid-line buoys on anchor lines to minimize impacts from anchor line sweep.

The Proponent is committed to fisheries science and research as it relates to offshore wind energy development. Working with the University of Massachusetts Dartmouth School for Marine Science and Technology, the Proponent is currently collecting pre-construction fisheries data (via trawl and drop camera surveys) within the SWDA. The Proponent plans to develop a framework for during and post-construction fisheries studies within New England Wind. In recognition of the regional nature of fisheries science, the Proponent expects that such during and post-construction studies will involve coordination with other offshore wind energy developers in the MA WEA and Rhode Island/Massachusetts Wind Energy Area (RI/MA WEA). The Proponent also expects the development of the fisheries studies will be undertaken in coordination with BOEM, other federal and state agencies, fisheries stakeholders, academic institutions, and other stakeholders. The Proponent is already engaging in collaboration with other developers, fishing industry representatives, and state and federal agencies through its participation in the Responsible Offshore Science Alliance and a Regional Wildlife Science Entity.

The Proponent is also committed to developing an appropriate benthic monitoring framework for the South Coast Variant (see Appendix I of the COP Addendum for the draft framework). The framework considers the Benthic Habitat Monitoring Plan for Vineyard Wind 1 in Lease Area OCS-A 0501 and accounts for different habitat zones found within the South Coast Variant. The Proponent will continue to consult with BOEM and other federal and state agencies as appropriate to further refine the benthic monitoring framework for New England Wind and the South Coast Variant.

5.0 Conclusions

Most potential impacts to EFH within the South Coast Variant from export cable installation are expected to be temporary and localized, with the exception of direct habitat alterations. Direct habitat alterations from the installation of potential cable protection could result in long term (lasting for the duration of New England Wind operations) impacts to EFH, specifically by converting Soft Bottom habitat or open pelagic habitat to structured habitat. However, this habitat alteration would only impact the small proportion of the South Coast Variant as outlined in Table 4.0-1. The Proponent plans to avoid, minimize, and mitigate potential impacts to EFH, wherever possible, and will work to identify technically feasible cable routes within the South Coast Variant that avoid or minimize the potential need for cable protection.

6.0 References

Bureau of Ocean Energy Management [BOEM]. 2018. Vineyard Wind offshore wind energy project Draft Environmental Impact Statement. BOEM. OCS EIS/EA BOEM 2018-060. US Department of the Interior, Bureau of Ocean Energy Management, Headquarters, Herndon, VA. https://www.boem.gov/Vineyard-Wind-EIS/

Fugro. 2022. Vineyard Wind LLC. New England Wind 534 ECC Benthic Survey Factual Report. Doc no. 21020084-1.

McBride, R.S., M.D. Scherer, and J.C. Powell. 1995. Correlated variations in abundance, size, growth, and loss rates of age-0 bluefish in a southern New England estuary. Trans. Am. Fish. Soc. 124: 898-910.

Shepherd G. R., & Packer, D. B. (2005). Essential fish habitat source document: Bluefish *Pomatomus saltatrix* life history and habitat characteristics (2nd Edition). NOAA Tech Memo NMFS NE, 198, 89 pp.

United States Department of Energy, Minerals Management Service [USDOE MMS]. 2009. Final Environmental Impact Statement for the proposed Cape Wind Energy Project, Nantucket Sound, Massachusetts (adopted). DOE. DOE/EIS-0470. https://www.boem.gov/Cape-Wind-FEIS/

Annex I: Large-Scale Maps of Bottom Habitats and Benthic Features Located Within the Phase 2 OECC South Coast Variant of New England Wind Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021)

Habitat maps included in Annex I display the characterized delineations of benthic habitat type and Benthic Features along with all ground-truthing samples collected in the Phase 2 OECC South Coast Variant in 2021. Habitat along the Phase 2 OECC South Coast Variant is presented in a series of 80 maps at a scale of 1:5,000 based on the presence of Heterogenous Complex and Complex habitat observed throughout.

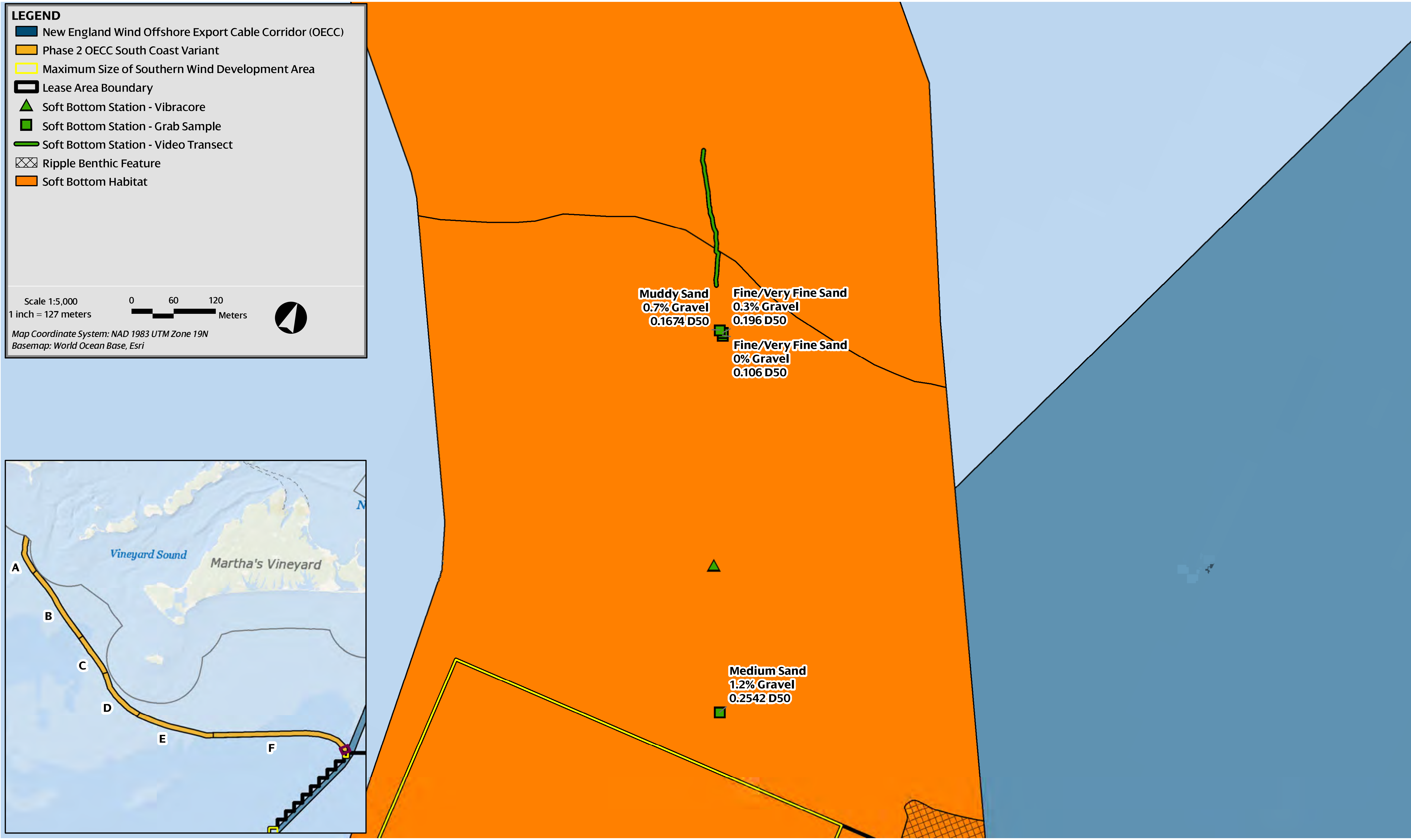
Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 1 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

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Figure 2 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

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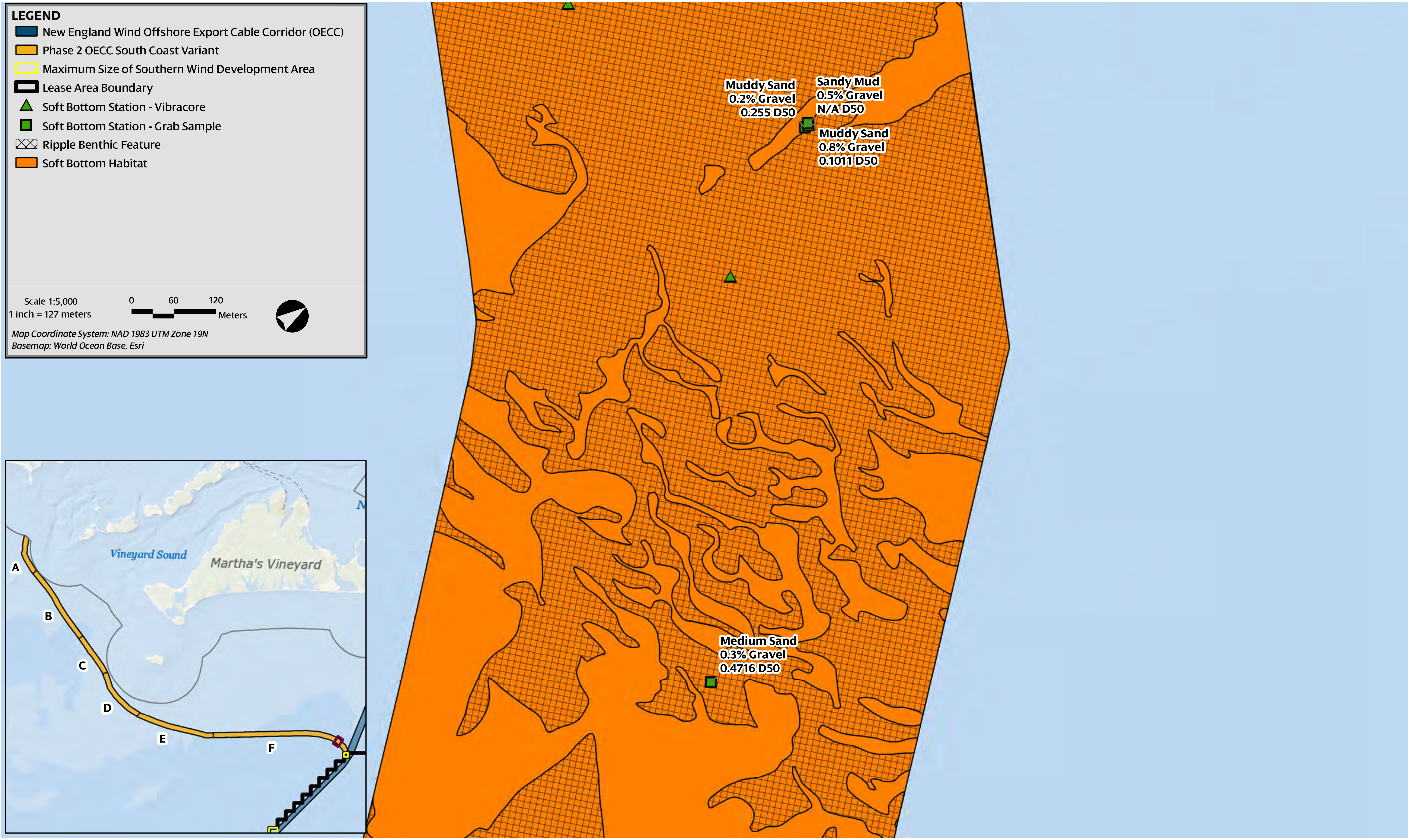
Figure 3 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind

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Figure 4 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

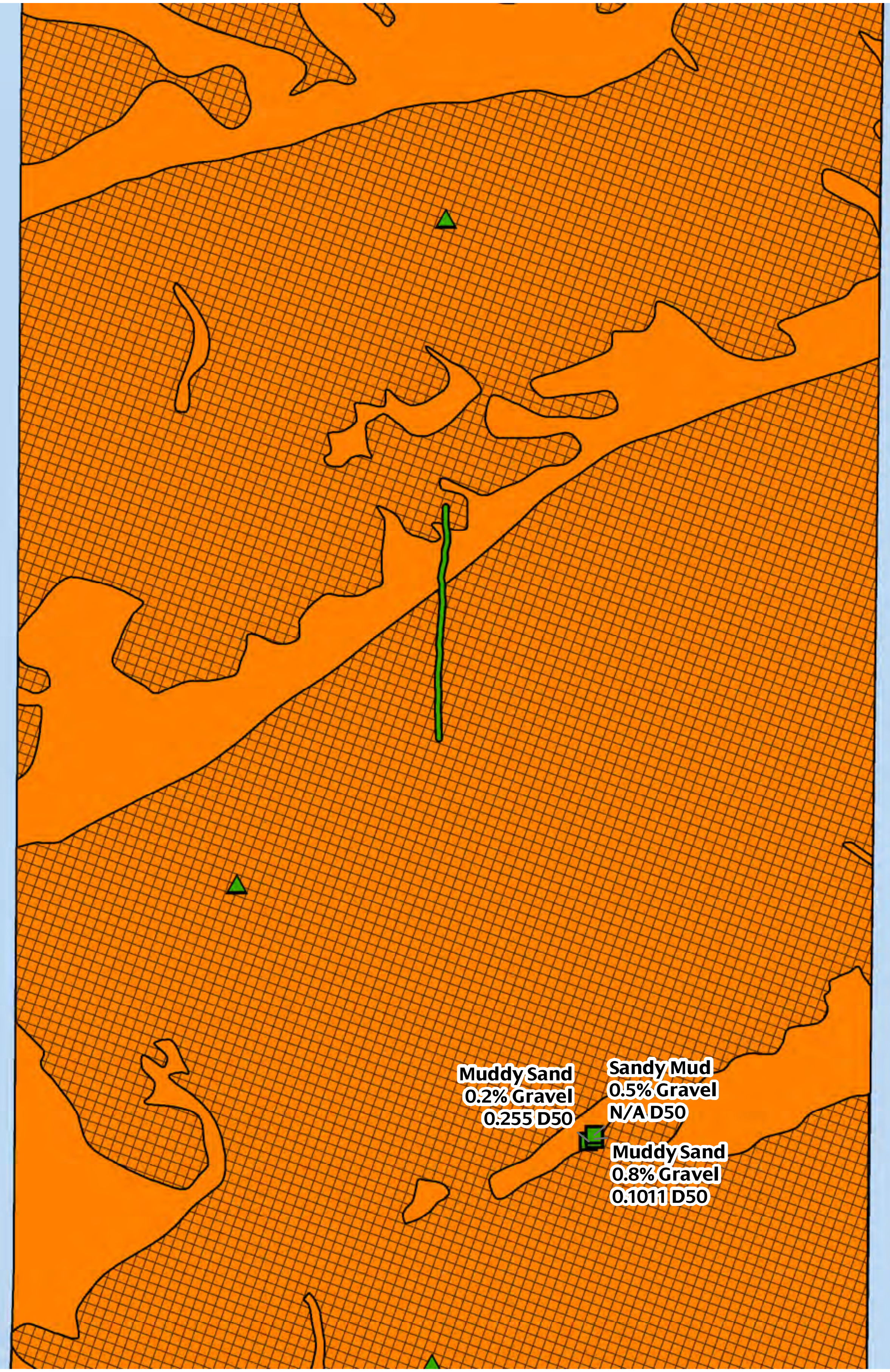
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

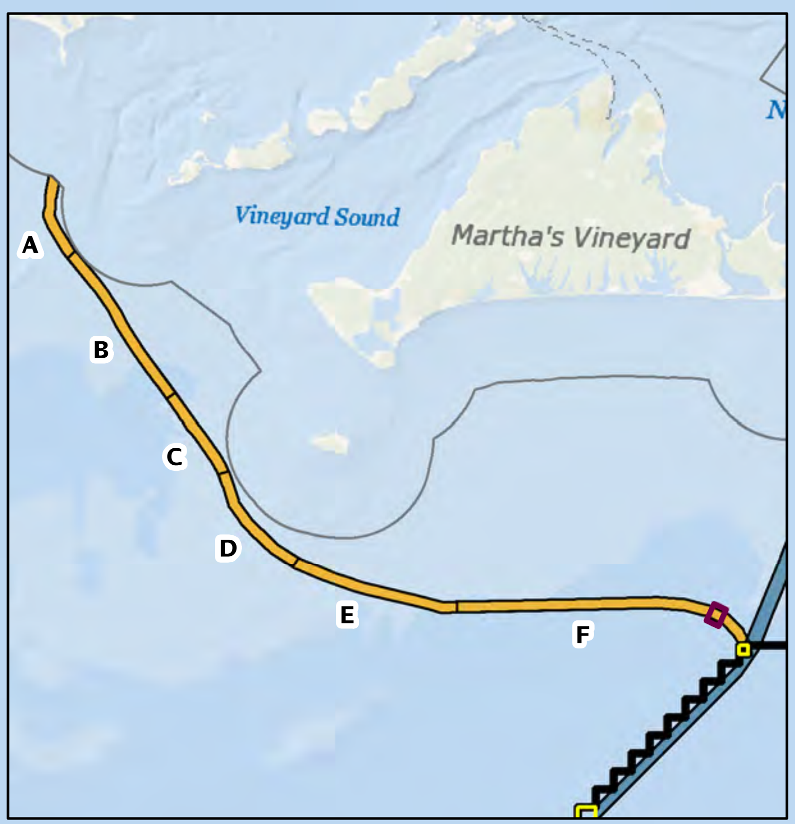
LEGEND

- New England Wind Offshore Export Cable Corridor (OECC)
- Phase 2 OECC South Coast Variant
- Maximum Size of Southern Wind Development Area
- Lease Area Boundary
- Soft Bottom Station - Vibracore
- Soft Bottom Station - Grab Sample
- Soft Bottom Station - Video Transect
- Ripple Benthic Feature
- Soft Bottom Habitat

Scale 1:5,000
1 inch = 127 meters
0 60 120 Meters

Map Coordinate System: NAD 1983 UTM Zone 19N
Basemap: World Ocean Base, Esri





Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
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Figure 5 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind

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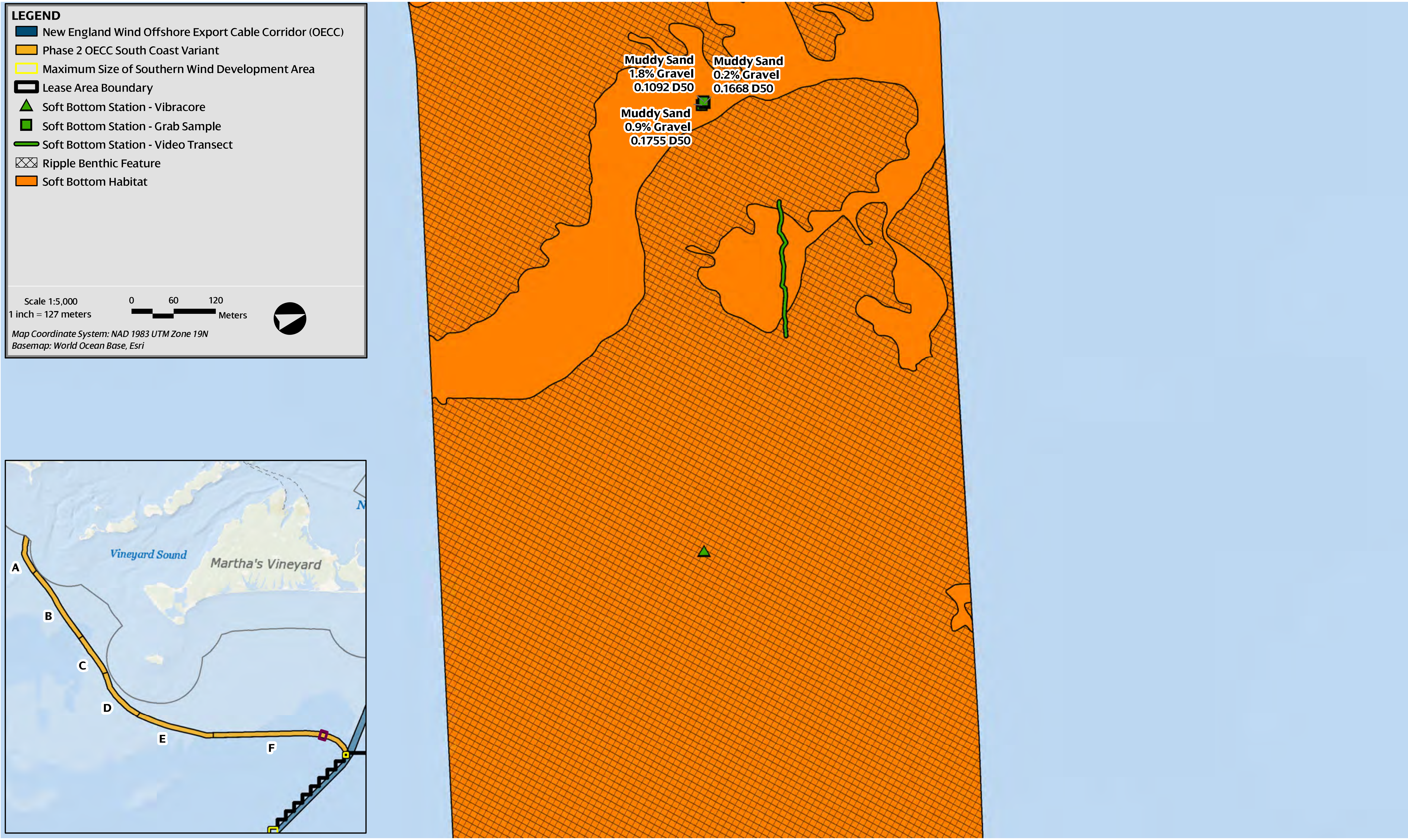
Figure 6 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
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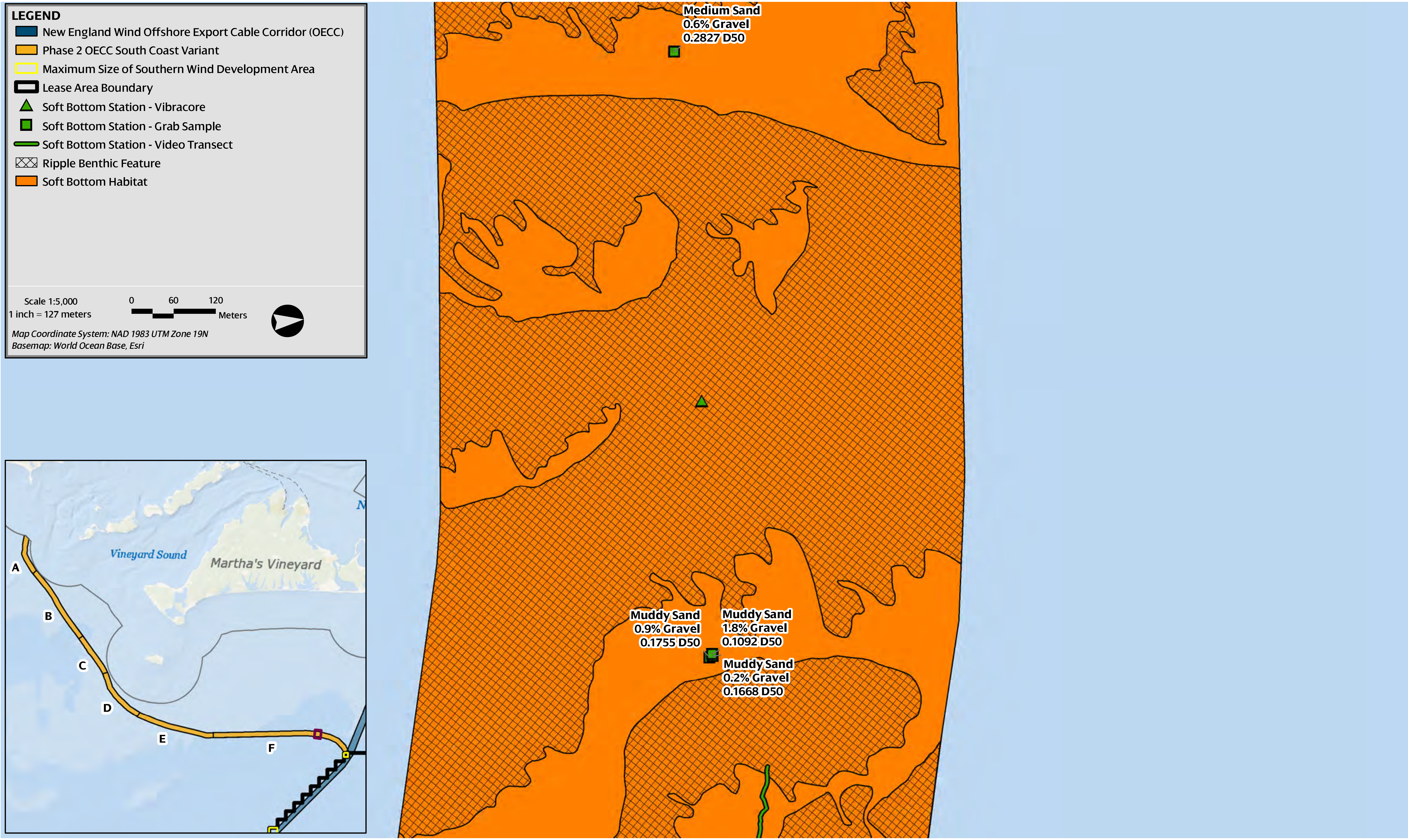
Figure 7 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind

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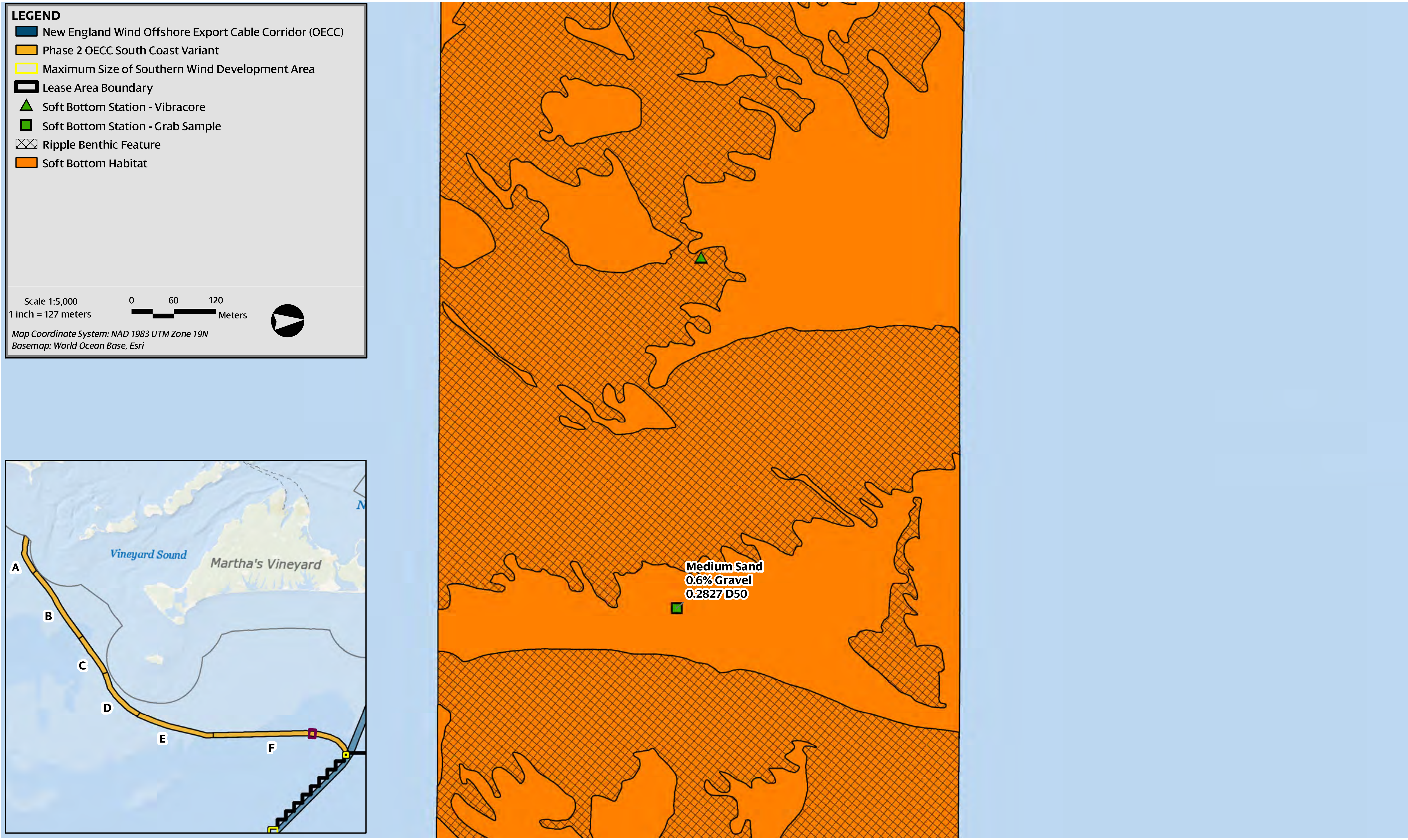
Figure 8 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
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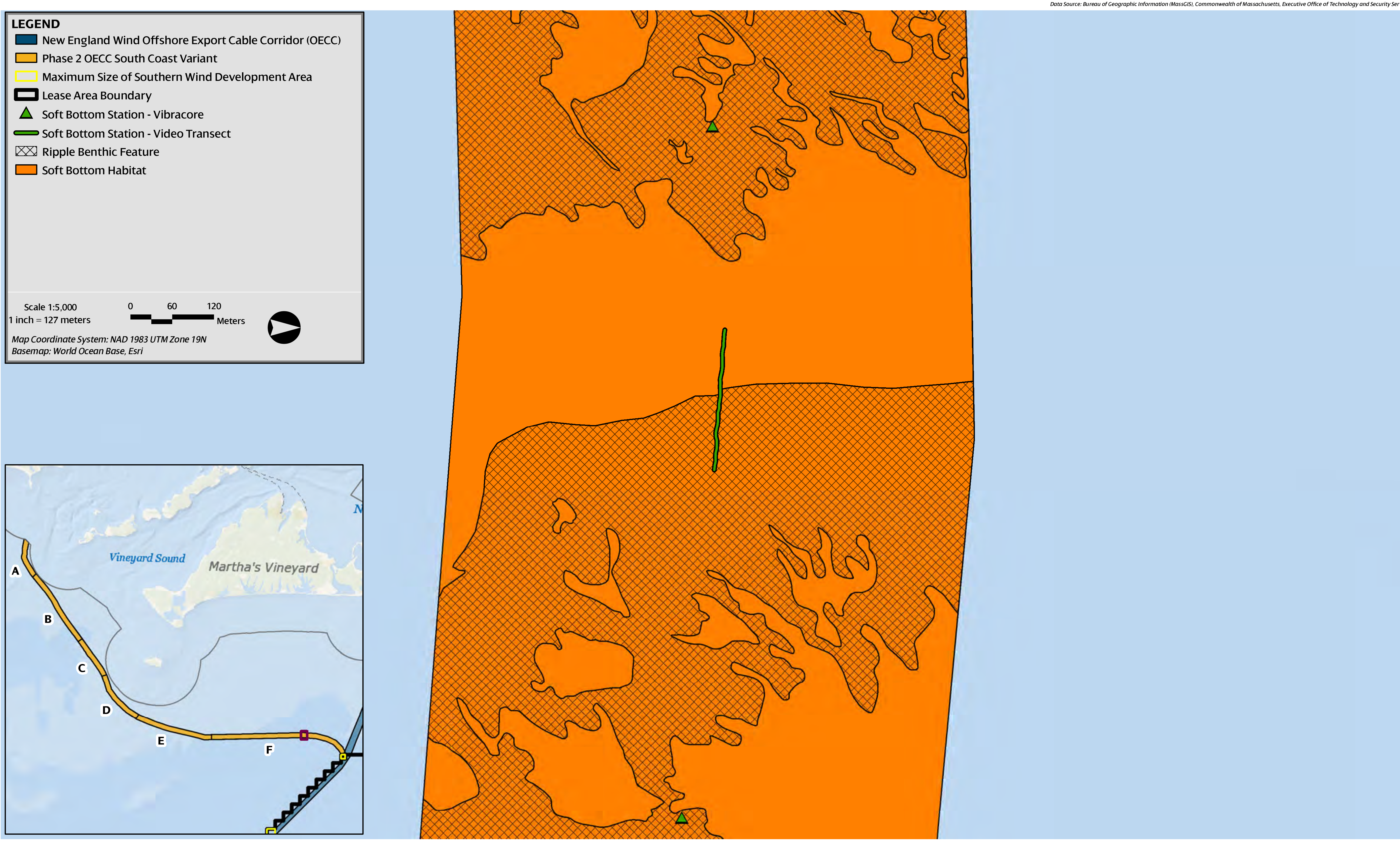
Figure 9 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
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Figure 10 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

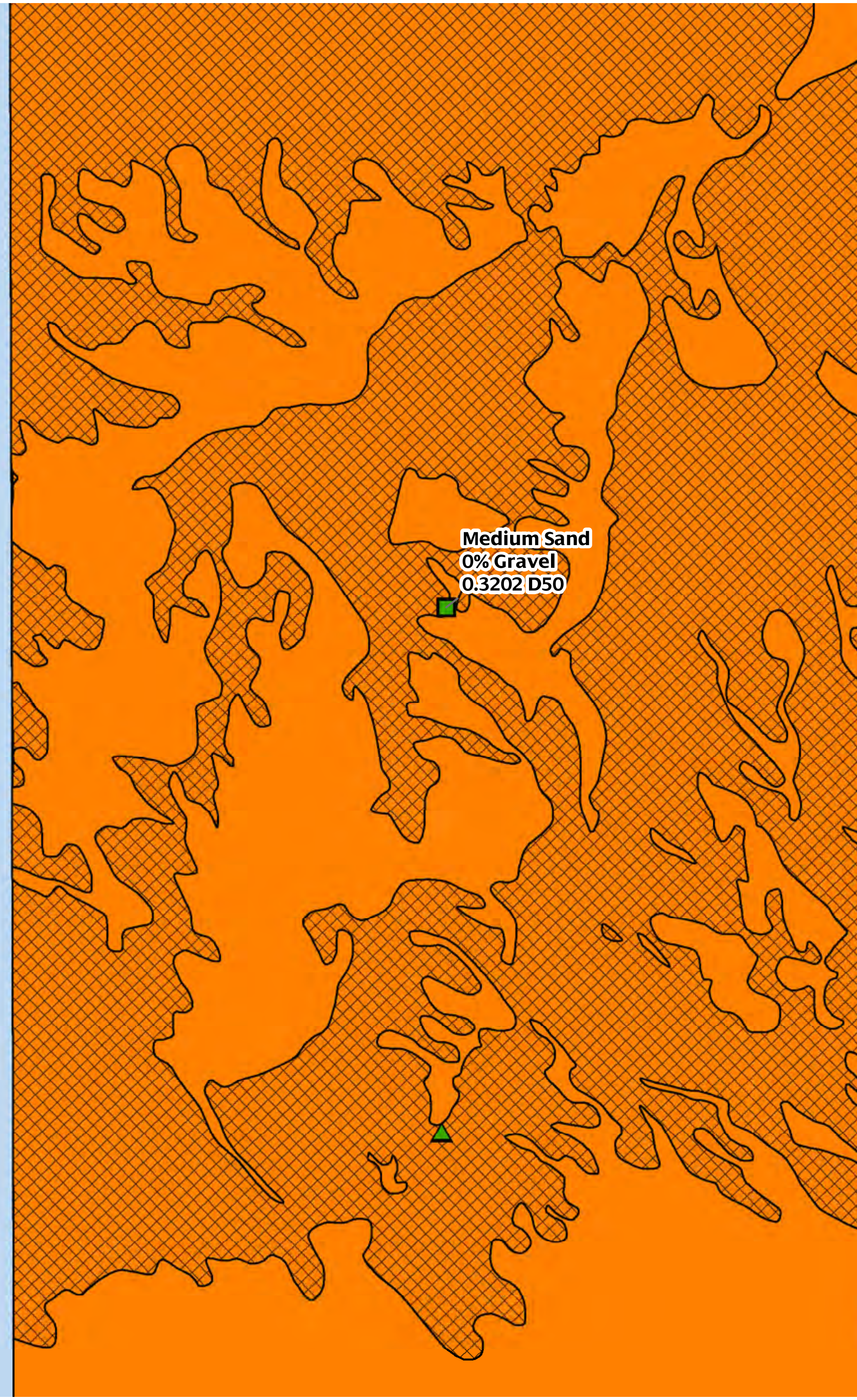
LEGEND

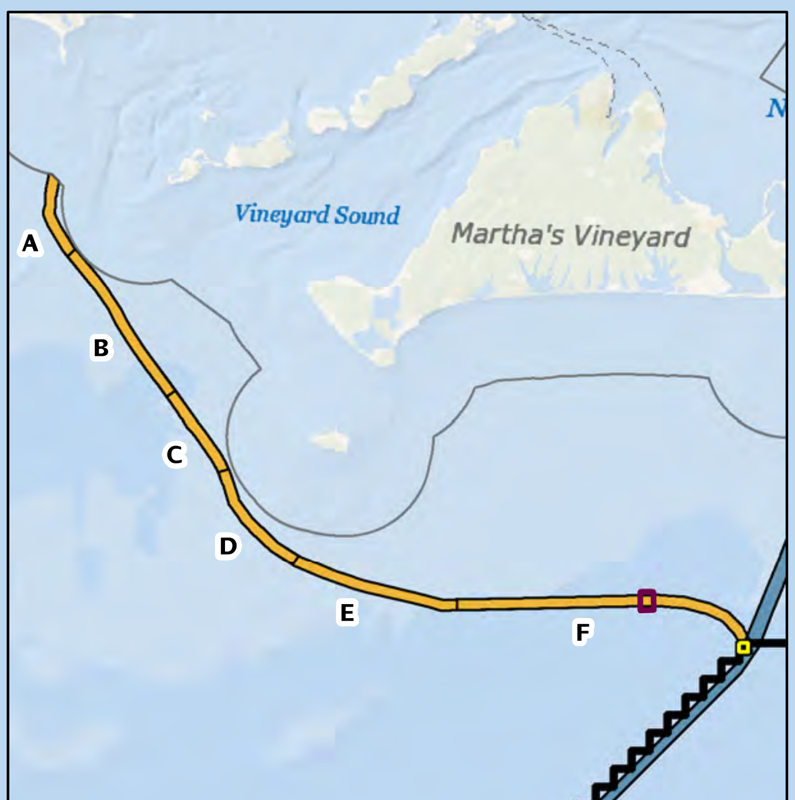
- New England Wind Offshore Export Cable Corridor (OECC)
- Phase 2 OECC South Coast Variant
- Maximum Size of Southern Wind Development Area
- Lease Area Boundary
- Soft Bottom Station - Vibracore
- Soft Bottom Station - Grab Sample
- Ripple Benthic Feature
- Soft Bottom Habitat

Scale 1:5,000
1 inch = 127 meters

0 60 120 Meters

Map Coordinate System: NAD 1983 UTM Zone 19N
Basemap: World Ocean Base, Esri



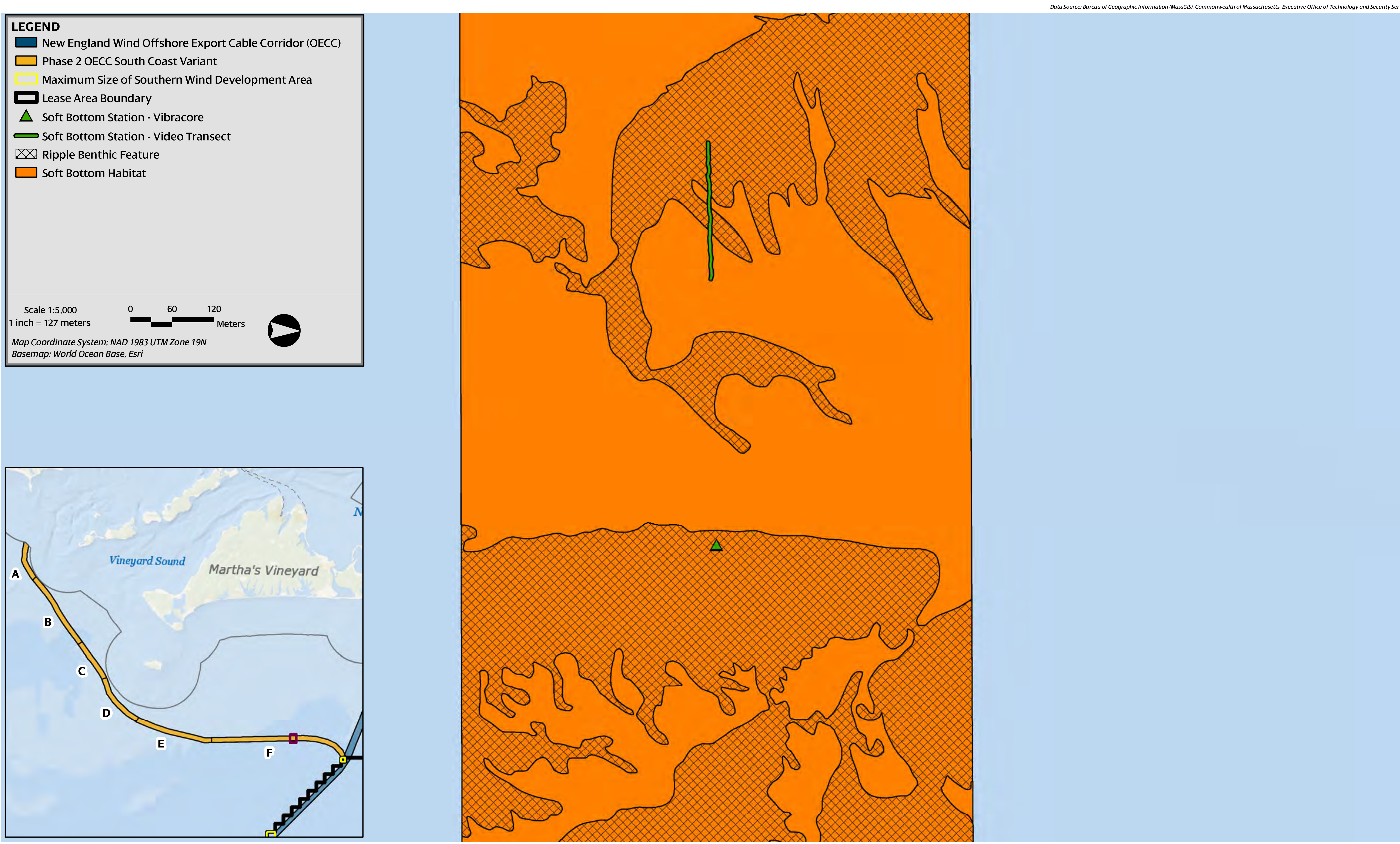


Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 11 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

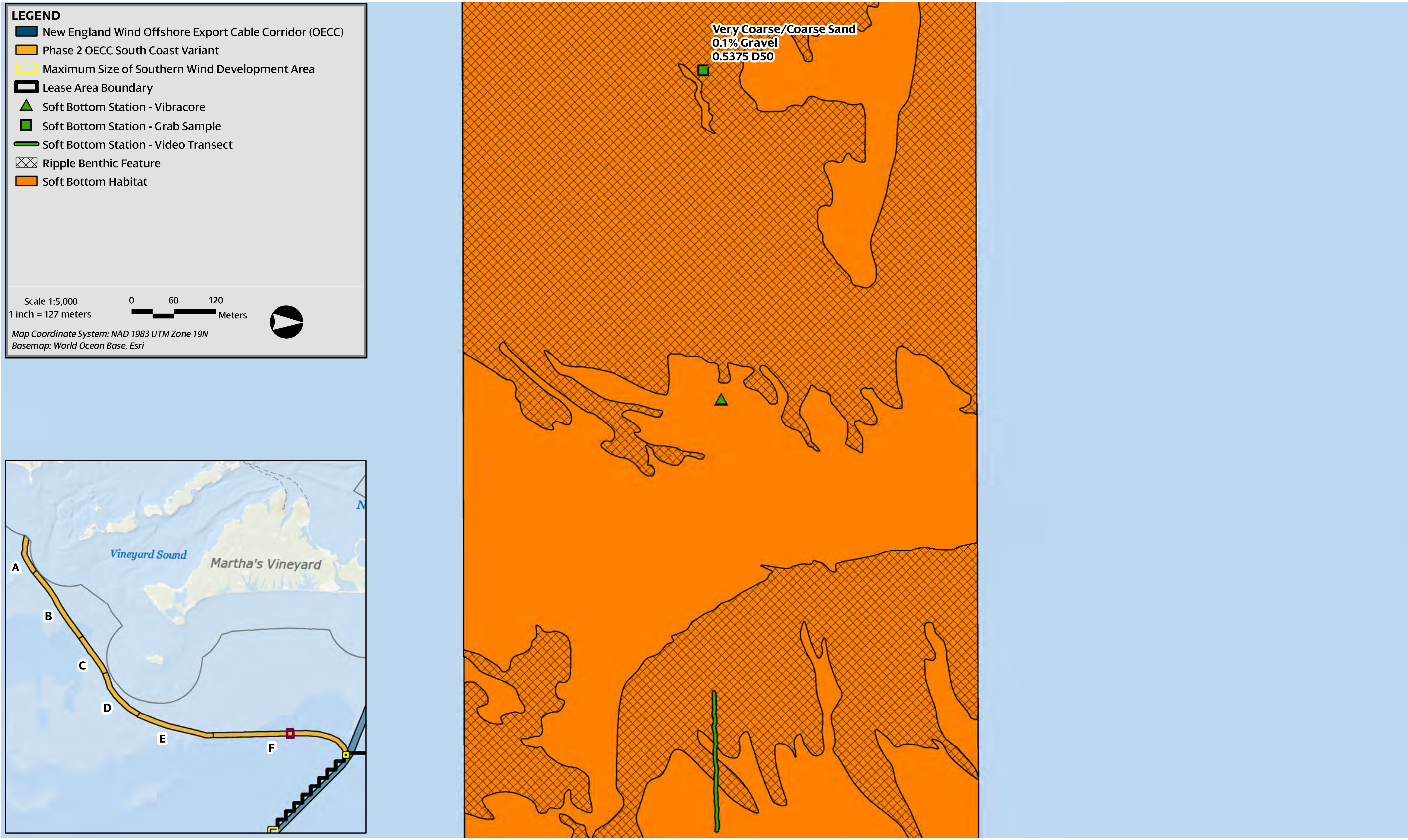


Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
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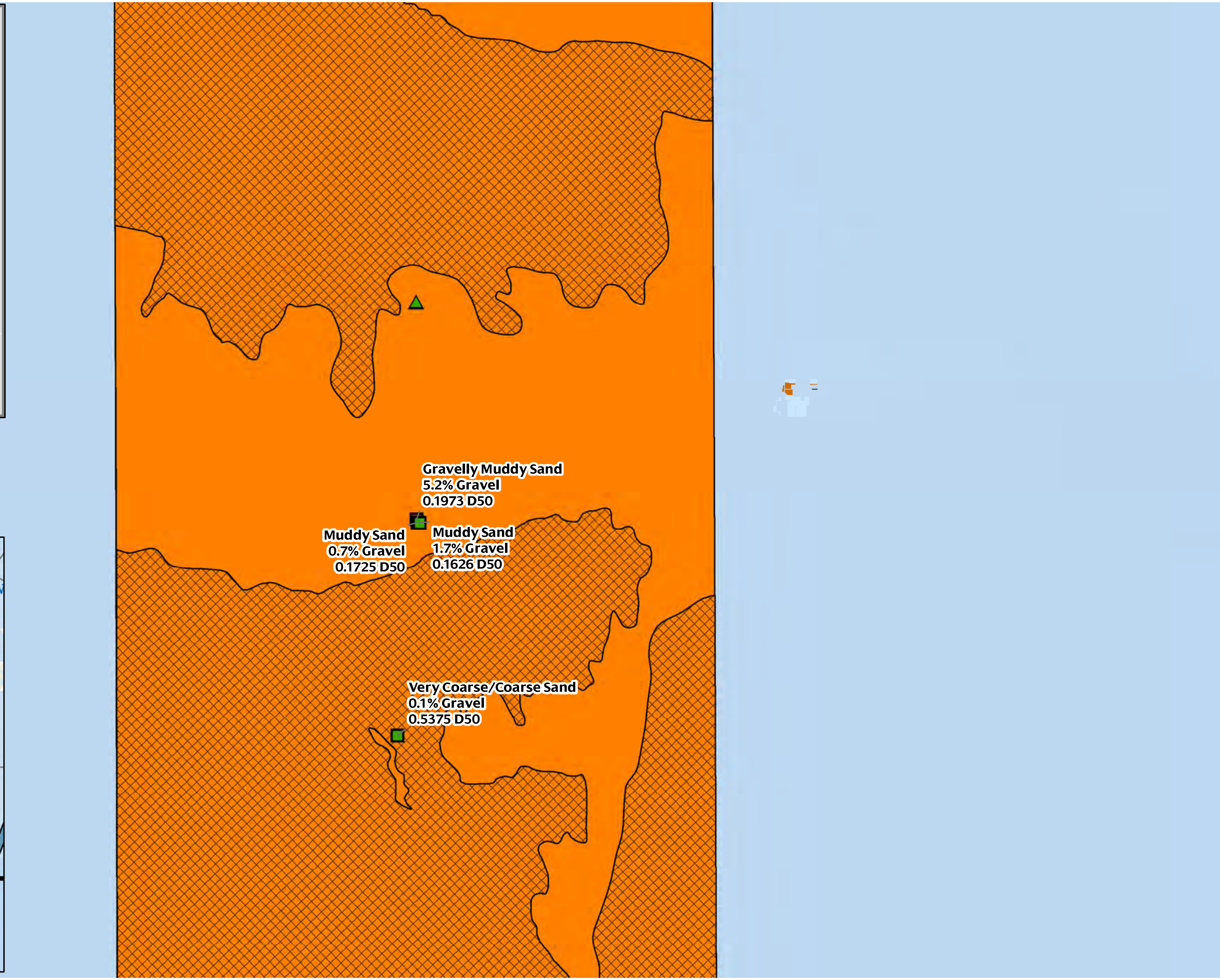
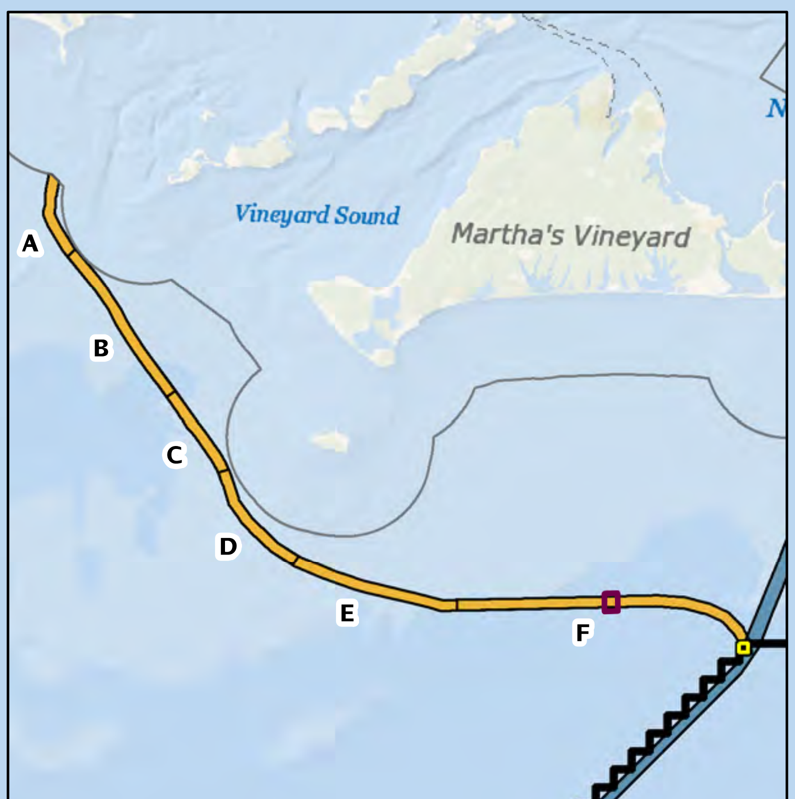
Figure 13 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services





Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

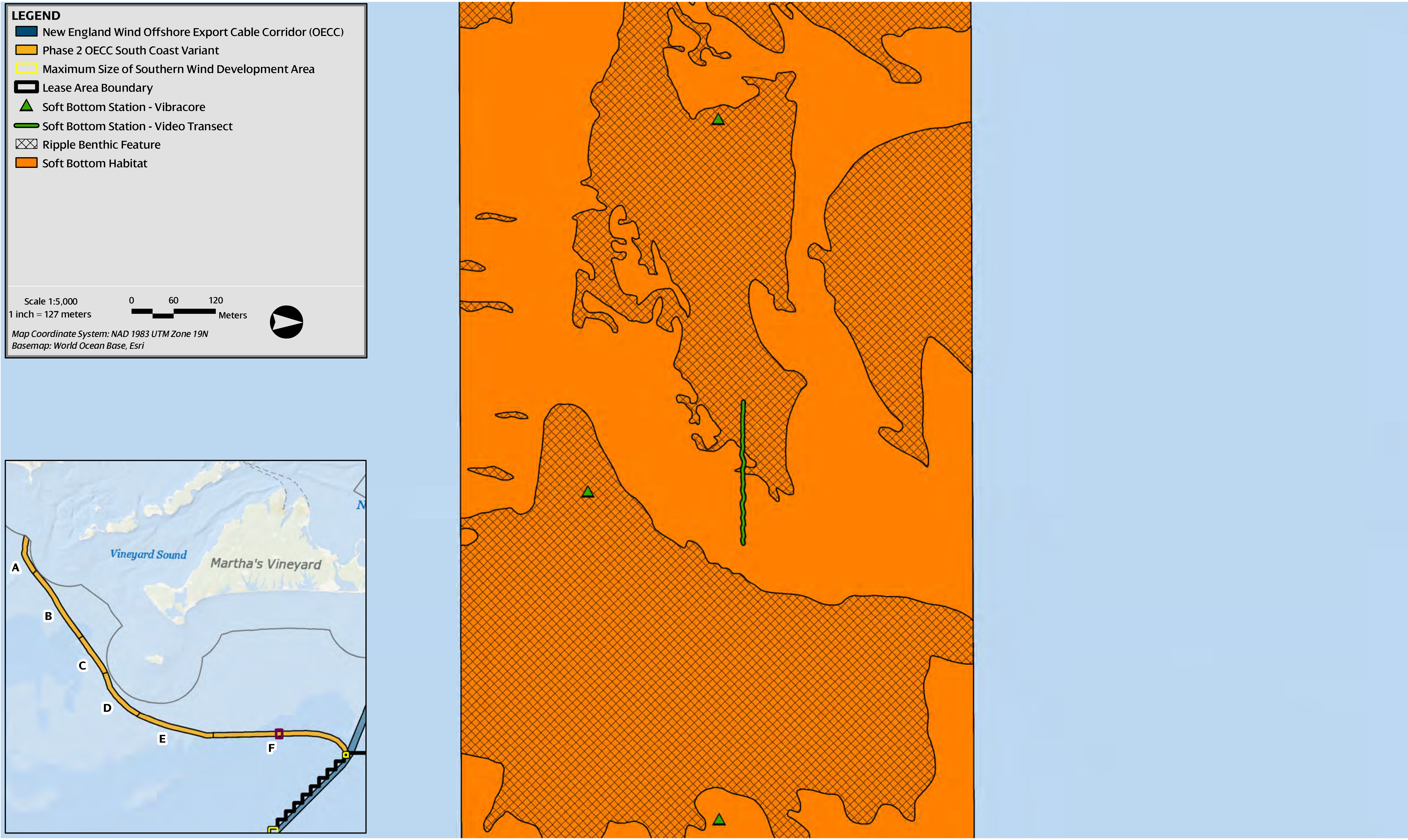
New England Wind

AVANGRID RENEWABLES

Figure 14 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

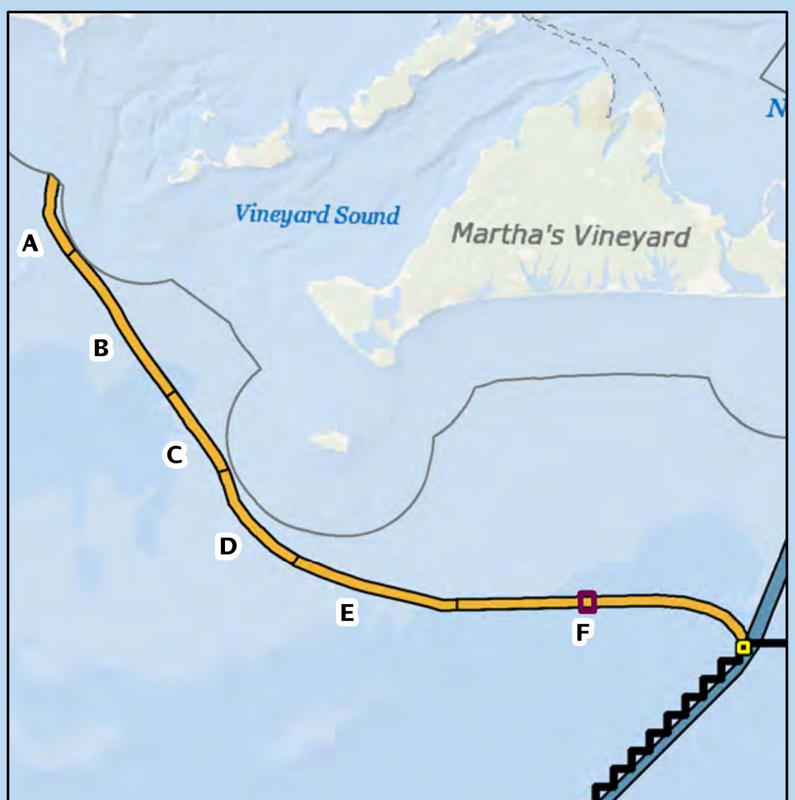
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

LEGEND

- New England Wind Offshore Export Cable Corridor (OECC)
- Phase 2 OECC South Coast Variant
- Maximum Size of Southern Wind Development Area
- Lease Area Boundary
- Soft Bottom Station - Vibracore
- Soft Bottom Station - Grab Sample
- Ripple Benthic Feature
- Soft Bottom Habitat

Scale 1:5,000
1 inch = 127 meters
0 60 120 Meters

Map Coordinate System: NAD 1983 UTM Zone 19N
Basemap: World Ocean Base, Esri



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

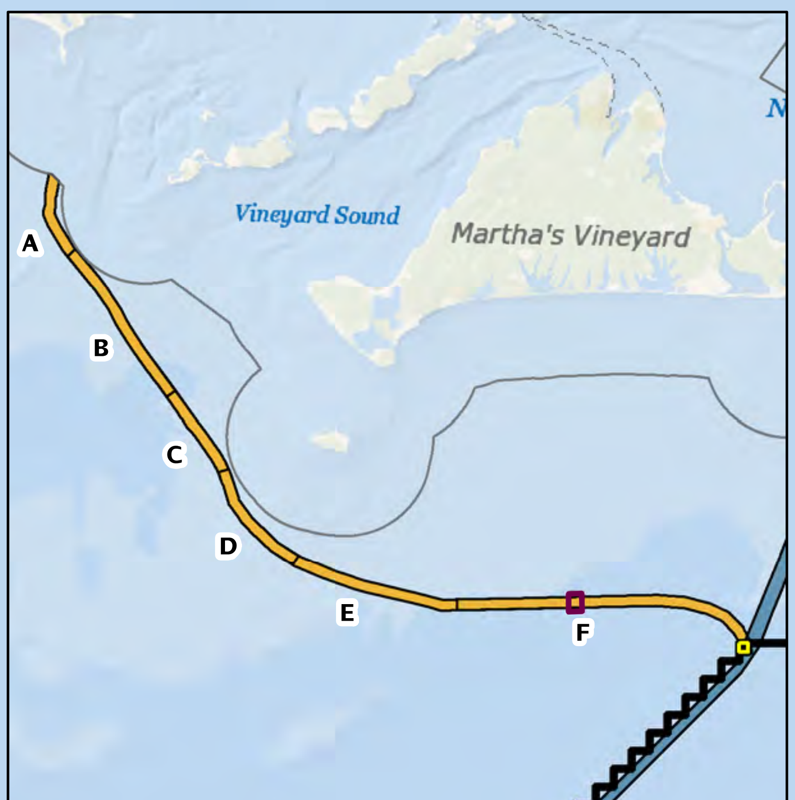
LEGEND

- New England Wind Offshore Export Cable Corridor (OECC)
- Phase 2 OECC South Coast Variant
- Maximum Size of Southern Wind Development Area
- Lease Area Boundary
- Soft Bottom Station - Vibracore
- Soft Bottom Station - Video Transect
- Ripple Benthic Feature
- Soft Bottom Habitat

Scale 1:5,000
1 inch = 127 meters

0 60 120 Meters

Map Coordinate System: NAD 1983 UTM Zone 19N
Basemap: World Ocean Base, Esri

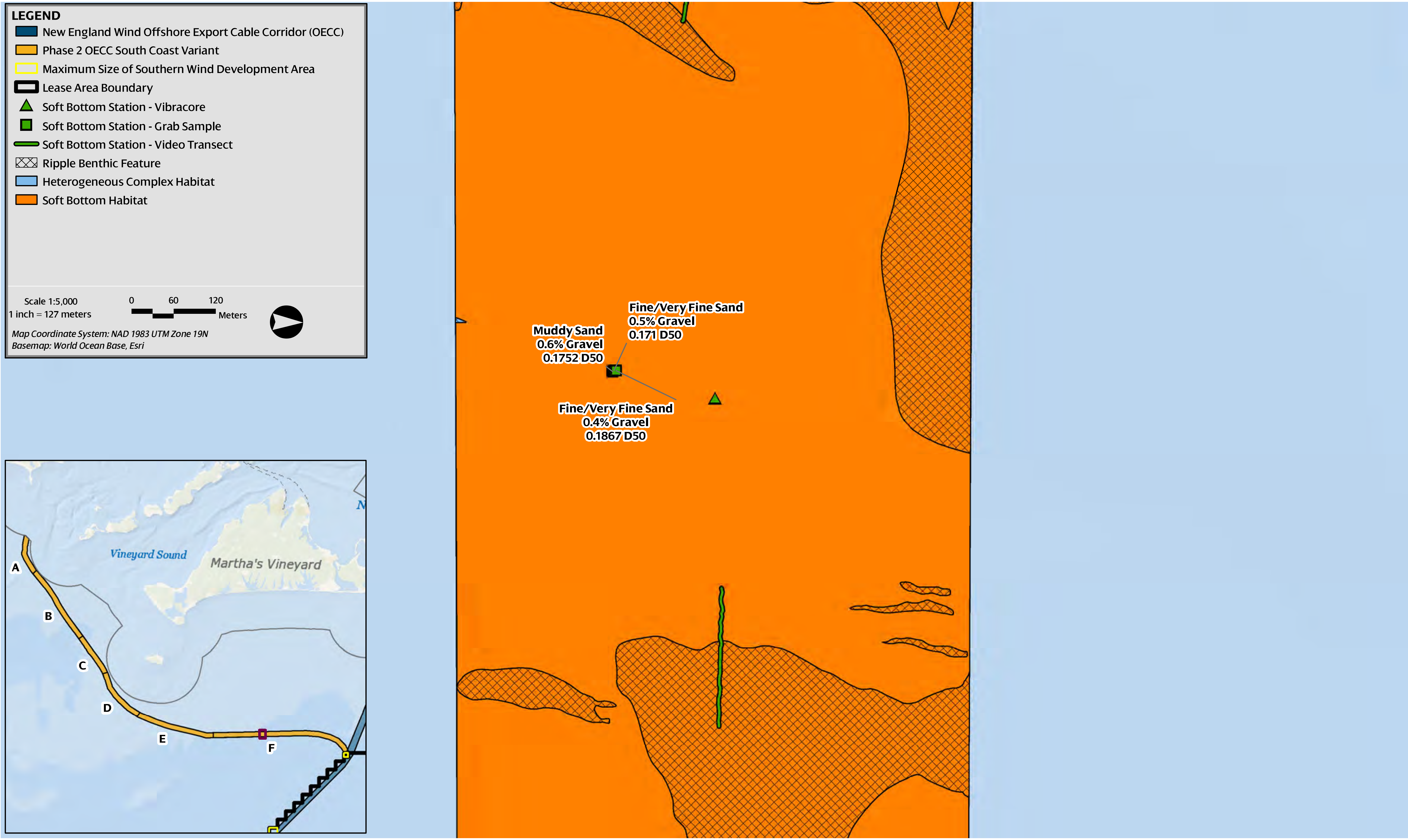


Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 17 of 80

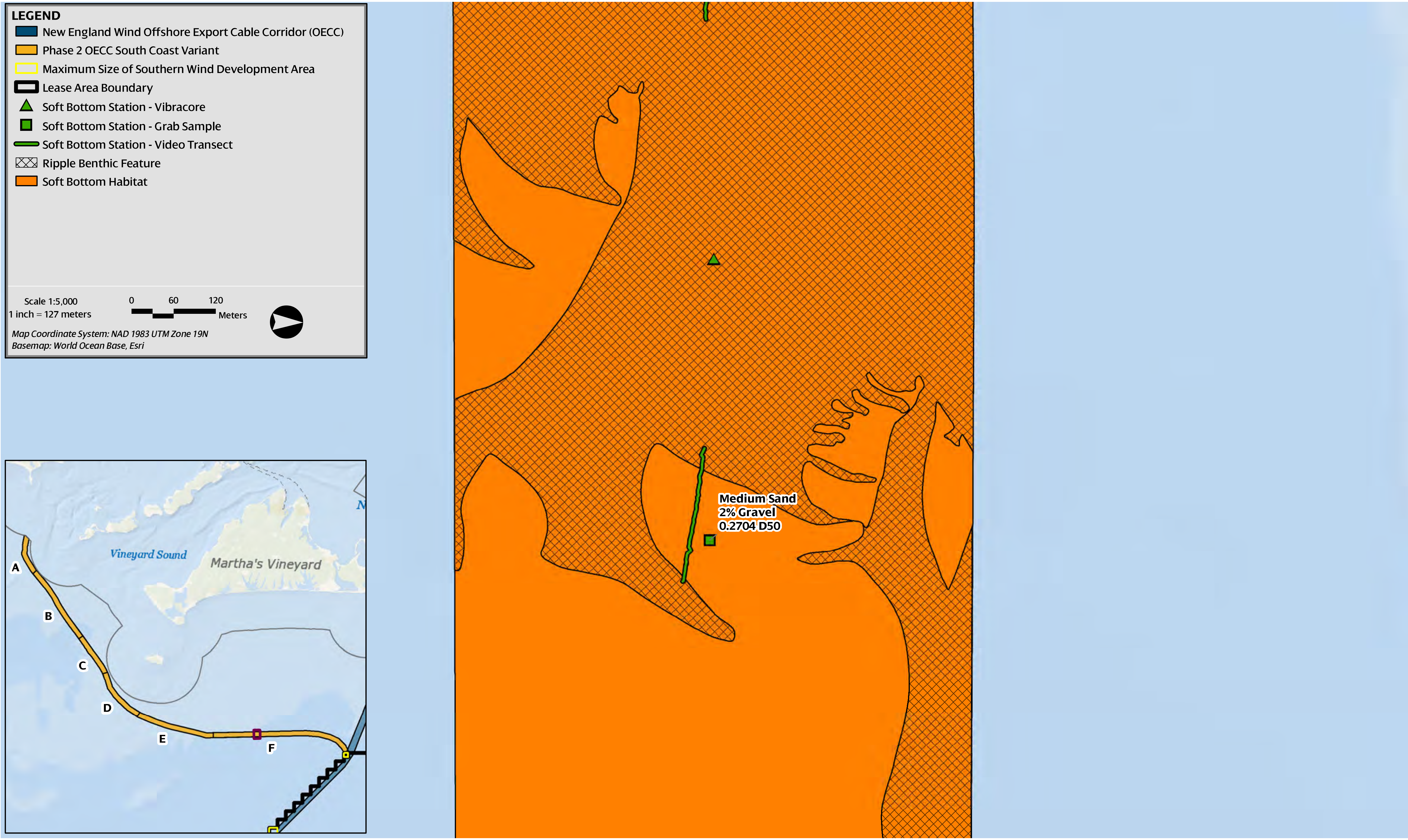
Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



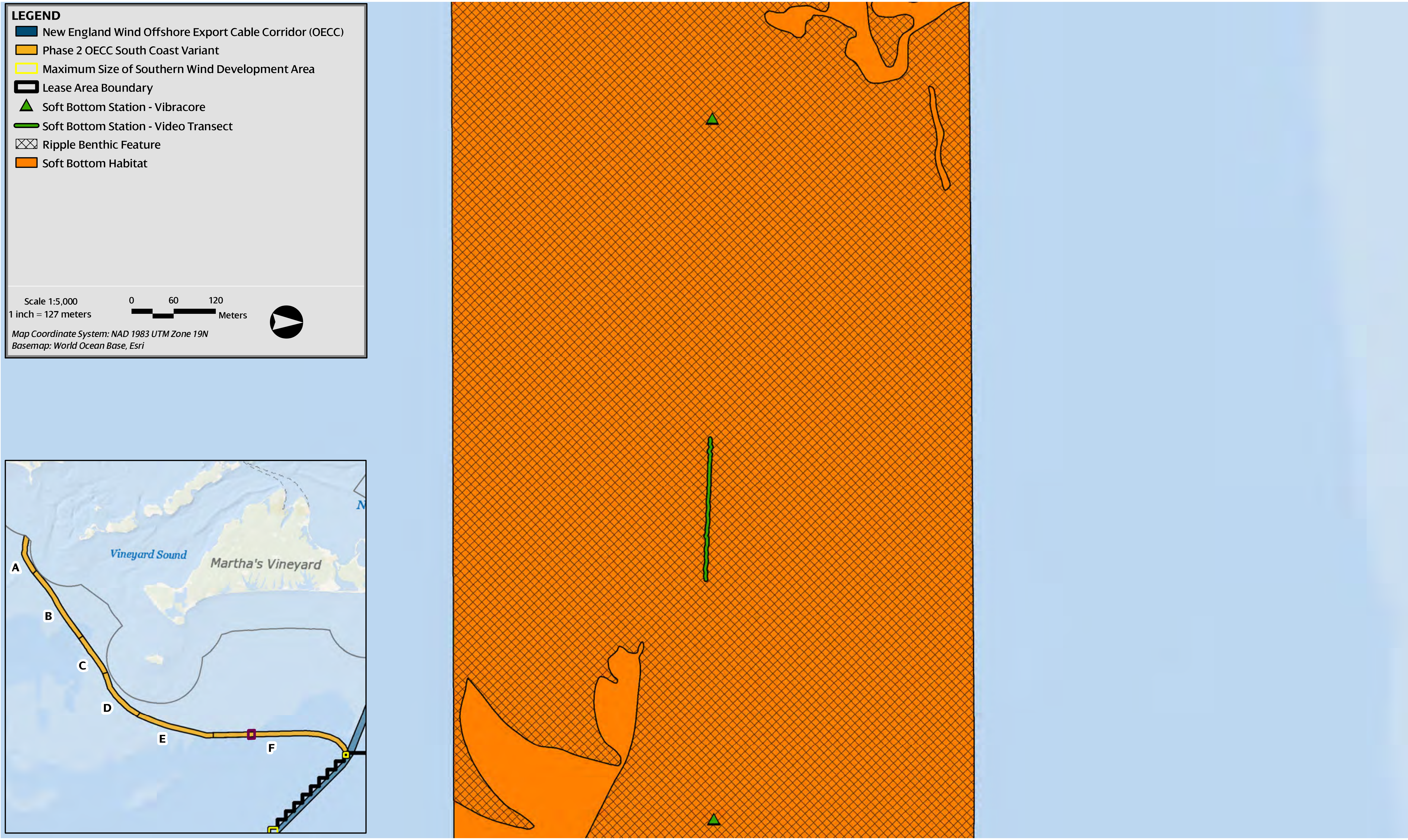
Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 19 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



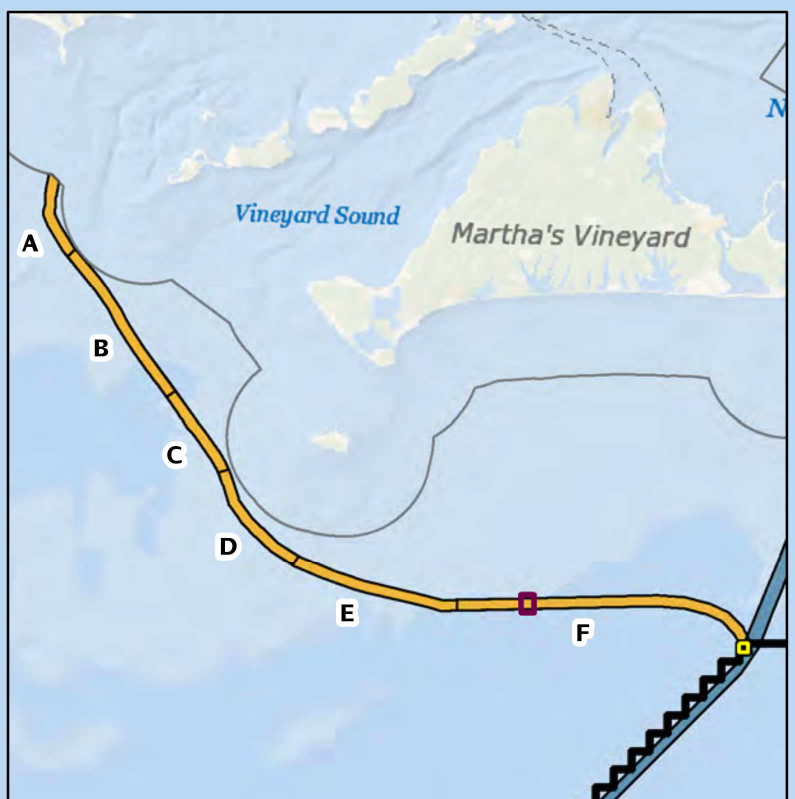
Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 20 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 21 of 80

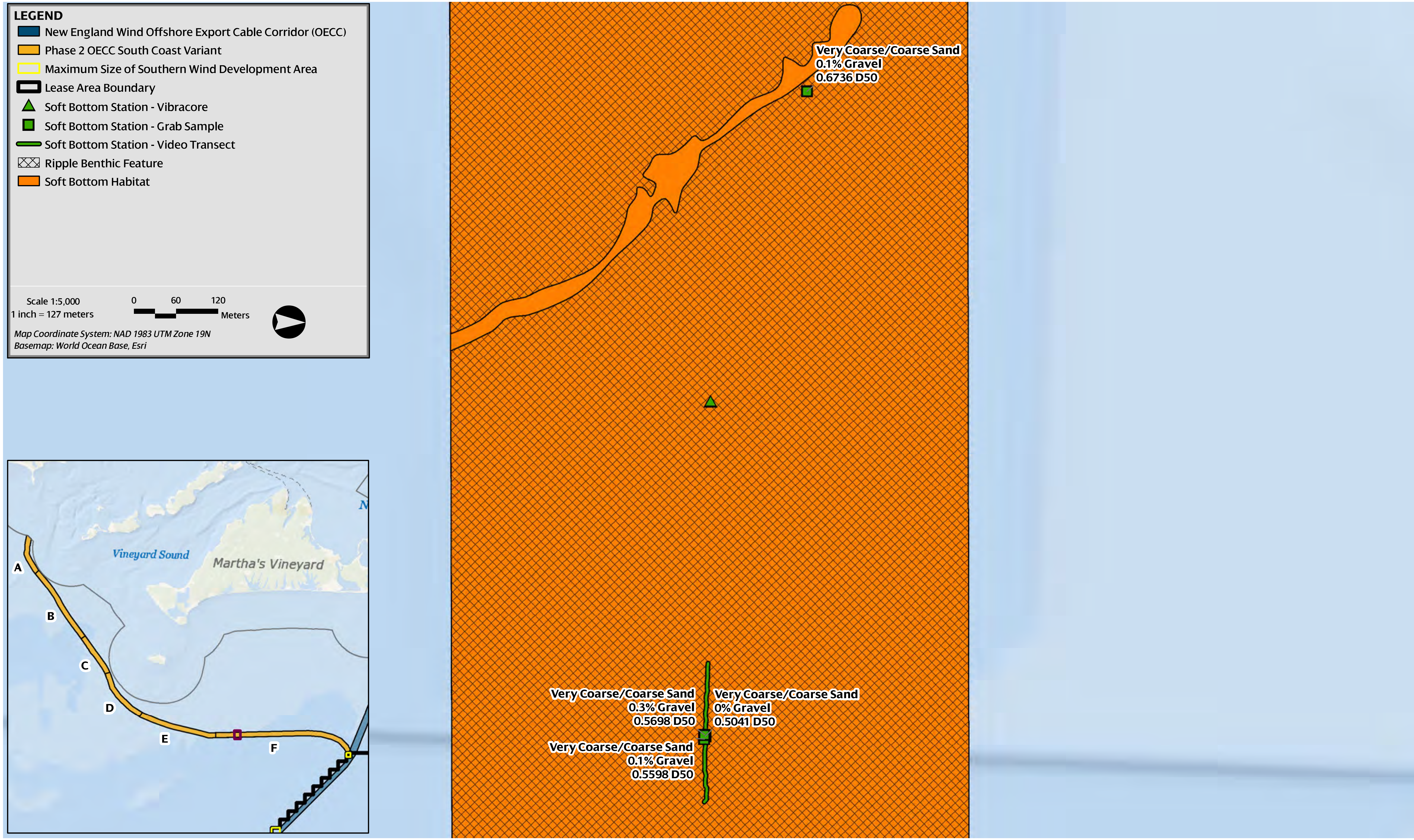
Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



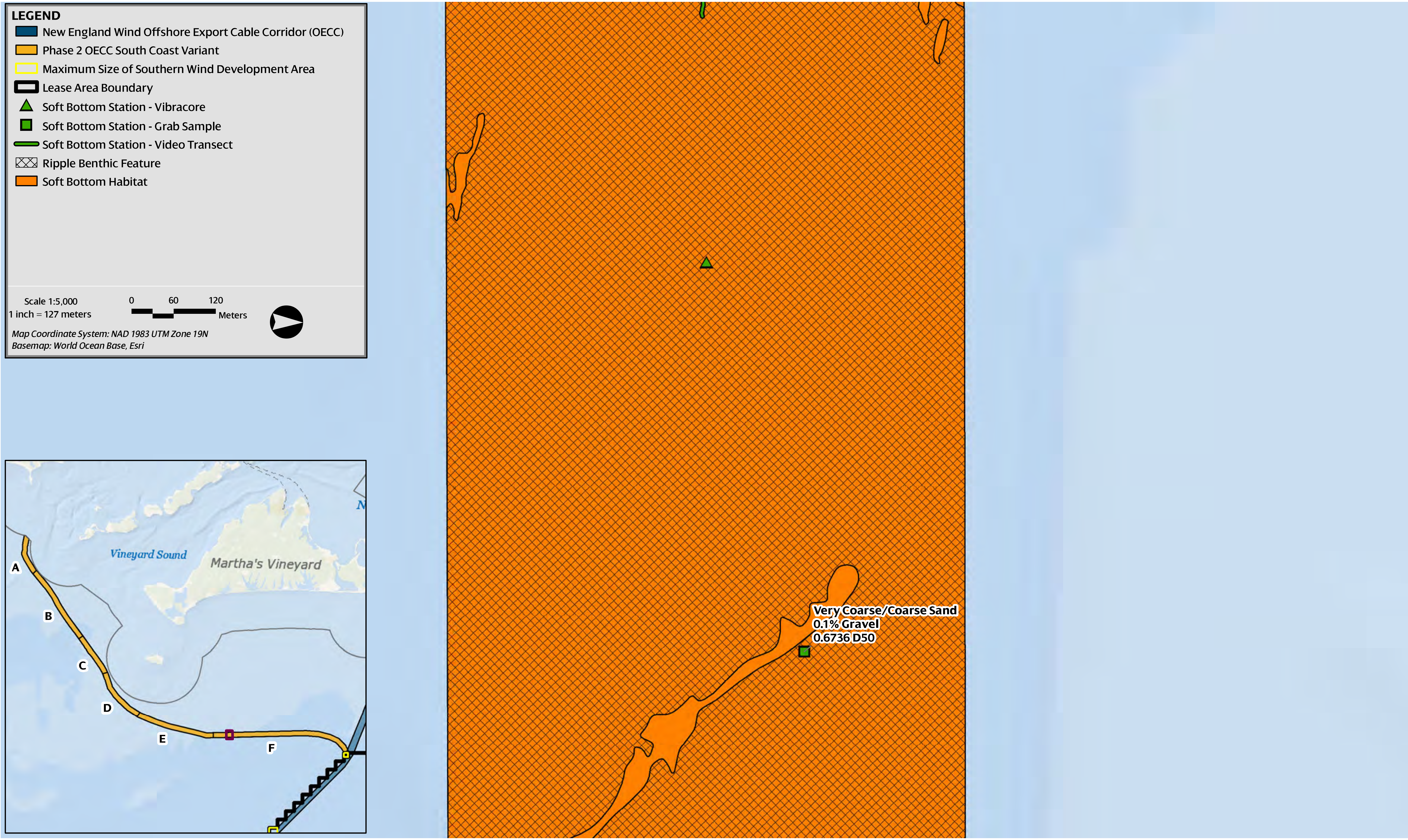
Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 23 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 24 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

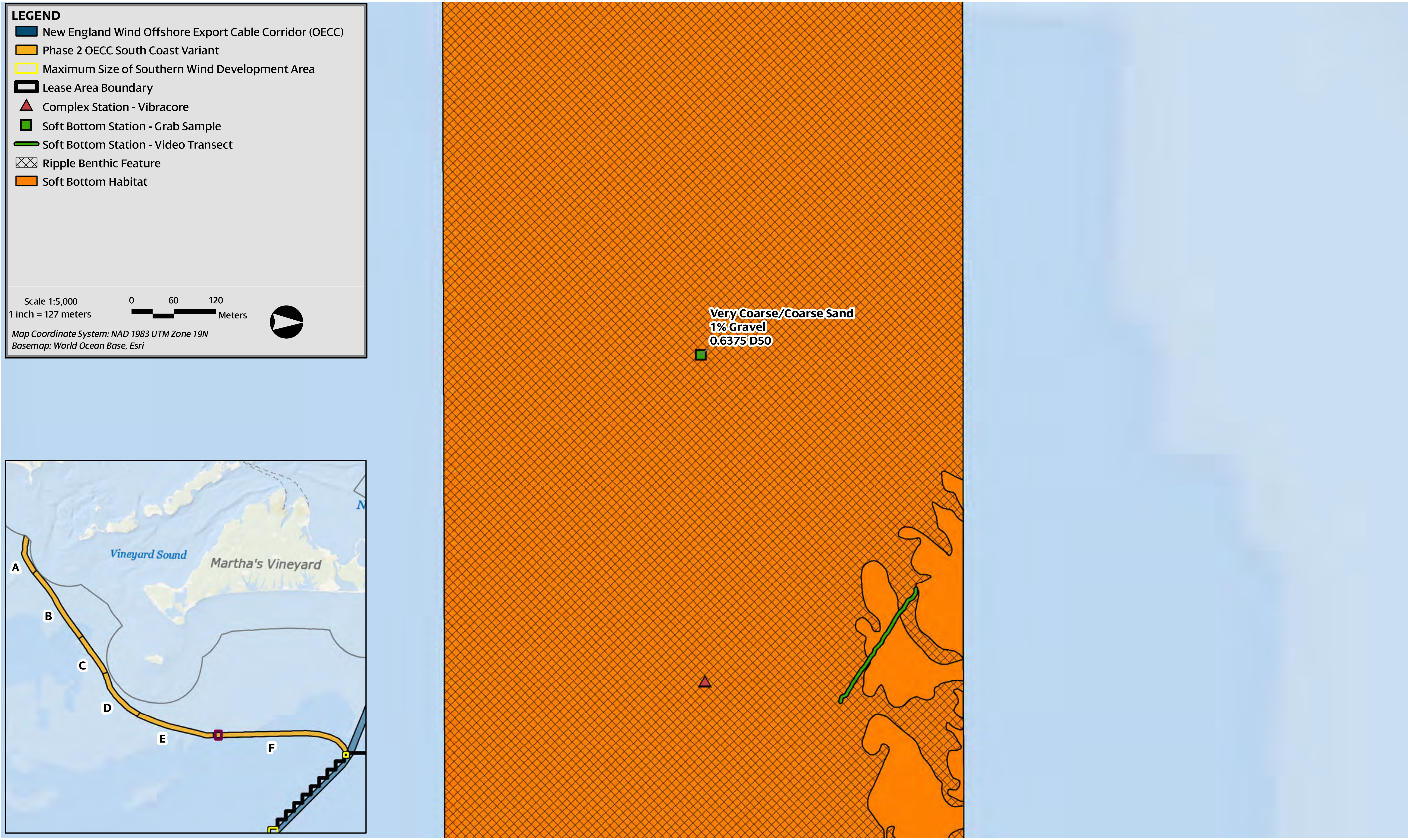
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



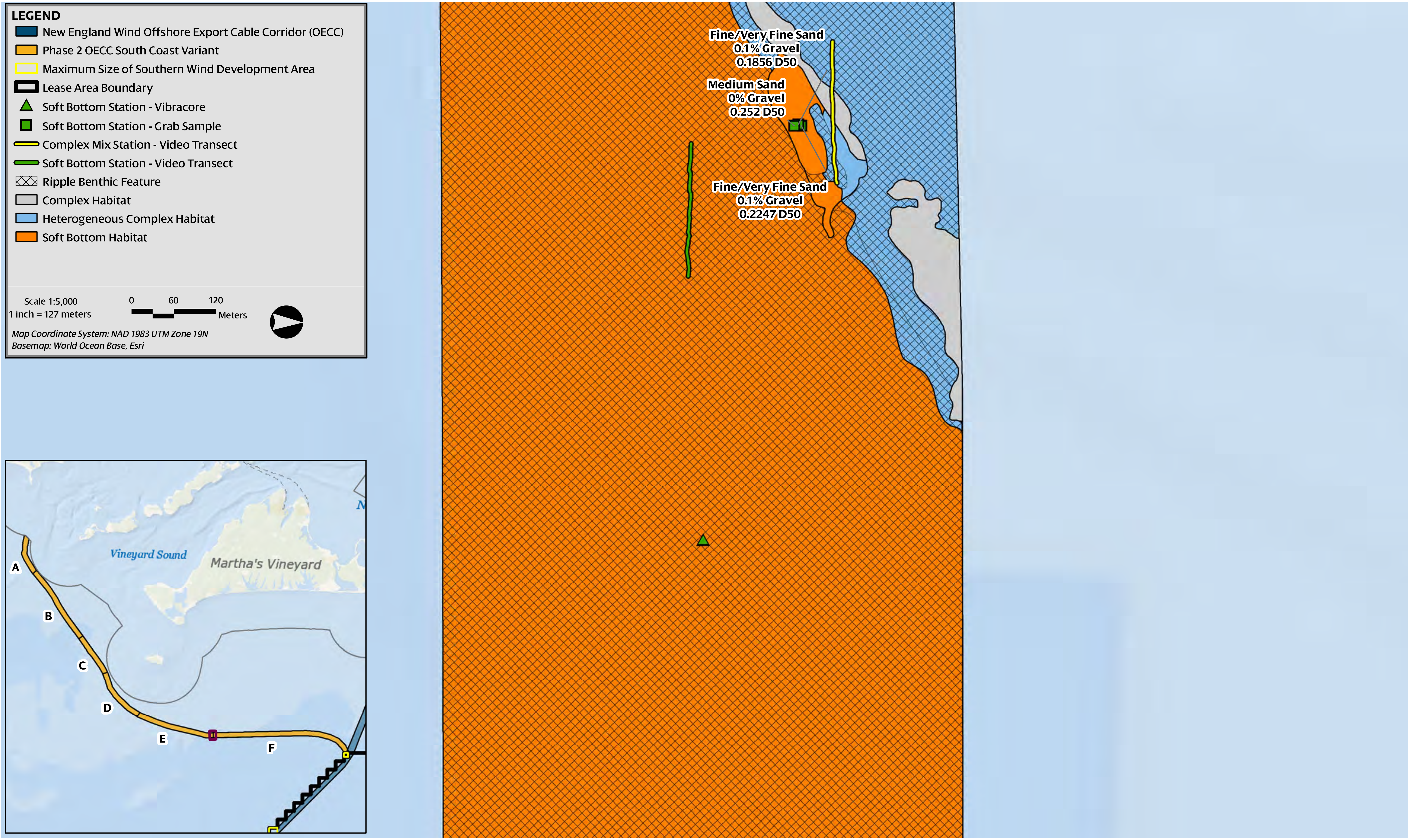
Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 26 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



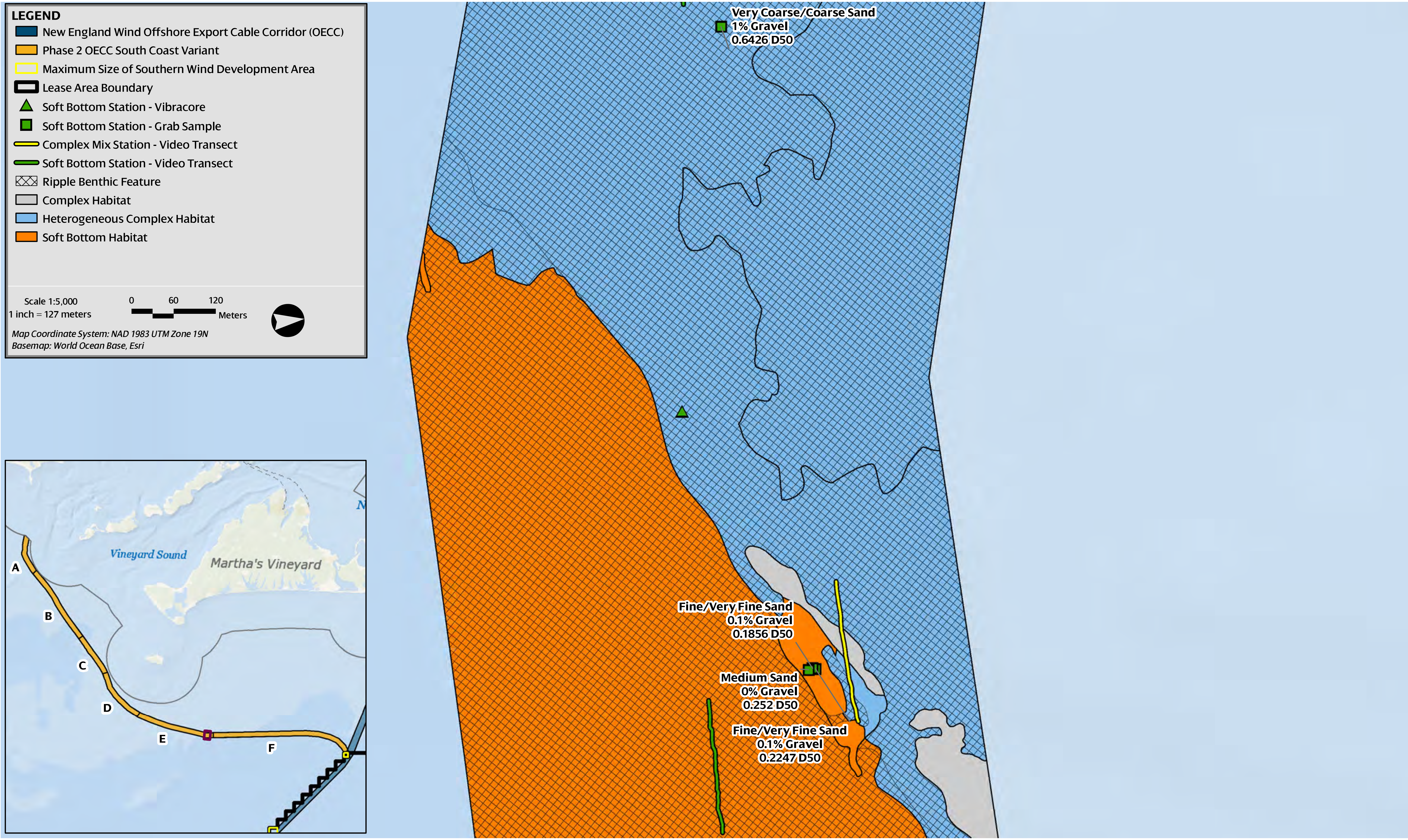
Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 27 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 28 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

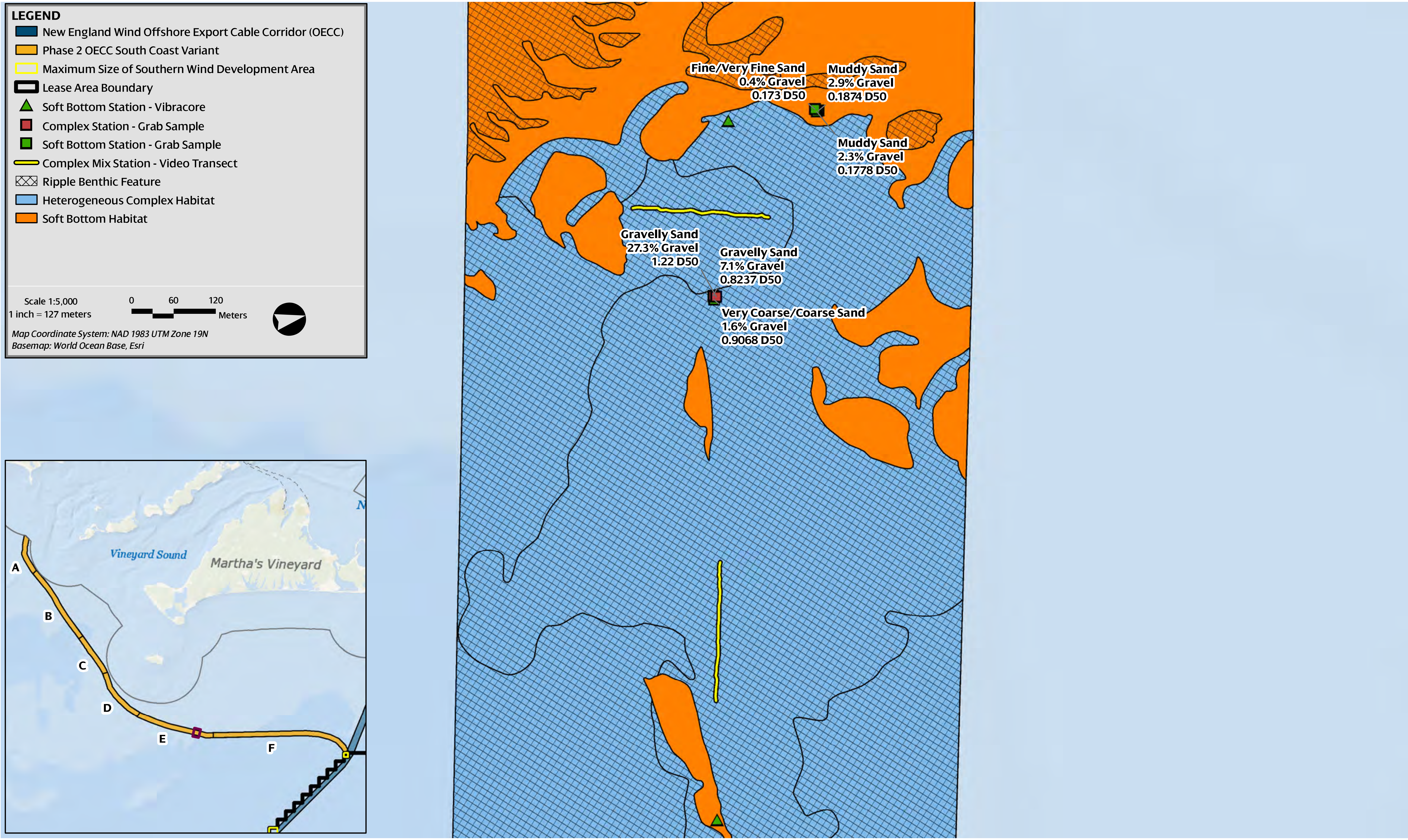
Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 29 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



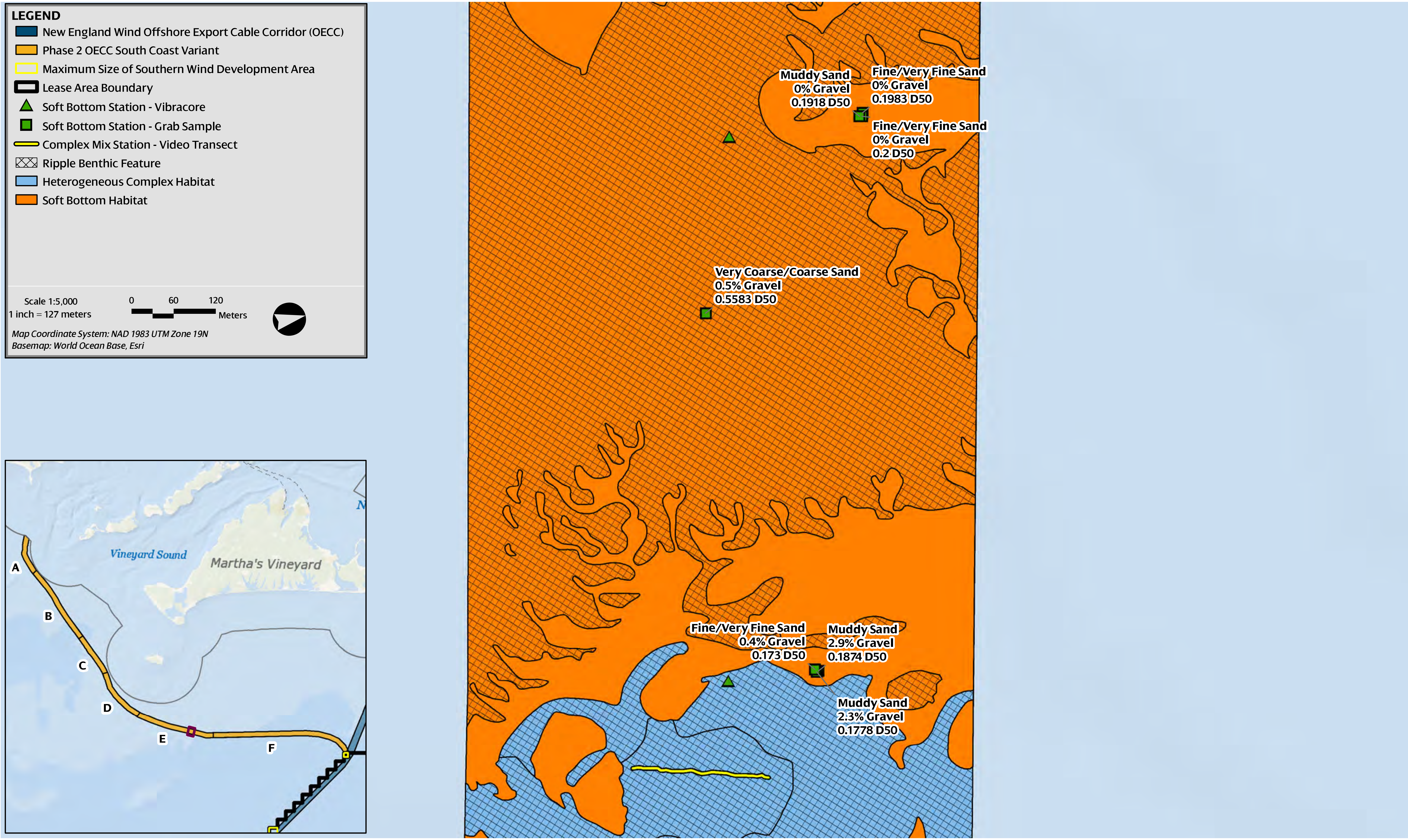
Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 30 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 31 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

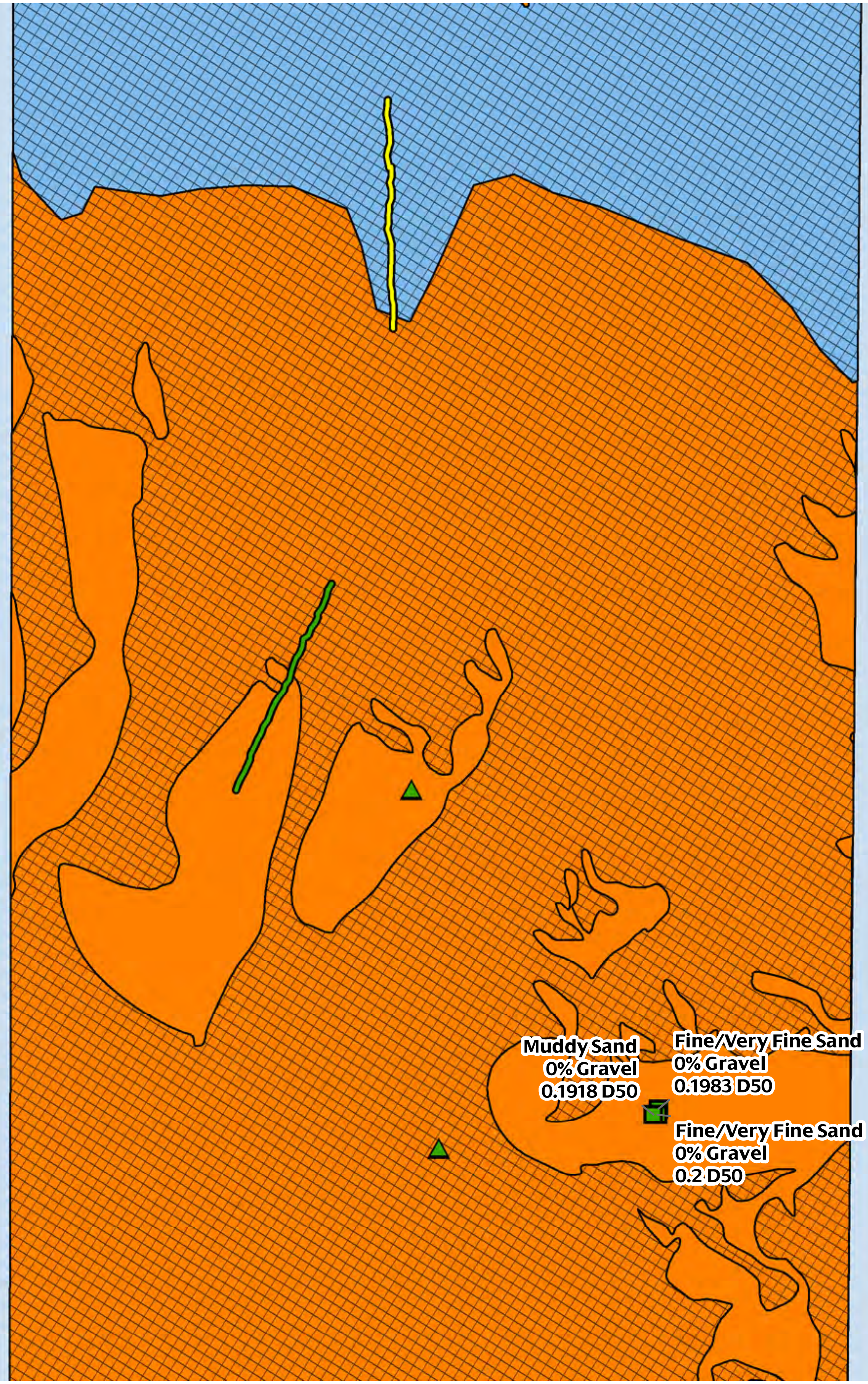
LEGEND

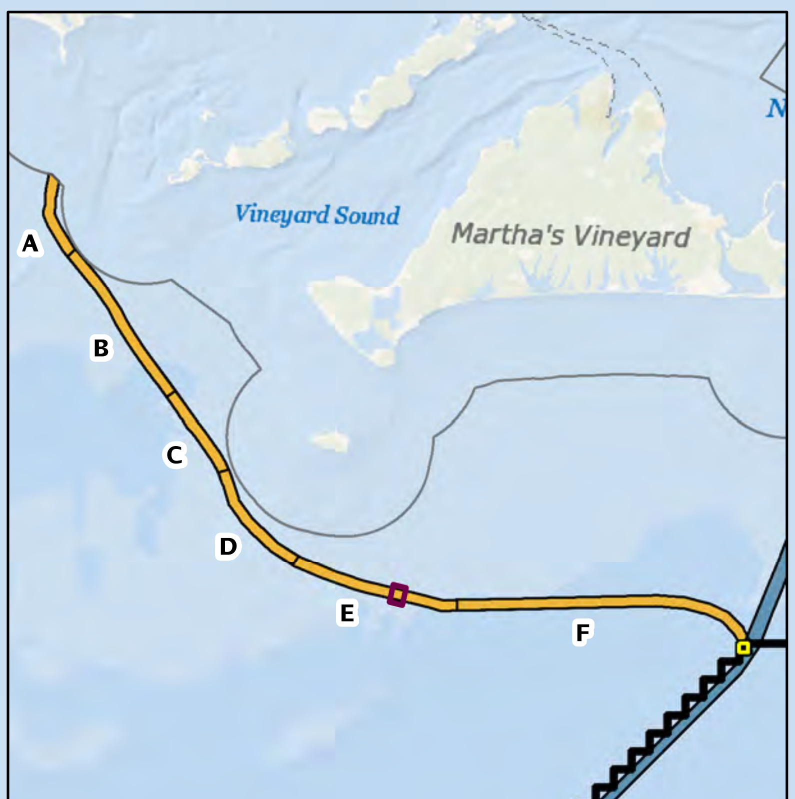
- New England Wind Offshore Export Cable Corridor (OECC)
- Phase 2 OECC South Coast Variant
- Maximum Size of Southern Wind Development Area
- Lease Area Boundary
- Soft Bottom Station - Vibracore
- Soft Bottom Station - Grab Sample
- Complex Mix Station - Video Transect
- Soft Bottom Station - Video Transect
- Ripple Benthic Feature
- Heterogeneous Complex Habitat
- Soft Bottom Habitat

Scale 1:5,000
1 inch = 127 meters

0 60 120 Meters

Map Coordinate System: NAD 1983 UTM Zone 19N
Basemap: World Ocean Base, Esri

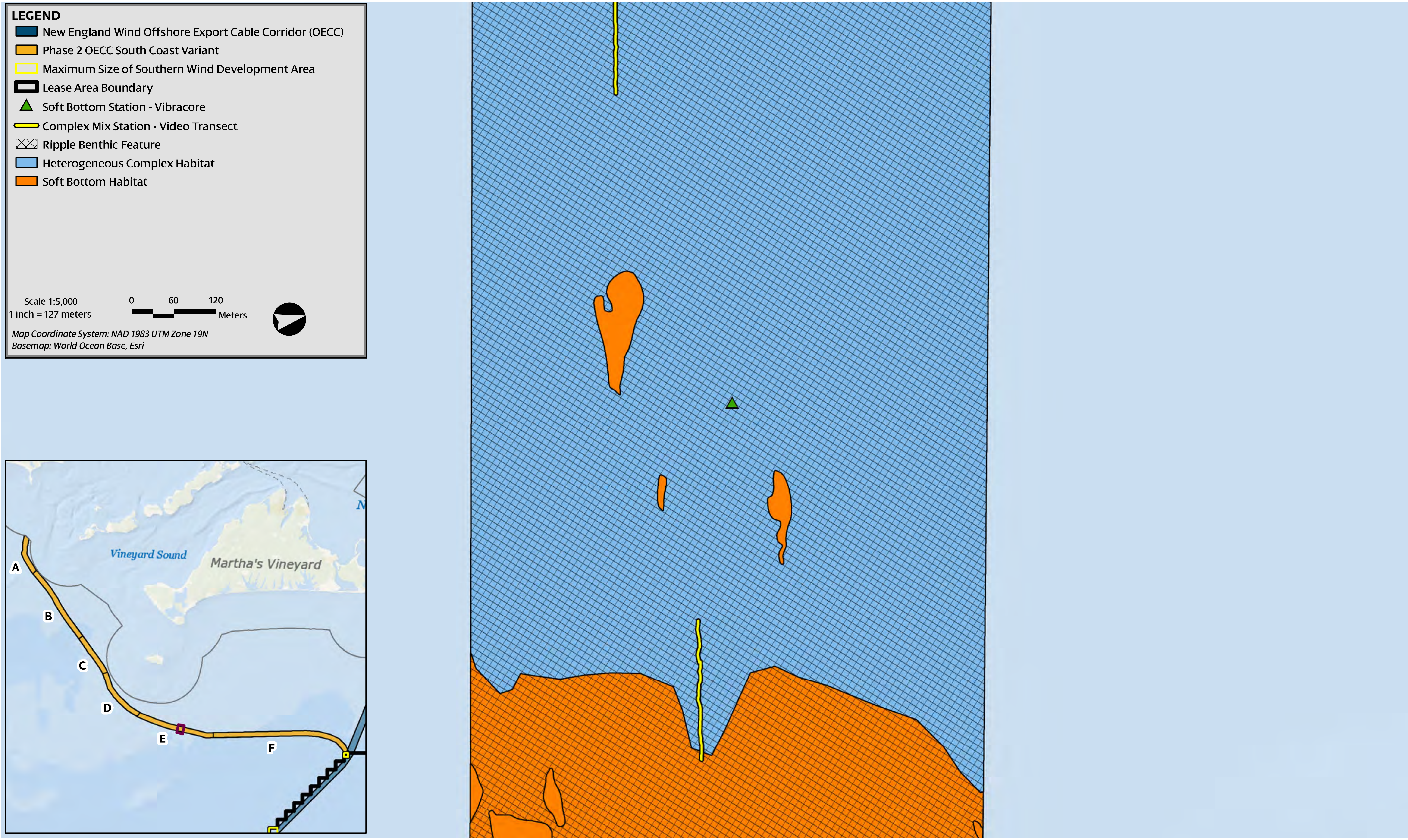




Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

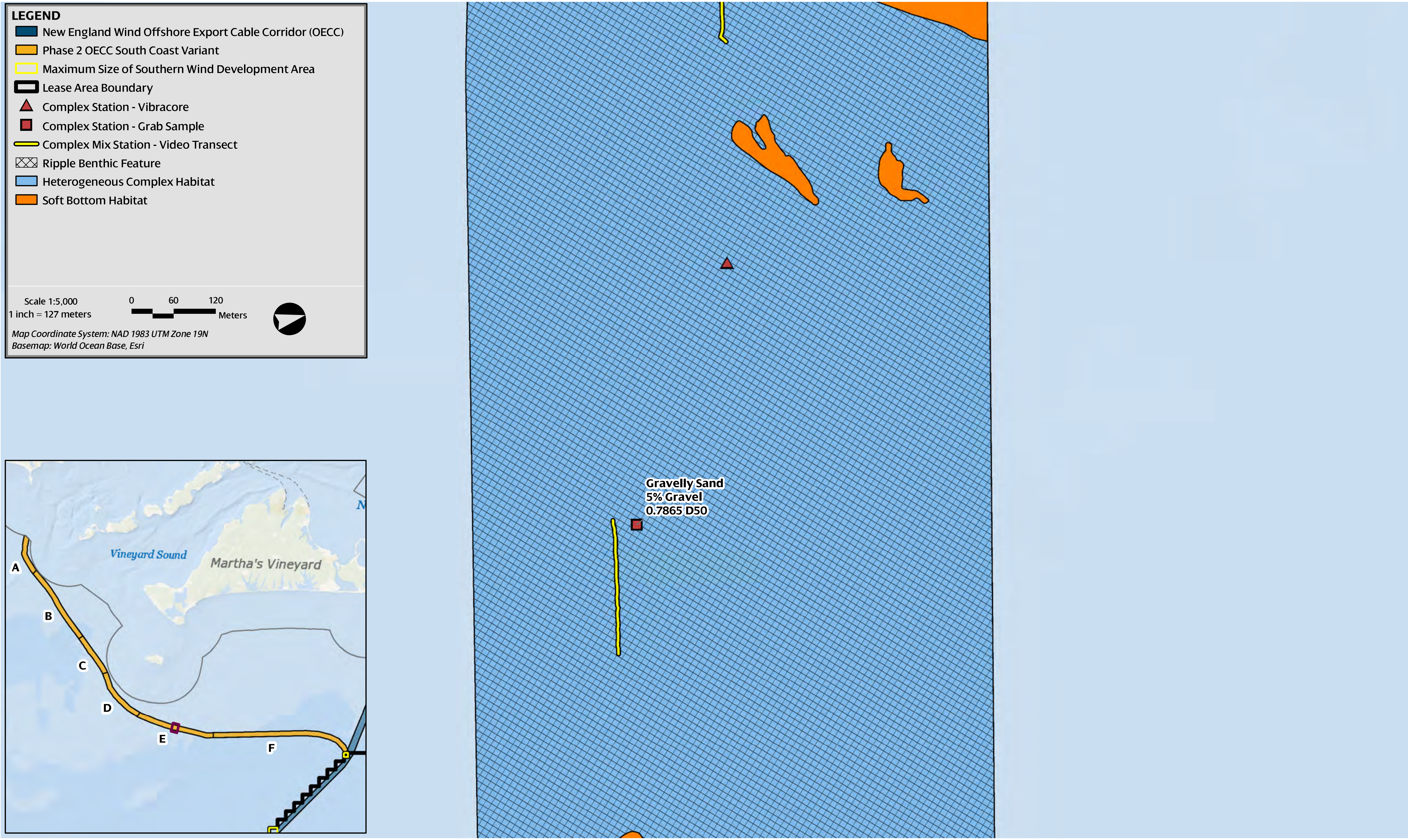
Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



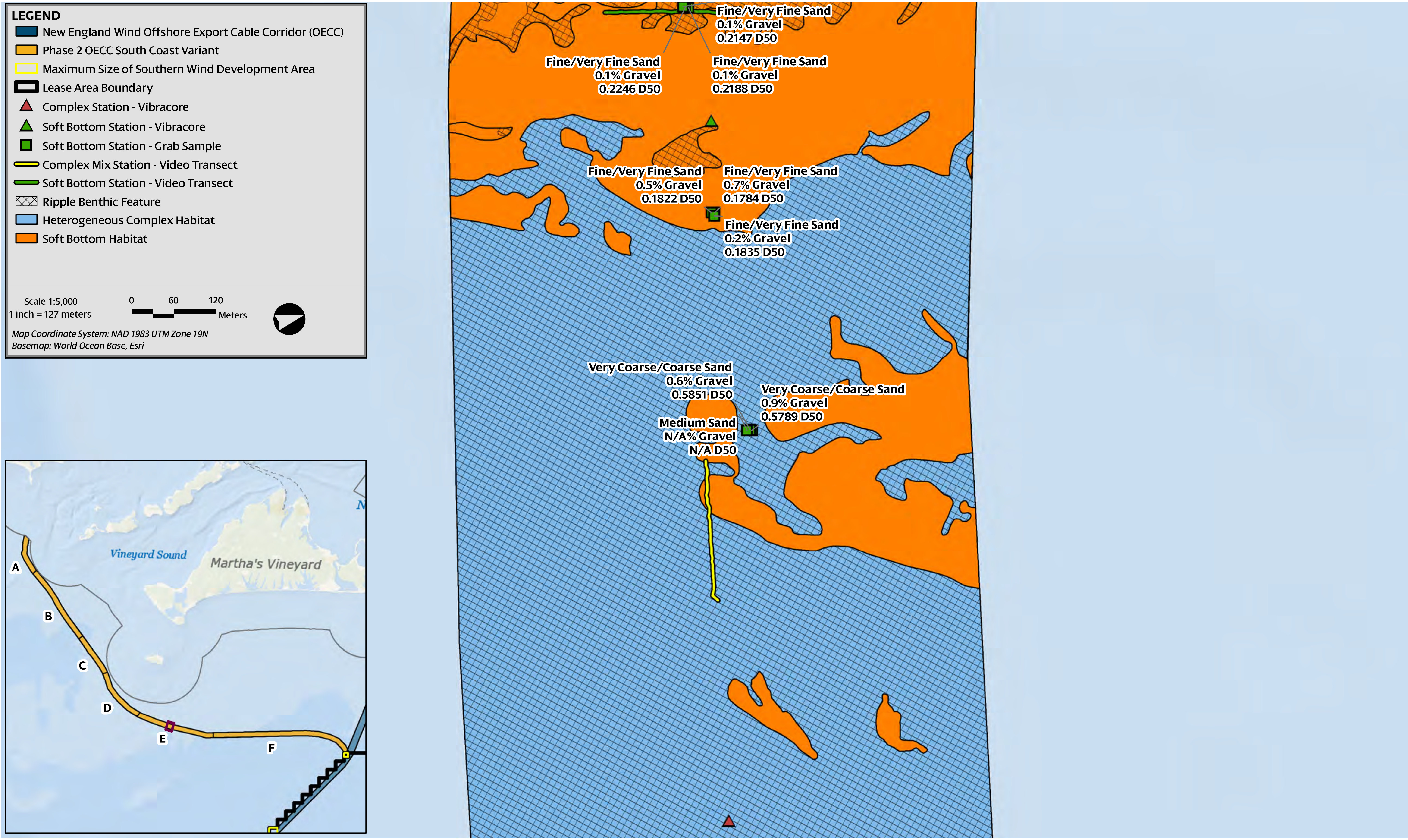
Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 34 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

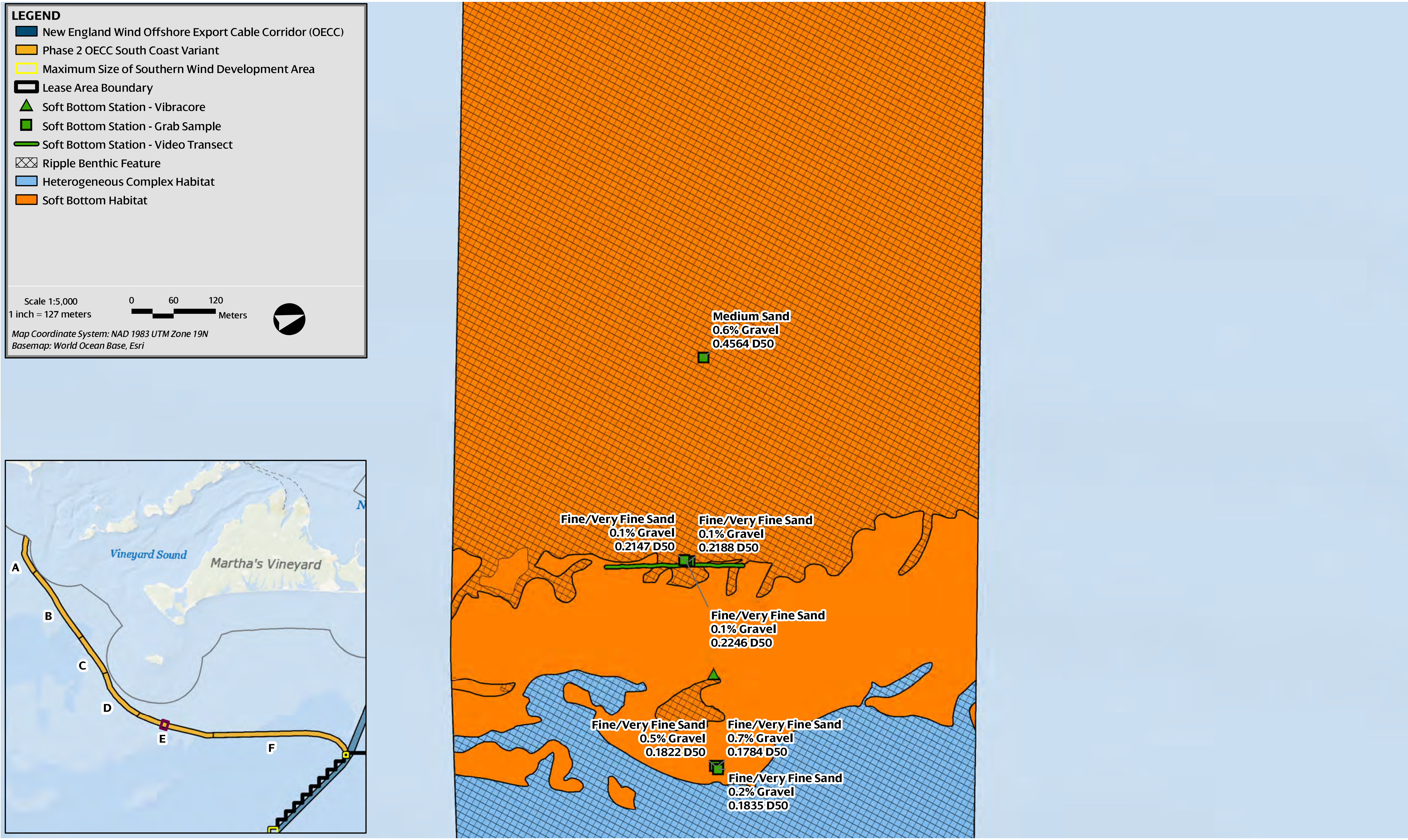


Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



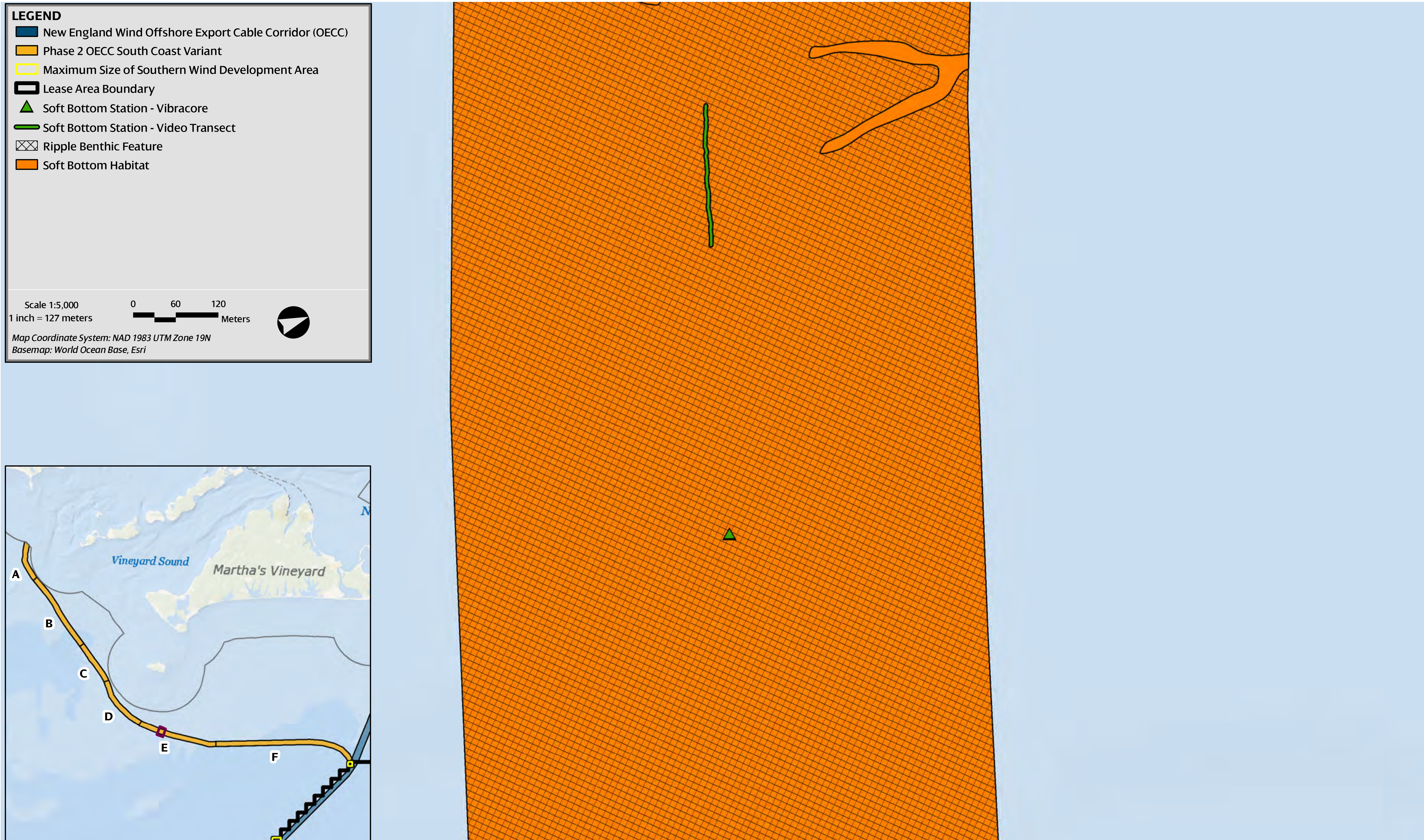
Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 36 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 37 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

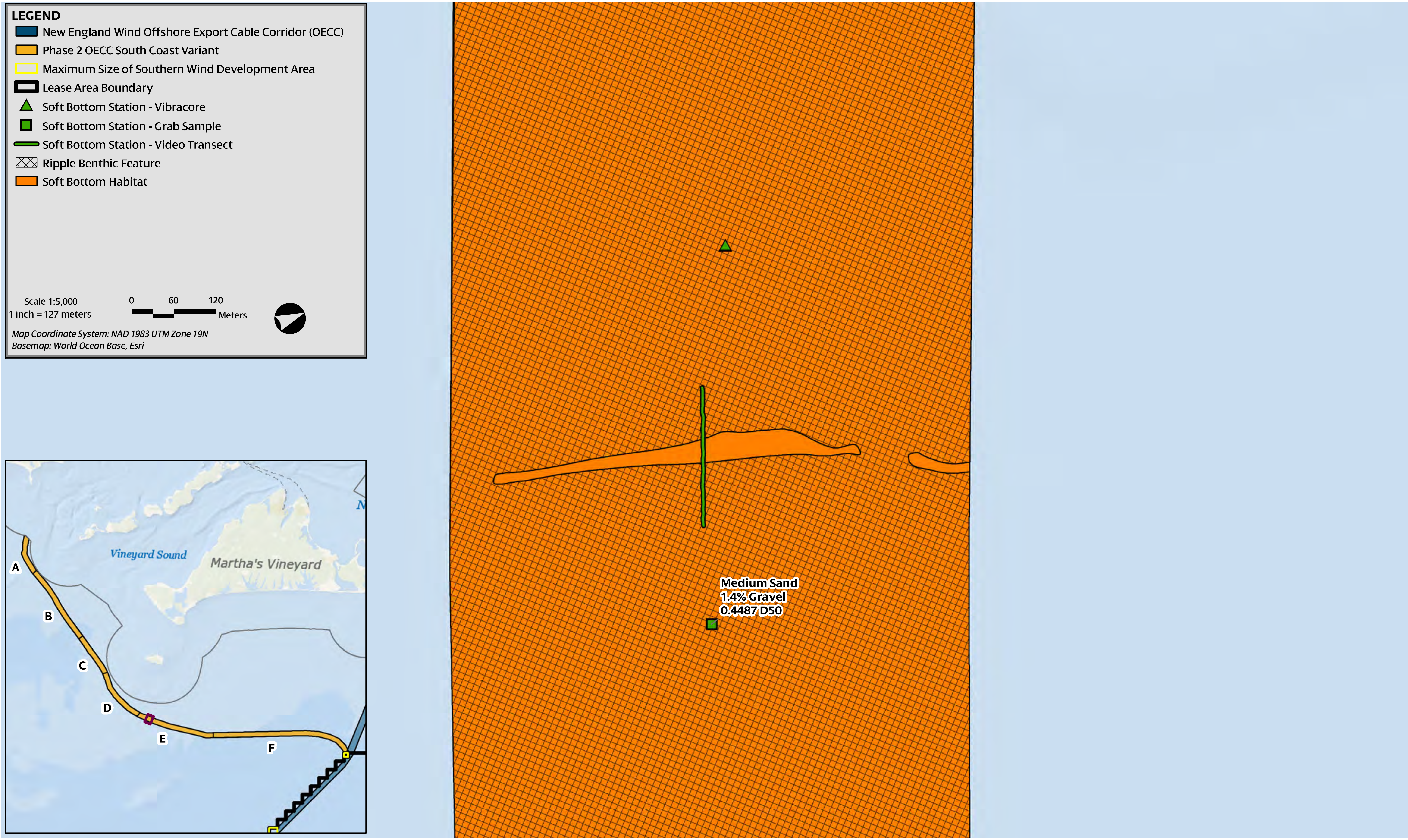
Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 38 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 39 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 40 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

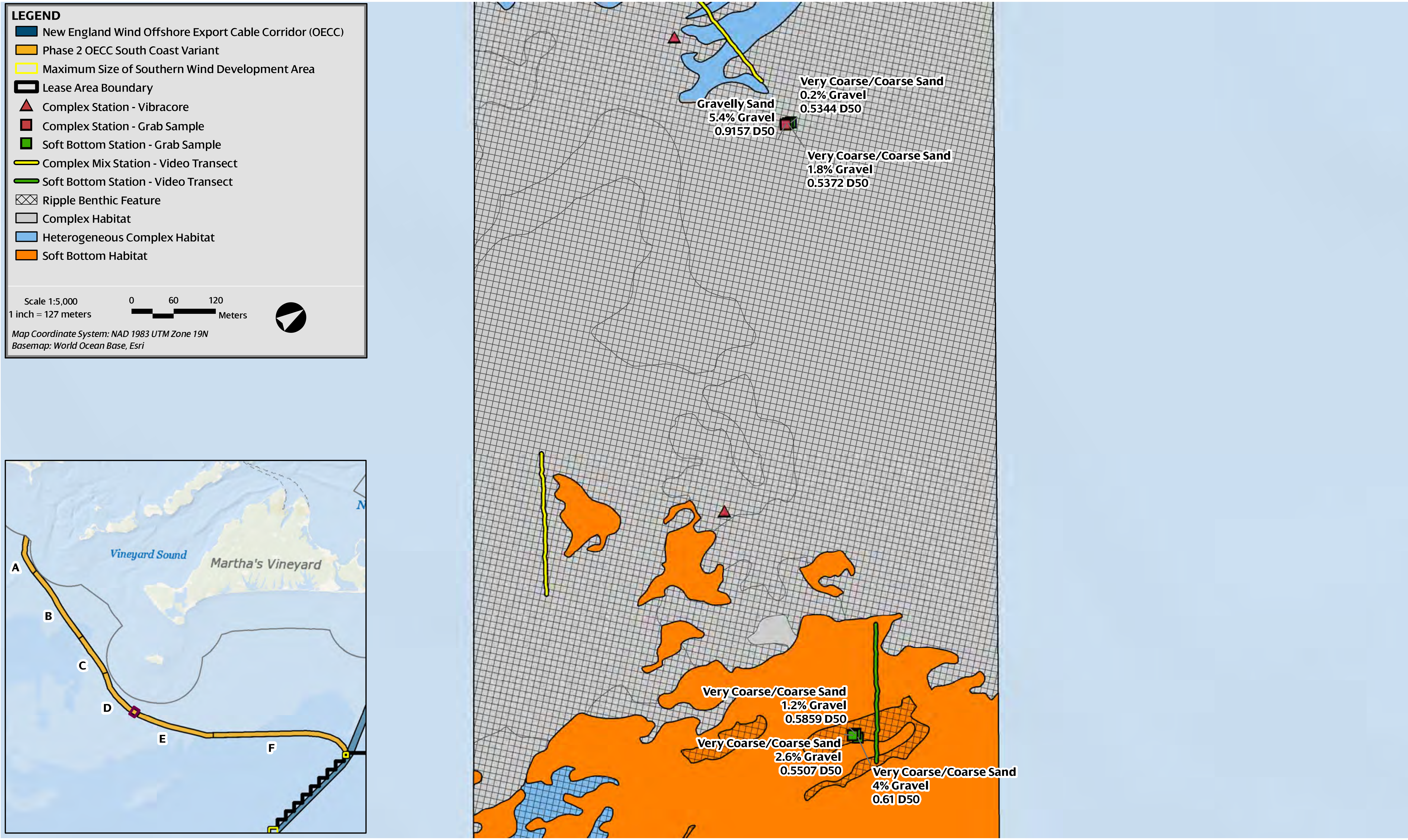
Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 41 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 42 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind

AVANGRID RENEWABLES

Figure 43 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

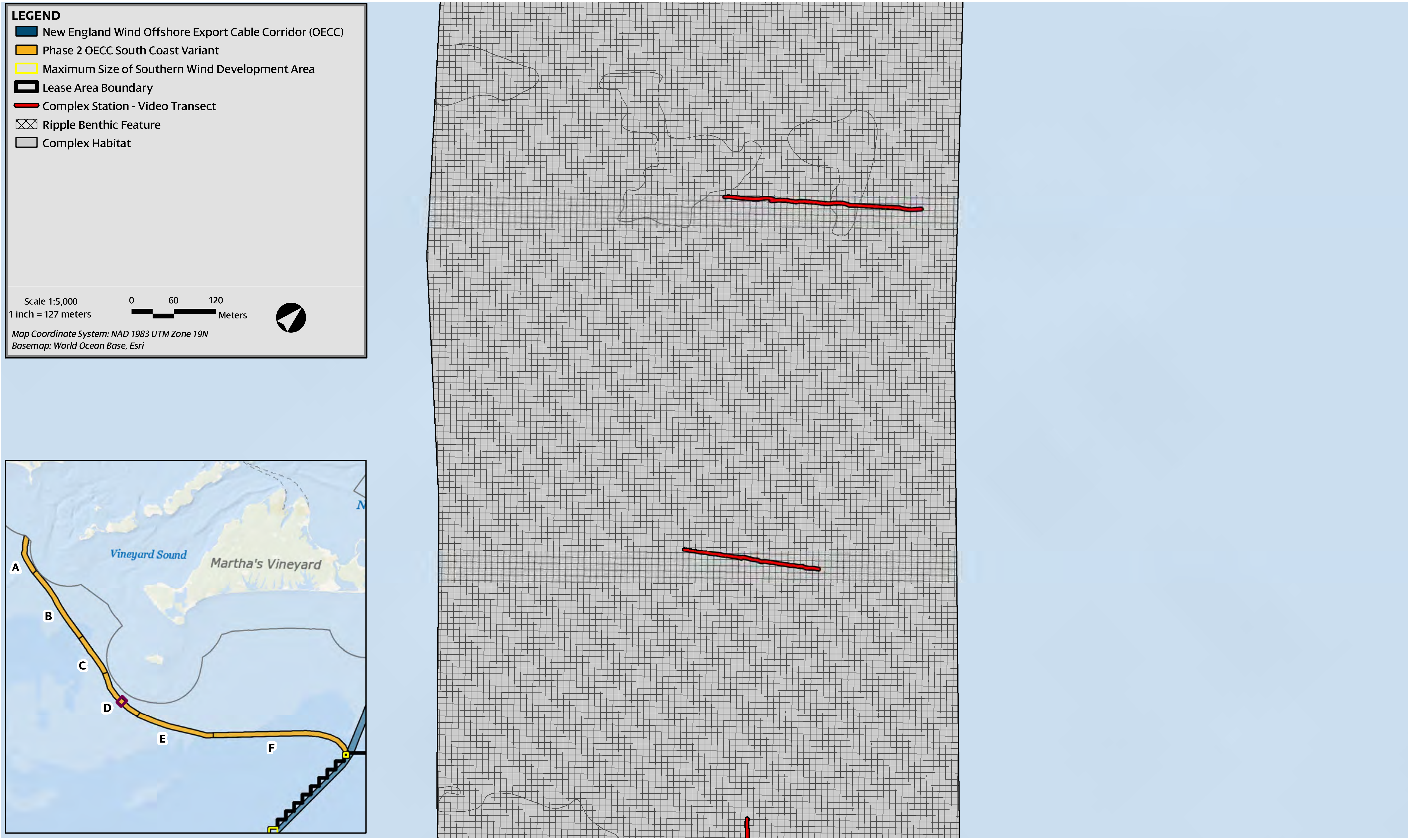
Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 44 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind

AVANGRID RENEWABLES

Figure 45 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

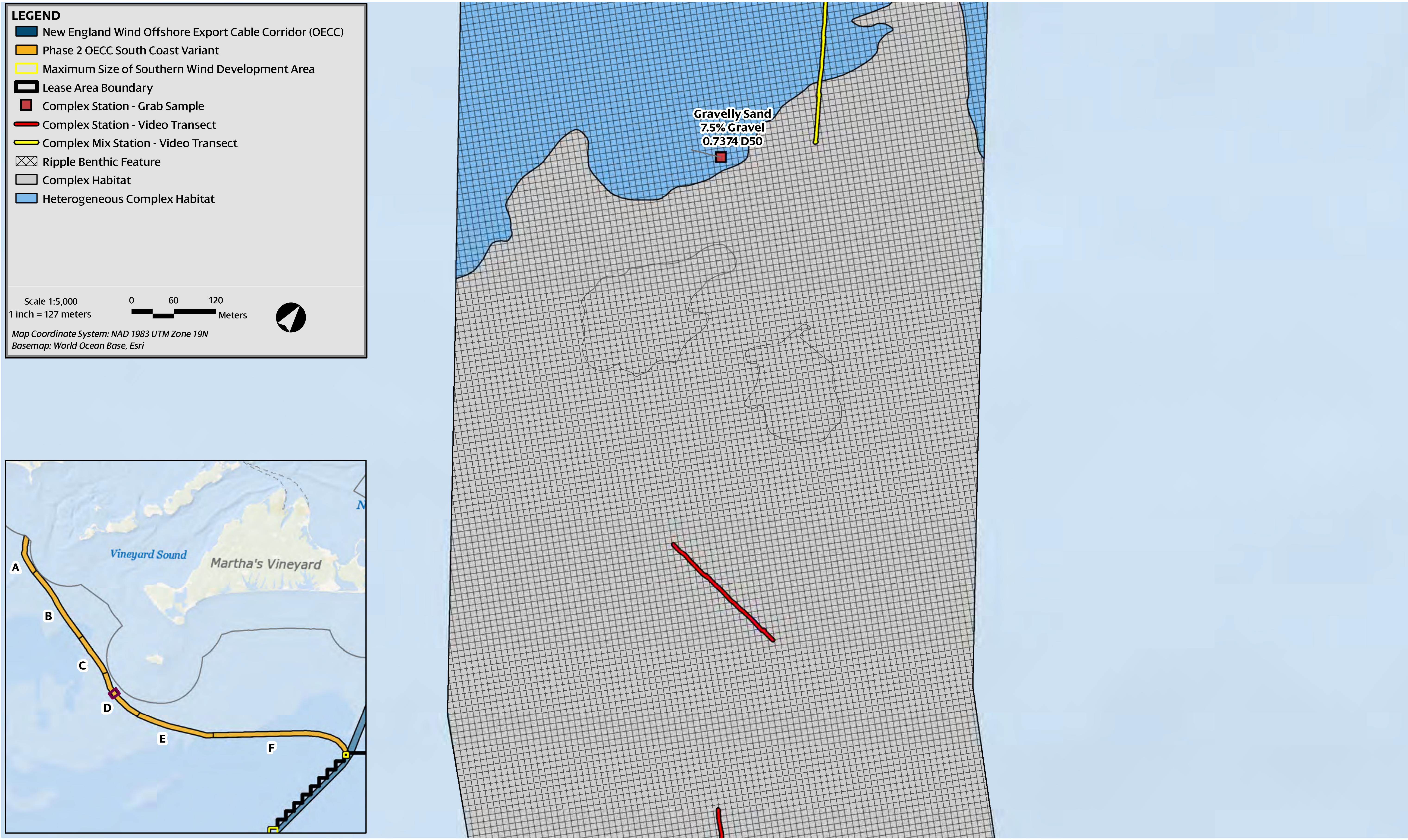
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



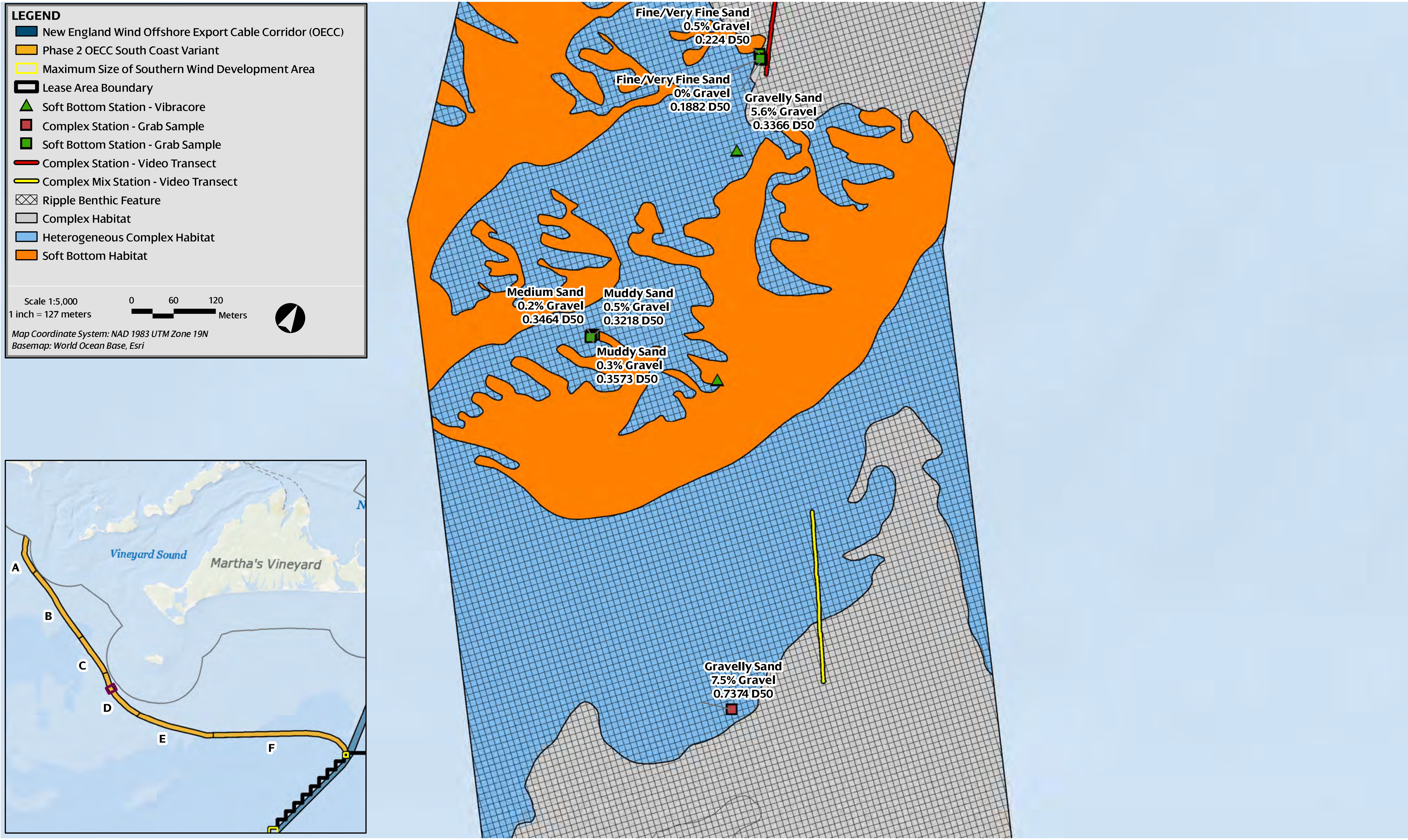
Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 47 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



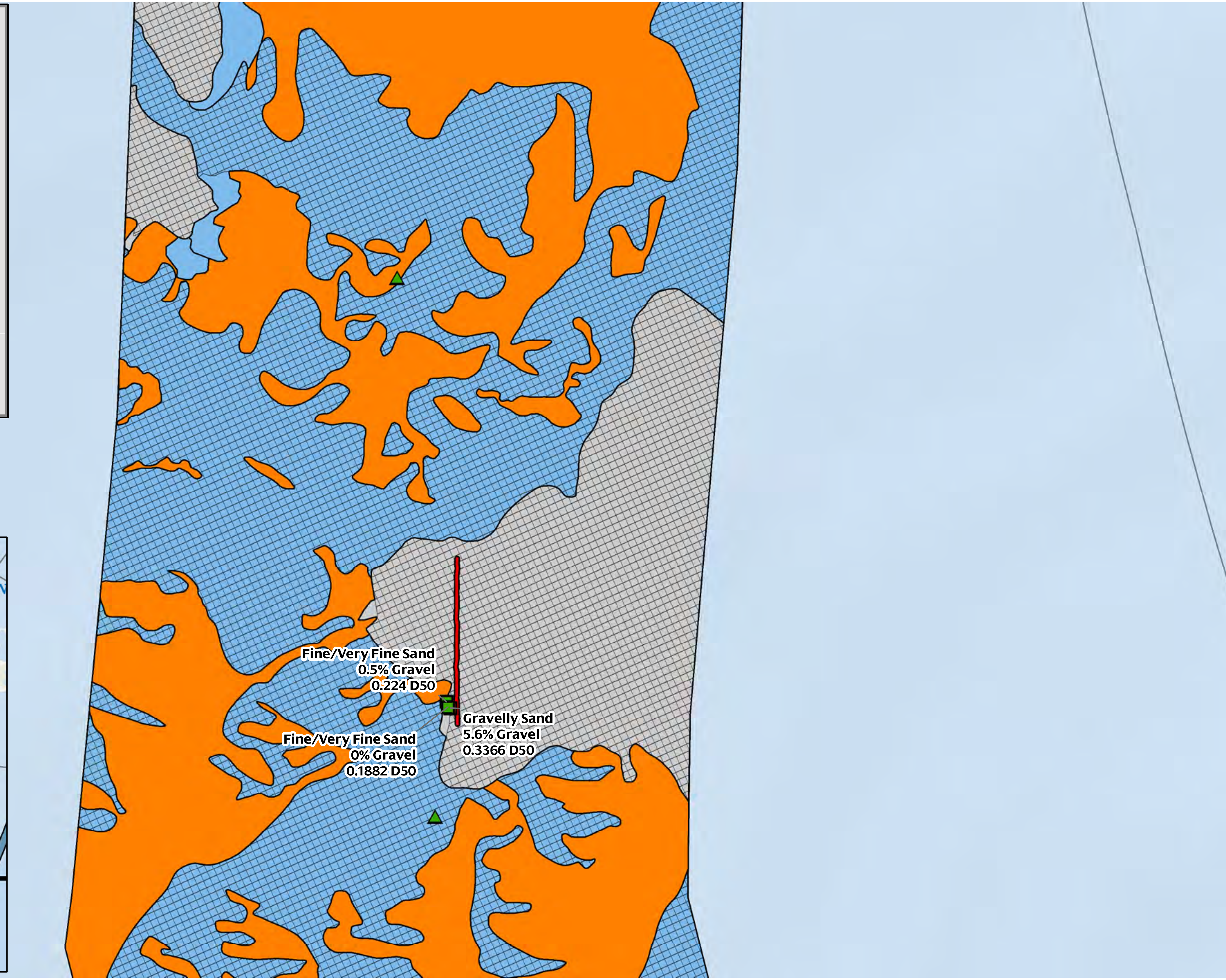
Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

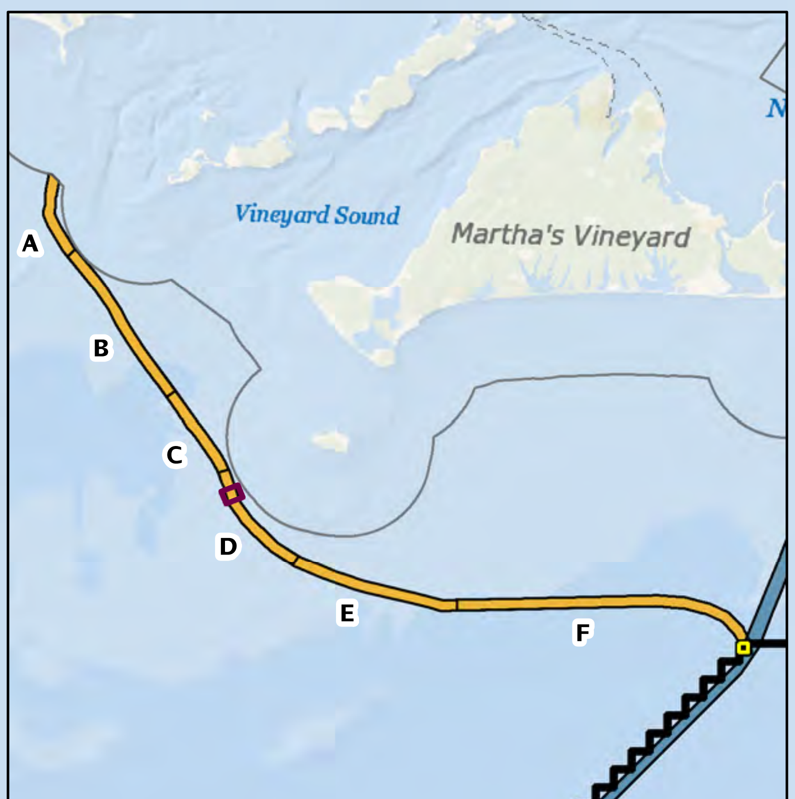
New England Wind
AVANGRID RENEWABLES

Figure 48 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services





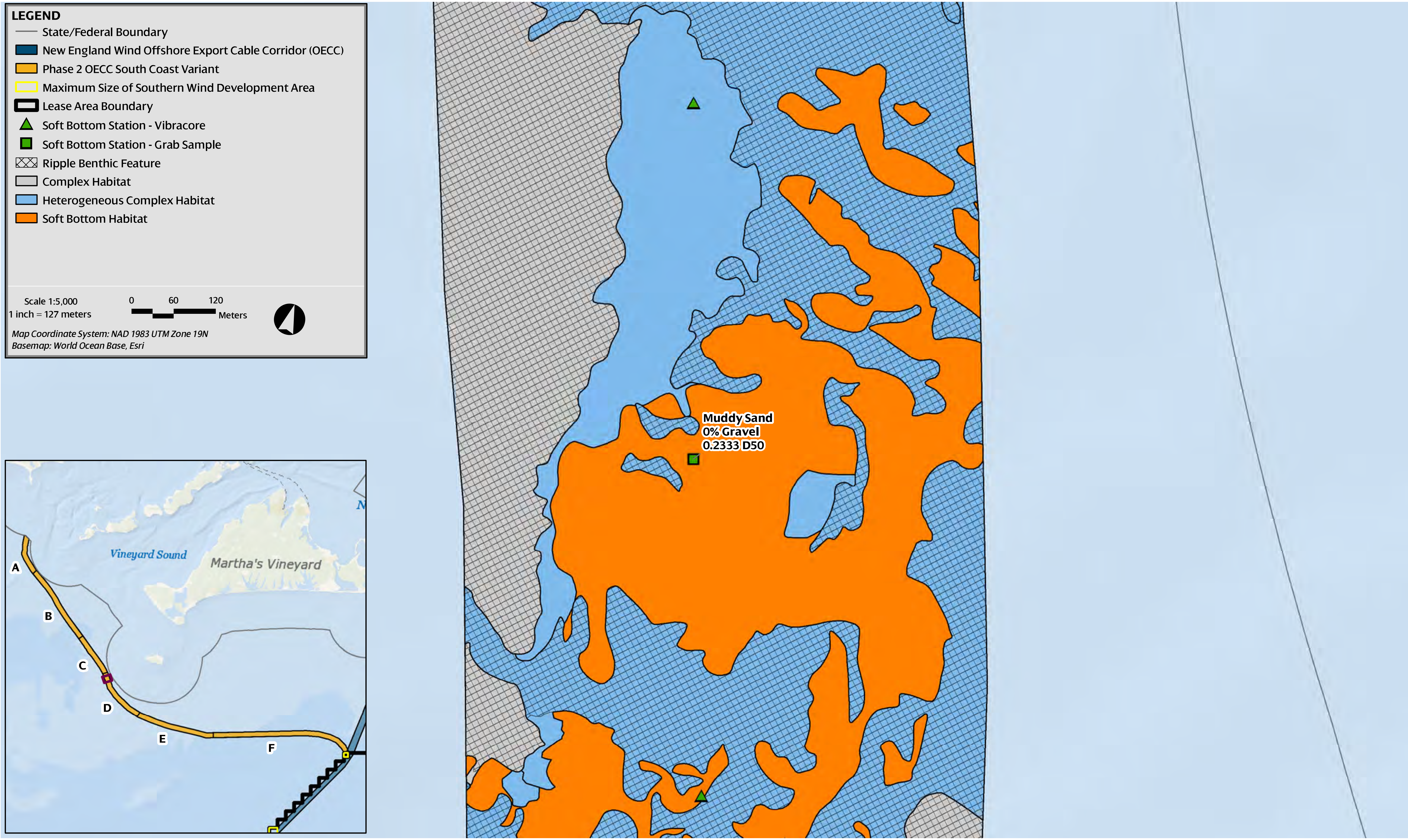
Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 49 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

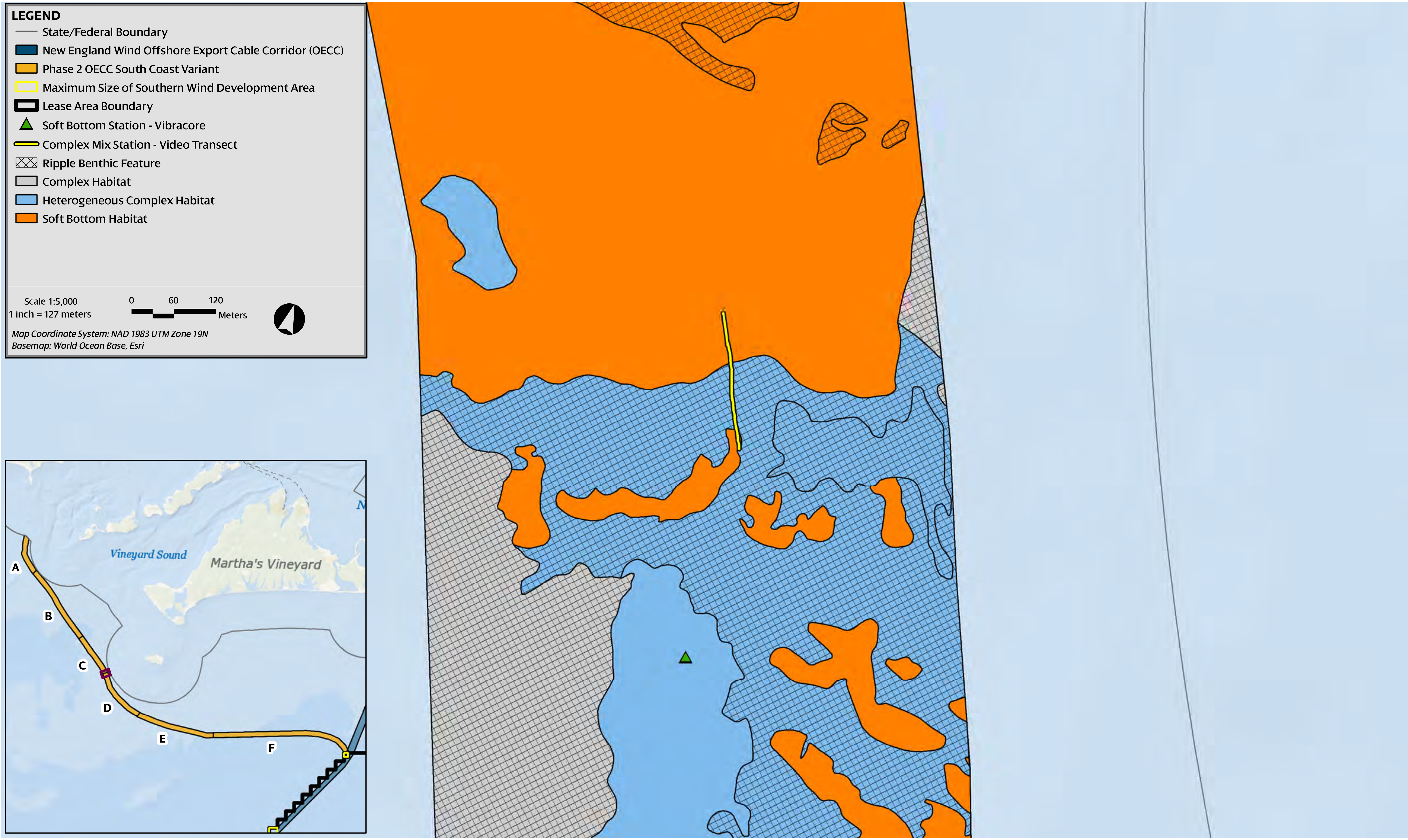
New England Wind

AVANGRID RENEWABLES

Figure 50 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 51 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

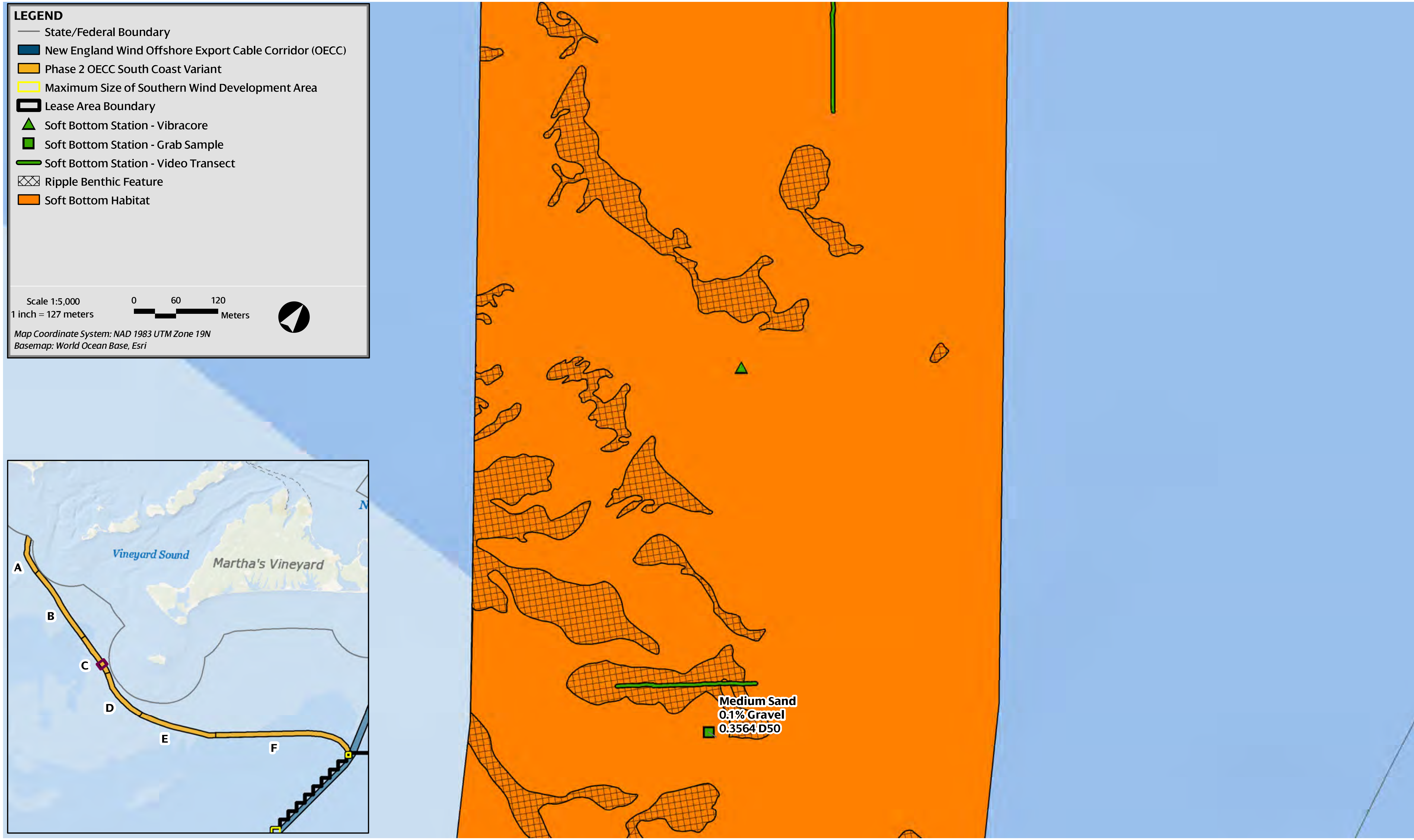
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

Figure 52 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 53 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

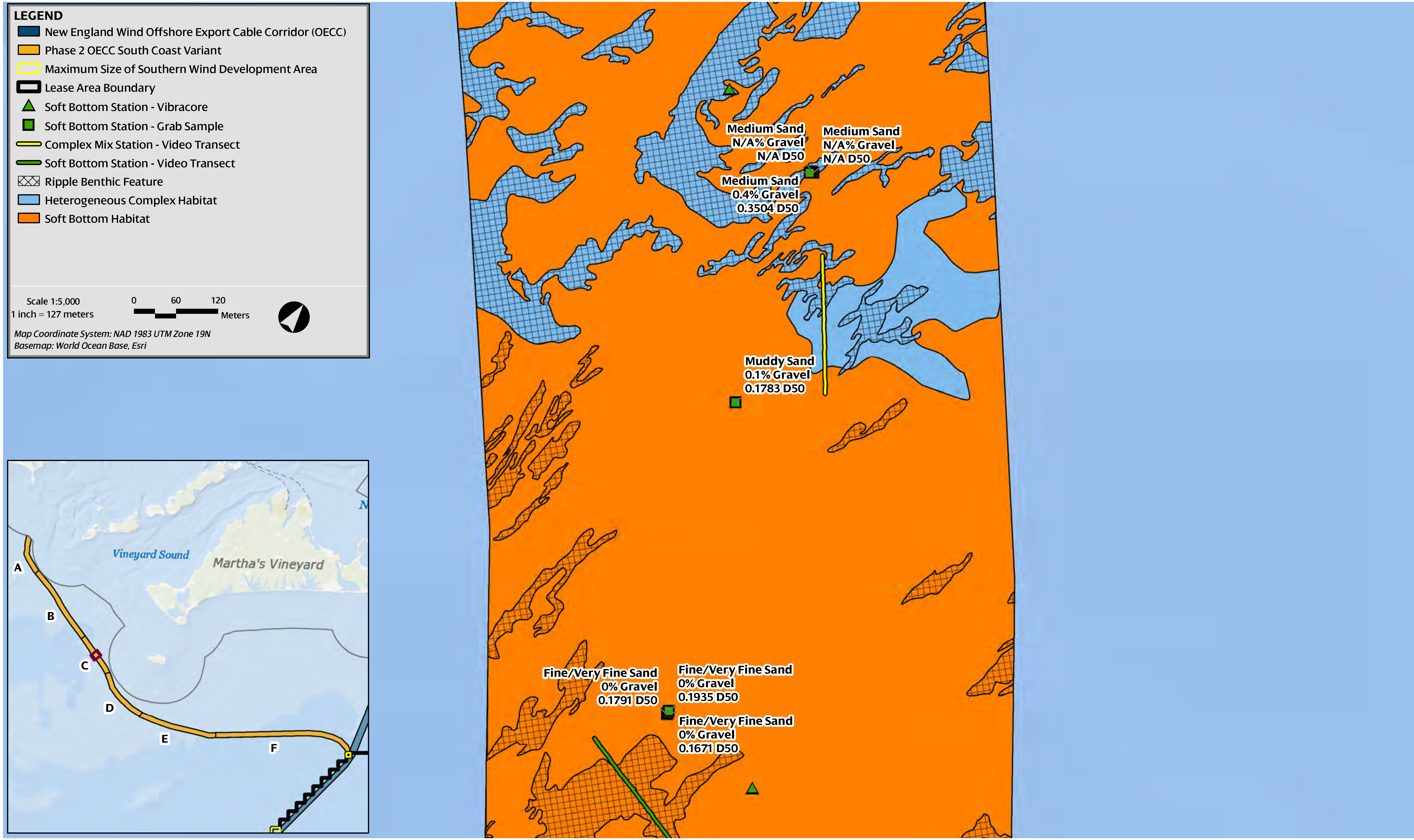
Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 54 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



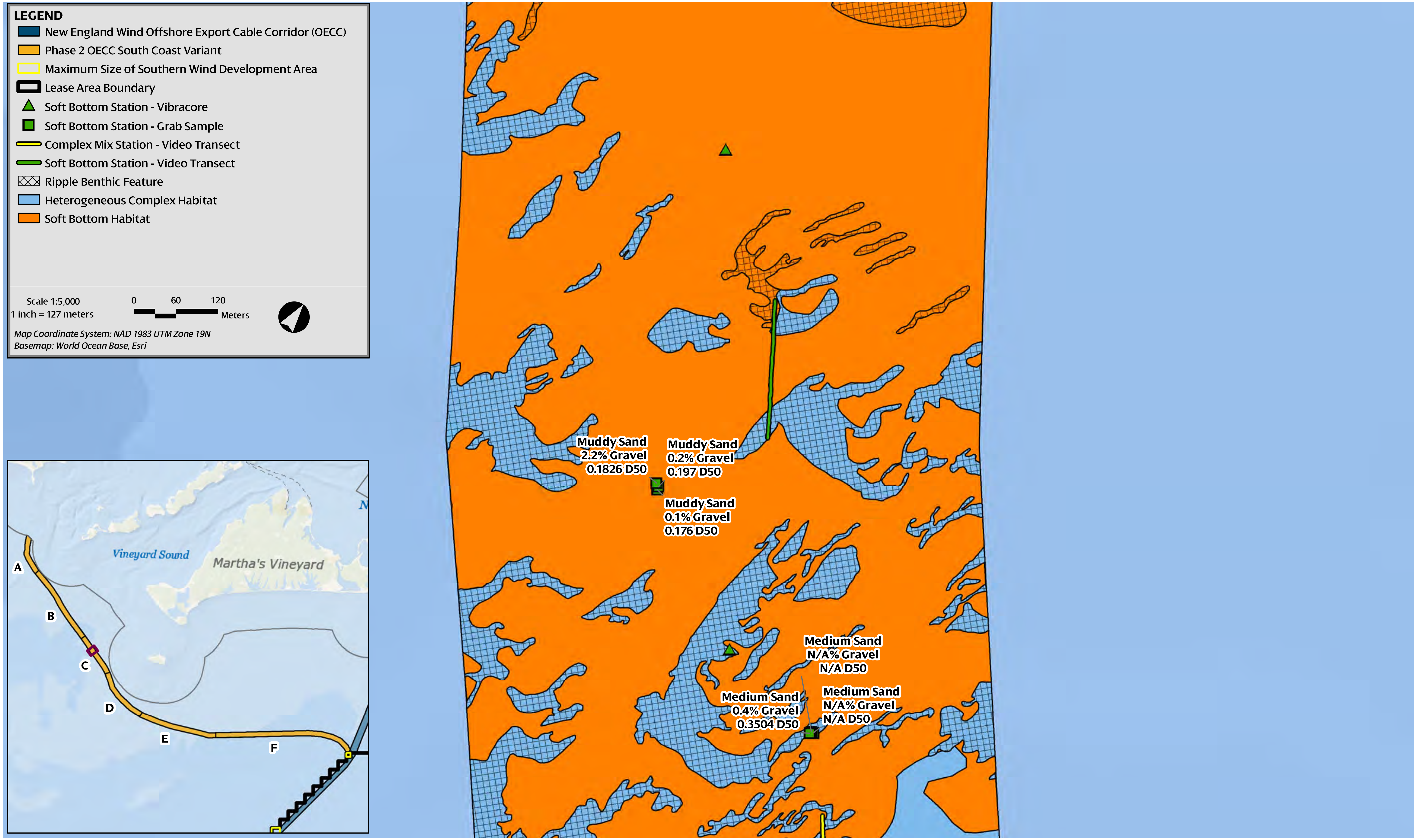
Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 55 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 56 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind

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Figure 57 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

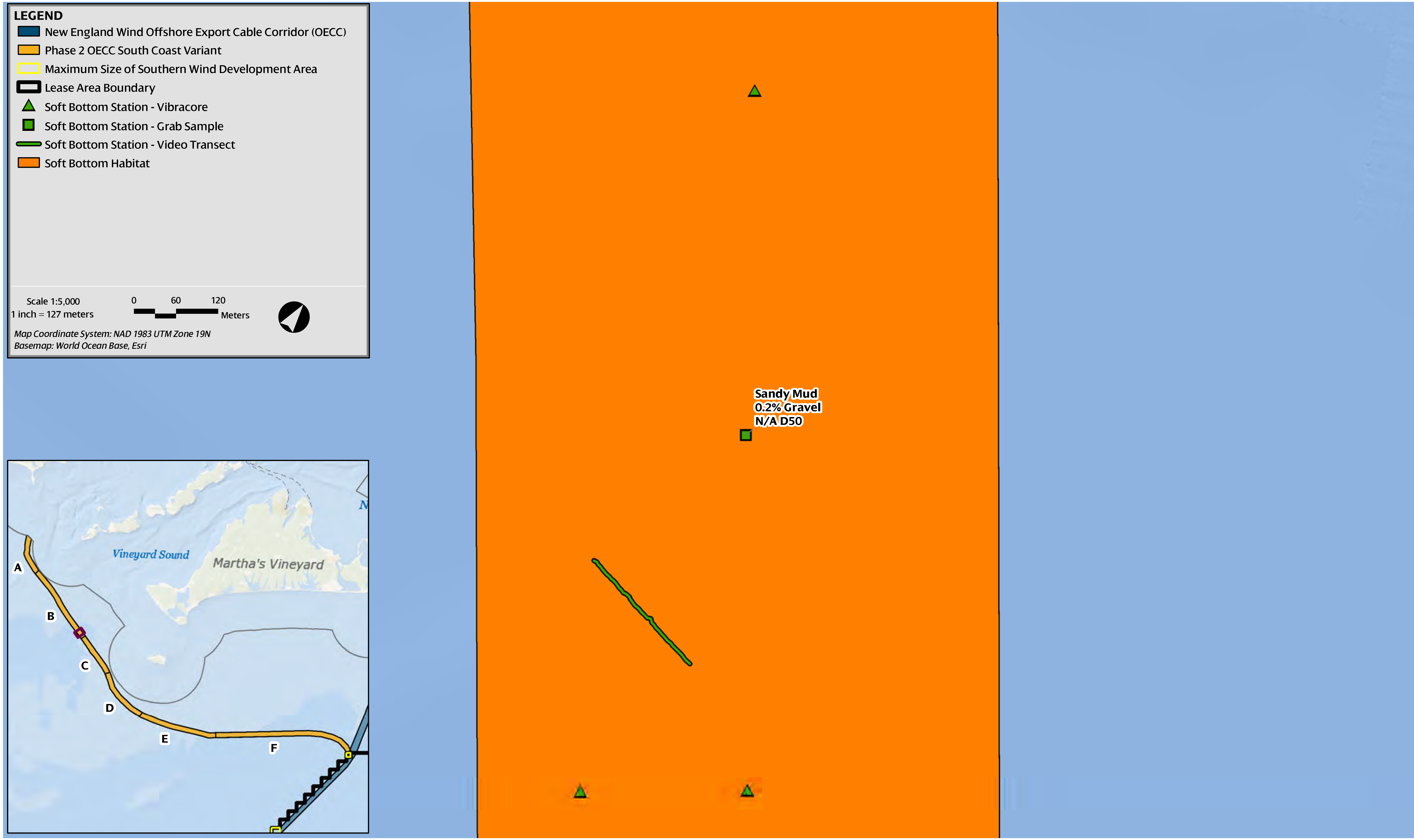
Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 59 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 60 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind

AVANGRID RENEWABLES

Figure 61 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

Figure 62 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

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New England Wind
AVANGRID RENEWABLES

Figure 63 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 64 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
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Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 65 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

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New England Wind
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Figure 66 of 80

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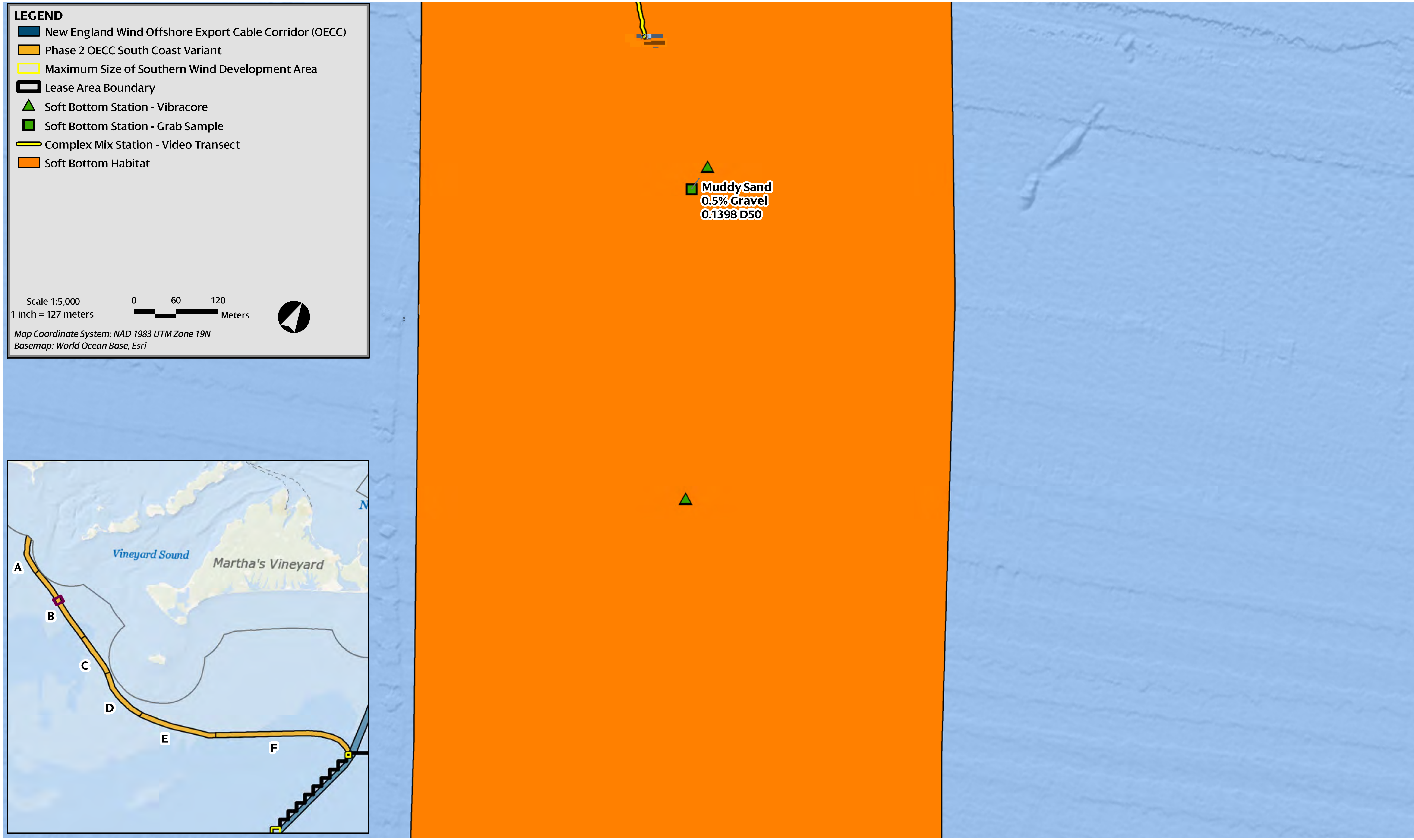
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind

AVANGRID RENEWABLES

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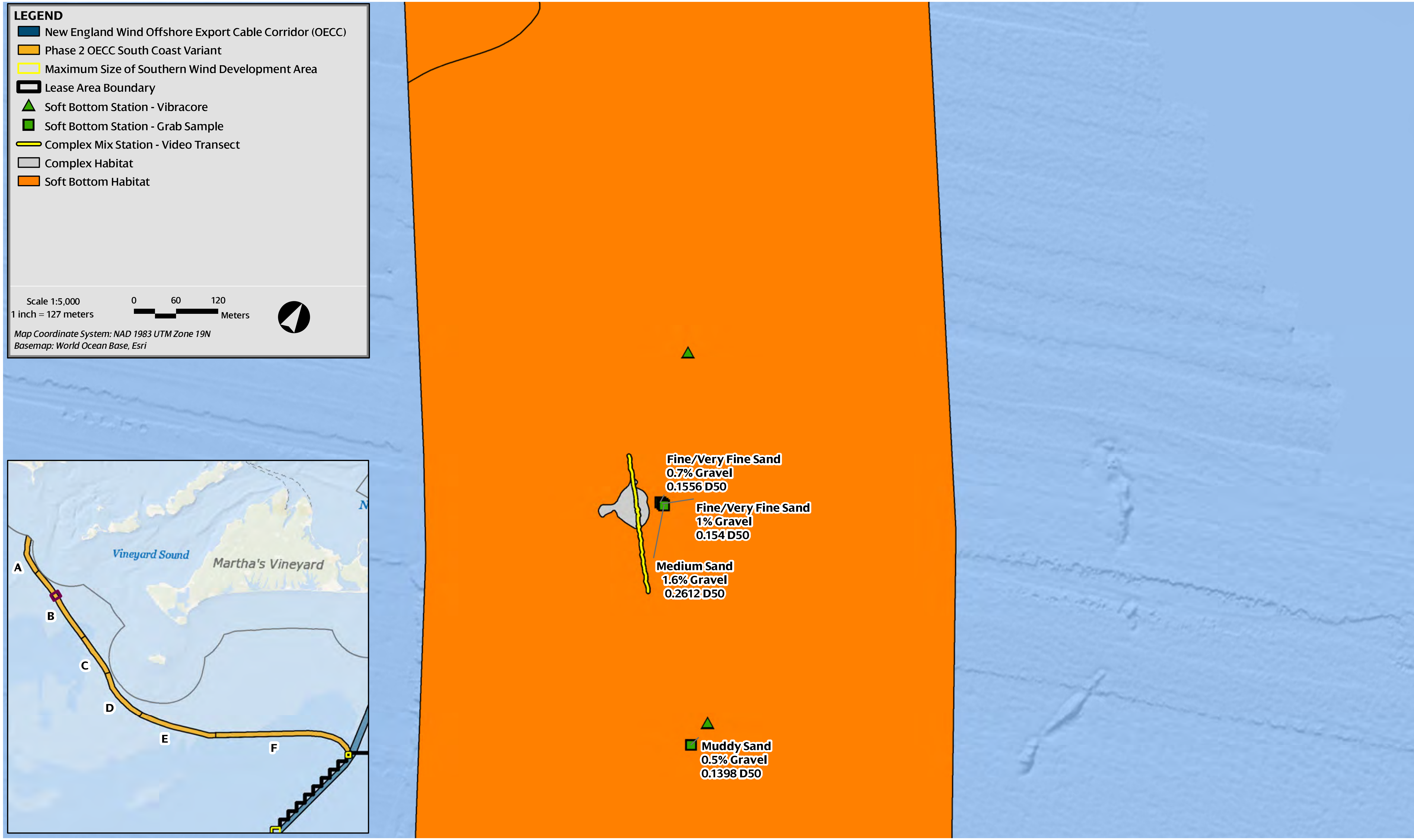

Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 68 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

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Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 69 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

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New England Wind
AVANGRID RENEWABLES

Figure 70 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
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New England Wind

AVANGRID RENEWABLES

Figure 71 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
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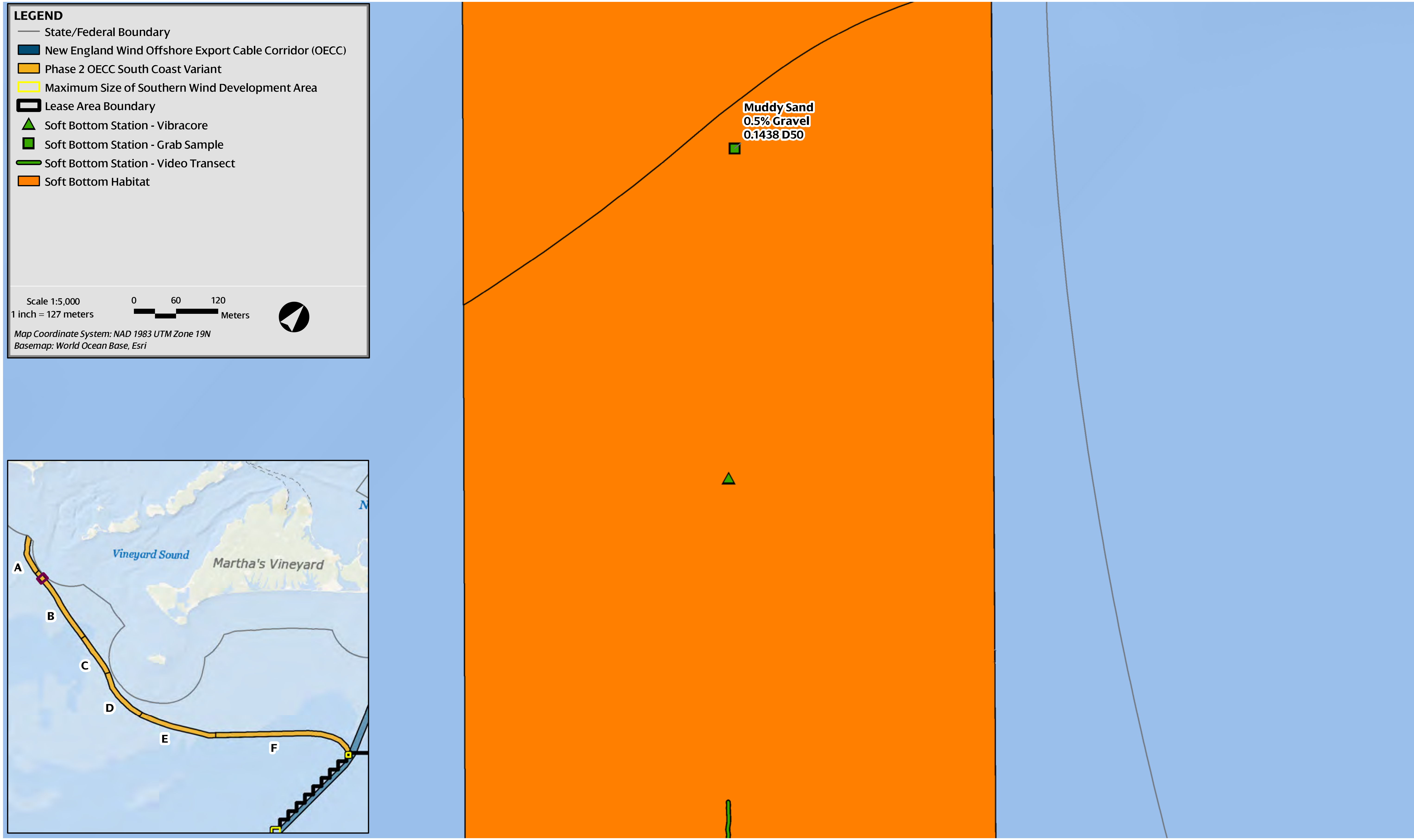
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 72 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
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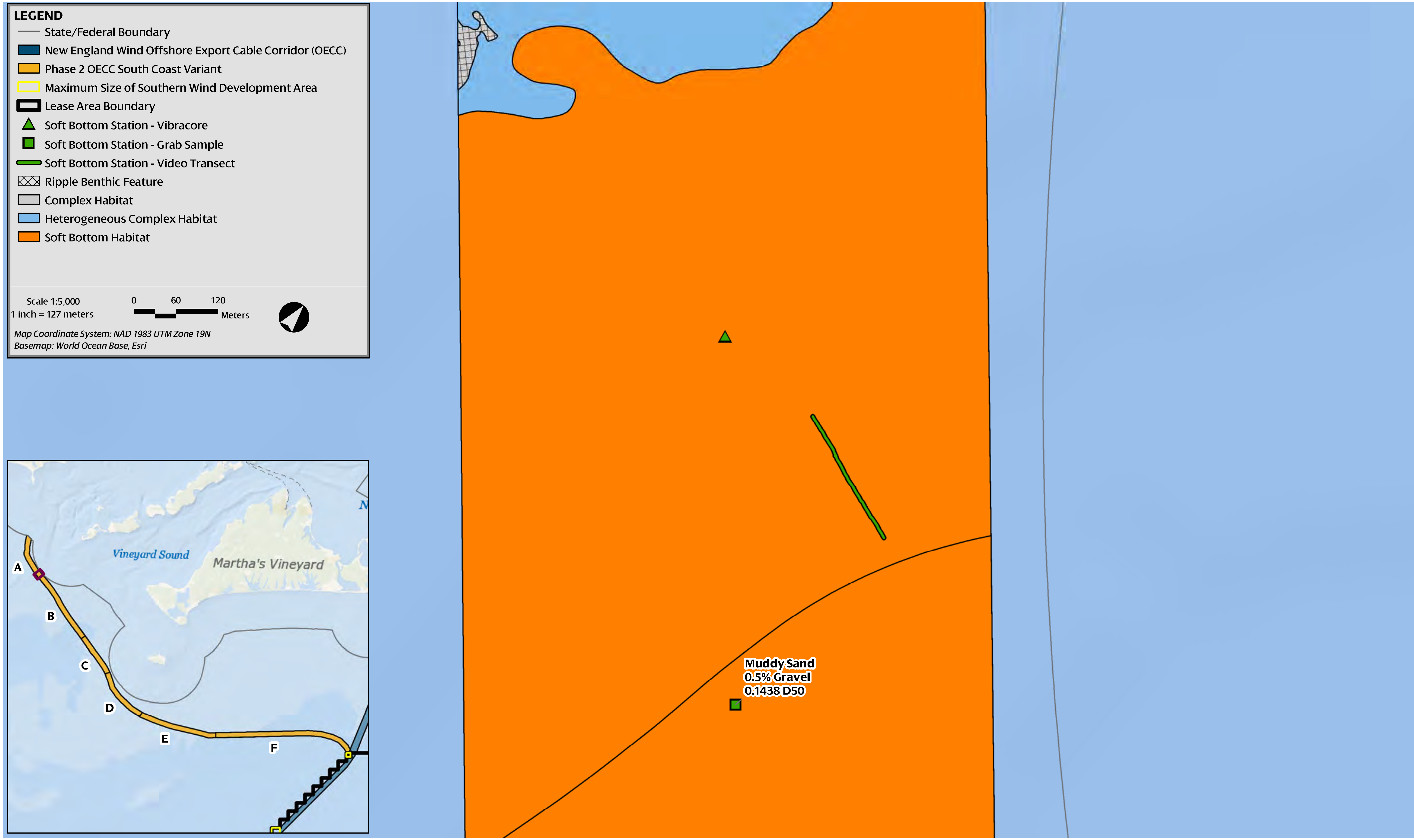
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind

AVANGRID RENEWABLES

Figure 73 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

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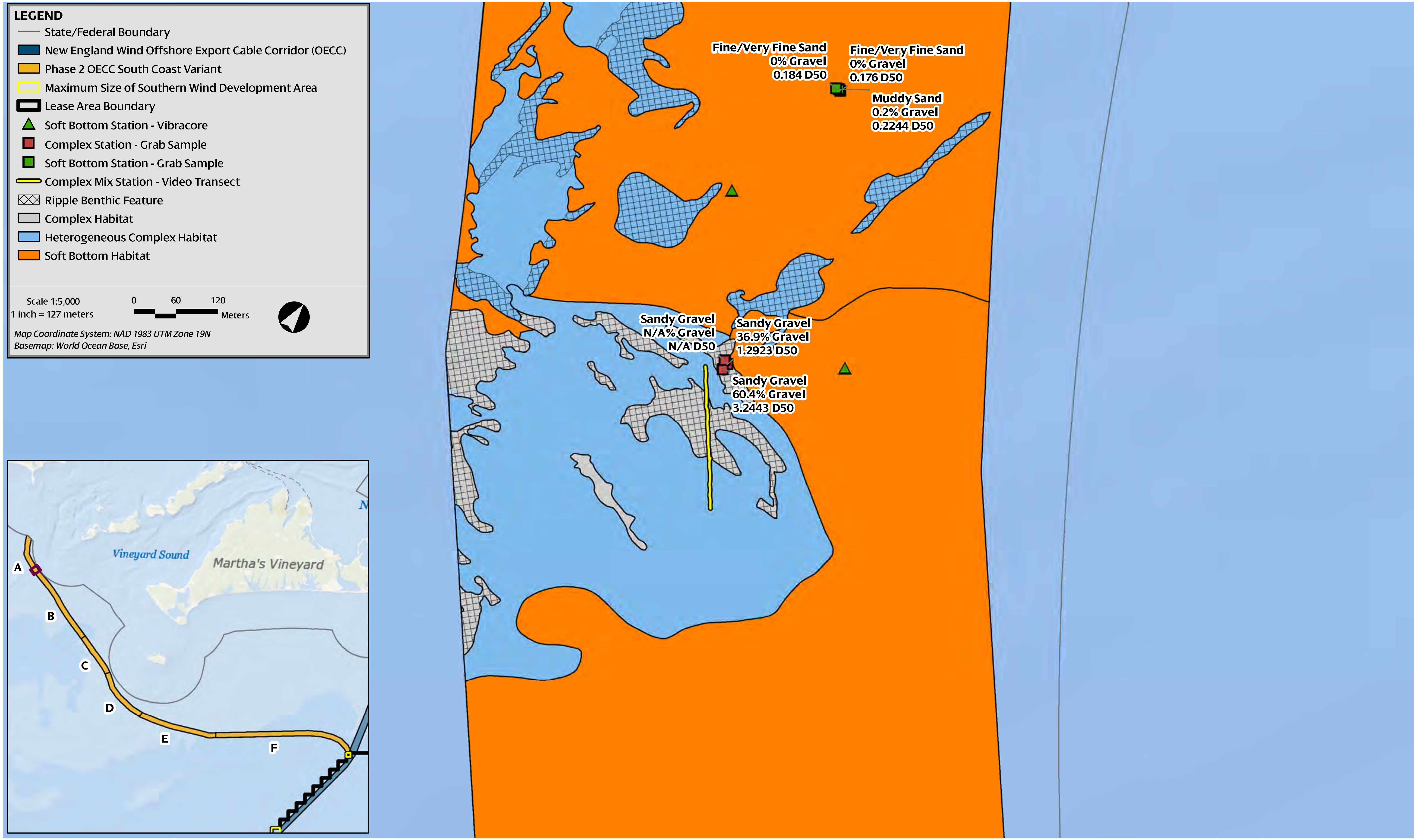

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New England Wind
AVANGRID RENEWABLES

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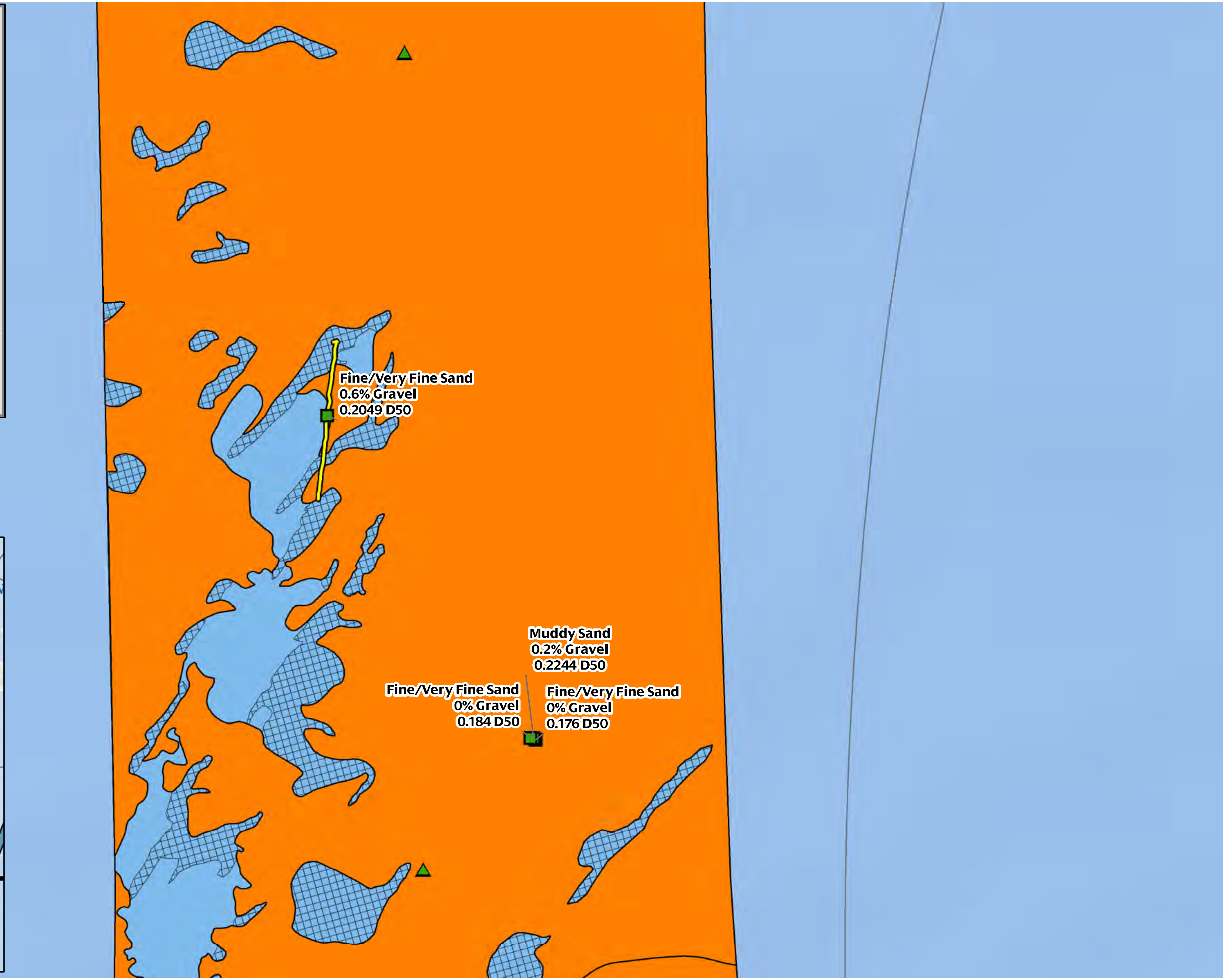
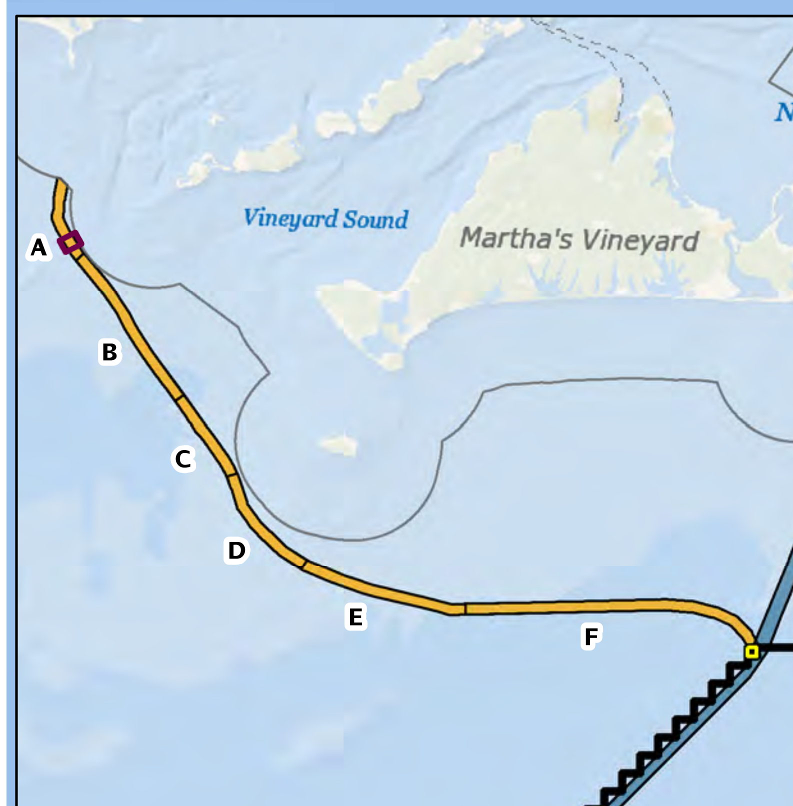


LEGEND

- State/Federal Boundary
- New England Wind Offshore Export Cable Corridor (OECC)
- Phase 2 OECC South Coast Variant
- Maximum Size of Southern Wind Development Area
- Lease Area Boundary
- Soft Bottom Station - Vibracore
- Soft Bottom Station - Grab Sample
- Complex Mix Station - Video Transect
- Ripple Benthic Feature
- Heterogeneous Complex Habitat
- Soft Bottom Habitat

Scale 1:5,000
1 inch = 127 meters
0 60 120 Meters

Map Coordinate System: NAD 1983 UTM Zone 19N
Basemap: World Ocean Base, Esri



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 75 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

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New England Wind
AVANGRID RENEWABLES

Figure 76 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021).
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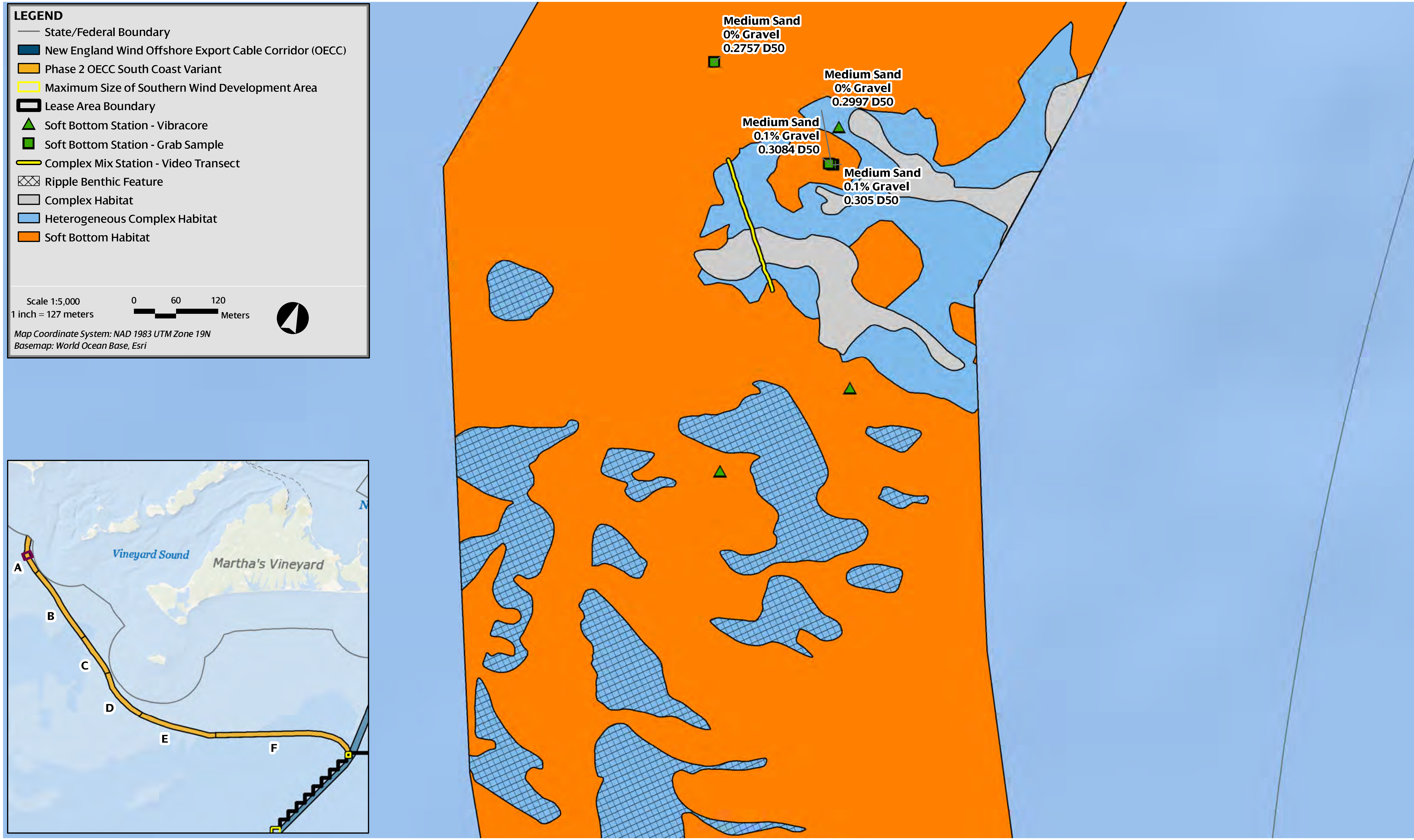
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



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New England Wind
AVANGRID RENEWABLES

Figure 77 of 80

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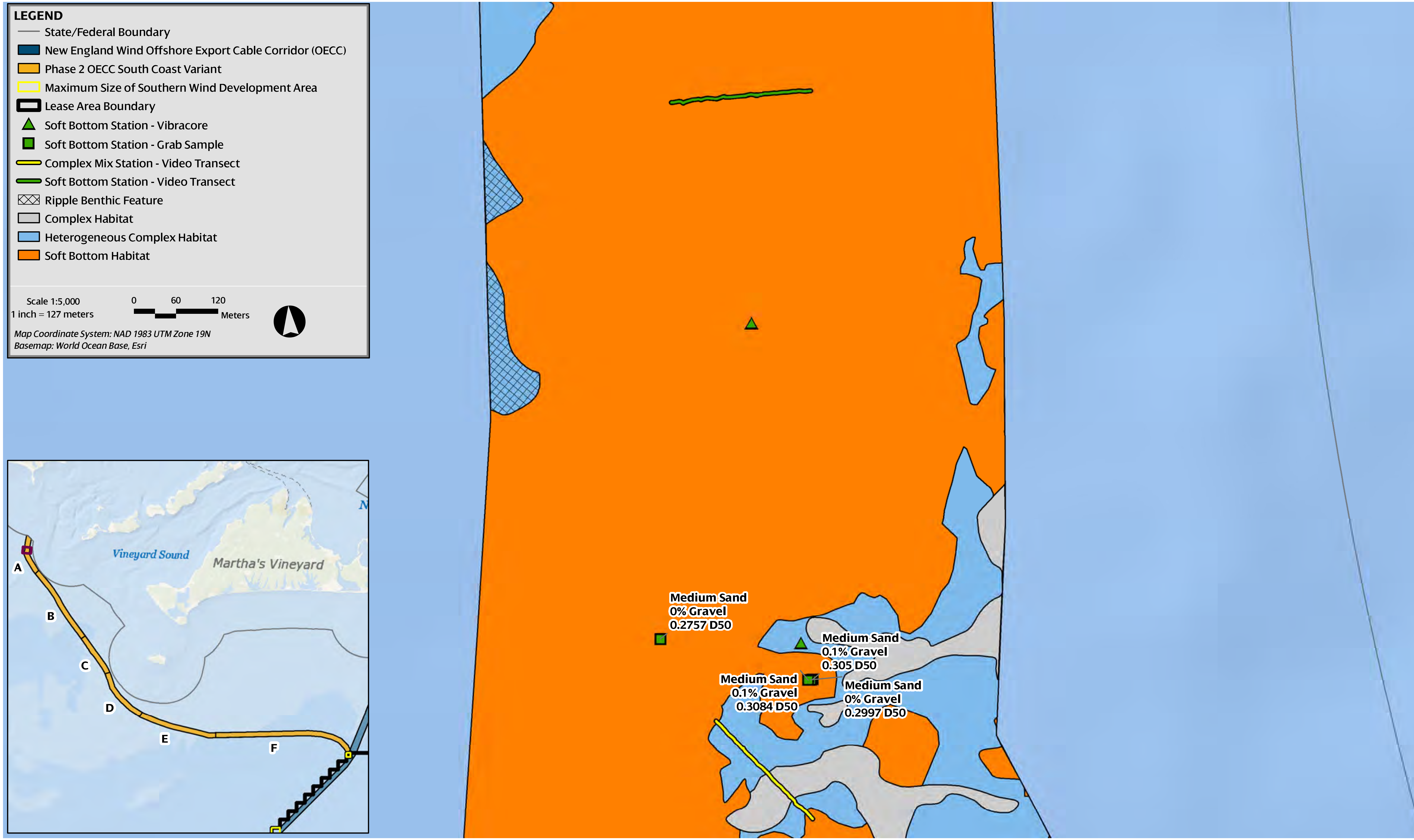
Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



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New England Wind
AVANGRID RENEWABLES

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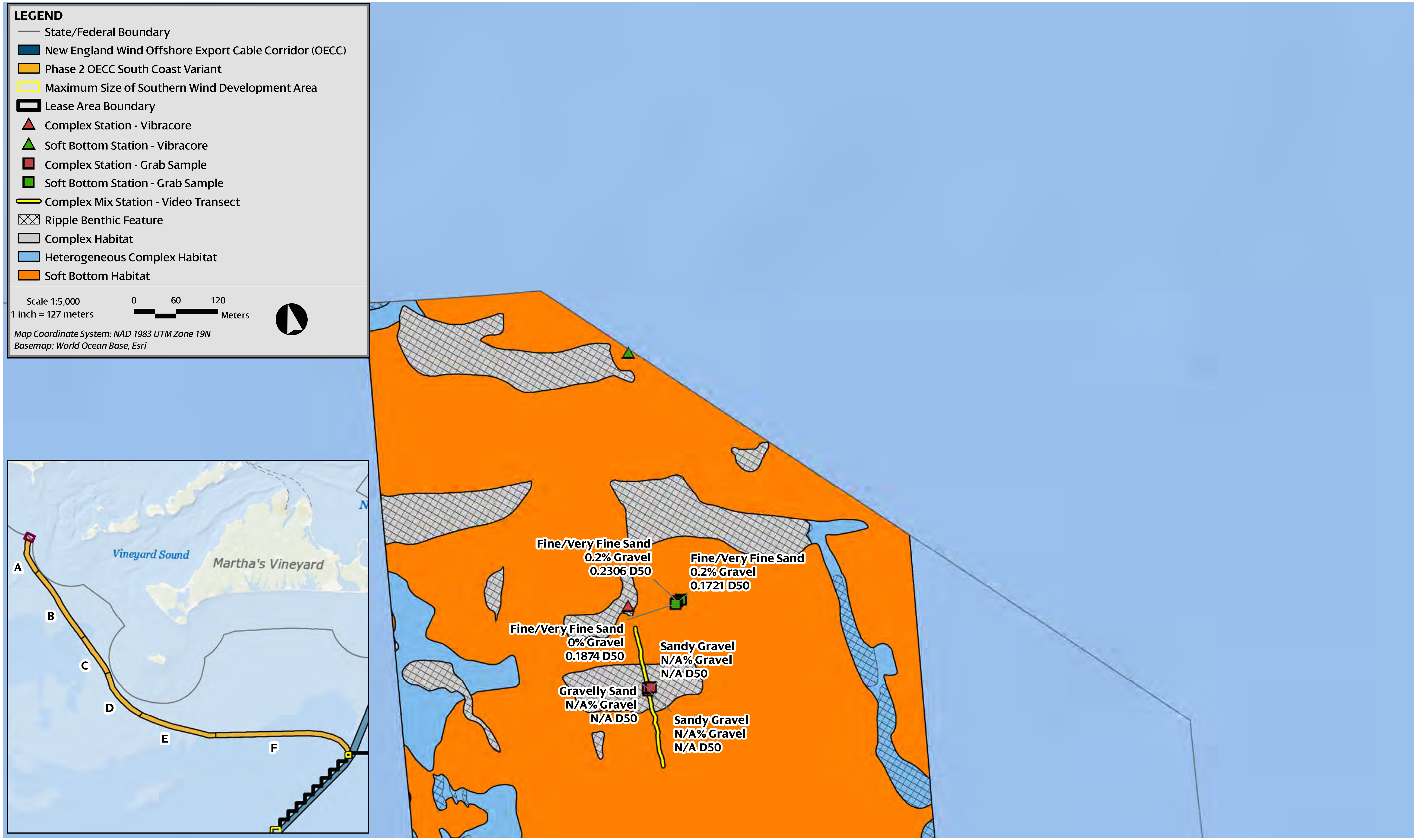
New England Wind
AVANGRID RENEWABLES

Figure 79 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



Where more than 50% of the sample passed through the finest USCS sieve, D50 is N/A. D50 size is in mm. Insufficient sediment recovery resulted in N/A for % gravel.

New England Wind
AVANGRID RENEWABLES

Figure 80 of 80

Large Scale Maps of Bottom Habitats and Benthic Features Located in the Offshore Development Area Following NMFS's Recommendations for Mapping Essential Fish Habitat (2021). Maps of the South Coast Variant are at a Scale of 1:5,000.