



**DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FLORIDA 32207-8915**

October 5, 2024

Regulatory Division
South Branch
Miami Permitting Section
SAJ-2004-12518 (SP-AAZ)

Mr. David Bernhart
Assistant Regional Administrator for Protected Resources
Southeast Regional Office
National Marine Fisheries Service
263 13th Avenue South
St. Petersburg, Florida 33701
Via email: nmfs.ser.esa.consultations@noaa.gov

Re: Request for Initiation of expedited informal consultation under section 7(a)(2) of the Endangered Species Act for Summers End (Coral Bay) SAJ-2004-12518. Consultation request originally submitted March 26, 2021 under formal consultation procedures.

Dear Mr. Bernhart,

Reference is made to Department of the Army (DA) permit application number SAJ-2004-12518 (SP-SLB), submitted by The Summer's End Group, LLC (SEG), for the proposed construction of a private commercial marina. The proposed project would require a permit from the U.S. Army Corps of Engineers (Corps) pursuant to Section 10 of the Rivers and Harbors Act (RHA) of 1899, as amended (33 U.S.C. § 403).

The proposed marina would be located at Coral Harbor, Estate Carolina, Coral Bay, St. John, U.S. Virgin Islands. Specifically, the proposed project would be located at coordinates 18.343277 °N, - 64.714555 °W. The application has been assigned the file number SAJ-2004-12518 (SP-SLB). We request initiation of expedited informal consultation under section 7(a)(2) of the Endangered Species Act (ESA) for the Summer's End Group, LLC. We have determined that the proposed activity may affect the ESA-listed species and critical habitat included in the table(s) below. Our supporting analysis is provided below.

Pursuant to our request for expedited informal consultation, the Corps is providing, enclosing, or otherwise identifying the following information:

- A description of the action to be considered;
- A description of the action area;
- A description of any listed species or designated critical habitat (DCH) that may be affected by the action; and
- An analysis of the potential routes of effect on any listed species or DCH.

1. PROPOSED ACTION

a. Project Description

The proposed project consists in the construction of a private commercial marina at Coral Harbor, Estate Carolina, Coral Bay, St. John, U.S. Virgin Islands. Specifically, the proposed project would be located at coordinates 18.343277 °N, - 64.714555 °W. Project plans are provided below in Figure 1.

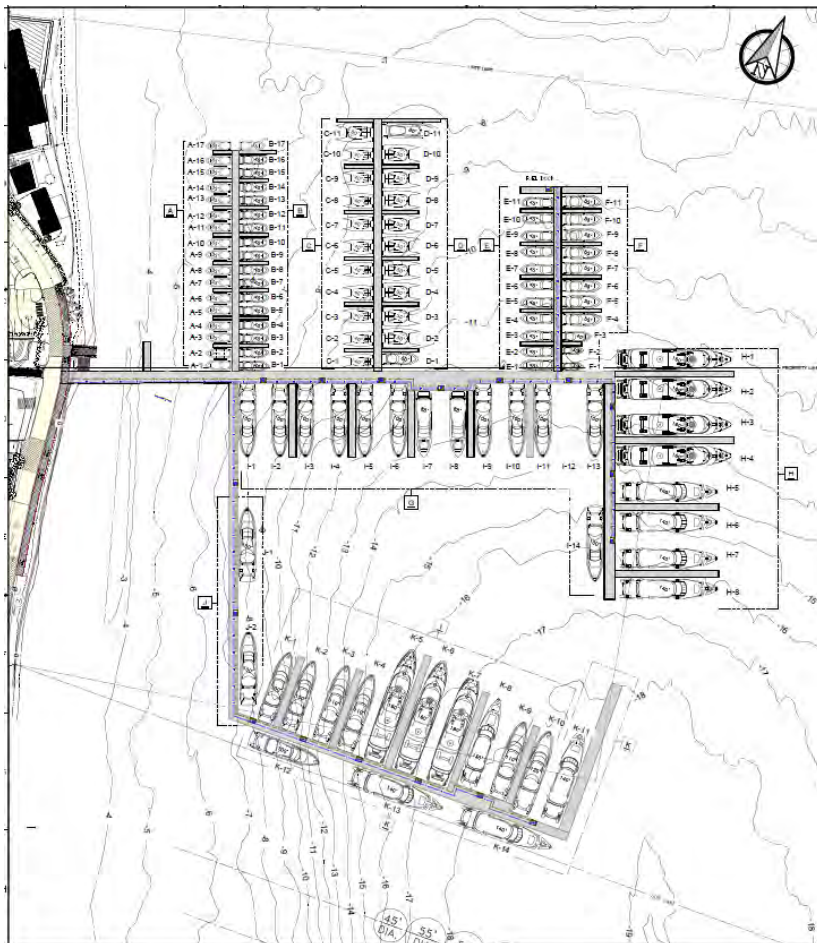


Figure 1. Proposed project.

The proposed action does not fall under the Jacksonville District Biological Opinion (JAXBO) because the project requires the removal of red mangroves waterward of the mean high-water line and does not comply with AP.12.

The proposed action does not fall under the Jacksonville District Biological Opinion (JAXBO) because of the total number of vessels proposed.

The following section describes the components of the proposed project and the associated construction methods and details:

The applicant proposes to construct a 67,832.63 square-foot (1.557 acres) fixed-dock marina consisting of 127-slips of varying lengths (30-160'). The construction includes the installation of approximately 867 steel pilings [470 of those would be 14-inch steel pipes filled with concrete; and 397 pilings would be 18-inch steel pipes filled with concrete, and the installation of twenty-two (22) boat lifts along the west side of the lateral north pier closest to the shore to accommodate vessels up to 35 feet in length.

The project includes the installation of twelve (12) 12-15" mooring buoys. Each mooring buoy would be secured to the marine bottom using three (3) helmken embedment auger type anchors with 10-foot embedment depth and properly floated lines. Also, the applicant is proposing seven (7) informational buoys to advise mariners to avoid shallow reefs while in transit and to avoid anchoring in areas of corals and seagrass.

The existing navigation channel will be utilized for the ingress/egress to the marina. There is an existing rip-rap revetment along the southern shoreline of Coral Harbor, which would not be modified or affected as part of the proposed project. The docks, finger piers, and walkways of the marina would have grated decking with 43 % open space. The proposed height of the structures is proposed at 4' above MHWL for the north club and 5' above MHWL for the south club. Average water depths within the marina footprint would be approximately 12 feet. Construction of the marina would not require dredging of any areas within Coral Harbor. Mooring piles would not be installed to operate this marina because each slip includes a full-length dock finger to support each vessel.

The Corps assessed direct and indirect impacts to aquatic resources as a result of this project are outlined below and also in the accompanying table.

Direct impacts include:
the areas below the dock footprint

the areas below the vessels moored at the docks
the areas where the mooring buoys would be located
the areas where the informational buoys would be located

Indirect impacts include:

the areas where the construction vessels spud and/or work*
areas that experience a measurable increase in turbidity during construction and operation of the marina.

Table summarizing seagrass impacts broken down by project components.

Docks footprint + shade	0.70 acres or 30,483 sq ft
Vessels + shade (assuming maximum capacity of marina-Direct Impact)	1.219 acres or 53,080 sq ft
Spudding (Direct Impact)	0.022 acres or 984sq ft
Other construction impacts (Direct Impact)	0.134 acres or 5922.2 sq ft
Operation of the marina (propwash) (Indirect Impact)	0.34 acres or 15,000 sq ft
Total impacts	2.39 acres or 104,108.4 sq ft

The applicant indicated that at no time would construction or monitoring vessels anchor in the bay.

The area within Coral Bay was surveyed for aquatic resources in June/July 2009, May and November 2012, February 2014, 2015, 2016, May and June of 2017, and February 2018. The 2018 survey also indicated that some of the dominant species of seagrasses changed in areas, as well as a narrow muddy bank of uncolonized sand formed along the shoreline. However, the surveys consistently showed that

the area supports seagrasses, while some corals are located closer to the shoreline.

The most recent survey was undertaken in 2022-2023 following the NMFS/USACE approved survey methods. The survey shows shifts in habitat boundaries from the previous 2018 survey with increases in macroalgae and *Halophila stipulacea* and a decrease of dense seagrass colonization. Many of these shifts were outside the Summer's End Group (SEG) development footprint. The seagrass loss may be partially related to Sargassum inundations in the harbor since many of these occurred in the shallowest areas where dense seagrass was most abundant. The areas of *H. stipulacea* colonization and the *H. stipulacea* density have both notably increased in the overall harbor, while this is primarily outside the project footprint it has contributed to the loss of native seagrass within the marina footprint. There was also an increase in drift algae over the uncolonized unconsolidated sediment, again, beyond the marina footprint. At least 1 *Acropora palmata*, and a *Dendrogyra cylindrus* was lost between the 2022-2023 surveys and the previous survey 4.5 years before. Over the 4.5-year period there has been a notable loss of native seagrass in the harbor and areas have become colonized by macroalgae and *H. stipulacea*.

The marina would provide facilities for fueling, solid waste disposal, potable water and electrical power supply and sewage pump-out services. The upland work is described as Works proposed on Parcels:10-17, 10-18, 10-19, 10-41. Renovation to existing buildings and construction of new buildings. The upland redevelopment to provide needed services for marina and community include; off-street parking, a restaurant, Customs and Border Protection Office, a Marina office, Marina Engineering, Marina Security, Crew shower and locker facilities, Apartments to support marina management, Fish and Farmers Market, Additional commercial space, Facilities for on dock fueling, Solid waste disposal, Hazardous waste disposal, Potable water, Shore power supply, Waste water pump-out services. In addition, they have now included an upland community boardwalk is to be located along the shoreline. No boat maintenance facilities will be associated with this upland redevelopment. The proposed upland redevelopment components would not require impacts to waters of the U.S. To offset unavoidable impacts the applicant proposes to provide compensatory mitigation as described and outlined in the attached **Minimization Mitigation and Compensatory Mitigation Plan dated September 27, 2024**. The mitigation plan includes debris removal within Coral Bay Harbor, out planting of listed corals, mangrove planting along the shoreline, mangrove enhancement and mangrove island creation. In addition to these measures, added actions that will result in decrease in impacts as a result of marina operations includes information signage, informational buoys, and pump-out and waste facilities. Furthermore, the applicant proposes to assume the long-term maintenance of storm water runoff management structures located throughout the Coral Bay Watershed.

A boardwalk (4,356 square feet) would be constructed along the shoreline, which would provide access from land to the docks and walkways of the marina. The boardwalk would be constructed above the mean sea level, without impacting navigable waters of the U.S. The boardwalk would connect to the main docking structure of the marina through a 45-foot 10-inch long and 16-foot-wide aluminum ramp. A 10-foot by 40-foot dinghy dock would be located midway between the shoreline and the first lateral pier of the marina.

The construction of the marina would be completed from the land and from the water using barges. An impact hammer from a barge would be used to install the proposed dock supporting piles and the auger anchors for the mooring buoys. A maximum of six (6) piles would be installed each day. The installation of each pile would require an average of 300 blows with the impact hammer. The installation of the 867 proposed piles would be completed in approximately 160 days. The installation of the 36 auger anchors for the 12 mooring buoys would require six (6) additional days.

The marina's operational protocol will only assign vessel dockage in slips that meet the 2.5' or greater clearance at mean low water, therefore, no vessels within the marina have to travel to reach the required clearance.

Table 1. Pile Installation

Pile Type and Material	<i>Steel, concrete</i>
Pile Diameter or Sheet Pile width (inches)	14 and 18-inch
Number of Piles or Sheet Piles Total	867
Installation Method	Impact hammer
Number of Strikes per Pile/Sheet Pile (if using impact hammer) or Number of Seconds of Vibration per Pile/Sheet Pile (if using vibratory hammer)	<i>300 strikes</i>
Number of Piles/Sheet Piles Installed per Day (if using impact or vibratory hammer)	<i>No more than 6</i>
Duration of pile driving activity (days)	<i>166</i>
Substrate and water depth in pile installation area	<i>Sandy</i>
Confined Space or Open Water?	<i>Open</i>
Noise abatement used	<i>None</i>

- Project vessels will be present:
 - A barge and/or work boat would be used.
 - All supporting equipment (barges and tow boats) will be shallow draft and will maintain a minimum of 2.5-foot (ft) of clearance above the existing bottom at mean low water.
 - Speeds will vary and are dependent on contractor selection and type of vessel being used. Vessel speeds will be reduced while maintaining sufficient maneuverability and navigation.
 - The exact travel routes to and from the proposed Project will be determined based on contractor selection. However, travel routes will be restricted to areas that maintain the 2.5 feet clearance from the seafloor.
 - All construction personnel will be responsible for observing water-related activities to detect the presence of Threatened and/or Endangered Species as described in the Protected Species Construction Conditions.

Work in uplands is proposed; however, the effects of land-based activities do not extend into the water or otherwise effect listed species under NMFS jurisdiction, Therefore, this aspect of the proposed action will not be considered further.

b. Conservation Measures and BMPs (Construction and Post Construction):

The project will be operated in compliance with Water Quality Monitoring Plan (attached), Minimization Mitigation and Compensatory Mitigation Plan dated September 27, 2024 (attached), and the below special conditions.

- **Protected Species Construction Conditions:** The Permittee shall comply with National Marine Fisheries Service's "Protected Species Construction Conditions, NOAA Fisheries Southeast Regional Office" dated May 2021.
- **Vessel Strike Avoidance Measures:** The Permittee shall comply with the "Vessel Strike Avoidance Measures and Reporting for Mariners", revised May 2021, for marine turtles and marine mammals.
- **Daylight Hours:** All work will occur during daylight hours.
- **Noise Abatement Measures:** No more than 5 piles per day shall be installed.
- Instruct all personnel associated with the project of the potential presence of protected species in the area and the need to prevent entrapment or entanglement of wildlife.
- Right-size vessels and equipment to be used, considering water depths, the presence of seagrass and hard-bottom, vessel draft, and expected propeller wash.
- Designate access corridors for operations and mark these with buoys or stakes; use existing channels and deeper water routes where possible; avoid shallow seagrass and hard-bottom habitats.
- Brief vessel operators about water depths, access corridors, and sensitive areas to be avoided.
- Conduct operations at high tide when feasible.
- No in-water construction will occur during times of year with peak thermal stress and spawning, which would be June, July and August.
- All vessels shall operate at "Idle Speed/No Wake" at all times while operating in water depths where the draft of the vessel provides less than a 4-foot (ft.) clearance from the bottom, and after a protected species has been observed in and has departed the area.
- All vessels will follow marked channels and/or routes using the maximum water

depth whenever possible.

- All equipment operators must watch for and avoid collision with species protected under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA). Equipment operators must avoid potential interactions with protected species.
- Stop operating mechanical construction equipment, including vessels, immediately if a protected or ESA-listed species is observed within a 50-ft. radius of construction equipment and resume after the species has departed the area of its own volition.
- If the detection of species is not possible during certain weather conditions (e.g., fog, rain, wind), then in-water operations will cease until weather conditions improve and detection is again feasible.
- Anchor in unconsolidated sediment (sand or mud bottoms) only and avoid all coral, hard-bottom, and seagrass beds.
- Operate boat motors in a manner that will not create sediment plumes or prop scarring of the bottom. When working on the dock structure above the water a floating platform will be used below the area of work which would catch anything that falls while also providing a work platform. Catch nets can also be hung below the deck to catch anything that inadvertently falls or is dropped into the water if a working platform is not feasible. During construction if floating materials fall into the water, they will be contained by the turbidity barriers and they will be immediately retrieved.

Recommended permit conditions for mitigation:

- The mangrove mitigation sites will have hydrological conditions and elevations found at nearby similar healthy mangrove wetlands. Any necessary groundwork or re-grading will occur to achieve appropriate site elevations and hydrological conditions prior to planting seedlings.
- No construction can begin until the applicant provides documentation that Parcel 11 Remainder Estate Coral Bay (property belonging to the U.S. Virgin Islands) can be used by SEG for mangrove mitigation.
- The mangrove mitigation shall be completed by experienced contractors who have successfully completed mangrove restoration.
- Mangrove mitigation success criteria: 85% survival of the planted mangroves occurs after five years with annual increases in plant height and diameter.
- Coral outplanting success criteria: The outplanting of corals will also follow the US Virgin Islands Department of Planning and Natural Resources (DPNR) Coral Mitigation Relocation Recommendations and obtain a minimum of 85% survival

of the outplanted corals, with secure substrate attachment at the end of five years. Overall survival of corals shall be defined as no net loss in pooled (by species) Live Tissue Area Index or an increase in pooled (by species) Live Tissue Area Index.

- The applicant will survey the harbor bottom and remove marine debris annually for a period of 5 years. The applicant will include a summary of the marine debris removal in the annual mitigation report to USACE and NMFS, which will include an inventory of the debris collected each event to incorporate into educational messaging for business owners and patrons. For example, if plastic disposable drink bottles are collected, the solution could be to switch to a reusable option or encourage customers to bring reusable items.
- The status of the mitigation and associated monitoring will be conveyed to NMFS and USACE via one annual report submitted in January. The report shall not exceed 25 pages including appendices or attachments, and should follow the reporting, adaptive management, and monitoring reporting tables frameworks developed by NMFS. The annual report summarizes the status of each mitigation activity, the number and date of monitoring events completed for each mitigation activity with summary statistics demonstrating compliance with success criteria, and corrective actions performed in the case success criteria are not met. If mitigation sites are not trending towards success after two years, the year three report shall include a contingency mitigation plan.
- The applicant shall operate the marina in perpetuity accordance with the Blue Flag or Clean Marina certification requirements.
- SEG will secure a performance bond or some other type of financial guarantee that is accessible to the U.S. Army Corps of Engineers in the amount necessary to complete the transplant, compensatory mitigation, required monitoring, long-term maintenance of the informational buoys as well as covering any contingencies that may occur. The bond will be prepared following the guidance set forth in the U.S. Army Corps of Engineers Regulatory Guidance Letter No. 05-1 dated 14 February 2005 SUBJECT: Guidance on the Use of Financial Assurances, and Suggested Language for Special Conditions for Department of the Army Permits Requiring Performance Bonds.

Recommended permit conditions for construction:

- Dredging is not authorized by this permit.
- All decking should be composed of grated decking with no less than 43% light transmittance
- Any cables, lines, or conduits located under the dock shall be co-located to minimize shading impacts
- Vessel spudding shall be limited to areas devoid of seagrass. Areas with seagrass should be delineated and no bottom disturbance in these areas is authorized.

- The applicant shall implement the biological monitoring plan that 1) gauges actual impacts relative to those predicted in the impact assessment and 2) triggers additional compensatory mitigation when unauthorized impacts are documented. The plan shall include pre-construction, during construction, and post-construction water quality monitoring. In addition, the plan should include examination of long-term on-site stormwater management measures to reduce runoff created by the impervious surface constructed for the parking area.
- The applicant shall implement the spill contingency plan that includes precautionary measures in a tiered approach for minor versus major spills, emergency actions should a spill occur, and spill reporting criteria.
- The applicant shall use erosion and sediment control measures during upland construction and floating silt curtains during in-water work and until water quality conditions return to ambient.

c. Description of the Action Area

The *action area* is all areas to be affected by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). *Effects of the action* are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. The action area is distinct from and can be larger than the project footprint because some elements of the project may affect listed species or critical habitat some distance from the project footprint. The action area, therefore, extends out to a point where no effects from the project are expected to occur.

For this project, the action area includes the waters of Coral Bay Harbor. The project is located at 18.343277 °N, -64.714555 °W. The most recent survey was undertaken in 2022-2023 following the NMFS/USACE approved survey methods. The survey shows shifts in habitat boundaries from the previous 2018 survey with increases in macroalgae and *Halophila stipulacea* and a decrease of dense seagrass colonization. Many of these shifts were outside the Summer's End Group (SEG) development footprint. The seagrass loss may be partially related to Sargassum inundations in the harbor since many of these occurred in the shallowest areas where dense seagrass was most abundant. The areas of *H. stipulacea* colonization and the *H. stipulacea* density have both notably increased in the overall harbor, while this is primarily outside the project footprint it has contributed to the loss of native seagrass within the marina footprint. There was also an increase in drift algae over the uncolonized unconsolidated sediment, again, beyond the marina footprint. At least 1 *Acropora palmata*, and a *Dendrogyra cylindrus* was lost between the 2022-2023 surveys and the previous survey 4.5 years before. Over the 4.5-year period there has been a notable loss of native

seagrass in the harbor and areas have become colonized by macroalgae and *H. stipulacea*. Further description of onsite resources and resources located within the secondary impact boundary can be found in the attached Minimization Mitigation and Compensatory Mitigation Plan dated September 27, 2024.

The Action Area, as shown in Figure 2, describes the percent coverage of seagrasses within the action area, includes the installation of the pilings for the proposed marina and turbidity barriers, and the 500-foot radius around each piling for noise impacts. The two-color envelopes are based on potential impacts during construction. The inner yellow box is the area of spudding, where the barge will need to locate to drive the piles. This assumes the use of a large barge (s) 80-100ft. This is the area where the seafloor would be repeatedly subject to the dropping of spuds which will physically impact approximately 8sf for each of the spud relocations. If a pile template is utilized for pile driving this would also encompass the area of the template footprints. The yellow box is the area where the benthic environment will be physically disturbed by the construction process. This is also the area where there is the greatest potential for the buildup of settling sediment on benthic colonizers. Heavier sediments fall out quickly and could potentially build up in this area and could smother or bury benthic colonizers.

The larger red envelope is that area which may be disturbed by propwash or shading of barges or vessels associated with the construction project. This area would be subject to the greatest turbidity during construction and the area most likely where repeated indirect impacts would occur. (Shading and turbidity indirect impacts since they are byproducts of the activity construction activity not direct physical disturbance). These areas were determined based on monitoring of previous dredging and pile installation projects over the last 35 years.

There is no dredging associated with this project, the bottom disturbance will be limited to pile driving which typically creates minimal highly localized turbidity. This site will have a greater potential for the creation of turbidity than other "sandier" locations since the sediment in this area has a high silt content. As proposed all pile driving must be surrounded by proper length turbidity barriers, and monitoring is required to minimize the potential impacts to these areas. The other causes of turbidity during construction will include propwash from tugs and vessels and spud placement and spud shifting during waves and swells. Again, these are periodic highly localized impacts. Repeated turbidity in this area could result in limited light transmission and could impact benthic colonizers. The red box is that area where these periodic repeated impacts could result in impact to habitat impact during construction. The map shown in 11 was prepared by H&M and is related to boating activities. The map in 10, is just construction related and assumes implementation of BMPs, monitoring and stoppage of work if turbidity exceedances occur. Work would be immediately ceased when exceedances occur limiting the overall impacts.

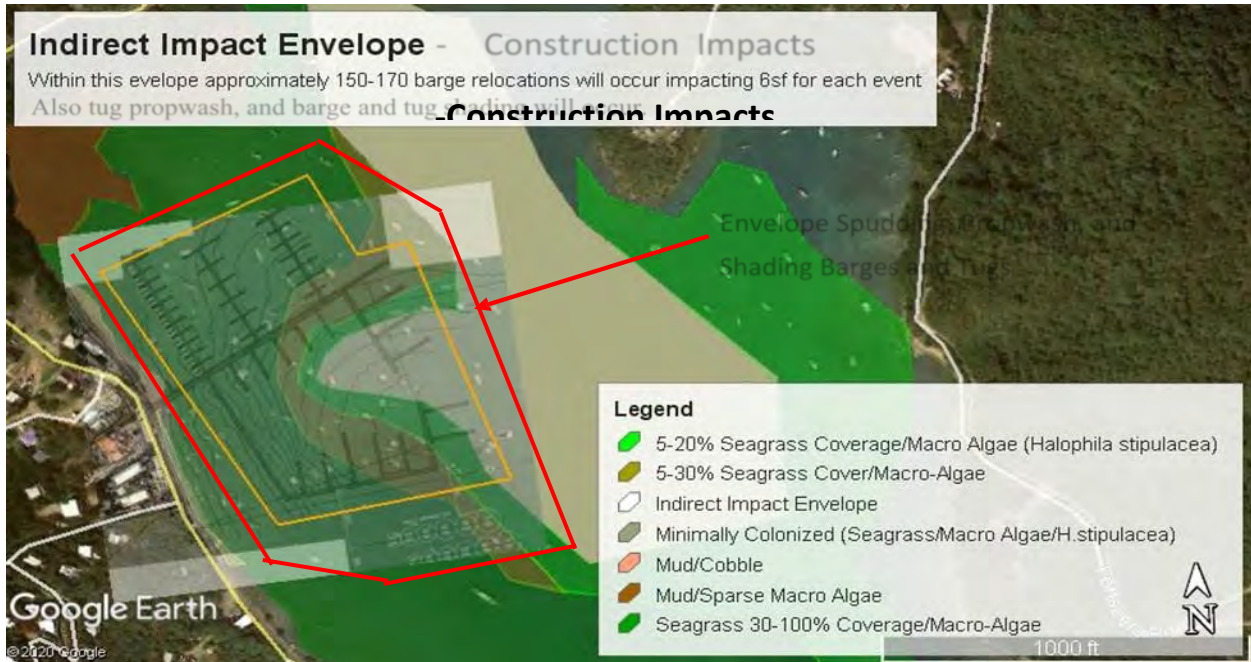


Figure 2a. Action area-Indirect Impacts.

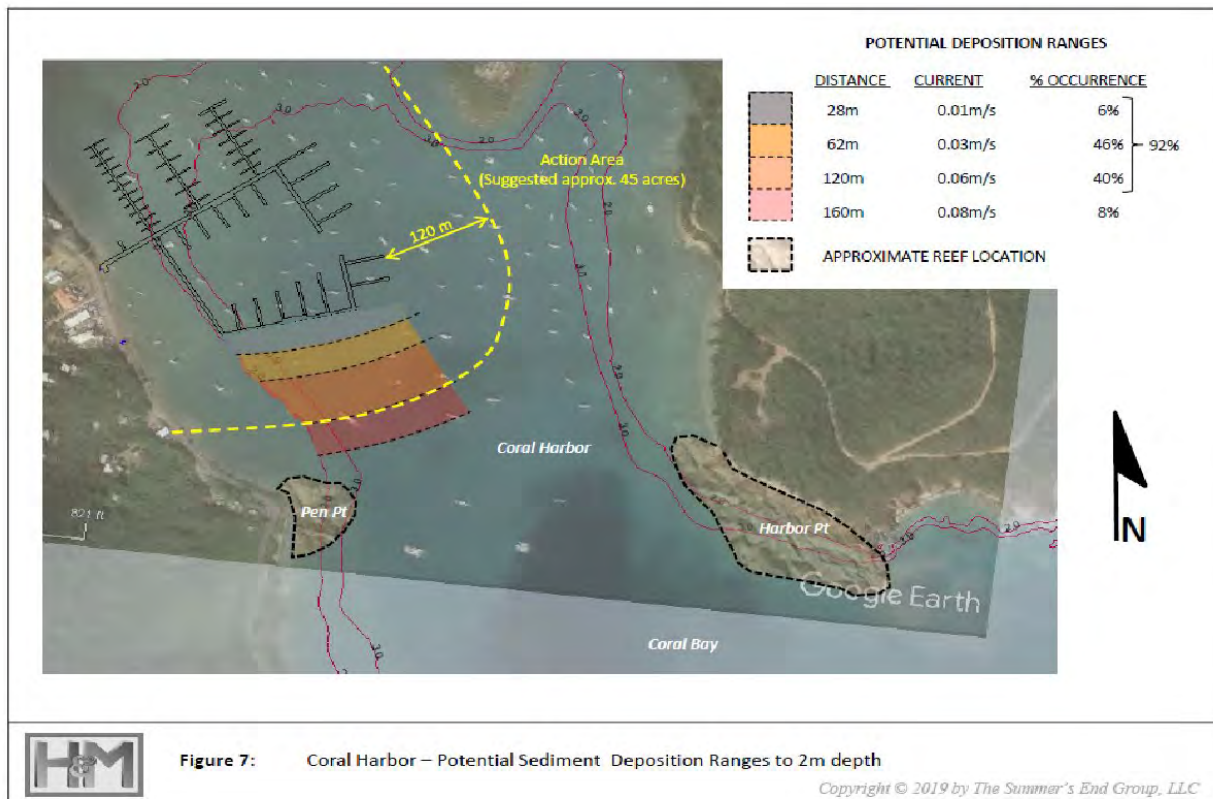


Figure 7. Action area-Potential turbidity impacts.

d. Potentially Affected NMFS ESA-Listed Species and Critical Habitat

We have assessed the listed species that may be present in the action area and our determination of the project’s potential effects to them as shown in Table 2 below.

Table 2. ESA-listed Species in the Action Area and Effect Determination(s)

Species	ESA Listing Status	Listing Rule/Date	Most Recent recovery plan date	USACE Effect Determination (Species)
Green sea turtle ¹	T	81 FR 20057/ April 6, 2016	October 1991	NLAA
Leatherback sea turtle	E	35 FR 8491/ June 2, 1970	April 1992	NLAA
Loggerhead sea turtle ²	T	76 FR 58868/ September 22, 2011	January 2009	NLAA
Hawksbill sea turtle	E	35 FR 8491/ June 2, 1970	December 1993	NLAA
Nassau grouper	T	81 FR 42268/ June 29, 2016	N/A	NLAA
Scalloped hammerhead shark ³	T	79 FR 38213/ July 3, 2014	N/A	NLAA
Oceanic white tip shark	T	83 FR 4153/ January 1, 2018	N/A	NLAA
Giant manta ray	T	83 FR 2916/ January 22, 2018	N/A	NLAA
Blue whale	E	35 FR 18319/ December 2, 1970	July 1998	NLAA
Fin whale	E	35 FR 18319/ December 2, 1970	August 2010	NLAA
Sei whale	E	35 FR 18319/ December 2, 1970	December 2011	NLAA
Sperm whale	E	35 FR 18319/ December 2,	December 2010	NLAA

¹ North Atlantic and South Atlantic DPS

² Northwest Atlantic Ocean DPS

³ Central and southwest Atlantic DPS

Species	ESA Listing Status	Listing Rule/Date	Most Recent recovery plan date	USACE Effect Determination (Species)
		1970		
Elkhorn coral	T	71 FR 26852/ May 9, 2006	March 2015	NLAA
Mountainous star coral	T	79 FR 53852/ September 10, 2014	N/A	NLAA
Lobed star coral	T	79 FR 53852/ September 10, 2014	N/A	NLAA
Pillar coral	T	79 FR 53852/ September 10, 2014	N/A	NLAA
Queen Conch	T	87 FR 55200/ September 8, 2022	N/A	NLAA

E = endangered; T = threatened; NLAA = may affect, not likely to adversely affect; NE = no effect; LAA = Likely to Adversely Affect, N/A = not applicable

The project is located within designated critical habitat for the Green sea turtle and Nassau grouper. .

We have assessed the critical habitats that overlap with the action area and our determination of the project’s potential effects to them as shown in Table 3 below:

Table 1. Critical Habitat(s) in the Action Area and Effect Determination(s)

Species	Critical Habitat in the Action Area	Critical Habitat Rule/Date	Effect Determination (Critical Habitat)
Nassau Grouper		February 1, 2024	<u>NLAA</u>
Green sea turtle		Proposed Rule Publish Date: July 19, 2024	<u>NLAA</u>

The project as proposed has the potential to limit use of the area by the species during construction however the project components are not likely to adversely modify these species’ designated critical habitat. All relevant PCE’s for designated critical habitat for the listed species will not be adversely modified as a result of the project. Furthermore, the applicant agrees to comply with NMFS’s Protected Species Construction Conditions (NMFS 2021).

2. EFFECTS OF THE ACTION

a. Route(s) of Effect to ESA-Listed Species:

The Corps does not have survey data for ESA-listed whale species in the area of USVI. Based on data from Puerto Rico, including reports of strandings, humpbacks are likely common during their winter migration to the Caribbean. In 2017, there was a stranding of a baby sperm whale on Vieques Island, Puerto Rico, which is part of the Spanish Virgin Islands and not far from St. Thomas and St. John. Blue, fin, and sei whales may also be present in the vicinity of the Action Area during winter migration. The Corps is aware of anecdotal reports of sightings of whales in waters around St. John and just outside of Coral Bay. However, because of its location in relatively shallow and narrow bay, it is unlikely that whales would be present within the Action Area. The Corps is not aware of any reports of whales within Coral Harbor or the Action Area. ESA-listed whale species could be struck by work vessels transiting to and from Coral Harbor during project construction, in particular if work takes place during winter migration. The USACE would require compliance with NMFS *Vessel Strike Avoidance Measures and Reporting for Mariners*, revised on February 2008. Work vessels would operate at low speeds and have sea turtle and marine mammal observers. This would provide protection to ESA-listed whales during the transit of work vessels by requiring vessels maintain set distances from whales for their transit. In addition to the required implementation of NMFS's vessel strike guidance, the marina construction contractors would implement a sea turtle and marine mammal monitor or observer training program for vessel crew members and construction personnel (previously provided in July 10, 2018 Consultation as Enclosure 6F). Because whales are not likely to be present in the Action Area year-round, and given the survey programs and permit conditions the Corps would require, we believe the risk of injury from collision with work vessels during the construction of the proposed marina would be discountable.

ESA-listed whales could also be struck by vessels transiting to or from the proposed marina, particularly considering a potential increase in vessel traffic as a result of the addition of 127 new boat slips in the area. The Corps has no information documenting any vessel-whale collisions around St. John or the U.S Virgin Islands. Notwithstanding, the Corps would require the implementation of an education program, including the installation of signs and placards alerting all marina users about the potential presence of ESA listed whales around St. John and providing information about safe navigation practices to protect marine mammals and prevent vessel strikes. We expect vessel operators to be able to see whales at a distance and steer a course away from them. Also, because of their mobility, we expect whales to move away from in-transit vessels. Smaller vessels are less likely to strike whales, are typically only used in good conditions when whales are more visible and can be more easily and

quickly maneuvered to avoid whales. Therefore, we believe the likelihood of whales being struck by vessels as a result of increasing the number of slips by 127 will be discountable.

Effects to Green, Leatherback, Loggerhead and Hawksbill sea turtles include the potential risk of injury from being struck by in-water construction machinery (barges, cranes, spuds, anchors, etc.) during the proposed construction work. Sea turtles could be struck also by work and support vessels transiting to and from the proposed work areas. As described above, Green and Hawksbill sea turtles were observed during surveys conducted within the Action Area for this project. The Action Area is located in an open bay, so access to open water is not impeded in any way for sea turtles that might be in the area during operation of in-water construction machinery and vessels. All in-water construction work would be limited to daylight hours only. Construction barges would be spudded in place while conducting in-water work. In addition, the barges and all other support vessels would move at very low speeds. As a result, sea turtles would be able to hear and see in water construction machinery and vessels. The Corps expects any animals that approach the in-water work areas to swim away. Sea turtles have been reported to flee approximately 60% of the time from slow moving vessels (2.5 miles per hour [mph]) (Hazel et al. 2007). Also, according to NMFS 2015, unpublished sea turtle stranding data from the U.S. Virgin Islands Department of Planning and Natural Resources (DPNR) indicate that from 1982 to 2006 there were 22 strandings in St. Thomas with only four caused by boats. In St. Croix, there were 74 strandings with only five caused by boats. In addition, the Corps would require compliance with NMFS *Sea Turtle and Smalltooth Sawfish Construction Conditions*, dated March 23, 2006. The implementation of the construction conditions would provide protection to sea turtles by requiring temporary work stoppages to protect any sea turtles that approach the in-water work area. The Corps would also require compliance with NMFS *Vessel Strike Avoidance Measures and Reporting for Mariners*, revised on February 2008. All work vessels involved in the construction of the marina would operate at low speeds and have sea turtle and marine mammal observers. This would provide protection to sea turtles during the transit of work vessels by requiring that vessels maintain set distances from sea turtles for their transit. Additionally, the proper use of turbidity curtains would prevent these species from coming into close proximity to active in water work areas. Marina construction contractors would also implement a sea turtle monitoring program (previously provided in July 10, 2018 Consultation as Enclosure 6F) during the proposed work, which would include training of personnel involved in in-water work as observers. Observers would visually monitor a 500-meter safety zone around any active construction. If at any time sea turtles are observed within the 500-meter safety zone, all construction work would be shut down until the animals leave the safety zone of own volition. Records would be maintained of all sea turtle sightings in the area, including date and time, weather conditions, species identification, approximate distance from the project area, direction and heading in relation to the project area, and behavioral observations. Reports would be provided to

the Corps, NMFS, and DPNR on a monthly basis. Based on the above, the Corps believes the risk of injury to sea turtles from being struck by in-water construction machinery or collisions with in-transit work vessels would be discountable.

In addition, sea turtles could be struck by vessels transiting to or from the marina during the operation of the project. An increase in vessel traffic, as a result of the construction and operation of the marina, may also increase the potential for vessel strikes to sea turtles. The project would provide new docking space for 127 vessels within Coral Harbor. However, even if 127 new vessels are introduced to this area, according to NMFS' analysis it would take the introduction of at least 300 vessels to an area to result in the take of one sea turtle in a single year (NMFS, 2013). Based on these findings, we believe sea turtles are unlikely to be struck as a result of increasing the number of vessels in the area by 127, which is the number of new slips to be created by the marina. In addition, the marina would implement an education program for the users of the marina, which would include the placement of signs or placards informing boaters about sea turtle awareness and vessel strike prevention. Therefore, we find the likelihood of sea turtles being struck as a result of increased vessel traffic associated with the construction and operation of the marina to be discountable.

Sea turtles might be adversely affected by their inability to access the project area for foraging, refuge, and/or nursery habitat, due to their avoidance of construction activities, and physical exclusion from the project area due to blockage by turbidity curtains. However, since pile installation activities would be limited to daylight hours, a maximum of six piles, and 300 impact hammer strikes per day, sea turtles would be able to resume normal activities during quiet periods between pile installations, immediately after completion of the noise producing activities each day, and at night. In addition, there are similar natural habitats outside of the Action Area, which would remain available to sea turtles during the temporary project construction. Therefore, any potential limitations in the ability of sea turtles to use habitats within the Action Area as a result of the construction of the proposed project are expected to be very minor, temporary, and insignificant.

Sea turtles could also be impacted by the temporary or permanent degradation or loss of foraging or refuge habitat associated with the construction of the proposed marina. As described above, applicant estimates indicate that the construction of the proposed project would result in impacts to 3.365 acres of seagrasses, due to the installation of the pilings, spudding of working barges, and shading from the docking structures and the vessels at the marina. It is relevant to indicate that estimates made by others (previously provided in July 10, 2018 Consultation as Enclosure 16C) suggest that shading from docking structures and vessels at the proposed marina would result in the loss of 7.8 acres of seagrasses. The Corps understands that additional practical alternative designs, which could further reduce the potential effects of the project on seagrasses, are available but were not considered or evaluated by the applicant. Such

alternatives could involve using mooring piles instead of full boat length finger piers; and reducing the size and width of some of the piers and docks. This would reduce the shading footprint of the marina, the number of proposed piles, and their associated impacts to seagrasses. The use of silt curtains and the implementation of the proposed water quality and environmental monitoring plans would effectively minimize sediment transport and impacts, including degradation and/or loss, to seagrasses adjoining the project footprint during in-water construction work. Also, shading impacts to seagrasses within the footprint of the marina would be minimized through the use of grated decking. To compensate for project impacts to seagrasses, the applicant proposes to complete the compensatory mitigation elements as described in detail in the attached Minimization Mitigation and Compensatory Mitigation Plan dated September 27, 2024. Furthermore, the applicant proposes to assume the long-term maintenance of storm water runoff management structures located throughout the Coral Bay Watershed. The applicant asserts that maintenance of those structures would result in improved water quality within Coral Harbor, which would in turn benefit the seagrass beds and the aquatic environment, enhancing sea turtle foraging and refuge habitat.

As previously described, sea turtles, particularly hawksbill and green sea turtles, have been documented using the resources and habitats within Coral Harbor. There are extensive seagrass beds in other portions of Coral Bay, which would continue to provide high quality foraging and refuge habitat for sea turtles. However, the Corps believes that the potential loss of 2.39 acres of seagrasses within the Action Area would not be detrimental for, and would not affect the recovery of, sea turtles, which regularly utilize those seagrasses as foraging and refuge habitat. Based on the above, the Corps has determined that the temporary or permanent loss of use of foraging or refuge habitat due to the installation of the pilings, spudding of working barges, and shading from the docking structures and vessels at the marina is not likely to adversely affect the above referenced ESA listed sea turtles.

In addition to the above, the applicant estimates that the operation of the marina would result in the loss of approximately 0.34 acre of seagrasses due to prop wash and sediment stir-up and resuspension from vessels while docked, docking at, or departing from the marina. The Corps understands that the applicant may have underestimated those impacts. Average water depth within the marina footprint would be approximately 12 feet. The proposed marina would provide docking space for 127 vessels up to 160 feet in length. Thirty-nine (39) of the 127 proposed slips would be for vessels 100 feet long or longer. Vessels of that size commonly have drafts between five to nine feet. Some of the docks for 100 feet long vessels would be located in water depths of eight to nine feet. With such a limited clearance from the marine bottom such large vessels could damage the seagrasses located within the footprint of slips by burying or breaking them with prop wash, or by continuously stirring-up and re-suspending sediments. This increased sedimentation and turbidity could extend throughout the Action Area impacting seagrass beds and other benthic habitats located therein. To assess the

water mixing and flushing capacity of Coral Harbor, as well as the potential effects of the operation of the marina on the sedimentation, turbidity and water quality levels therein, the applicant collected water current measurements within the project footprint for a two-year period, and then analyzed those observations in accordance with methods described by Ketchum (1951). According to the applicant's measurements and analysis, water movement in Coral Bay, particularly in Coral Harbor, is sluggish with circulation and currents being both tidally and wind influenced. Only limited exchange or flushing occurs which is clear by the difference in turbidity in and out of the bay. Rarely is turbidity low within the harbor. The applicant's analysis acknowledges that under those conditions, resuspended fine sediments would remain in the water column of Coral Harbor for an extended period of time potentially resulting long-term increases in turbidity and associated detrimental effects to the benthic community. Therefore, the Corps believes that it could be reasonably expected that the operation of the marina would generate and maintain chronic high turbidity, worsening the already compromised water quality of Coral Harbor, and potentially resulting in extensive deterioration and loss of the seagrasses located therein. This would reduce the foraging and refuge habitat available for sea turtles within the Action Area and could affect the recovery of the species. As stated above, based on the available information, and studies the Corps cannot fully assess or quantify the beneficial effects of the proposed debris removal and maintenance of storm water runoff on the condition and extent of seagrasses within Coral Harbor. Furthermore, there are similar natural habitats outside of the Action Area, which would remain available to these species during the temporary project construction. Therefore, the Corps has determined that the temporary or permanent loss of foraging or refuge habitat associated with sediment stir-up and resuspension from vessel prop wash as part of the operation of the marina would be reduced if seagrasses were to remain in place leading to a determination that the project as proposed is not likely to adversely affect the above referenced ESA listed sea turtles.

As stated in the project description, the proposed project includes the installation of 12 mooring buoys, which would be secured to the marine floor using auger anchors and floated lines. Also, seven informational buoys would be installed using screw anchors and floated lines. In addition, floating silt curtains would be installed around the pile driving work areas. The mooring tackle or lines of those buoys could pose an entanglement risk for sea turtles if the lines become slack or are capable of forming loops. However, we expect that the anchoring lines would be given only enough slack to enable the buoys to move up and down with the wind and waves and are not expected to form loops. The Corps could not locate any information documenting entanglements with similar mooring tackle in the USVI. Based on a review of the entanglement risks to larger marine animals posed by moorings used for offshore energy systems, it was found that moorings pose a relatively modest risk in terms of entanglement (Benjamins et al., 2014). The buoys and their mooring tackle would be inspected periodically to ensure they remain in good condition and do not pose any risk

of entanglement. Similarly, the floating silt curtains would be inspected constantly to ensure they are taut and are not presenting a risk of entanglement to marine fauna. Based on this information, we believe the threat of entanglement of sea turtles in the mooring tackle and silt curtains is discountable.

Sea turtles could be adversely impacted by potential spills of fuels during the operation of the proposed project, particularly since the operation of the marina would include vessel fueling facilities. The applicant has indicated that all components of the fueling system would be constructed in compliance with U.S. Environmental Protection Agency (USEPA) and DPNR requirements. As part of its operations, the marina would obtain a Terminal Facility License in order to be able to provide fuel. In addition, the marina would have a DPNR approved Spill Prevention Countermeasure and Control Plan, prior to commence operations. This plan would address measures to prevent, address and minimize the effects of any potential minor or major fuel spills. Based on this information, the Corps understands that it would be unlikely that any fuel spill would be severe enough to produce adverse effects to sea turtles or other listed species. Therefore, the Corps believes that the potential for adverse effects to sea turtles from potential fuel spills during the operation of the proposed marina would be discountable.

Effects to Nassau grouper, Scalloped hammerhead shark, Oceanic white tip shark, and Giant manta ray from this project include the potential risk of injury from being struck by in-water construction machinery and vessels (barges, anchors, spuds, crane, etc.) within the in-water work footprint. Sightings data for the project area indicate that only Nassau groupers have been observed within the proposed work areas. However, the colonized reef, hard bottom areas, macroalgae and seagrass areas within the Action Area could also provide suitable foraging habitats for the Scalloped hammerhead shark, Oceanic white tip shark, and Giant manta ray. Notwithstanding, the construction of the proposed marina would be completed using work vessels operating at slow speeds. Due to their mobility and ability to avoid construction activities, we expect Nassau grouper, Scalloped hammerhead shark, Oceanic white tip shark, and Giant manta ray individuals to move away from any operating in-water equipment. Additionally, the proper use of turbidity curtains would prevent these species from coming into close proximity to active in water work areas. Based on the above, we believe injury from in-water construction machinery is extremely unlikely to occur; therefore, this effect would be discountable.

Nassau grouper, Scalloped hammerhead shark, Oceanic white tip shark, and Giant manta ray individuals might be adversely affected by their inability to access the project area for foraging, refuge, and/or nursery habitat, due to their avoidance of construction activities, and physical exclusion from the project area due to blockage by turbidity curtains. However, since piling installation activities would be limited to daylight hours, a maximum of six piles, and a maximum of 1,800 impact hammer strikes per day, ESA listed fish species would be able to resume normal activities during quiet periods

between pile installations, immediately after completion of the noise producing activities each day, and at night. In addition, there are similar natural habitats outside of the Action Area, which would remain available to these species during the temporary project construction. Therefore, any potential limitations in the ability of Nassau grouper, Scalloped hammerhead shark, Oceanic white tip shark, and Giant manta ray individuals to use habitats within the Action Area as a result of the construction of the proposed project are expected to be very minor, temporary, and insignificant.

Nassau grouper, Scalloped hammerhead shark, Oceanic white tip shark, and Giant manta ray individuals could also be impacted by the temporary or permanent degradation or loss of nursery, foraging and/or refuge habitat associated with the construction of the proposed marina. As described above, applicant estimates suggest that the construction of the proposed project would result in impacts to 3.71 acres of seagrasses, due to the installation of the pilings, spudding of working barges, and shading from the docking structures and the vessels at the marina. The Corps estimates that shading from docking structures, vessels, and the operation of the proposed marina would result in the loss of 2.39 acres of seagrasses. The use of turbidity curtains and the implementation of the water quality and environmental monitoring plans will effectively minimize sediment transport and would prevent impacts to adjoining seagrasses during project construction. To offset unavoidable impacts the applicant proposes to provide compensatory mitigation as described and outlined in the attached **Minimization Mitigation and Compensatory Mitigation Plan dated September 27, 2024**. The mitigation plan includes debris removal within Coral Bay Harbor, out planting of listed corals, mangrove planting along the shoreline, mangrove enhancement and mangrove island creation. In addition to these measures, added actions that will result in decrease in impacts as a result of marina operations includes information signage, informational buoys, and pump-out and waste facilities. Furthermore, the applicant proposes to assume the long-term maintenance of storm water runoff management structures located throughout the Coral Bay Watershed. The applicant asserts that maintenance of those structures would result in improved water quality within Coral Harbor, which would in turn benefit the seagrass beds and the aquatic environment, enhancing ESA listed fish species nursery, foraging and/or refuge habitat. In spite of the applicant's assertions, based on the available information and studies the Corps cannot fully assess or quantify the beneficial effects of the proposed debris removal and maintenance of storm water runoff on the condition and extent of seagrasses within Coral Harbor. In addition, as described below in more detail, the Corps understands that the operation of the marina would result in increased and potentially chronic turbidity within the harbor, which could outweigh the benefits of the proposed compensatory measures. The Corps further understands that the mitigation plan proposed by the applicant would not provide sufficient compensation for the potential impacts of the marina on seagrasses, which serve as ESA-listed fish species nursery, foraging and/or refuge habitat. As previously described, ESA listed fish species, particularly Nassau grouper, have been documented using the resources and

habitats within Coral Harbor. In addition, Coral Harbor has been documented to serve as a shark nursery habitat. There are extensive seagrass beds in other portions of Coral Bay, which would continue to provide high quality nursery, foraging and/or refuge habitat for ESA listed fish species. However, the Corps believes that the potential loss of 2.39 acres of seagrasses within the Action Area would not be detrimental for, and could affect the recovery of, ESA listed fish species, particularly Nassau grouper, which regularly utilize those seagrasses as nursery, foraging and/or refuge habitat. The project site is situated in and adjacent to neighboring habitat communities that provide support to these species. Based on the above, the Corps has determined that the temporary or permanent loss of use of nursery, foraging and/or refuge habitat due to the installation of the pilings, spudding of working barges, and shading from the docking structures and vessels at the marina is insignificant to the above referenced ESA listed fish species.

Average water depth within the marina footprint would be approximately 12 feet. The proposed marina would provide docking space for 127 vessels up to 160 feet in length. Thirty-nine (39) of the 127 proposed slips would be for vessels 100 feet long or longer. Vessels of that size commonly have drafts between five to nine feet. Some of the docks for 100 feet long vessels would be located in water depths of eight to nine feet. However, the applicant has modified the layout of the marina to ensure that each vessel has a minimum clearance of 2.5 feet above the substrate in order to reduce the suspension of sediment into the water column during the operation of the marina. To accurately assess the water mixing and flushing capacity of Coral Harbor, as well as the potential effects of the operation of the marina on the sedimentation, turbidity and water quality levels therein, the Corps requested the applicant to complete and submit a water circulation modeling study of the harbor discussed above in Section B – Action Area. In addition, the applicant collected water current measurements within the project footprint for a two-year period, and then analyzed those observations in accordance with methods described by Ketchum (1951). According to the applicant's measurements and analysis, water movement in Coral Bay, particularly in Coral Harbor, is sluggish with circulation and currents being both tidally and wind influenced. Only limited exchange or flushing occurs which is clear by the difference in turbidity in and out of the bay. Rarely is turbidity low within the harbor. The applicant's analysis acknowledges that under those conditions, resuspended fine sediments would remain in the water column of Coral Harbor for an extended period of time potentially resulting in long-term increases in turbidity and associated detrimental effects to the benthic community. Based on this information, the Corps has determined that the temporary or permanent loss of nursery, foraging or refuge habitat associated with sediment stir-up and resuspension from vessel prop wash as part of the operation of the marina the affect is insignificant to the Nassau grouper, scalloped hammerhead shark, oceanic white tip shark, and giant manta ray.

As stated in the project description, the proposed project includes the installation

of 12 mooring buoys, which would be secured to the marine floor using auger anchors and floated lines. Also, seven informational buoys would be installed using screw anchors and floated lines. In addition, floating silt curtains would be installed around the pile driving work areas. The mooring tackle or lines of the buoys could pose an entanglement risk for Nassau grouper, Scalloped hammerhead shark, Oceanic white tip shark, and Giant manta ray individuals if the buoy lines become slack or is capable of forming loops. However, we expect that would be given only enough slack to enable the buoys to move up and down with the wind and waves and are not expected to form loops. The Corps could not locate any information documenting entanglements with similar mooring chains in USVI. Based on a review of the entanglement risks to larger marine animals posed by moorings used for offshore energy systems, it was found that moorings pose a relatively modest risk in terms of entanglement (Benjamins et al., 2014). Abandoned fishing gear was found to pose a far greater risk of entanglement. The buoys and their mooring tackle would be inspected periodically to ensure they remain in good condition and do not pose any risk of entanglement. Similarly, the floating silt curtains would be inspected constantly to ensure they are taut and are not presenting a risk of entanglement to marine fauna. Based on this information, we believe the threat of entanglement of Nassau grouper, Scalloped hammerhead shark, Oceanic white tip shark, and Giant manta ray in the mooring tackle or silt curtains would be discountable.

Nassau grouper, Scalloped hammerhead shark, Oceanic white tip shark, and Giant manta ray individuals may be impacted by potential spills of fuels during the operation of the proposed project. The applicant has indicated that all components of the fueling system would be constructed in compliance with U.S. Environmental Protection Agency (USEPA) and DPNR requirements. As part of its operations, the marina would obtain a Terminal Facility License in order to be able to provide fuel. In addition, the marina would have a DPNR approved Spill Prevention Countermeasure and Control Plan, prior to commence operations. This plan would address measures to prevent, address and minimize the effects of any potential minor or major fuel spills. Based on this information, the Corps understands that it would be unlikely that any fuel spill would be severe enough to produce adverse effects to fish species. Therefore, the Corps believes that the potential for adverse effects to Nassau grouper, Scalloped hammerhead shark, Oceanic white tip shark, and Giant manta ray individuals from potential fuel spills during the operation of the proposed marina would be discountable.

Queen conch may occur within the project footprint and could be impacted as a result of the project. The applicant proposes to incorporate the following measures to ensure that the project as proposed would not adversely impact the species.

Guidance for Queen Conch During-Construction Surveys, Construction Conditions:

If 10 or fewer queen conch (adults and/or juveniles) are found to be present in the

survey area during the pre-construction survey, then the applicant may choose to do one of the following: (a) allow the queen conch to move away from the area on their own, or (b) relocate the individuals away from the routes of effect from in-water activities. If the applicant chooses to allow the queen conch to move out of the area on their own, the applicant will then need to conduct during construction surveys and adhere to the construction conditions as described below (see *Queen Conch During-Construction Surveys and Construction Conditions*). If the applicant chooses to relocate the queen conch, the applicant will need to follow the guidelines described below (see *Queen Conch Relocation Guidelines*).

Queen Conch During-Construction Surveys and Construction Conditions:

If queen conch are found within the survey area during pre-construction surveys, the applicant must then conduct during construction surveys and may choose one of the following survey methods below:

- Daily surveys of the project footprint in addition to a buffer area equal to 22 m (72ft) around the entire project footprint.
- Surveys every 2 days of the project footprint in addition to a buffer area equal to 44 m (144 ft) around the entire project footprint.
- Surveys every 3 days of the project footprint in addition to a buffer area equal to 66 m (217 ft) around the entire project footprint.

Survey protocols will remain consistent with pre-construction surveys (i.e., radial or belt transect surveys, providing 100% coverage of survey area). If any queen conch are found within the survey area, all in-water work below MHWL may not begin until the animal(s) relocates away from the route of effect to a minimum distance of 22 m (72 ft) beyond the survey perimeter. If and when this condition is satisfied and work resumes, during-construction surveys must continue following the above-described survey protocol.

As stated above in Table 4, Elkhorn, Mountainous star, Lobed star, and Pillar corals are present within the Action Area, but not in the project footprint. According to the benthic assessments conducted for this project, five colonies of Elkhorn coral, four colonies of Mountainous star coral, 12 colonies of Lobed star, and one colony of Pillar coral are found on the shallow reef and hard bottom areas located on both sides of the mouth of Coral Harbor, between 1,100 ft and 2,100 ft from the project site.

The project could result in indirect impacts to these ESA listed coral colonies due to the discharge, resuspension, and transport of sediments during the proposed construction and pile-driving work. ESA listed coral colonies could also be affected by transport of sediments discharged into the harbor from the upland construction areas of the project. However, erosion and sediment control measures including silt fences

would be installed between upland construction areas and the shoreline of Coral Harbor to prevent sediment discharges from the project areas into aquatic habitats. In addition, floating turbidity curtains would be installed around all in-water pile driving work, to minimize transport of resuspended sediments outside of the in-water work areas into adjacent aquatic habitats. Furthermore, Water Quality and Environmental Monitoring plans would be implemented during the construction of the marina to assess associated potential sedimentation effects. If elevated turbidity above background levels is detected outside of the immediate work areas, the construction work would stop and any potential deficiencies in the deployed turbidity control would be corrected. Therefore, we believe that the risk of impacts to ESA listed corals associated with the potential discharge, resuspension, and transport of sediments from the proposed marina construction and pile-driving work would be discountable.

The project could also result in indirect impacts to the above referenced colonies of ESA listed corals if as part of its operation sediments are resuspended due to prop wash from vessels at the marina, and those sediments are transported to the mouth of Coral Harbor. Average water depth within the marina footprint would be approximately 12 feet. The proposed marina would provide docking space for 127 vessels up to 160 feet in length. Thirty-nine (39) of the 127 proposed slips would be for vessels 100 feet long or longer. Vessels of that size commonly have drafts between five to nine feet. Some of the docks for 100 feet long vessels would be located in water depths of eight to nine feet. With such a limited clearance from the marine bottom such large vessels could generate prop wash, continuously stirring-up and re-suspending sediments. This increased sedimentation and turbidity could extend throughout the Action Area reaching the mouth of the harbor and impacting the ESA listed corals located therein. According to the applicant's measurements and analysis, water movement in Coral Bay, particularly in Coral Harbor, is sluggish with circulation and currents being both tidally and wind influenced. Only limited exchange or flushing occurs which is clear by the difference in turbidity in and out of the bay. Rarely is turbidity low within the harbor. The applicant's analysis acknowledges that under those conditions, resuspended fine sediments would remain in the water column of Coral Harbor for an extended period of time potentially resulting long-term increases in turbidity and associated detrimental effects to the benthic community. Based on the above information in addition to the supplemental information provided, the Corps has determined that the sediment stir-up, resuspension and transport from vessel prop wash as part of the operation of the marina is not likely to adversely affect the above referenced ESA listed coral colonies.

In addition, ESA listed coral colonies could be affected by the transit of work vessels to and from the in-water construction areas of the proposed marina if a work vessel was to ground on the shallow reef and colonized hard bottom located at both sides of the mouth of Coral Harbor. In order to minimize the potential for accidental groundings associated with the project, the Corps would require that no work takes place at night. Also, prior to begin project construction seven informational buoys or

aids to navigation would be deployed in shallow areas on the approach to the marina location, including the reefs and hard bottom areas at both sides of the mouth of Coral Harbor. These aids to navigation would alert all boaters, including the operators of work vessels associated with the construction of the marina, about the presence of those shallow areas and the sensitive resources located therein, so they can maneuver the boats to avoid those areas. For these reasons, we believe the potential for impacts to ESA listed coral colonies from accidental groundings of work vessels associated with the construction of the proposed marina is discountable.

Furthermore, ESA listed coral colonies occur outside of the project footprint and therefore not likely to be affected by groundings of vessels transiting to or from the marina during the operation of the project. While the project would provide new docking space for 127 vessels within Coral Harbor, the associated increase in vessel traffic, as a result of the construction and operation of the marina is not likely to result in the potential for vessel groundings in ESA listed coral colonized habitats within the Action Area based on the location of listed corals occurring at the mouth of the harbor where vessels traverse currently. In addition, the marina will implement an education program for the users of the marina, which will include the placement of signs or placards informing boaters about the presence of ESA listed corals in shallow reef and hard bottom areas of Coral Harbor, as well as safe navigation practices to prevent groundings and impacts to those sensitive resources. Also, prior to begin project construction seven informational buoys or aids to navigation would be deployed in shallow areas on the approach to the marina location, including the reefs and hard bottom areas at both sides of the mouth of Coral Harbor, to alert all boaters and users of the marina about the presence of those shallow areas and the sensitive resources located therein, so they can maneuver the boats to avoid those areas. For these reasons, the Corps believes that the potential for impacts to ESA listed coral colonies from accidental groundings associated with increased vessel traffic to and from Coral Harbor as a result of the operation of the marina would be discountable.

ESA listed corals could be adversely impacted by potential spills of fuels during the operation of the proposed project. The applicant has indicated that all components of the fueling system would be constructed in compliance with U.S. Environmental Protection Agency (USEPA) and DPNR requirements. As part of its operations, the marina would obtain a Terminal Facility License in order to be able to provide fuel. In addition, the marina will have a DPNR approved Spill Prevention Countermeasure and Control Plan, prior to commencing operations. This plan would address measures to prevent, address and minimize the effects of any potential minor or major fuel spills. Based on this information, the Corps understands that it would be unlikely that any fuel spill would be severe enough to produce adverse effects to the above reference ESA listed coral colonies. Therefore, the Corps believes that the potential for adverse effects to Elkhorn, Mountainous star, Lobed star, and Pillar corals from potential fuel spills during the operation of the proposed marina would be discountable.

Noise Effects

Noise created by pile driving activities can physically injure animals or change animal behavior in the affected areas. Animals can be physically injured in 2 ways. First, immediate adverse effects can occur if a single noise event exceeds the threshold for direct physical injury. Second, adverse physical effects can result from prolonged exposure to noise levels that exceed the daily cumulative sound exposure level for the animals. Noise can also interfere with an animal's behavior, such as migrating, feeding, resting, or reproducing and such disturbances could constitute adverse behavioral effects.

When an impact hammer strikes a pile, a pulse is created that propagates through the pile and radiates sound into the water, the ground substrate, and the air. Pulsed sounds underwater are typically high-volume events that have the potential to cause hearing injury. Vibratory pile driving produces continuous, non-pulsed sounds that can be tonal or broadband. In terms of acoustics, the sound pressure wave is described by the peak sound pressure level (PK, which is the greatest value of the sound signal), the root-mean-square pressure level (RMS, which is the average intensity of the sound signal over time), and the sound exposure level (SEL, which is a measure of the energy that takes into account both received level and duration of exposure). Further, the cumulative sound exposure level (SELcum) is the measure of energy that takes into account the received sound pressure level over a 24-hour period. For underwater sounds, a reference pressure of 1 micropascal (μPa) is commonly used to describe sounds in terms of decibels (dB). Thus, 0 dB on the decibel scale would be a measure of sound pressure of 1 μPa . NMFS has determined that there are no PK potential effects to ESA-listed sea turtles, fishes, and marine mammals resulting from continuous, non-pulsed sounds associated with vibratory pile-driving. Further, NMFS has determined that there are no SELcum potential effects to ESA-listed fishes resulting from continuous, non-pulsed sounds associated with vibratory pile-driving.

NMFS uses the U.S. Navy Phase III criteria for all noise thresholds (U.S. Department of the Navy, 2017). As of May 2022, potential effects to ESA-listed species may occur when impact or vibratory pile driving produces sounds that exceed the following thresholds in Table 3. Below, PK and RMS are referenced to dB re: 1 μPa , the relative unit used to specify the intensity of sound underwater. Further, SEL and SELcum are referenced to dB re: 1 μPa^2 -second.

Table 4. Pile Driving Sound Measurement Thresholds for ESA-listed Species in the Southeast Region

Type of Sound Pressure Effect	Type of Pile Driving	Threshold By ESA-Listed Species
Peak Pressure Injury (PK)	Vibratory	<ul style="list-style-type: none"> ● None for all species
	Impact	<ul style="list-style-type: none"> ● 206 dB for all fish species, regardless of size ● 232 dB for sea turtles ● 219 dB for low-frequency cetaceans (i.e., Rice's, North Atlantic Right, Sei, and Fin whales) ● 230 dB for mid-frequency cetaceans (i.e., Sperm whales)
Cumulative Exposure Injury (SELcum)	Vibratory	<ul style="list-style-type: none"> ● None for all fish species ● 220 dB for sea turtles ● 199 dB for low-frequency cetaceans (i.e., Rice's, North Atlantic Right, Sei, and Fin whales) ● 198 dB for mid-frequency cetaceans (i.e., Sperm whale)
	Impact	<ul style="list-style-type: none"> ● 183 dB for fish species less than 2 grams ● 187 dB for fish species greater than 2 grams ● 204 dB for sea turtles ● 183 dB for low-frequency cetaceans (i.e., Rice's, North Atlantic Right, Sei, and Fin whales) ● 185 dB for mid-frequency cetaceans (i.e., Sperm whale)
Behavioral Disturbances (RMS)	Vibratory	<ul style="list-style-type: none"> ● 150 dB RMS for all fish species ● 175 dB RMS for sea turtles ● 120 dB RMS for all cetaceans
	Impact	<ul style="list-style-type: none"> ● 150 dB RMS for all fish species, regardless of size ● 175 dB RMS for all sea turtles ● 160 dB RMS for all cetaceans

We use the NMFS Multi-species Pile Driving Tool (dated August 2022) to calculate the

radii of physical injury and behavioral effects on ESA-listed species that may be located in the action area based on the above measurements of underwater sound.

Our underwater noise or acoustic effects analysis considered the specific details of the proposed steel pipe pile driving activities, as summarized above in the Description of the Proposed Action and Table 1. Construction of the proposed marina would require installing 867 piles to support the docking structures. Sixty-six (66) of those would be 14-inch square concrete piles; 457 would be 14-inch steel pipe piles filled with concrete; and 437 would be 18-inch steel pipe piles filled with concrete. Pile installation work would be limited to daylight hours only. A impact hammer would be used to install all piles. A maximum of six (6) piles would be installed each day. The installation of each pile would require an average of 300 blows with the vibratory hammer. The installation of the 867 proposed piles would be completed in approximately 160 days. Even though three different types of piles would be installed, following a conservative approach, the noise analysis was completed using the largest pile with the largest potential for noise generation, which was the 18-inch in diameter steel pipe piles. Since the NMFS Pile Driving Noise Calculator Tool does not provide information for Steel Pipe Piles with 18" diameter, we used the data 52 for Steel Pipe Piles with 36" in diameter installed with vibratory hammer at a water depth of 5 meters, with attenuation of 20 dB.

According to our results, the proposed installation of steel pipe piles by impact hammer would cause single-strike or peak-pressure injury to sea turtles at a radius of up to 0 m (0 ft). In addition, the cumulative sound exposure level (cSEL) of multiple pile strikes over the course of a day may cause injury to sea turtles at a radius of up to 0.17252353 m (0.566 ft). To minimize potential impacts to federally protected sea turtles, the applicant is proposing, and the Corps would require establishing a 500-m safety/monitoring zone around the project area during project construction. Trained observers would visually monitor the safety zone for at least 30 minutes prior to beginning all in-water construction activities. If at any time, a sea turtle is observed in this safety zone, which is well before the sea turtle's threshold for injurious effects, the operation would be shut down until the animal leaves the safety zone of its own volition. This would effectively protect sea turtles from potential noise impact related injury if they were to approach the pile installation area. Additionally, the proper use of turbidity curtains would prevent these species from coming into close proximity to active in water work areas. Also, due to the mobility sea turtles, we expect them to move away from noise disturbances. Because we anticipate the animal would move away, we believe that the possibility of a sea turtle suffering physical injury from noise would be extremely unlikely. Therefore, the likelihood of any injurious cSEL effects to sea turtles would be discountable. An animal's movement away from the injurious impact zone is a behavioral response, with the same effects discussed below.

Based on our noise calculations, impact hammer pile installation could also cause behavioral effects to sea turtles at a radius of up to 100 m (328.084 ft). Due to the

mobility of sea turtles, we expect them to move away from noise disturbances. Because there are similar habitats nearby, we believe behavioral effects would be insignificant. If a sea turtle chooses to remain within the behavioral response zone, it could be exposed to behavioral noise impacts during pile installation. Since piling installation activities would be limited to daylight hours, a maximum of six piles, and 300 impact hammer strikes per day, sea turtles would be able to resume normal activities during quiet periods between pile installations, immediately after completion of the noise producing activities each day, and at night. Therefore, we anticipate that any project related behavioral effects to sea turtles would be insignificant.

Notwithstanding the above, it is important to note that our noise analysis above relied on the pile driving information provided by the applicant. This information estimated that an average of 300 strikes would be required to install each pile, six piles would be installed per day, and all pile driving would be completed in 166 days. These estimates were based on the assumption that sediments within the proposed marina footprint are composed of a mix of fine, silty sand and clay throughout the 25 feet embedment depth necessary to adequately install the piles. If rocky layers, bedrock or harder substrate are found within the needed embedment depth, additional strikes could be needed to install each pile, and/or the pile installation work duration could be extended. This could affect the noise analysis results and determinations provided above.

Calculated Distances					
	Onset of Physical Injury			Fish Behavior	Sea Turtle Behavior
	Peak	Cumulative SEL dB**		RMS	RMS
	Sea Turtles & Fish	Sea Turtles & Fish ≥102 g	Fish < 2 g	dB	dB
Threshold value	206	234	191	150	160
Distance to threshold (m)	0	0.17252353	126.9155989	464.1588834	100
Distance to threshold (ft)	0.0 ft	0.566 ft	416.39 ft	1522.831 ft	328.084 ft
	** This calculation assumes that single strike SELs < 150 dB do not accumulate to cause injury (Effective Quiet)				

Figure 3. Impact Pile Driving report, generated from NMFS Multi-species Pile Driving Tool (NMFS, 2022)

Noise generated during the proposed installation of anchor pilings has the potential to physically injure or change the behavior of ESA listed fish species, including Nassau

grouper, Scalloped hammerhead shark, Oceanic white tip shark, and Giant manta ray individuals, which could be present in the vicinity of the project area. Injurious effects to these species can occur in two ways. First, immediate adverse effects can occur to listed species if a single noise event exceeds the threshold for direct physical injury. Second, effects can result from prolonged exposure to noise levels that exceed the daily cumulative exposure threshold for the animals, and these can constitute adverse effects, if animals are exposed to the noise levels for sufficient periods. Behavioral effects can be adverse if such effects prevent animals from migrating, feeding, resting, or reproducing, for example. To evaluate potential effects to ESA listed fish species as a result of noise created by the proposed dock supporting piles installation, we utilized the Practical Spreading Loss Model of Pile Driving Noise Calculator Tool, dated August 16, 2017, from NMFS South East Region.

Our underwater noise or acoustic effects analysis considered the specific details of the proposed steel pipe pile driving activities, as summarized above in the Description of the Proposed Action and Table 1. Construction of the proposed marina would require installing 867 piles to support the docking structures. 470 would be 14-inch steel pipe piles filled with concrete; and 397 would be 18-inch steel pipe piles filled with concrete. Pile installation work would be limited to daylight hours only. An impact hammer would be used to install all piles. A maximum of six (6) piles would be installed each day. The installation of each pile would require an average of 300 blows with the impact hammer. The installation of the 867 proposed piles would be completed in approximately 166 days. Even though three different types of piles would be installed, following a conservative approach, the noise analysis was completed using the largest pile with the largest potential for noise generation, which was the 18-inch in diameter steel pipe piles. Since the NMFS Pile Driving Noise Calculator Tool does not provide information for Steel Pipe Piles with 18" diameter, we used the data 52 for Steel Pipe Piles with 36" in diameter installed with impact hammer at a water depth of 5 meters, with attenuation of 20 dB. Since there would be open water portions of the bay without solid objects within 260 feet of any proposed pile driving activity, the project area was considered an open water environment. The results of our noise analysis are summarized in Table 5 above.

According to our results, the installation of the dock supporting piles by hydraulic impact hammer would cause single-strike or peak-pressure injury to ESA-listed fish (Nassau grouper, Scalloped hammerhead sharks, Oceanic white tip sharks, and Giant manta rays) at a radius of up to 0 m (0 ft). The cumulative sound exposure level (cSEL) of multiple pile strikes over the course of a day may cause injury to those ESA listed fish species at a radius of up to 126.9155989 m (416.39 ft). However, the proper use of turbidity curtains would prevent these species from coming into close proximity to active in water work areas. Also, due to the mobility of ESA-listed fish species, we expect them to move away from noise disturbances. Because we anticipate fish to move away, we believe that an animal suffering physical injury from noise would be extremely unlikely to occur and the likelihood of any injurious cSEL effects would be discountable.

An animal's movement away from the injurious impact zone is a behavioral response, with the same effects discussed below.

Based on our noise calculations, impact hammer pile installation could also cause behavioral effects to ESA-listed fish species at radius of up to 464.1588834 m (1522.831 ft). Due to the mobility of ESA-listed fish species, we expect them to move away from noise disturbances. Because there are similar habitats nearby, we believe behavioral effects would be insignificant. If a listed fish chooses to remain within the behavioral response zone, it could be exposed to behavioral noise impacts during pile installation. Since pile installation activities would be limited to daylight hours, a maximum of six piles, and 300 impact hammer strikes per day, fish species would be able to resume normal activities during quiet periods between pile installations, immediately after completion of the noise producing activities each day, and at night. Therefore, we anticipate that any project related behavioral effects to ESA-listed fish species would be insignificant.

Notwithstanding the above, it is important to note that our noise analysis above relied on the pile driving information provided by the applicant. This information estimated that an average of 300 strikes would be required to install each pile, six piles would be installed per day, and all pile driving would be completed in 166 days. These estimates assumed that sediments within the proposed marina footprint are composed of a mix of fine, silty sand and clay throughout the 25 feet embedment depth necessary to adequately install the piles. If rocky layers, bedrock or harder substrate are found within the needed embedment depth, additional strikes could be needed to install each pile, and/or the pile installation work duration could be extended. This could affect the noise analysis results and determinations provided above.

3. CONCLUSION: The Corps has reviewed the proposed project for its effects to ESA-listed species and their critical habitat. Based on the analysis above, we have determined that the proposed project is not likely to adversely affect any listed species or critical habitat under NMFS's jurisdiction. We have used the best scientific and commercial data available to complete this analysis. We request your concurrence with this determination. Should you require further information regarding this project, please contact Alisa Zarbo at 561-472-3517 or via e-mail at Alisa.A.Zarbo@usace.army.mil. Please refer to identification number SAJ-2004-12518 (SP-AAZ) in any correspondence concerning this project. Thank you for your assistance and attention to this matter.

Sincerely,

Samantha L. Burns

Samantha L. Burns
Chief, Miami Permitting Section

Literature Cited

Barnette, M. 2018. Threats and Effects Analysis for Protected Resources on Vessel Traffic Associated with Dock and Marina Construction. NMFS SERO PRD Memorandum. October 31, 2018.

NMFS. 2021. Protected species construction conditions, NOAA Fisheries Southeast Regional Office. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Regional Office, revised May 2021, Saint Petersburg, FL.

NMFS. 2022. Multi-Species Pile Driving Calculator, Version 1.2-Multi Species, <https://www.fisheries.noaa.gov/s3/2023-05/BLANK-Multi-Species.xlsx> (as of May 25, 2023)

U.S. Department of the Navy. 2017. Technical Report: Criteria and Thresholds for U.S. Navy Acoustic and Explosive Effects Analysis (Phase III). San Diego, California: SSC Pacific.

FOR APPROVAL



LEGEND

	ALUMINUM FIXED DOCKS
	REMOVED ALUMINUM FIXED DOCK SECTIONS
	ALUMINUM FIXED BOARDWALK

DESIGN CRITERIA

WIND SPEED (25 yrs) FULL OCCUPANCY: 83 mph
WIND SPEED (50 yrs) WITHOUT BOATS: 96 mph
SECURITY FACTOR (WIND LOAD) : 1.5
WAVE PERIOD (25 yrs): 2.6 sec.
CURRENT SPEED (25 yrs) : 1.75 Knots (0.9m/s)
BULKHEAD ELEV. : +4.2'

SURGE (25 yrs)-STILLWATER ELEV. + WAVE : 5.7 ft MSL
WAVE HEIGHT (25 yrs) : 1.2 ft MSL
SURGE (100 yrs)-STILLWATER ELEV. + WAVE : 9.2 ft MSL
WAVE HEIGHT (100 yrs) : 3.2 ft MSL

HAT : +0.85' MSL
MHHW : +0.43' MSL
MHW : +0.39' MSL
MTL : +0.03' MSL
DTL : +0.02' MSL
MSL : +0.00'
VIVD09 : +0.02' MSL
MLW : -0.33' MSL
MLLW : 0.39' MSL
LAT : -0.76' MSL
SEABED ELEVATION : -5.00' TO -18.00' MSL
SOIL TYPE : SAND
N VALUE : 10
BOAT PROFILE : TOBIASSON 1989 BOAT
PROFILE CURVE
METHOD OF : U.S. CORPS OF ENGINEER
CALCULATION SPECIAL REPORT 1974

NOTES

ALL DIMENSIONS ARE BETWEEN DOCK ALUMINUM EXTRUSIONS ONLY AND DO NOT TAKE INTO ACCOUNT THE FENDER WIDTHS UNLESS NOTED.

NO.	DESCRIPTION	DATE	BY	APPROVED	REVISION
1	FOR APPROVAL GUARDRAIL ON PIER G	24/06/27	R.G.		
2	REDUCED BERTHING ON PIERS B,C,D,F & G	22/12/22	R.G.		
3	BERTHING REVISION	22/02/10	R.G.		
4	FOR CONSTRUCTION	20/12/24	R.G.		
5	SINGLE POINT MOORING FOR APPROVAL	09/14/20	S.H.		
6	FOR APPROVAL	19/12/04	R.G.		
7	PIER "A" FOR APPROVAL	17/06/30	R.G.		
8	REVISED NOTES FOR APPROVAL	17/06/29	R.G.		
9	PIER H BOARDWALK DESIGN CHANGES	17/06/19	R.G.		
10	INITIAL ISSUE				

PROPRIETARY INFORMATION

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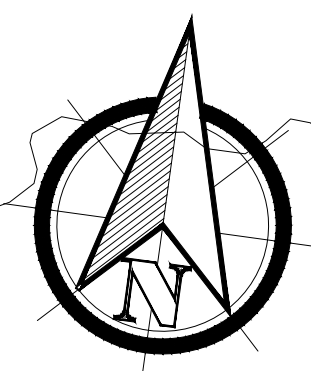
Projet
SUMMER'S END MARINA, ST-JOHN'S, VIRGIN ISLAND

Titre
OVERALL LAYOUT

No. de Contrat D1445	Gérant de projet S. HUDON
Tracé le 24/06/27	Dessiné par S. GELINAS
Dessin de réf. 4895-B	No. de dessin D1445-OL01
	Rev. 15

PLAN VIEW
MARINA WITH BOATS

FOR APPROVAL



SINGLE POINT MOORING - BERTHING SUMMARY

BOAT LENGTH L (ft)	%	DISTRIBUTION												QTY.	TOTAL BERTHING FOOTAGE		
		SP-1	SP-2	SP-3	SP-4	SP-5	SP-6	SP-7	SP-8	SP-9	SP-10	SP-11	SP-12				
37.5'	100%	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	450
SUMMARY	100%															12	450

*NOTE: ALL REPRESENTED BOAT LENGTHS ARE INDICATIVE OF MAXIMUM BOAT SIZE FOR EACH BERTH

TOT. MARINA FOOT: 450.00'
AVG. BOAT LENGTH: 37.50'

BERTHING SUMMARY - NEW BERTH COUNT

BOAT LENGTH L (ft)	%	DISTRIBUTION								QTY.	TOTAL BERTHING FOOTAGE
		A	B	C	D	E	F	G	H		
30'	2%				2					2	60
35'	16%		17		1					18	630
40'	15%		17							17	680
40' CAT	9%			10						10	400
45'	10%					11				11	495
50' CAT	9%				10					10	500
50'	1%					1				1	50
55'	7%					8				8	440
60'	0%									0	0
80'	1%									1	80
88'	2%	2								2	176
100'	14%	8					2	6		16	1600
110'	3%							3		3	330
120'	1%							1		1	120
130'	1%							1		1	130
140'	6%						4	3		7	980
160'	6%						4	3		7	1120
SUMMARY	100%									115	7791.00'

NOTE: CELLS OUTLINED IN RED INDICATE BERTH COUNT CHANGE

TOT. MARINA FOOT: 7791.00'
AVG. BOAT LENGTH: 67.75'

BERTHING SUMMARY - REMOVED BERTHS

BOAT LENGTH L (ft)	%	DISTRIBUTION						QTY.	TOTAL BERTHING FOOTAGE
		B	C	D	F	G			
35'	21%	6					6	210	
40'	21%	6					6	240	
45'	10%			3			3	135	
50' CAT	3%		1				1	50	
55'	10%				3		3	165	
60'	17%					5	5	300	
80'	3%			1			1	80	
140'	14%					4	4	560	
SUMMARY	100%						29	1740.00'	

NOTE: TOTAL QUANTITY OF BERTHS REMOVED

TOT. MARINA FOOT: 1740.00'
AVG. BOAT LENGTH: 60.00'

BOAT DIMENSIONS

LENGTH (ft)	*BEAM (ft)	DRAFT (ft)	LENGTH (m)	*BEAM (m)	DRAFT (m)
30'	10.80'	3.00'	9.14 m	3.29 m	0.91 m
35'	12.02'	3.00'	10.67 m	3.66 m	0.91 m
40'	13.17'	3.50'	12.19 m	4.01 m	1.07 m
40' CAT	19.66'	4.50'	17.99 m	5.99 m	1.37 m
45'	14.32'	4.00'	13.72 m	4.36 m	1.22 m
50' CAT	26.25'	5.00'	15.24 m	8.00 m	1.52 m
50'	16.38'	4.00'	15.24 m	4.99 m	1.22 m
55'	17.06'	4.50'	16.76 m	5.20 m	1.37 m
60'	18.30'	4.50'	18.29 m	5.58 m	1.37 m
80'	20.29'	6.00'	24.38 m	6.18 m	1.83 m
88'	21.29'	6.00'	26.82 m	6.49 m	1.83 m
** 100'	** 22.30'	** 4.25'	30.48 m	6.80 m	1.30 m
110'	24.15'	7.00'	33.53 m	7.36 m	2.13 m
120'	25.47'	8.00'	36.58 m	7.76 m	2.44 m
130'	26.47'	9.00'	39.62 m	8.07 m	2.74 m
140'	28.05'	9.00'	42.67 m	8.55 m	2.74 m
160'	30.64'	9.00'	48.77 m	9.34 m	2.74 m

*BASED ON TOBIASSON 1989 BOAT PROFILE CURVE
** AB YACHTS TECHNICAL DATA FOR AB-100

ANNUAL OCCUPANCY CHART

DOCKS	SLIP SECTIONS	SLIP COUNT	ANNUAL OCCUPANCY %
(B)	(A)	17	80%
(C)	(B)	17	85%
(D)	(C)	11	60%
(E)	(D)	11	60%
(F)	(E)	11	59%
(G)	(F)	11	53%
(A)	(G)	13	32%
(E)	(H)	8	39%
(F)	(I)	10	38%
(H)	(J)	2	29%
(G)	(K)	4	30%
(H)	BOARDWALK	N/A	
TOTAL SLIPS		115	

LEGEND

- ALUMINUM FIXED DOCKS
- REMOVED ALUMINUM FIXED DOCK SECTIONS
- ALUMINUM FIXED BOARDWALK

DESIGN CRITERIA

WIND SPEED (25 yrs) FULL OCCUPANCY: 83 mph
 WIND SPEED (50 yrs) WITHOUT BOATS: 96 mph
 SECURITY FACTOR (WIND LOAD) : 1.5
 WAVE PERIOD (25 yrs) : 2.6 sec.
 CURRENT SPEED (25 yrs) : 1.75 Knots (0.9m/s)
 BULKHEAD ELEV. : +4.2'
 SURGE (25 yrs)-STILLWATER ELEV. + WAVE : 5.7 ft MSL
 WAVE HEIGHT (25 yrs) : 1.2 ft MSL
 SURGE (100 yrs)-STILLWATER ELEV. + WAVE : 9.2 ft MSL
 WAVE HEIGHT (100 yrs) : 3.2 ft MSL
 HAT : +0.85' MSL
 MHHW : +0.43' MSL
 MHW : +0.39' MSL
 MTL : +0.03' MSL
 DTL : +0.02' MSL
 MSL : +0.00'
 VIVDOR : +0.02' MSL
 MLW : -0.33' MSL
 MLLW : 0.39' MSL
 LAT : -0.76' MSL
 SEABED ELEVATION : -5.00' TO -18.00' MSL
 SOIL TYPE : SAND
 N VALUE : 10
 BOAT PROFILE : TOBIASSON 1989 BOAT PROFILE CURVE
 METHOD OF : U.S. CORPS OF ENGINEER
 CALCULATION : SPECIAL REPORT 1974

NOTES

ALL DIMENSIONS ARE BETWEEN DOCK ALUMINUM EXTRUSIONS ONLY AND DO NOT TAKE INTO ACCOUNT THE FENDER WIDTHS UNLESS NOTED.

No.	Description	By	Appr.	Feb.	Inst.
1	FOR APPROVAL GUARDRAIL ON PIER G	R.G.			24/06/27
2	REVISED DRAFT FOR 100' YACHT	R.G.			23/10/13
3	REDUCED BERTHING ON PIERS B,C,D,F & G	R.G.			22/12/22
4	BERTHING REVISION	R.G.			20/12/24
5	FOR CONSTRUCTION	R.G.			22/02/10
6	FOR APPROVAL SINGLE POINT MOORING	R.G.			05/14/20
7	FOR APPROVAL	S.H.			19/12/04
8	PIER "A"	R.G.			17/06/30
9	FOR APPROVAL REVISED NOTES	R.G.			17/06/29
10	INITIAL ISSUE				

PROPRIETARY INFORMATION

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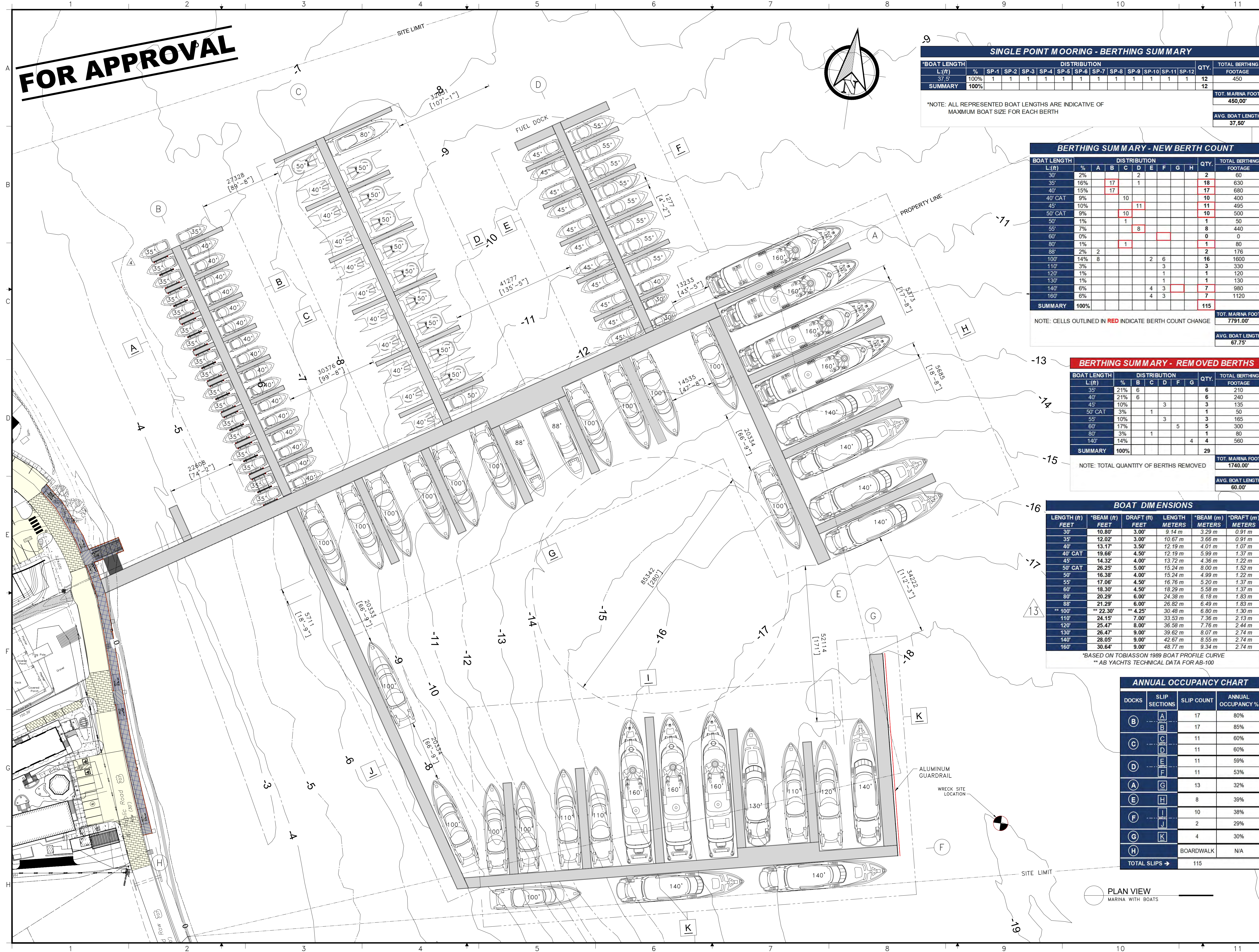


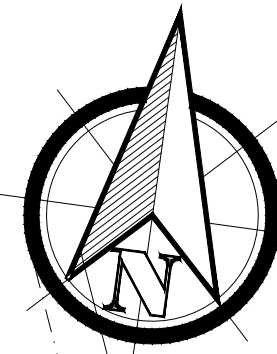
Projet: SUMMER'S END MARINA, ST-JOHN'S, VIRGIN ISLAND

Titre: BERTHING LAYOUT

No. de Contrat 4895-B	Gérant de projet M.J. Project manager
Tracé le 24/06/27	Dessiné par R.G.
Dessin de réf. 4895-B	No. de dessin D1445-BL01
Ref. drawing	Rev. 16

PLAN VIEW
MARINA WITH BOATS





BOAT DIMENSIONS					
LENGTH (ft)	BEAM (ft)	DRAFT (ft)	LENGTH (m)	BEAM (m)	DRAFT (m)
30'	10.80'	3.00'	9.14 m	3.29 m	0.91 m
35'	12.02'	3.00'	10.67 m	3.66 m	0.91 m
40'	13.17'	3.50'	12.19 m	4.01 m	1.07 m
40' CAT	19.66'	4.50'	12.19 m	5.99 m	1.37 m
45'	14.32'	4.00'	13.72 m	4.36 m	1.22 m
50' CAT	26.25'	5.00'	15.24 m	8.00 m	1.52 m
50'	16.38'	4.00'	15.24 m	4.99 m	1.22 m
55'	17.06'	4.50'	16.76 m	5.20 m	1.37 m
60'	18.30'	4.50'	18.29 m	5.58 m	1.37 m
80'	20.29'	6.00'	24.38 m	6.78 m	1.83 m
88'	21.29'	6.00'	26.82 m	6.49 m	1.83 m
100'	22.88'	6.00'	30.48 m	6.97 m	1.83 m
110'	24.15'	7.00'	33.53 m	7.36 m	2.13 m
120'	25.47'	8.00'	36.58 m	7.76 m	2.44 m
130'	26.47'	9.00'	39.62 m	8.07 m	2.74 m
140'	28.05'	9.00'	42.67 m	8.55 m	2.74 m
160'	30.64'	9.00'	48.77 m	9.34 m	2.74 m

*BASED ON TOBIASSON 1989 BOAT PROFILE CURVE

LEGEND

- ALUMINUM FIXED DOCKS
- ALUMINUM FIXED BOARDWALK

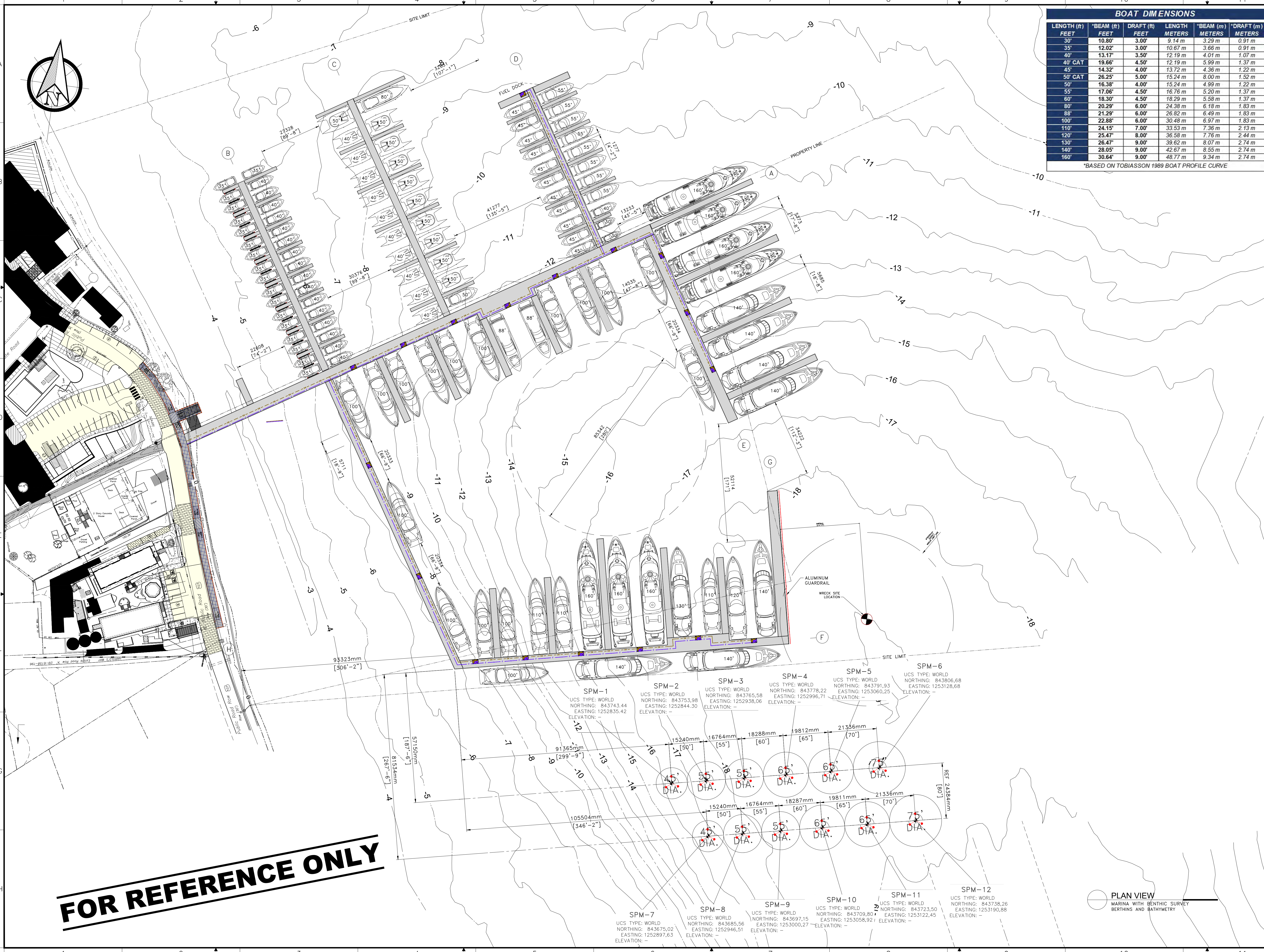
DESIGN CRITERIA

WIND SPEED (25 yrs) FULL OCCUPANCY: 83 mph
 WIND SPEED (50 yrs) WITHOUT BOATS: 96 mph
 SECURITY FACTOR (WIND LOAD) : 1.5
 WAVE PERIOD (25 yrs) : 2.6 sec.
 CURRENT SPEED (25 yrs) : 1.75 Knots (0.9m/s)
 BULKHEAD ELEV. : +4.2'
 SURGE (25 yrs)-STILLWATER ELEV. + WAVE : 5.7 ft MSL
 WAVE HEIGHT (25 yrs) : 1.2 ft MSL
 SURGE (100 yrs)-STILLWATER ELEV. + WAVE : 9.2 ft MSL
 WAVE HEIGHT (100 yrs) : 3.2 ft MSL

HAT : +0.85' MSL
 MHHW : +0.43' MSL
 MHW : +0.39' MSL
 MTL : +0.03' MSL
 DTL : +0.02' MSL
 MSL : +0.00'
 VIVD09 : +0.02' MSL
 MLW : -0.33' MSL
 MLLW : 0.39' MSL
 LAT : -0.76' MSL
 SEABED ELEVATION : -5.00' TO -18.00' MSL
 SOIL TYPE : SAND
 N VALUE : 10
 BOAT PROFILE : TOBIASSON 1989 BOAT PROFILE CURVE
 METHOD OF : U.S. CORPS OF ENGINEER
 CALCULATION : SPECIAL REPORT 1974

NOTES

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FOR REFERENCE ONLY

FOR APPROVAL	R.G.	24/06/27
GUARDRAIL ON PIER G	R.G.	
INITIAL ISSUE	R.G.	23/10/13

No.	Description	By	Appr.	Feb.	Inst.

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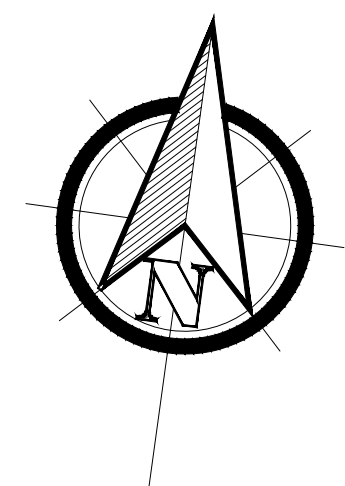
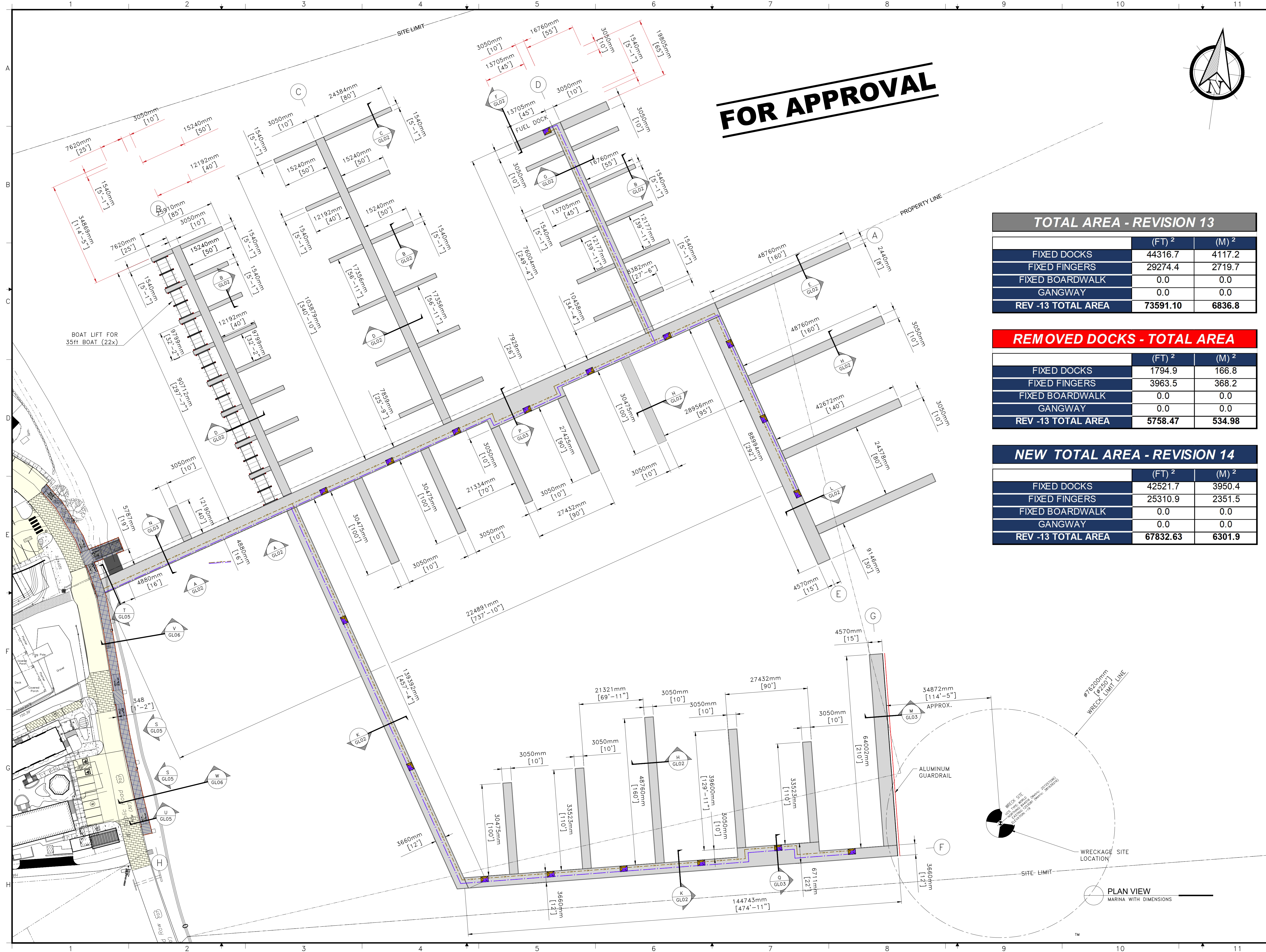


Projet
SUMMER'S END MARINA, ST-JOHN'S, VIRGIN ISLAND

Titre
SKETCH LAYOUT BERTHING DETAILS SINGLE POINT MOORING DETAILS

No. de Contrat D1445	Gérant de projet M.J. Project manager
Tracé le 24/06/27	Dessiné par R.G.
Dessin de réf. 4895-B	No. de dessin D1445-SK10
Ref. drawing	Rev. 01

PLAN VIEW
 MARINA WITH BERTHING SURVEY BERTHING AND BATHYMETRY



FOR APPROVAL

TOTAL AREA - REVISION 13		
	(FT) ²	(M) ²
FIXED DOCKS	44316.7	4117.2
FIXED FINGERS	29274.4	2719.7
FIXED BOARDWALK	0.0	0.0
GANGWAY	0.0	0.0
REV -13 TOTAL AREA	73591.10	6836.8

REMOVED DOCKS - TOTAL AREA		
	(FT) ²	(M) ²
FIXED DOCKS	1794.9	166.8
FIXED FINGERS	3963.5	368.2
FIXED BOARDWALK	0.0	0.0
GANGWAY	0.0	0.0
REV -13 TOTAL AREA	5758.47	534.98

NEW TOTAL AREA - REVISION 14		
	(FT) ²	(M) ²
FIXED DOCKS	42521.7	3950.4
FIXED FINGERS	25310.9	2351.5
FIXED BOARDWALK	0.0	0.0
GANGWAY	0.0	0.0
REV -13 TOTAL AREA	67832.63	6301.9

LEGEND

- ALUMINUM FIXED DOCKS
- REMOVED ALUMINUM FIXED DOCK SECTIONS
- ALUMINUM FIXED BOARDWALK

DESIGN CRITERIA

WIND SPEED (25 yrs) FULL OCCUPANCY: 83 mph
 WIND SPEED (50 yrs) WITHOUT BOATS: 96 mph
 SECURITY FACTOR (WIND LOAD) : 1.5
 WAVE PERIOD (25 yrs): 2.6 sec.
 CURRENT SPEED (25 yrs) : 1.75 Knots (0.9m/s)
 BULKHEAD ELEV. : +4.2'
 SURGE (25 yrs)-STILLWATER ELEV. + WAVE : 5.7 ft MSL
 WAVE HEIGHT (25 yrs) : 1.2 ft MSL
 SURGE (100 yrs)-STILLWATER ELEV. + WAVE : 9.2 ft MSL
 WAVE HEIGHT (100 yrs) : 3.2 ft MSL
 HAT : +0.85' MSL
 MHW : +0.43' MSL
 MHHW : +0.39' MSL
 MTL : +0.03' MSL
 DTL : +0.02' MSL
 MSL : +0.00'
 VIVD09 : +0.02' MSL
 MLW : -0.33 MSL
 MLLW : 0.39' MSL
 LAT : -0.76' MSL
 SEABED ELEVATION : -5.00' TO -18.00' MSL
 SOIL TYPE : SAND
 N VALUE : 10
 BOAT PROFILE : TOBIASSON 1989 BOAT
 PROFILE CURVE
 METHOD OF : U.S. CORPS OF ENGINEER
 CALCULATION SPECIAL REPORT 1974

NOTES

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FOR APPROVAL	R.G.
GUARDRAIL ON PIER G	24/06/27
REDUCED BERTHING'S ON PIERS B,C,D,F & G	22/12/22
FOR APPROVAL	R.G.
FOR CONSTRUCTION	22/02/10
FOR APPROVAL	R.G.
FOR APPROVAL	20/12/24
FOR APPROVAL	R.G.
FOR APPROVAL	20/05/14
FOR APPROVAL	S.H.
FOR APPROVAL	19/12/04
PIER "A"	R.G.
FOR APPROVAL	17/06/30
REVISED NOTES	R.G.
FOR APPROVAL	17/06/29
PIER H BOARDWALK	R.G.
DESIGN CHANGES	17/06/19
INITIAL ISSUE	

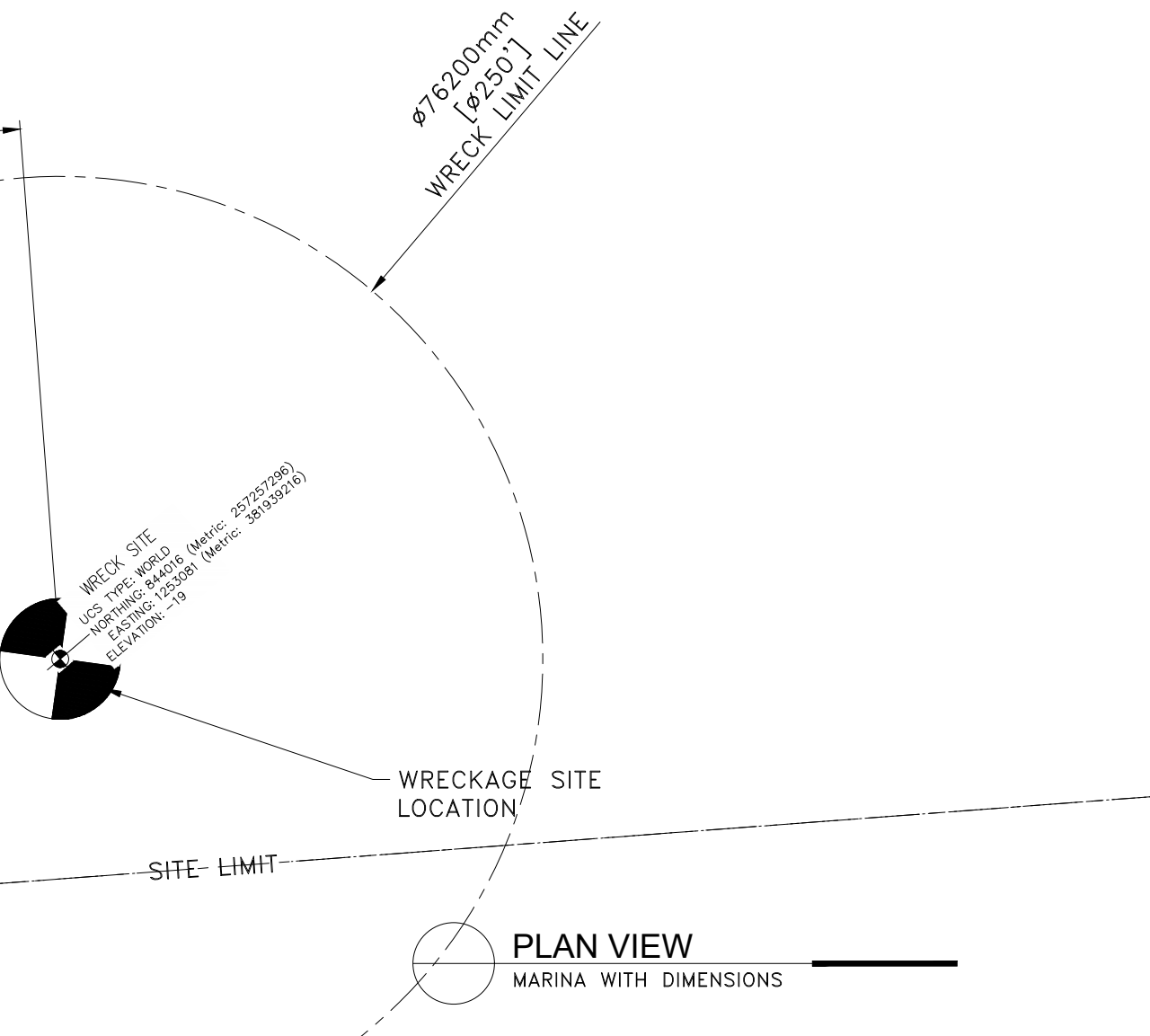
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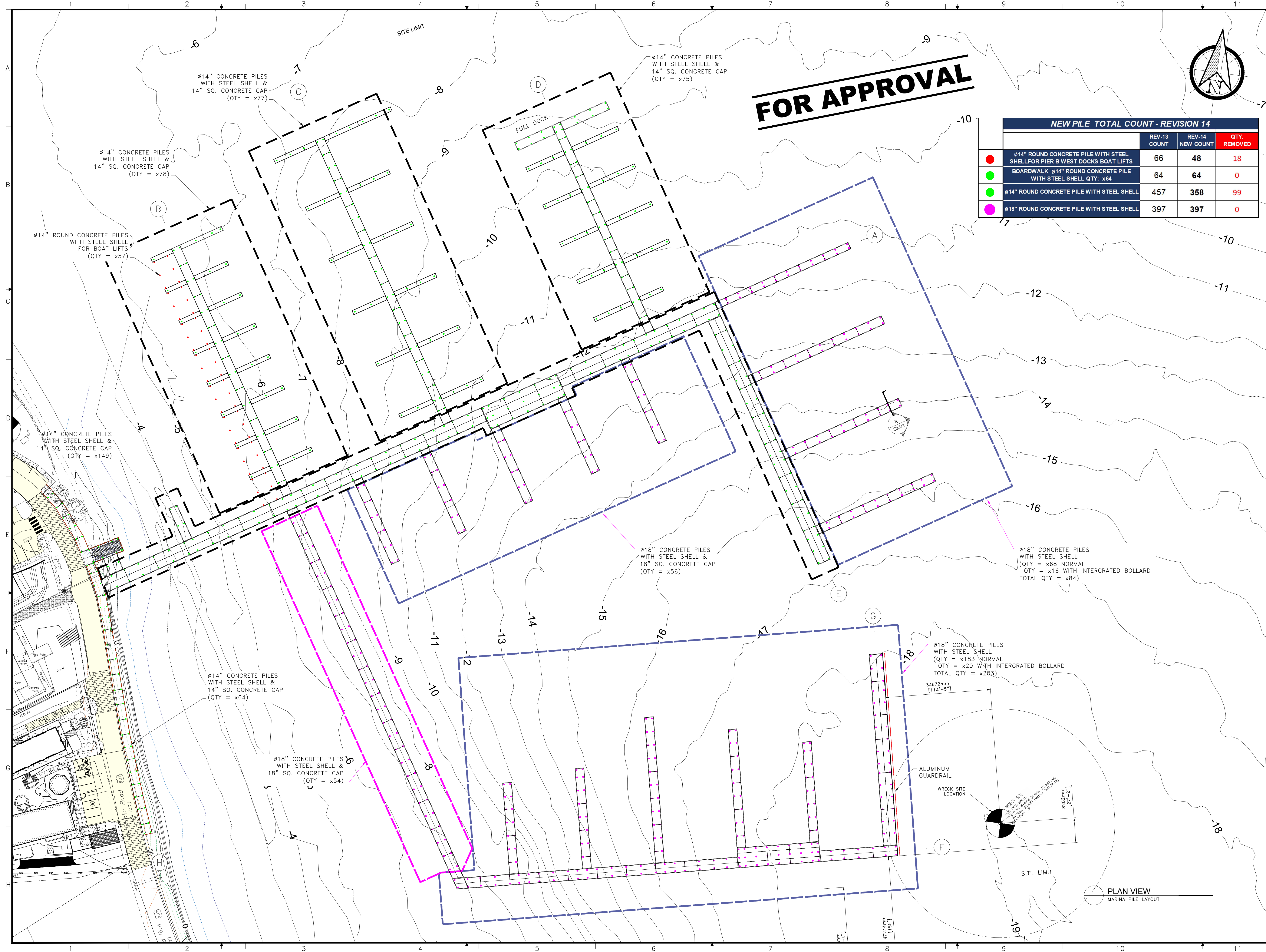


Projet
SUMMER'S END MARINA, ST-JOHN'S, VIRGIN ISLAND

Titre
GENERAL LAYOUT

No. de Contrat D1445	Gérant de projet M.J. Project manager
Tracé le 24/06/27	Dessiné par R.G.
Dessin de réf. 4895-B	No. de dessin D1445-GL01 Rev. 15





FOR APPROVAL

NEW PILE TOTAL COUNT - REVISION 14			
	REV-13 COUNT	REV-14 NEW COUNT	QTY. REMOVED
● #14" ROUND CONCRETE PILE WITH STEEL SHELL FOR PIER B WEST DOCKS BOAT LIFTS	66	48	18
● BOARDWALK #14" ROUND CONCRETE PILE WITH STEEL SHELL QTY: x64	64	64	0
● #14" ROUND CONCRETE PILE WITH STEEL SHELL	457	358	99
● #18" ROUND CONCRETE PILE WITH STEEL SHELL	397	397	0

LEGEND

- ALUMINUM FIXED DOCKS
- REMOVED ALUMINUM FIXED DOCK SECTIONS
- ALUMINUM FIXED BOARDWALK

TOTAL QUANTITY FOR:
14" ROUND CONCRETE PILE WITH STEEL SHELL FOR PIER B WEST DOCKS LIFTS QTY: x48

TOTAL QUANTITY FOR:
14" ROUND CONCRETE PILE WITH STEEL SHELL FIXED DOCK QTY: x358
BOARDWALK QTY: x64

TOTAL QUANTITY FOR:
18" ROUND CONCRETE PILE WITH STEEL SHELL QTY: x397

DESIGN CRITERIA

WIND SPEED (25 yrs) FULL OCCUPANCY: 83 mph
WIND SPEED (50 yrs) WITHOUT BOATS: 96 mph
SECURITY FACTOR (WIND LOAD) : 1.5
WAVE PERIOD (25 yrs): 2.6 sec.
CURRENT SPEED (25 yrs) : 1.75 Knots (0.9m/s)
BULKHEAD ELEV. : +4.2'
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MHH : +0.39' MSL
MTL : +0.03' MSL
DTL : +0.02' MSL
MSL : +0.00'
VIVD09 : +0.02' MSL
MLW : -0.33 MSL
MLLW : 0.39' MSL
LAT : -0.76' MSL
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SOIL TYPE : SAND
N VALUE : 10
BOAT PROFILE : TOBIASSON 1989 BOAT PROFILE CURVE
METHOD OF : U.S. CORPS OF ENGINEER CALCULATION SPECIAL REPORT 1974

NOTES

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NO.	DESCRIPTION	DATE	BY	APPROVED
1	FOR APPROVAL GUARDRAIL ON PIER G	24/06/27	R.G.	
2	FOR APPROVAL PILE COUNT REVISION	23/11/20	R.G.	
3	FOR APPROVAL ON PIERS B,C,D,F & G	23/10/13	R.G.	
4	FOR APPROVAL ON PIERS B,C,D,F & G	23/12/22	R.G.	
5	REDUCED BERTHING ON PIERS B,C,D,F & G	22/12/22	R.G.	
6	FOR CONSTRUCTION	20/12/24	R.G.	
7	PILE DETAILS	R.G.		
8	FOR APPROVAL	20/05/14	S.H.	
9	FOR APPROVAL	19/12/04	R.G.	
10	PIER "A" INITIAL ISSUE	17/06/30	R.G.	

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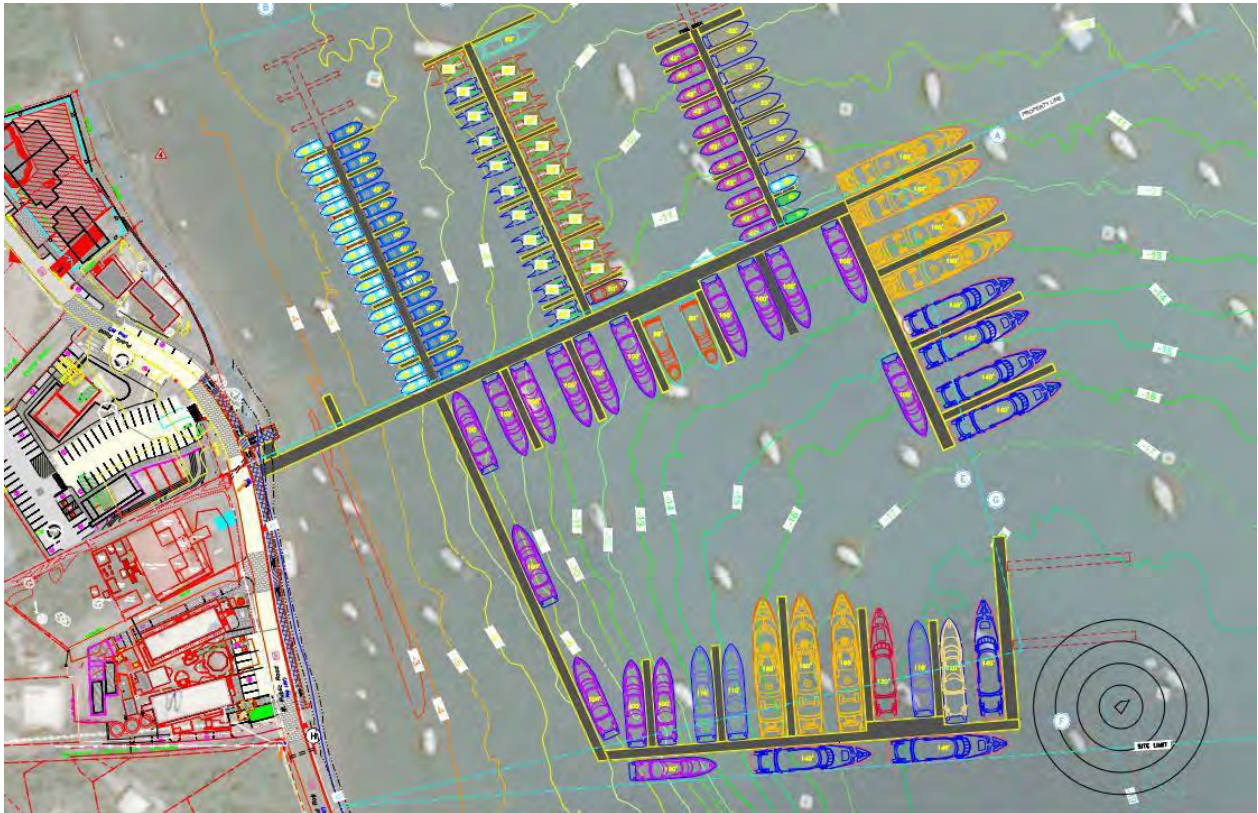
MAADI group

Project: **SUMMER'S END MARINA, ST-JOHN'S, VIRGIN ISLAND**

Titre: **ANCHORING LAYOUT**

No. de Contrat: D1445	Gérant de projet: M.J. Project manager
Tracé le: 24/06/27	Dessiné par: M. LAUZON
Dessin de réf.: 4895-B	No. de dessin: D1445-AL01
Ref. drawing	Rev. 15

**MINIMIZATION MITIGATION AND
COMPENSATORY MITIGATION
PLAN FOR
DEVELOPMENT OF THE
ST. JOHN MARINA
SUMMER'S END GROUP
U.S. VIRGIN ISLANDS**



**PREPARED FOR
SUMMER'S END GROUP
PREPARED BY**

BIOIMPACT, INC.

**P.O. BOX 132 KINGSHILL
ST. CROIX, U.S. VIRGIN ISLANDS 00851**

**REVISED AUGUST 2024
NMFS recommended updates provided to USACE on September 27, 2024**

Table of Contents

I.	INTRODUCTION	3
III.	SITE PROTECTION INSTRUMENT	17
IV.	REASON FOR MITIGATION - BASELINE INFORMATION	17
V.	COMPENSATION FOR UNAVOIDABLE IMPACTS.....	24
VI.	MITIGATION WORK PLAN.....	24
	Corals - Minimization	24
	Clean up of Debris in Harbor – Compensatory Mitigation.....	25
	ESA Coral Outplanting -Compensatory Mitigation.....	25
	Mangrove Planting – Compensatory Mitigation.....	26
	Mangrove Enhancement and Mangrove Island Creation – Compensatory Mitigation.....	27
	Placement of Informational Buoys – Compensatory Mitigation	29
	Information Signage – Compensatory Mitigation.....	30
	Pump-out and Waste Facilities – Compensatory Mitigation	30
VII.	MAINTENANCE PLAN	30
VIII.	ECOLOGICAL PERFORMANCE STANDARDS	32
IX.	MONITORING REQUIREMENTS	32
	OUTPLANTED CORALS	32
	DEBRIS CLEAN UP	34
X.	LONG TERM MANAGEMENT PLAN.....	34
XI.	ADAPTIVE MANAGEMENT PLAN	36
XII.	FINANCIAL ASSURANCES	37
	Appendix A	39
	Appendix B	41
	Appendix C	43

Table of Figures

Figure 1. Benthic Habitat Map 2023	2
Figure 2. Benthic Habitat Map 2018	3
Figure 3. 2023 benthic survey map overlain the 2018 benthic survey map - areas of seagrass loss is shown in red.	4
Figure 4. Reduction in marina footprint 2018-2023	5
Figure 5. Seagrass within the footprint of dock	6
Figure 6. Impact of all habitat types in the marina footprint	8
Figure 7. Location and distance of existing corals from the dock structure	10
Figure 8. Coral Relocation Area - S. Bournoni	13
Figure 9. Coral Outplanting Area	14
Figure 10. Benthic Habitats Coral Bay	16
Figure 11. Corals found in Coral Bay	17
Figure 12. Corals around Harbor Point in Survey Area	18
Figure 13. Corals around Penn Point in Survey Area	19
Figure 14. Critical Habitat within Coral Harbor (1.35 ac)	20
Figure 15. Area of Mangrove Planting Along Shoreline	24
Figure 16. Mitigation Lay-out Portion of Parcel 11 Remainder	25
Figure 17. Mitigation Portion Parcel 11 Remainder Estate Carolina	26
Figure 18. Map of Informational Buoys	27

This plan follows the compensatory mitigation guidelines as set forth in 40 CFR Part 230, Compensatory Mitigation for Losses of Aquatic Resources: Final Rule. The fundamental objective of compensatory mitigation is to offset environmental losses resulting from unavoidable impacts to the waters of the United States authorized by DA permits.

I. INTRODUCTION

The following is the proposed minimization and compensatory mitigation program for the proposed Summer’s End Marina (Summer’s End) in Coral Harbor, Coral Bay St. John, U.S. Virgin Islands. This plan encompasses mitigation to minimize the impacts of both direct and indirect impacts and compensatory mitigation for those impacts which cannot be avoided.

This minimization and compensatory mitigation plan have been revised to reflect the most recent minimization measures taken by Summer’s End to address concerns raised by the U.S. Army Corps of Engineers and the federal reviewing agencies. The most recent reduction reduces the overall size of the marina from 73,591sf (1.69 acres) to 67,832.63sf (1.557 acres) an 8% reduction in square footage.

The applicant proposes to construct a 67,832.63 square-foot (1.557 acres) fixed-dock marina consisting of 127-vessels of varying lengths (30-160’+). The construction includes the installation of approximately 867 steel pilings [470 of those would be 14-inch steel pipes filled with concrete; and 397 pilings would be 18-inch steel pipes filled with concrete, and the installation of twenty-two (22) boat lifts along the west side of the lateral north pier closest to the shore to accommodate vessels up to 35 feet in length.

The total minimizations from the original design are shown in Table 1 below. Other minimizations included modifying the docks from floating to fixed, removing a building from the docks, and incorporating grated decking allowing for no less than 43% light transmittance.

Table 1. Reduction from the original design

Total Dock Areal Reductions				
Original Sqft	Current Sqft	Total Reduction	% Reduction	
91,573.76	67,832.63	23,741.13	26%	
Total Pile Reductions				
Original Pile count	Current Pile Count	Total Reduction	% Reduction	
1,333	803	530	40%	
Total Vessels				
Original Vessel Count	Current Vessel Count	Total Reduction	% Reduction	
169	127	42	25%	

The most recent survey was undertaken in 2022-2023 following the NMFS/USACE approved survey methods. The survey shows shifts in habitat boundaries from the previous 2018 survey with increases in macroalgae and *Halophila stipulacea* and a decrease of dense seagrass colonization. Many of these shifts were outside the Summer’s End Group (SEG) development footprint. The seagrass loss may be partially related to Sargassum inundations in the harbor since many of these occurred in the shallowest areas where dense seagrass was most abundant. The areas of *H. stipulacea* colonization and the *H. stipulacea* density have both notably increased in the overall harbor, while this is primarily outside the project footprint it has contributed to the loss of native seagrass within the marina footprint. There was also an increase in drift algae over the uncolonized unconsolidated sediment, again, beyond the marina footprint. At least 1 *Acropora palmata*, and a *Dendrogyra cylindrus* was lost between the 2022-2023 surveys and the previous survey 4.5 years before.

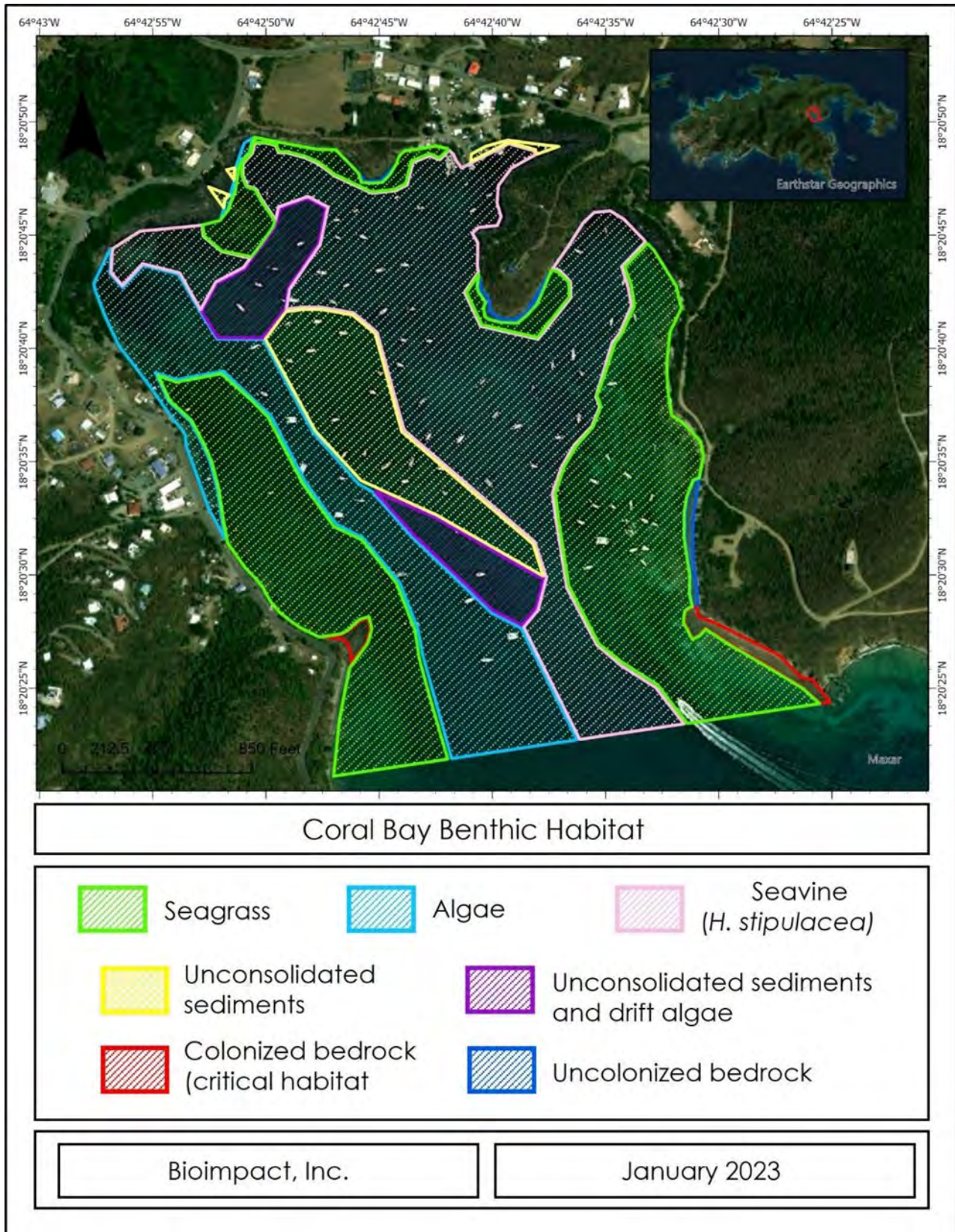


Figure 1. Benthic Habitat Map 2023

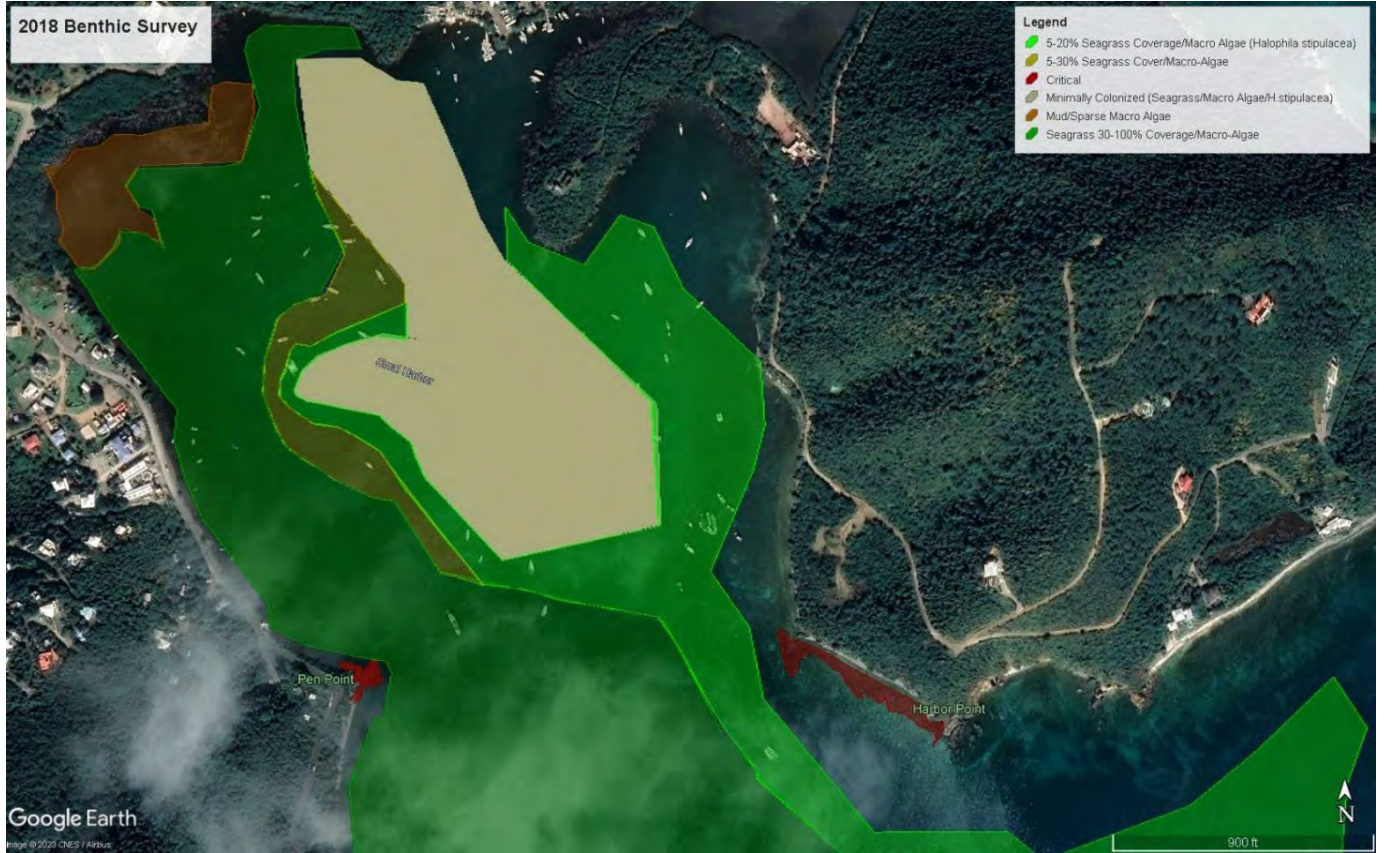


Figure 2. Benthic Habitat Map 2018

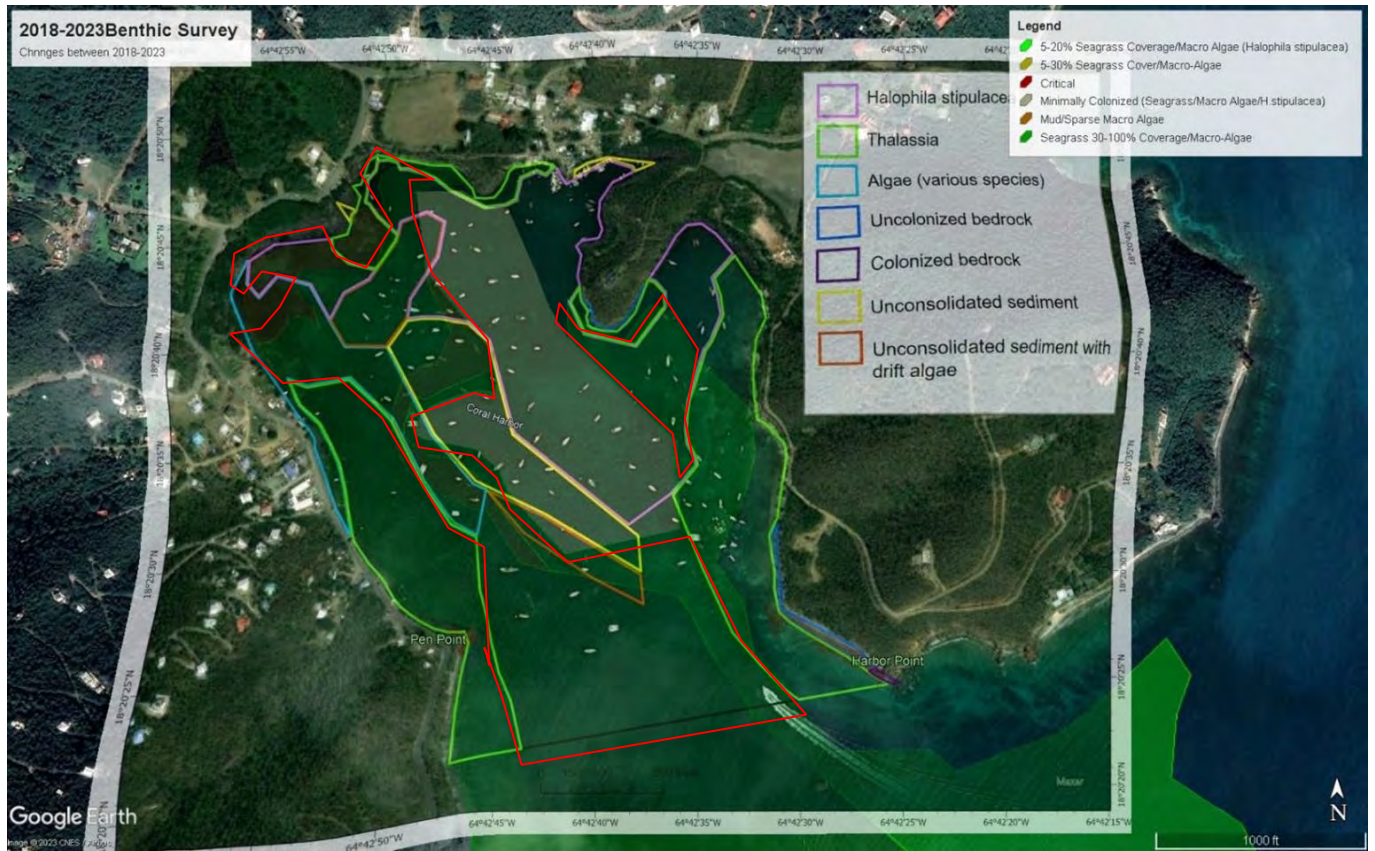


Figure 3. 2023 benthic survey map overlain the 2018 benthic survey map - areas of seagrass loss is shown in red.

Figure 3. 2023 benthic survey overlain the 2018. Areas of seagrass loss are shown in red.

Over the 4.5-year period there has been a notable loss of native seagrass in the harbor and areas have become colonized by macroalgae and *H. stipulacea*.

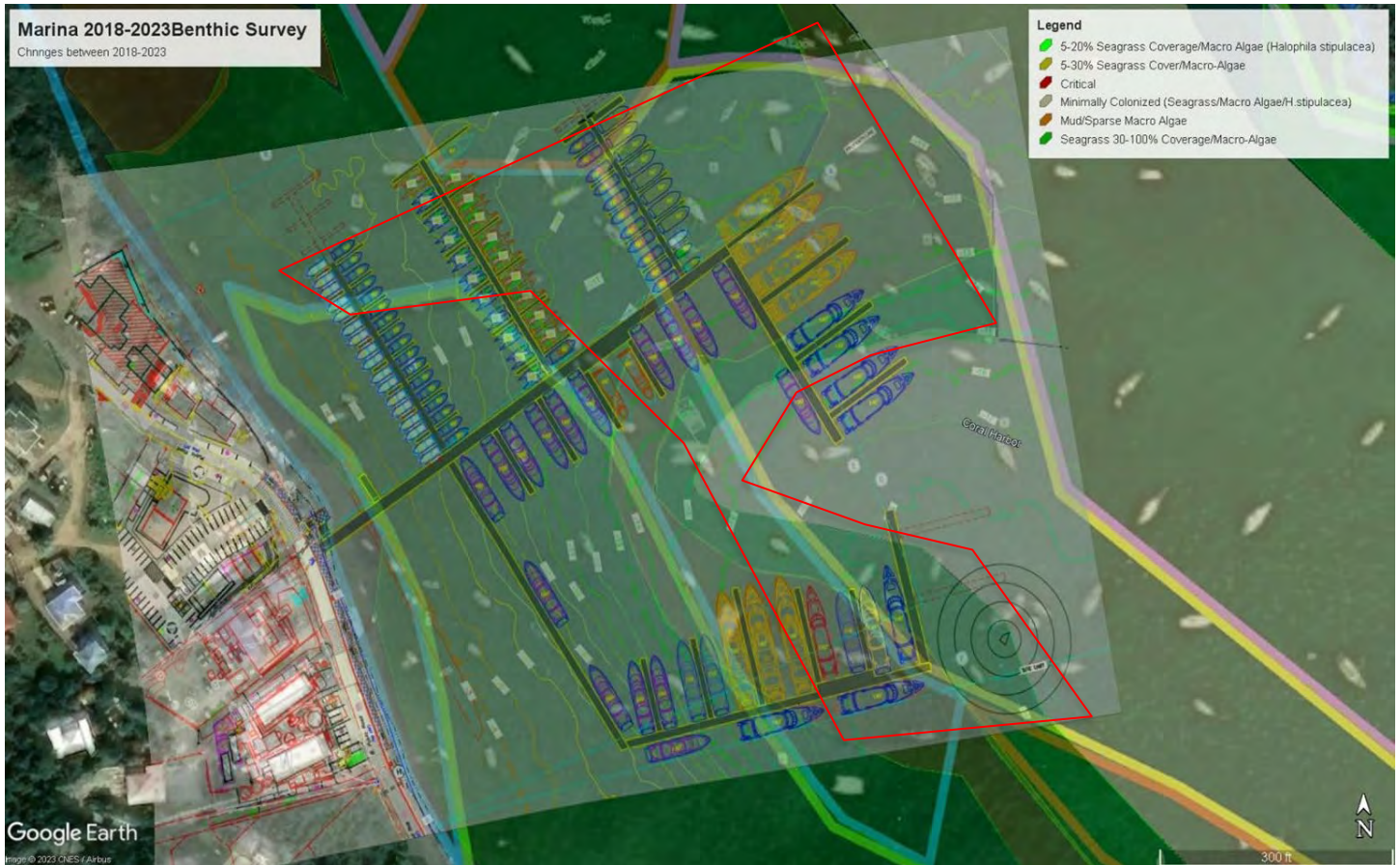


Figure 4. Reduction in marina footprint 2018-2023

There was an issue raised about the number of ESA corals present at Harbor Point/Penn Point. The survey in 2018 did not extend as far south and the marked corals were the closest ESA corals to the marina and channel and was not meant to be a comprehensive map of all the ESA corals. Those locations were used to determine sites for the protective buoys. A NMFS representative had previously swum the area with representatives of Bioimpact, Inc. and had been shown the ESA species present at that time.

Impacts of Marina Construction and Operation

The proposed docks will have grated decking, allowing no less than 43% light transmittance,, but these docks are 10 to 16ft in width (except for the finger piers on the north side of the central dock which are 5ft1in). The docks will extend over 0.47acres or 20,483sf of seagrass. This includes all areas of seagrass colonization in the dock footprint.

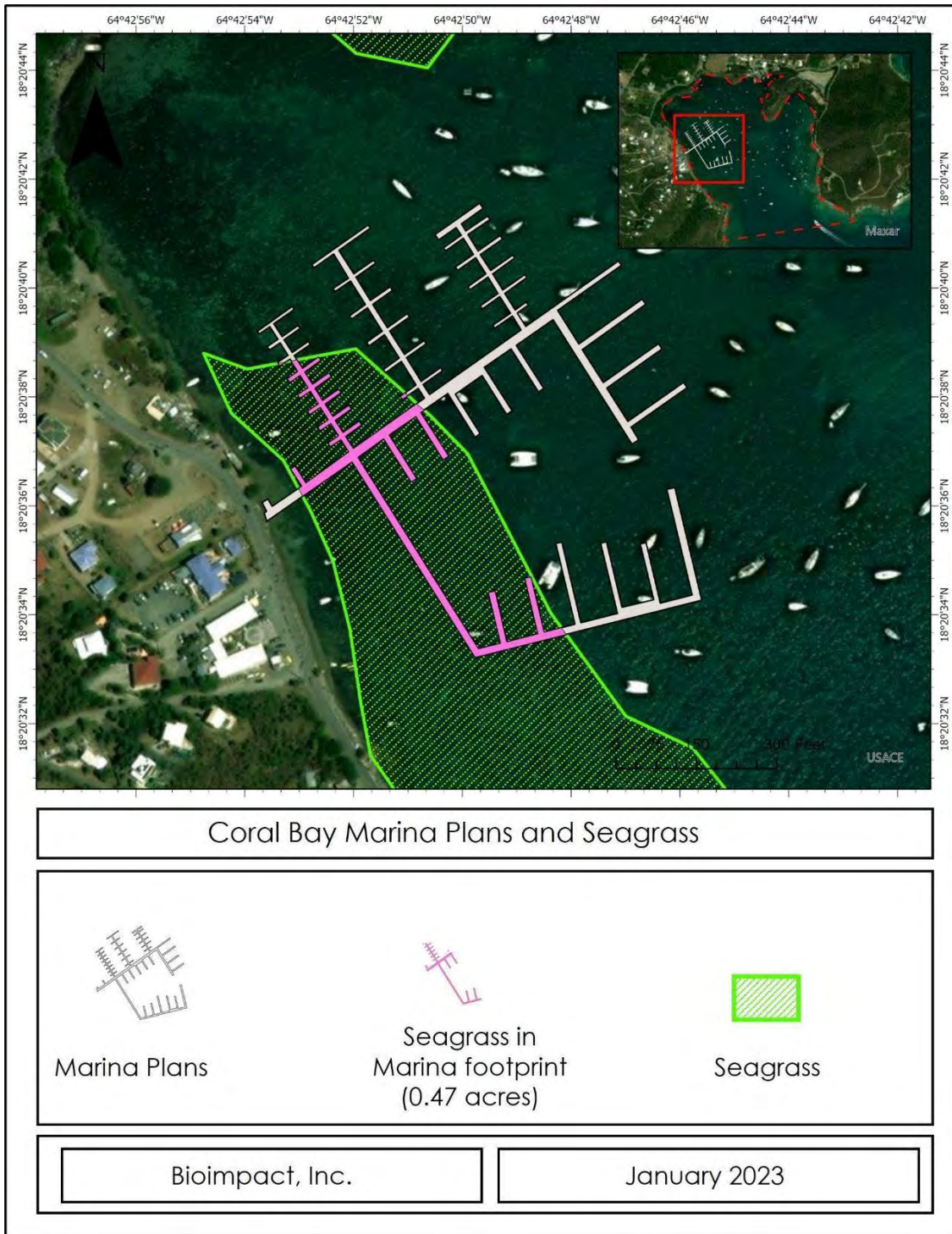


Figure 5. Seagrass within the footprint of dock.

Because of the width of the docks, they may result in higher mortality of seagrasses especially due to the elevated turbidity and suspended sediments in Coral Harbor. Because of the potential for loss all the dense seagrass in the footprint of the dock and a potential shading area 3.3ft (1m) to each side of the wider docks (10ft and 16ft), and 1ft (0.3m) to each side of the narrower finger piers (5ft1in) will be lost.

This will result in the loss of 30,483sf (0.70 acres) of seagrass, (*Thalassia testudinum* with minor amounts of *Syringodium filiforme*). Some of this seagrass is intermixed with the invasive *Halophila stipulacea*. These seagrasses will be left in place during construction to stabilize the sea floor and help minimize turbidity.

The width of the dock is necessary to accommodate:

- two-way traffic on and off the dock for pedestrians,
- the use of emergency large golf carts with a pull behind carriage to transport people with health related issues,
- the Use of Emergency Fire equipment (Fire Cart Motorized) that requires the design width to make the turns on and off the main dock, and
- the use of used oils and blackwater tanks pulled by motorized carts.

The dock width allows for the placement of the following under the dock which will be co-located to the maximum extent possible to minimize additional shading impacts:

- High tension Cable
- Fuel lines
- Water distribution
- Sewage collection
- IT conduits

At the maximum capacity and at the maximum sized boat in each slip there will be 1.219 acres (53,080sf) of shading due to vessels within the area of dense seagrass colonization. It can be assumed that most of the seagrass (53,080sq. ft) in this footprint will be lost due to vessels being docked more than 2 weeks at a time.. However, for impact calculations the entire area of the slip will be included.

During construction impacts due to spudding which will account for between 1656sq.ft. and 1884sf of impact (6sf per single spud, 2 spuds per barge based on between 138 and 157 relocations both in and outside of the area of densest seagrass. The area of construction with seagrasses is approximately 52% of the project area. This would mean that between 72, and 82 spudding events in the areas of seagrass and a loss of between 864sf and 984sf of seagrass loss. If possible, the barges will be positioned to avoid spudding in the areas of seagrass. The construction impacts related to barge movements, spudding and propwash by tugs moving the barges will be minimized through monitoring and delineating spudding areas prior to bottom disturbance. Barge shading will be mitigated through the periodic relocation of barges to prevent shading impacts. The surrounding SAV could also be impacted by construction related turbidity impacts. This will be abated by the sediment and siltation control and through monitoring. The construction operation of the marina may also have impacts due to propwash related to tugs relocating barges, and the barges shifting in the currents and tides, and you can assume another 10% of seagrass loss due to these activities (5922.2sf loss for a total of 89,485.2sf (2.05 acres loss).

The overall impact area for the marina is approximately 14.4 acres as vessels move around during the construction and operation of the marina but only 6.8 is over seagrass beds. As water deepens the potential impacts due to propwash decreases, most if not all the propwash scour will occur in areas where props are less than 6 ft from the seafloor. The larger vessels with deeper drafts are all in waters no shallower than 7 to 8ft and will have between 3-4ft of clearance from the seafloor. Over the life of the marina, it is possible that vessels in area of seagrasses less than 10 ft. of depth may impact another 15,000sf of seagrass or 0.344ac.

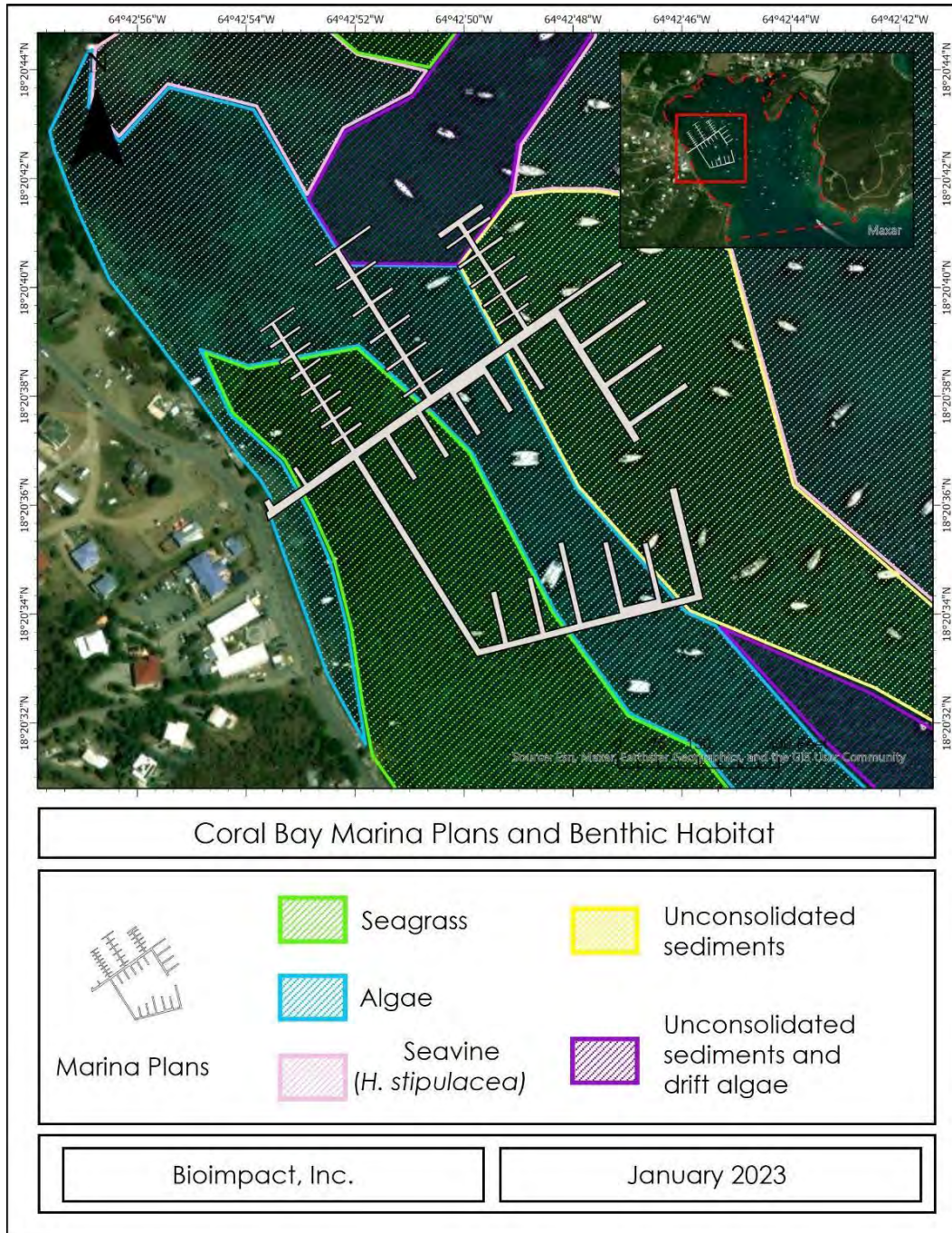


Figure 6. Impact of all habitat types in the marina footprint

A total approximately 89,485.2sf (2.05 acres loss) of seagrass will be lost because of the construction and mooring of vessels related to the project and another 0.34 acres will be lost due to prop wash and vessel movements. Therefore approximately 2.39 acres of seagrass could be lost. (The overall seagrass loss is less than previous assessments are due to the decrease of seagrass within the harbor, and the project area and due to the reduction of size of the marina.)

The vessels entering the bay have the potential, although unlikely, to impact *Acropora spp.*, other ESA listed species and non-ESA corals through vessel strikes. To minimize this impact the applicant will be placing informational buoys delineating the shallow hard bottom areas at the entrance of Coral Harbor and will be providing information signage on the dock advising mariners of avoiding shallow reefs while in transit and to avoid anchoring in area of coral and seagrass. The marina management plan includes provisions for escort tenders that will guide vessels into and out of the marina through the deepest part of the channel, the marina closing at dark so vessels will not be coming in and out at night and the requirement that vessels will radio in prior to approach to ensure that they have the channel coordinates for safe navigation into and out of the marina.

Table summarizing seagrass impacts broken down by project components

Docks footprint + shade	0.70 acres or 30,483 sq ft
Vessels + shade (assuming maximum capacity of marina)	1.219 acres or 53,080 sq ft
Spudding	0.022 acres or 984sq ft
Other construction impacts	0.134 acres or 5922.2 sq ft
Operation of the marina (propwash)	0.34 acres or 15,000 sq ft
Total impacts	2.39 acres or 104,108.4 sq ft

Four *Solenastrea bournoni* occur near the dock and these corals will be transplanted prior to any construction activity to minimize potential impact. These corals will be transplanted south of Penn Point. There are also some small *Siderastrea siderea* found on debris within the marina footprint which will be relocated. Prior to the 2017 hurricanes there were 6 viable *S. bournoni*.



Figure 7. Location and distance of existing corals from the dock structure

The applicant will also be providing pump out facilities and will bring a pump out vessel to the harbor at a frequency to meet the demand for the service. The applicant will also service and maintain waste receptacles which will minimize impacts on water quality and hopefully reduce the amount of refuse being tossed in the sea.

The applicant had previously proposed engaging in a derelict vessel clean up and was proposing the cleanup of any remaining sunken vessels which have not been removed during the Coral Bay Community Council clean up. However, with the passage of hurricanes Irma and Maria in 2017, dozens of new boats were sunken and wrecked within the bay. Both U.S. Coast Guard and DPNR engaged contractors in the cleanup and removal of vessels and most of the sunken vessels have been removed therefore this is no longer a large-scale mitigation option. SEG will however pick up the smaller pieces remaining from the vessels which have been removed and the other debris such as tires, trash cans, boards, tree limbs and ropes. Based on what was seen during the 2022-2023 survey there will be a minimum of 1000sq.ft. of debris which can be removed from the seagrass beds to allow for recolonization. Post issuance of the permit the applicant will undertake a survey and cleanup of Coral Harbor on a yearly basis (annually) for 5 years. Specifically, the applicant will:

- Obtain a “VI Clean Coasts” certification¹, sponsored by the Virgin Islands Department of Planning and Natural Resources. Other clean marina certifications such as Blue Flag will also be pursued
- Participate in the Surfrider Foundation’s Ocean Friendly Restaurant Program²
- Install signage at the restaurant clearly stating it is illegal to dispose of any garbage in all U.S. waters and anywhere at sea (examples located at: <https://www.bsee.gov/sites/bsee.gov/files/notices-to-lessees-ntl/alerts/ntl-2015-g03.pdf>.)
- Require all restaurant employees to annually complete marine trash and debris awareness training (example training located at: <https://www.bsee.gov/sites/bsee.gov/files/marine-trash-anddebris-2006-v1.pdf>).
- Implement the following Best Management Practices for diver-based marine debris removal, specifically divers should:
 - Maintain buoyancy control and avoid and minimize touching and body or gear contact with corals.
 - Minimize sediment disturbance near corals and seagrass.
 - Secure all equipment so that it cannot drag or snag on corals, seagrass, or mangroves.
 - Use mooring buoys instead of anchors when possible and never drop anchors on to coral reefs.
 - Ensure engines are maintained to avoid release of petroleum products in reef areas.
 - Make sure vessel sewage is disposed of in a way that does not affect the nutrient balance of the reef ecosystem.
 - Follow environmentally sound methods of trash disposal on boats and on the land.
 - Obey all local dive rules, regulations, and customs.
- Conduct an inventory of the debris collected each week during the operation of the marina to incorporate into educational messaging for patrons or business choices for the restaurant. For example, if plastic to-go cups from the restaurant are collected, the solution could be to switch to a reusable option or encourage customers to bring reusable items.

¹ <https://dpr.vi.gov/czm/programs-viczmp/vi-clean-coasts/>

² https://www.surfrider.org/programs/ocean-friendly-restaurants#section_11

The applicant will be planting mangrove seedlings along the shoreline of their parcels to create a mangrove fringe along the shoreline. The mangroves throughout the bay were damaged by the 2017 hurricanes, and the planting of additional mangroves along the shoreline at elevations consistent with nearby healthy mangrove fringes on St. John will help to restore the habitat function. Mangroves along this section of shoreline will be planted below MLW in areas that mimic elevations and hydrology of nearby healthy mangrove shorelines so they will provide the maximum habitat benefit by providing in water structure. A total of 300 red mangroves seedlings will be planted within the 850 linear ft of the SEG property. SEG will also be mitigating on a Portion Parcel 11 Remainder Estate Coral Bay. The property belongs to the U.S. Virgin Islands, and SEG has entered into an agreement with the government to conduct mitigation activities on this site. The agreement is currently being drafted and will become Appendix A of this document upon receipt. No construction will begin on the marina or mitigation until this documentation is supplied to USACE. Once the mitigation is complete the property will be put under the stewardship of the Department of Planning and Natural Resources' Division of Fish and Wildlife. The mitigation on a Portion Parcel 11 Remainder Estate Coral Bay includes the enhancement of 0.77ac (33,350sf) of existing mangrove wetland and creation of 1 acre (43,560sf) of mangrove fringe creation, and mangrove islands.

To mitigate those impacts which cannot be avoided, SEG proposes to outplant 3,000 ESA corals into 1.84 acres. The corals used for mitigation will be genetically diverse to the maximum extent possible. SEG will work with Coral World Ocean and Reef Initiative to obtain the corals for outplanting (Letter of Commitment is found in Appendix B).

Summary

- Place 7 informational Buoys to protect shallow corals.
- Provide pump out services to minimize discharge of wastewater into the bay by vessels.
- Maintain a Blue Flag or Clean Marina certification.
- Conduct yearly cleanup of debris from seagrass beds in Coral Harbor.
- Relocate four (4) *Solenastrea bournoni* which will be near the dock.
- Outplant 3,000 ESA corals into an area of 1.84 acres.
- All mangrove mitigation activities will be conducted at sites that demonstrate consistent elevations and hydrology with nearby healthy and similar mangrove communities. Any re-grading or ground work needed to establish appropriate elevations or hydrologic conditions will occur prior to planting seedlings
- Creation of an 850ft mangrove fringe on Parcel 10-17, 10-19 and Remainder 13, Estate Carolina, Coral Bay Quarter, St. John
- Enhancement of 0.77 ac of existing mangrove forest on Portion Parcel 11 Remainder Estate Coral Bay, Coral Bay Quarter, St. John (cleanup, removal of dead mangroves and planting of mangroves).
- Creation of 1 acre of red mangrove islands and channels off Portion Parcel 11 Remainder Estate Coral Bay, Coral Bay Quarter, St. John.

Provide one annual report to NMFS and USACE, not to exceed 25 pages including appendices or attachments, and following the reporting framework developed by NMFS. The annual report summarizes

the status of each mitigation activity, the number and date of monitoring events completed for each mitigation activity with summary statistics demonstrating compliance with performance criteria, and corrective actions performed in the case performance criteria are not met.

II. SITE SELECTION

*The 4 *Solenastrea bournoni* and any corals found in the project footprint will be relocated to a site chosen following DPNR Coral Relocation Site Selection recommendations³. For example, the relocation site must be as close in proximity to the removal site as possible to preserve the functional ecosystem value of the surrounding areas provided by the resources to be relocated, but err conservatively on the side of being slightly farther from expected project-associated direct and indirect impact areas. The relocation site must be suitable reef habitat, be within the known range of the species or genera, and have historic presence of the species to be relocated (in recent decades). The site being considered for relocation is located south of Penn Point, which has the same habitat type. The ESA outplanted corals will be placed to the south of Harbor Point, which has the appropriate substrate and water quality.*

³https://dpr.vi.gov/wp-content/uploads/2022/10/Coral-Mitigation-Relocation-Recommendations_USVI_v1.2.pdf

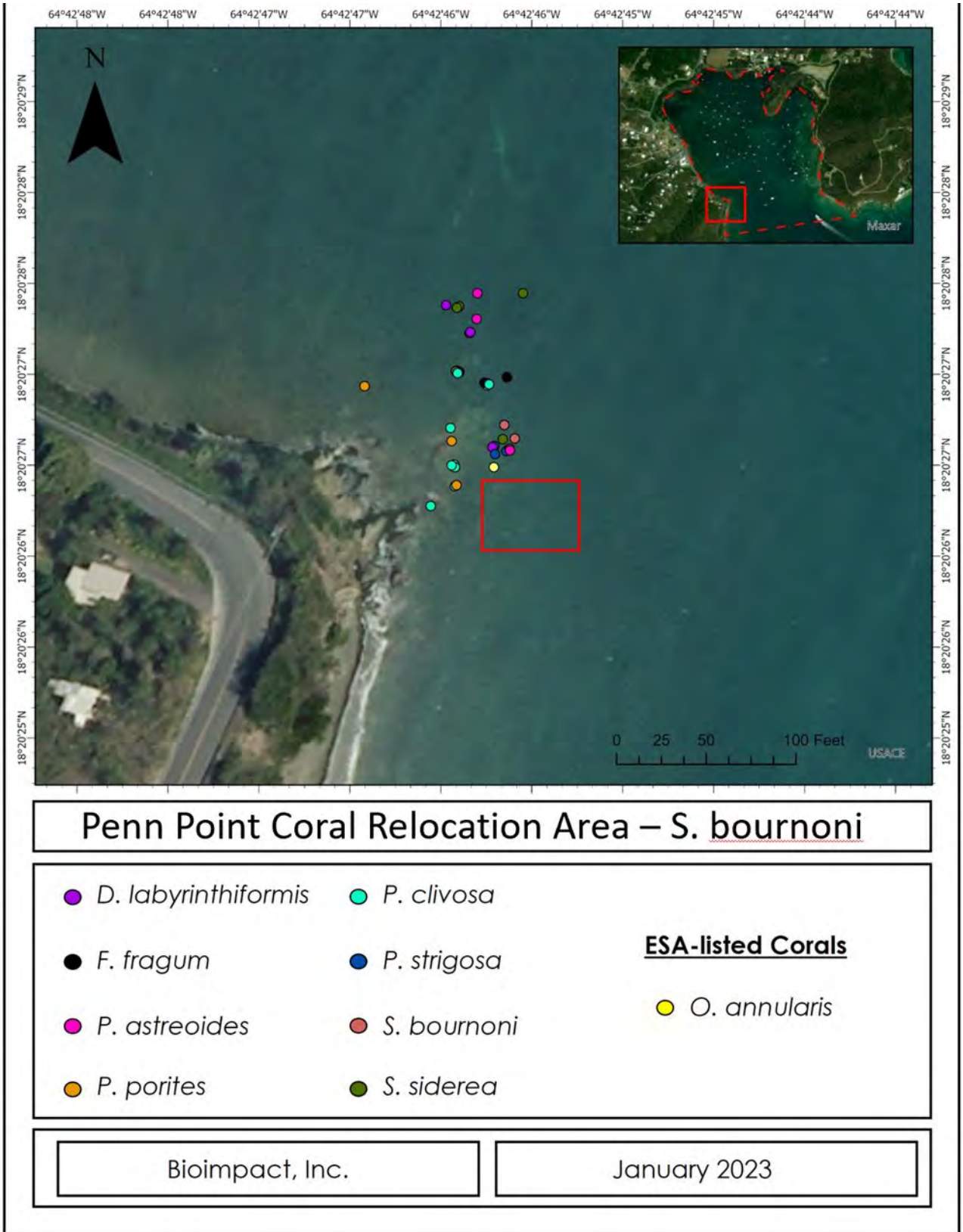


Figure 8. Coral Relocation Area - *S. Bournoni*



Figure 9. Coral Outplanting Area

III. SITE PROTECTION INSTRUMENT

The recipient sites are submerged lands and therefore both USACE and CZM permits would have to be obtained for any future alteration of this area, therefore no Site Protection Instruments should be necessary to protect the recipient area. To protect the recipient areas informational buoys will be placed to alert boaters of the shallow seagrass bed and the presence of the transplant recipient area. The enhanced and created mangrove areas on Portion Parcel 11 Estate Carolina, Coral Bay will be placed under the stewardship of the DPNR, Division of Fish and Wildlife.

IV. REASON FOR MITIGATION - BASELINE INFORMATION

The project area is located on the eastern side of Coral Harbor within Coral Bay on the east end of the island of St. John. Within the project area there are dense grass beds offshore with a shoreline which is a mixture of muddy/cobble to the north and riprapped to the south. There is a narrow band of muddy sand between the cobbly shore/riprapped shore and the seagrass beds which is colonized by macro algae. This band has widened over the last several years. There are 4 large coral heads (*S. bournoni*) offshore a culvert which discharges in the middle of the project area. The seagrass, primarily *Thalassia testudinum* is found in the offshore environment between 3ft and 11-14ft, at which point the seagrass

ends and algal species become more prevalent. A large area of *Halophila stipulacea* (the invasive seavine) lies farther offshore in the middle of the bay in the project area.

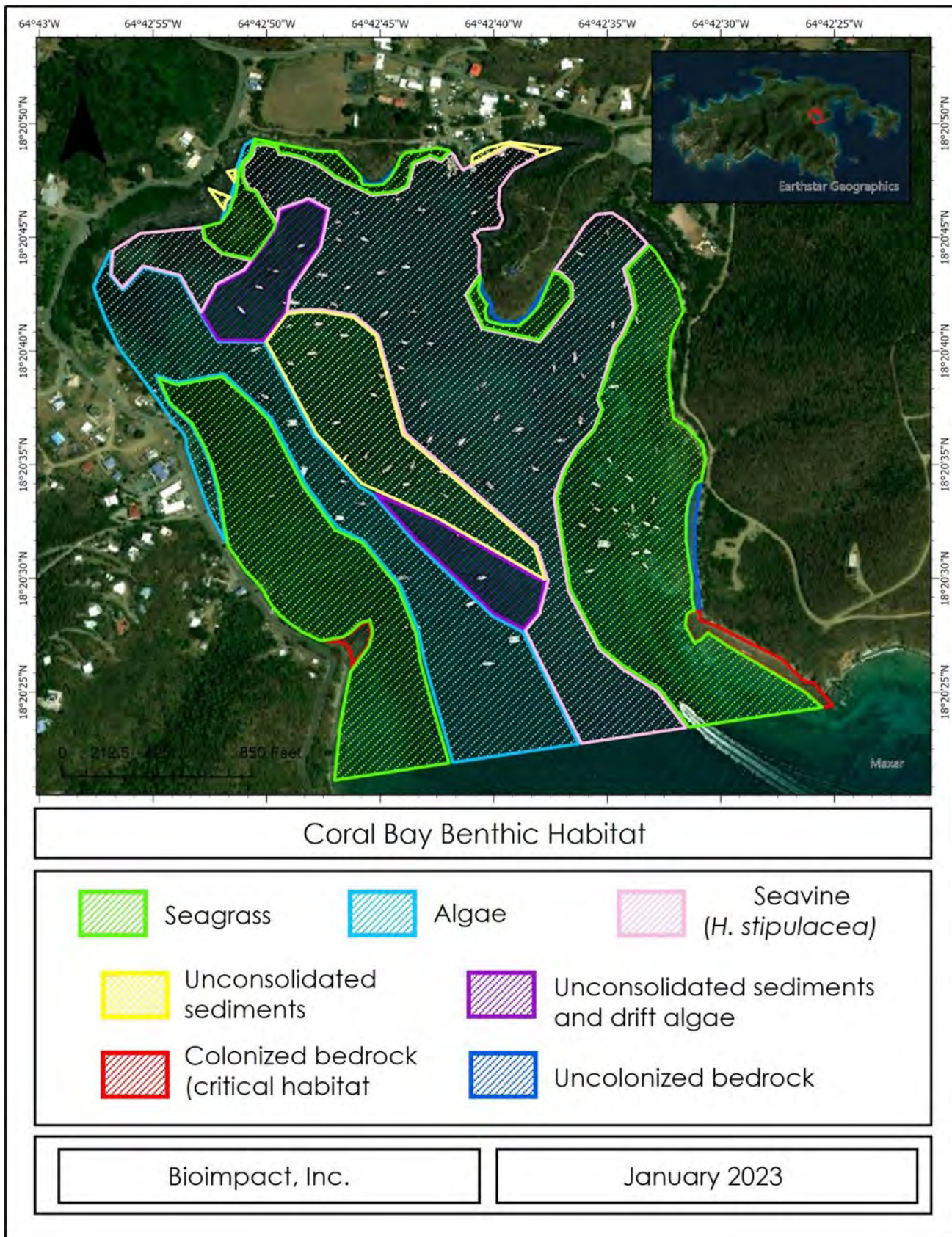


Figure 10. Benthic Habitats Coral Bay

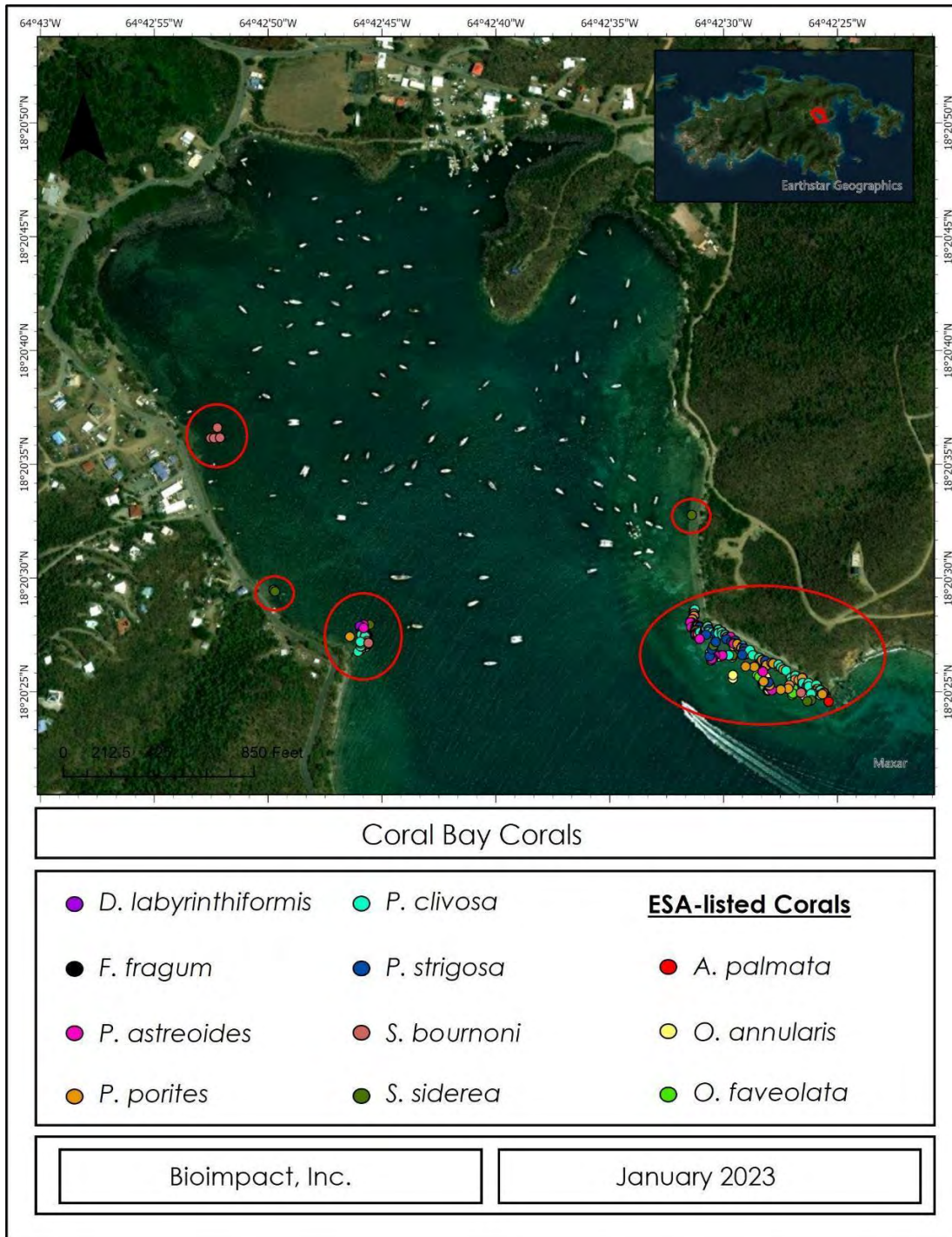


Figure 11. Corals found in Coral Bay

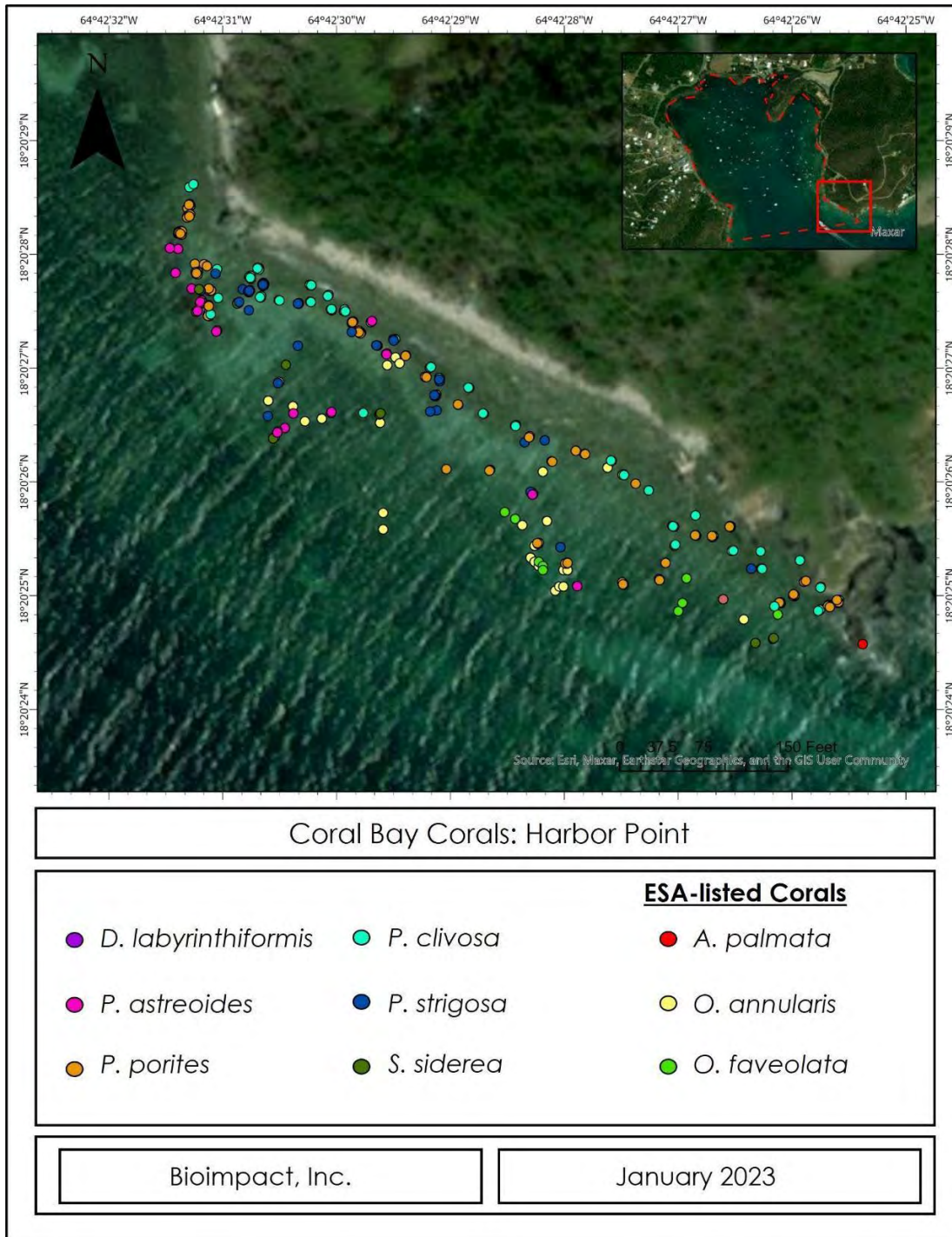


Figure 12. Corals around Harbor Point in Survey Area

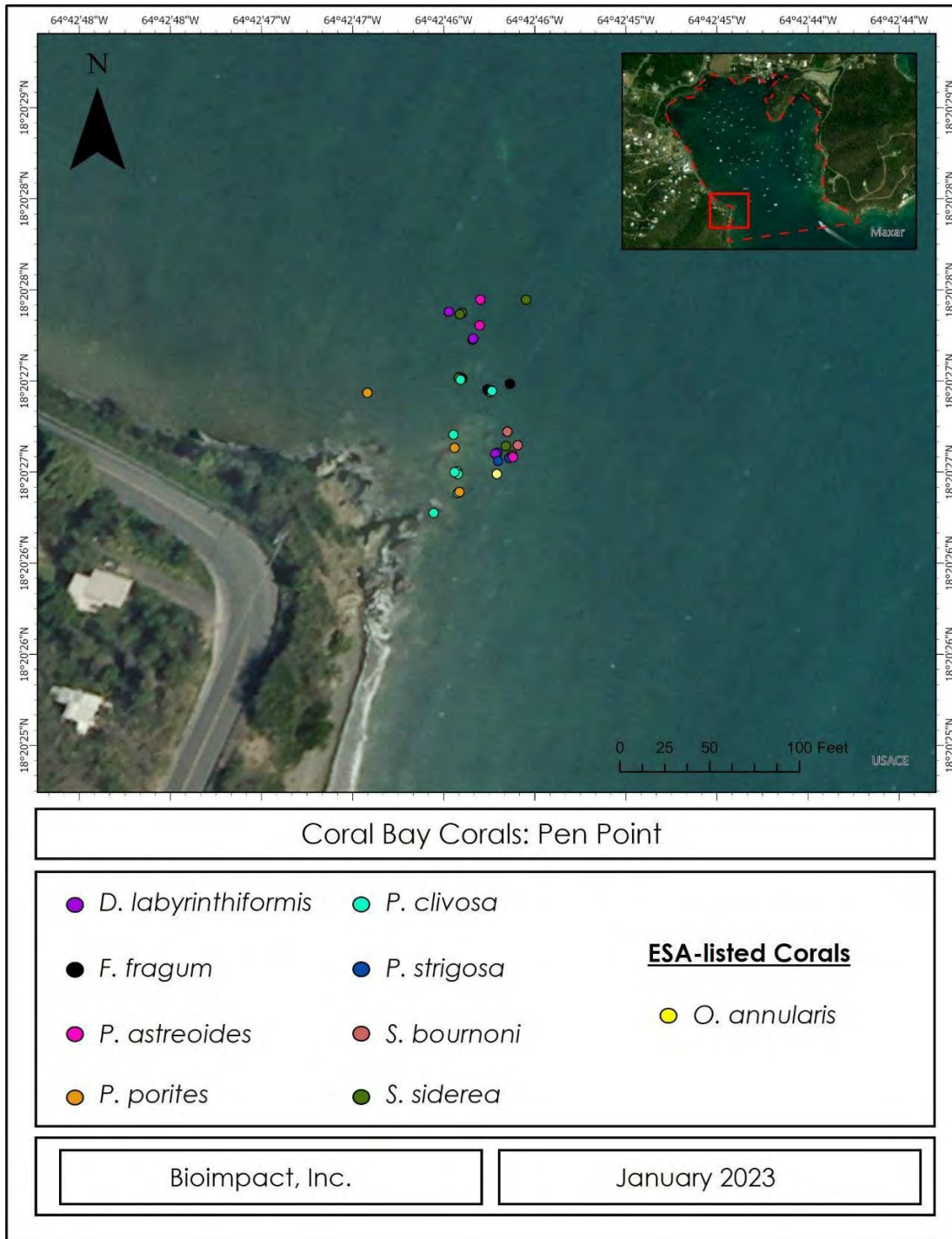


Figure 13. Corals around Penn Point in Survey Area

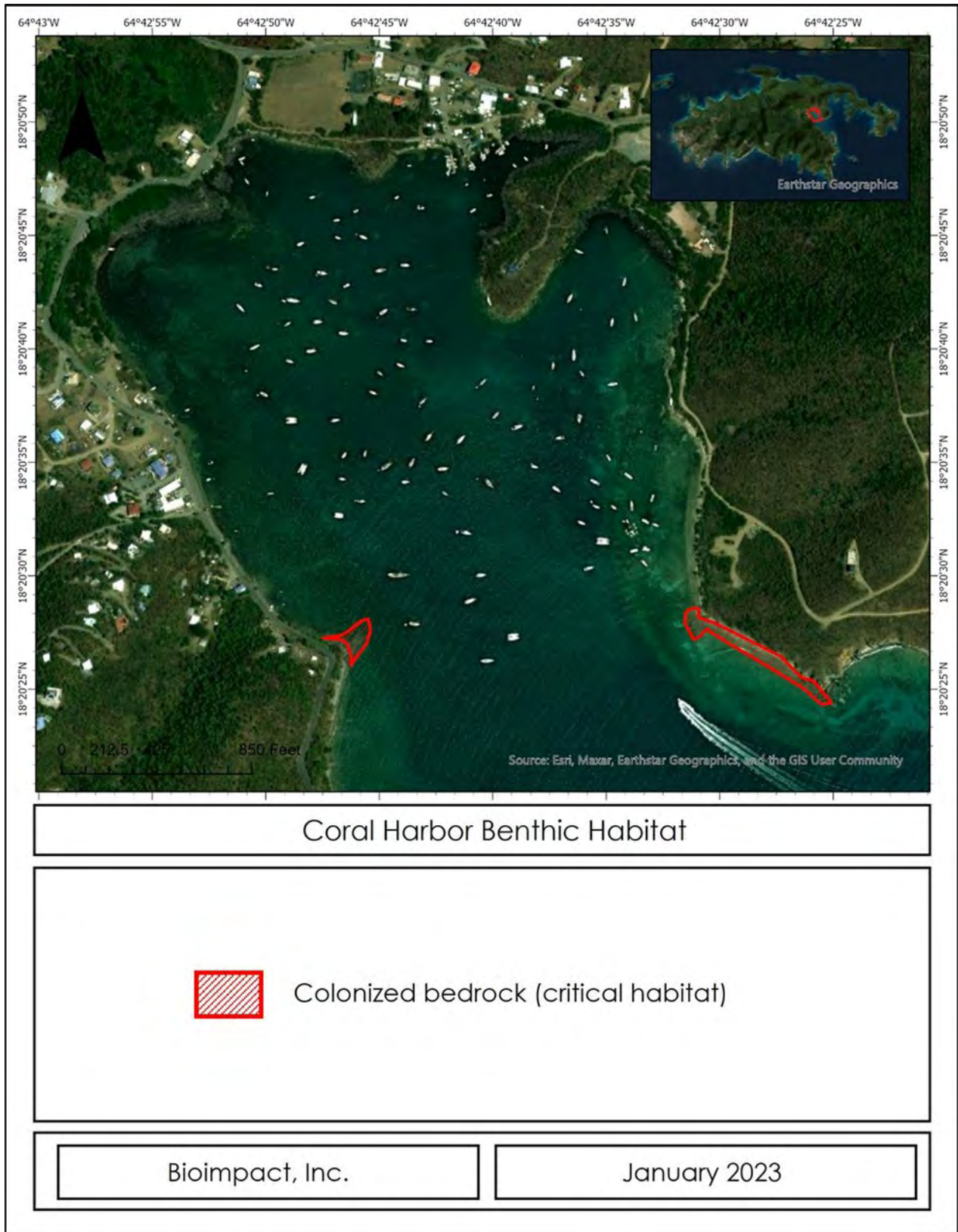


Figure 14. Critical Habitat within Coral Harbor (1.35 ac)

The area is heavily used for boat mooring and there are large scars associated with most moorings, even those with what is considered a “properly installed” mooring have chains on the bottom which result in seagrass loss. Ropes swinging from the moorings denude large areas of seagrass. There have also been impacts due to two category five hurricanes and increasing *Sargassum* inundations.

V. COMPENSATION FOR UNAVOIDABLE IMPACTS

The docks have been positioned offshore to avoid dredging and to avoid the densest seagrass while still allowing for access into the bay through the established channel. The dock size has been minimized, most recently by an addition 8% to minimize overall impacts.

The project will be directly impacting approximately 2.05 acres of dense seagrass through construction impacts and shading, and it is probable that as much as 0.34 additional acres may be impacted. To minimize impacts the corals near the dock will be transplanted. To compensate for impacts that cannot be avoided, 300 red mangroves will be planted along 850ft along the shoreline at elevations appropriate for red mangrove establishment and growth, 0.77 acres of mangroves will be enhanced, 1 acre of mangrove islands and channels will be created, 3000 ESA corals will be outplanted to the south of Harbor Point, and 7 information buoys will be installed to protect shallow resources. SEG will only conduct mangrove mitigation activities at sites with elevations and hydrologic conditions matching nearby similar healthy mangrove sites.

VI. MITIGATION WORK PLAN

Corals - Minimization

Divers will collect the *Solenastrea bournoni* and place them on the transport tray. Divers will then survey the dock footprint and will collect any corals on pieces of debris or rocks. Baskets will be used to collect the small corals. Once coral baskets and the larger *S. bournoni* are placed on the tray it will be lifted to be suspended beneath the boat. The boat will be driven dead slow to the recipient site where the tray will be slowly lowered near the seafloor and unloaded. At no time will the corals be taken out of seawater.

Coral attached to the rocks or debris too big to move will be removed with a chisel and hammer from their substrate and re-attached with 2-part underwater epoxy on to the hard bottom south of Penn Point. Care will be taken when moving corals, in the baskets and on the tray beneath the boat so they are not damaged, and no diseased corals will be relocated. All corals will be re-attached the same day they are removed corals will not be held in a temporary holding site.

If corals with Stony Coral Tissue Loss Disease (SCTLD) are seen in the impact area no relocation of corals out of the impact area will occur. If SCTLD is observed in the recipient site, another recipient location will be used.

Transplanted colonies will be placed no closer than 0.75 m from each other.

The *Solenastrea bournoni* will be placed in the seagrass beds at the same depth from which they were removed. Seagrass from their footprints will be transplanted into the recipient site to minimize impact.

Clean up of Debris in Harbor – Compensatory Mitigation

During the 2022-2023 surveys it was noted that there is small debris within the harbor and along Penn Point and Harbor Point, tires, tree limbs, clothing, sail pieces, clothes, boards, trash cans, etc. SEG will collect a minimum of 2.3 acres of debris from the seagrass beds and in coral colonized areas within the harbor and document it by conducting an inventory of the debris collected during each event and providing a summary of the marine debris removal in the annual report to NMFS and USACE. Most of the debris will be collected by hand but lift bags will be used to collect large items such as small engines and will occur over a minimum period of 5 years. All debris will be disposed of at the Bovoni Landfill. A survey and cleanup of Coral Bay will continue throughout the life of the marina.



ESA Coral Outplanting -Compensatory Mitigation

SEG will work with Coral World Ocean and Reef Initiative to obtain genetically diverse ESA species for outplanting. *Acropora palmata*, *Orbicella* spp. will be the preferred species to outplant since these corals occur or did occur within the area. The *Orbicella* fragments will be attached with two-part underwater epoxy. The *Acropora palmata* fragments will be either attached with underwater epoxy or may be attached to concrete nails with tie-wraps depending on size.

All corals will be placed in recipient sites as outlined in the DPNR's Coral Mitigation Relocation Recommendation in areas with sufficient room for growth and so they will not impact nearby coral

colonies. Outplanted corals will be placed in an area of consolidated hardbottom, scatter emergent hardbottom in the seagrass beds and bedrock near Harbor Point in an area which is approximately 1.84 acres.

Mangrove Planting – Compensatory Mitigation

Tidal hydrology can influence the success of mangrove restoration projects^{4,5}, thus a hydrologic and soil assessment will be conducted to demonstrate that the tidal elevation, exchange (hydrology), and physicochemical parameters at both proposed restoration sites are appropriate for mangrove growth. Elevations at nearby healthy mangrove wetlands will be examined to help establish elevation targets for the mitigation sites. If the assessment indicates unfavorable conditions, the shoreline will be regraded to create conditions conducive to successful mangrove establishment and growth.

The potential for using a more mature life stage of mangrove will be considered since it would lead to greater success of the mitigation. This option will be consulted with the University of the Virgin Islands and The Nature Conservancy, since both organizations have mangrove nurseries. If these nurseries cannot source more mature mangroves, cultivating the propagules to a more mature stage (e.g. seedling with roots and leaves) before planting will be considered.

Three hundred red mangrove seedlings will be placed along the shoreline across the 850' of shoreline on approximately 3ft centers. The mangroves will be carefully placed so that they have the greatest chance of survival. All propagules will be placed at the appropriate tidal elevation (dictated by the hydrological assessment mentioned above) along the shoreline. Split PVC pipes may be utilized to help minimize wave impacts to allow the mangroves to become established in areas which do not have riprap.

Mangroves will be planted along the shoreline seaward of the boardwalk and riprap below MLW. This will restore what was probably once an entirely mangrove lined shoreline prior to early development of the area. Three hundred red mangrove (*Rhizophora mangle*) propagules will be placed along the 850ft of waterfront. The area to the west is colonized by red mangroves and this will create a more continuous fringe.

⁴ Roy R. Lewis III. 2005. Ecological engineering for successful management and restoration of mangrove forests. Ecological Engineering 24, 403-418

⁵ Lewis, R.R., et al., 2016. Stress in mangrove forests: Early detection and preemptive rehabilitation are essential for future successful worldwide mangrove forest management. Marine Pollution Bulletin 109, 764-771

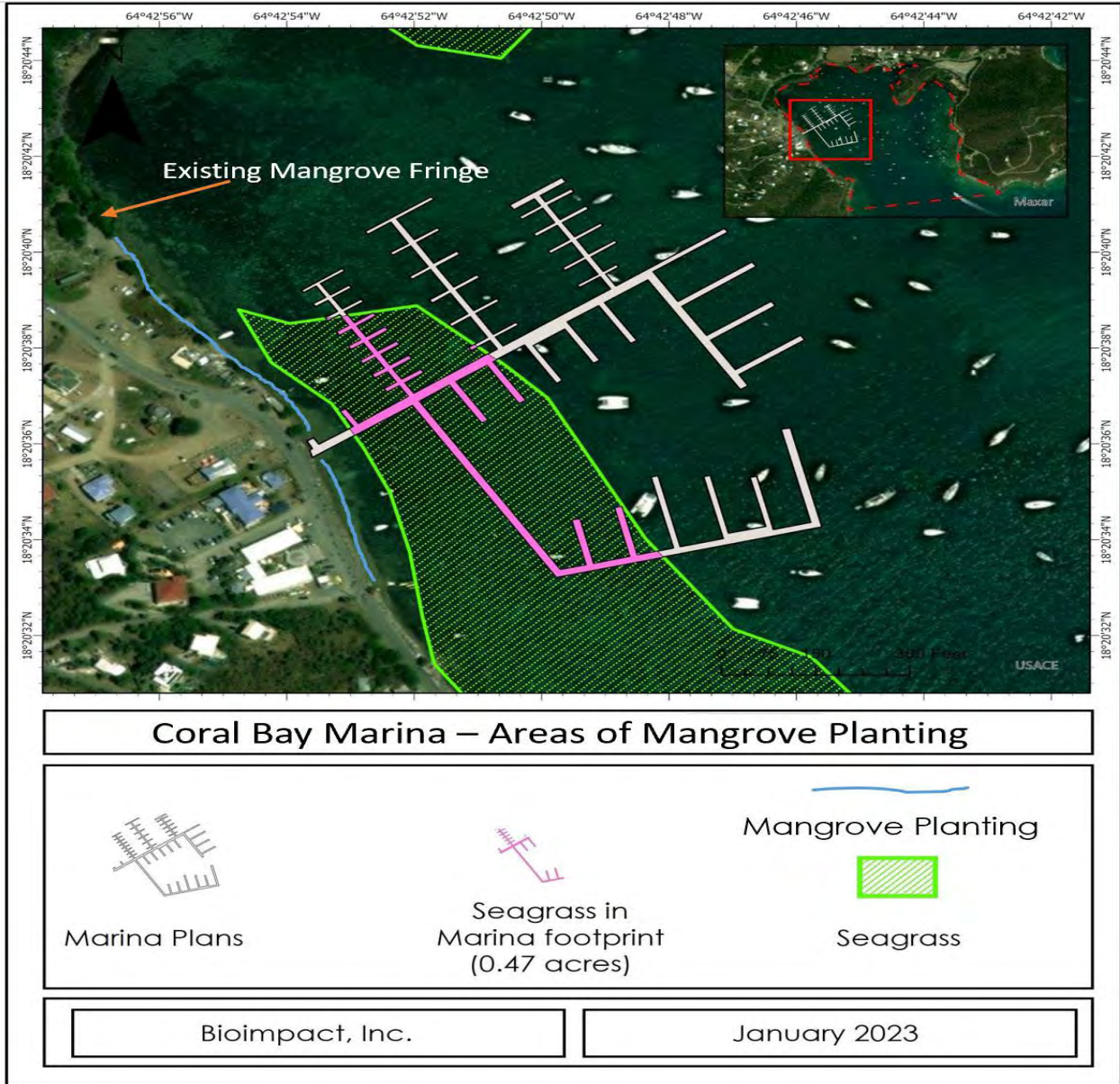


Figure 15. Area of Mangrove Planting Along Shoreline

Mangrove Enhancement and Mangrove Island Creation – Compensatory Mitigation

A Portion Parcel 11 Remainder Estate Carolina is located on the seaward side of the roadway and is predominant mangrove forested wetland. This wetland and its mangrove have been negatively impacted by the passage of hurricanes, flotsam, and terrestrial dumping. The garbage and debris will be cleaned and dead mangroves, both in and out of the water will be carefully removed. Dead branches will be removed from live mangroves, and they will be carefully trimmed following guidelines⁶ to ensure their health and survival. Red mangroves propagules will then be planted in areas with appropriate elevations (determined by surveying nearby healthy red mangrove communities) in the

⁶ Florida Department of Environmental Protection. Mangrove Trimming Guidelines for Homeowners

newly open spaces and maintained to ensure their survival. Offshore mangrove islands will be created in the shallow waters determined to have appropriate elevation and hydrologic conditions based on surveying nearby healthy red mangrove communities, but planting mangroves within split PVC pipes. The mangroves will be maintained and replaced as necessary to create groups of mangrove islands will meandering channels to create habitat for the animals which utilize Coral Harbor. These islands will create not only habitat for marine animals but also avifauna.



Figure 16. Mitigation Lay-out Portion of Parcel 11 Remainder



Figure 17. Mitigation Portion Parcel 11 Remainder Estate Carolina

Placement of Informational Buoys – Compensatory Mitigation

The Summers End Group will be placing buoys on the locations shown below. These informational buoys will warn boats of the presence of resources and shallow areas on the approach to the YCSE marina which will also protect the outplanting and recipient areas. The buoys will be located at 18° 20.703'N 64° 42.897'W, 18° 20.460'N 64° 42.750'W, 18° 20.437'N 64° 42.542'W, 18° 20.122'N 64° 42.437'W, 18° 19.949'N 64° 42.046'W, 18° 20.397'N 64° 41.371'W and 18° 19.819'N 64° 40.709'W. A total of 7 buoys will be placed all will be placed with screw anchors and loaded lines so they will have no impact on the seafloor. Some of the buoys will be placed in sand and several will be in seagrass. Due to the use of the anchoring system, they should have no impact on seagrass resources. The signage will be inspected annually and after major weather events. Any needed repairs or maintenance to signage will occur immediately.

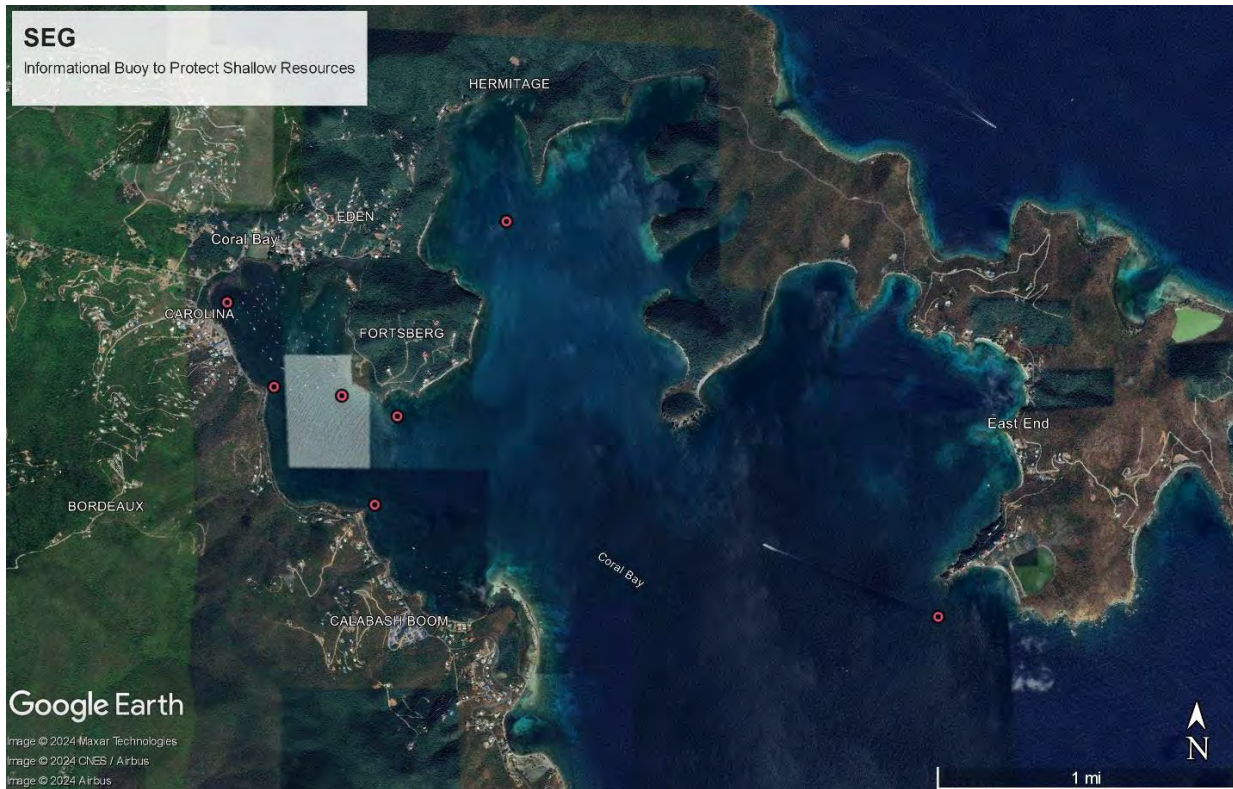


Figure 18. Map of Informational Buoys

Information Signage – Compensatory Mitigation

Summers End Group will be including information to boats about the protection of resources and safe boating practices to all the boats which utilize the marina. Signage will also be placed in conspicuous places on the dock showing nearby shallow areas, proper anchoring procedures and steps necessary to protect sea turtles and marine mammals. The signage will be inspected annually and after major weather events. Any needed repairs or maintenance to signage will occur immediately.

Pump-out and Waste Facilities – Compensatory Mitigation

There is no pump out or waste disposal facilities in Coral Bay. The marina will be providing these services at minimal cost. This will help prevent the discharge of waste into the harbor and help lower the nutrient input. There will be both a pump out facility on the dock and a pump out vessel to service vessels in the harbor. The applicant will also maintain a Blue Flag or other clean marina designation in perpetuity.

VII. MAINTENANCE PLAN

The mangroves will be surveyed on a biweekly basis for the first two months and then monthly for the first 2 years to ensure that they are stable and becoming well rooted. Propagules will be replaced as needed to create a continuous fringe and islands.

Corals will be monitored and surveyed on a biweekly basis for the first two months and then monthly for the first year to ensure that they are attaching well and are thriving in their new location

VIII. ECOLOGICAL PERFORMANCE STANDARDS

The object of this mitigation is to minimize impact to benthic resources which provide high quality habitat to marine species. To objectively evaluate the mitigation project, ecological performance standards must be established.

It is the intent of this transplanting program to meet the performance standards set for in 2020 SARBO and the US Virgin Islands Department of Planning and Natural Resources (DPNR) Coral Mitigation Relocation Recommendations and obtain a minimum of 85% survival of the transplanted corals, with secure substrate attachment. Overall survival of corals shall be defined as no net loss in pooled (by species) Live Tissue Area Index or an increase in pooled (by species) Live Tissue Area Index.

It is the intent of the mangrove planting to create an uninterrupted mangrove fringe along the areas of the shoreline and to have 85% survival of the planted mangroves after five years, with annual increases in plant height and diameter.

It is the intent of the coral outplanting to increase the presence of ESA listed corals on Harbor Point and to have 85% survival of the outplanted corals after five years. The outplanting of ESA coral will also follow the US Virgin Islands Department of Planning and Natural Resources (DPNR) Coral Mitigation Relocation Recommendations and obtain a minimum of 85% survival of the outplanted corals, with secure substrate attachment. Overall survival of corals shall be defined as no net loss in pooled (by species) Live Tissue Area Index or an increase in pooled (by species) Live Tissue Area Index.

SEG is committed to putting forth the greatest effort to see that the relocations are successful and that they obtain the greatest potential survival of transplanted coral and improvement of the mangrove systems within Coral Harbor.

IX. MONITORING REQUIREMENTS

Monitoring the compensatory mitigation project site is necessary to determine if the project is meeting its performance standards, and to determine if adaptive measures are necessary to ensure that the project does meet its objectives.

As per the guidelines set forth in §230.96 Monitoring the mitigation project will be monitored for a minimum period of 5 years.

One annual report will be turned in on January of the following year and will summarize the following mitigation components (see specifics in the below sections):

- Relocated corals: coral survival overall and live tissue index pooled by species
- Outplanted ESA corals: coral survival of the monitored percentage, live tissue index pooled by species of the monitored percentage
- Mangrove restoration at Parcel 10-17, 10-19 and Remainder 13: survival of plantings, and plant height and diameter, hydrology, associated biodiversity,
- Debris and trash collection: pounds of trash collected and an inventory of the type of debris

OUTPLANTED CORALS

Relocated corals:

Due to the small number of corals being relocated, all *Solenastrea bournoni* and any other coral in the project area will be relocated.

Outplanted ESA corals:

A total of 3,000 ESA corals will be outplanted, and 10% or 300 corals will be marked for monitoring. The subset will be selected to be representative of the species and sizes of the outplanted corals.

Monitoring and reporting requirements for relocated corals, and outplanted ESA corals:

The monitoring requirements will be the same for both relocated and outplanted corals. Both coral activities will follow the SARBO guidelines and those of DPNR's Coral Mitigation Relocation Recommendations. All the coral data will be entered in the spreadsheet associated with the guidelines. Two spreadsheets should be used, one to document the relocated corals, and one to document the outplanted ESA corals.

DPNR recommends corals to be monitored for overall survival and attachment success during week one (may be conducted at any time during the seven days beginning the day immediately after the day relocation is conducted), at one month, at three months, six months, at one year and continued annually for five years post-relocation.

The Baseline or As-built report will record the overall number of corals, listing species and size. The spreadsheets will document the numbered plastic identification tag adjacent to each transplanted colony being monitored. For each monitored coral, the widest length, width, and height of the coral, percent live tissue, and site depth at mean high water of each colony at both the original location and the transplant location will be recorded.

The timing for monitoring surveys will involve:

1 Week - attachment success and immediately reattach any corals that are not firmly attached to the hardbottom. The spreadsheet will document the number of corals which require re-attachment, and any relocations.

1 and 3-Month - document sediment cover on the colonies (sediment dusting, sediment accumulation, partial burial, burial of the base, burial, or sediment halo if present) and colony condition (bleaching, % live tissue, and presence of disease, fouling, or predation). Any maintenance required to ensure the survival of the corals will be documented.

6 and 12-Month - document colony size, percent live tissue, sediment cover on the colonies, algal cover, and colony condition.

Annually – document colony size, percent live tissue, sediment cover on the colonies, algal cover, and colony condition.

Reporting:

One report will be submitted to NMFS and USACE annually to the agencies in January of the following year

with the two associated spreadsheets (one for the relocated corals and one of the outplanted ESA corals). The annual report will follow the format specified by NMFS in Appendix XX.

The report will include one section for the relocated corals and a separate section for the outplanted ESA corals. Under each of these sections there will be summary statistics. For example, the reports will state the number of initially relocated corals and the percent survival at the last monitoring event. If any relevant species patterns occur these will be stated in the reports (e.g., survival differences by species). The report will include any discussion of any factors that may be affecting survival of the corals (e.g., disease) how it is being addressed (See table below with adaptive management measures during monitoring surveys).

MANGROVE ENHANCEMENT – CREATION

Ten 5-meter permanent square plots will be established in the mangrove fringe in the SEG property and ten permanent plots will be in the island creation parcel, for evaluating the success of the mangrove mitigation component.. All the plots will be surveyed bi-weekly for the first two months post planting, then monthly for the first year and then bi-annually for the following 4 years. The reports will include just a few photographs of the monitoring plots

The following variables will be documented for all the mangroves within each plot during the mangrove restoration monitoring surveys and the data will be entered in the spreadsheet provided by NMFS

- Mangrove seedling health: Seedling status (dead, alive), seedling height and diameter, and assess leaf conditions for signs of disease, stress, or predation, percent survival per plot.
- Hydrology: Monitor key variables such as salinity, temperature, dissolved oxygen, pH, tidal dynamics, and sediment deposition.
- Associated biodiversity: Track the presence of associated fauna such as fish, crabs, mollusks, and bird species as indicators of ecosystem recovery and functional success.

During the monitoring surveys of the plots, any potential smothering plant species will be removed.

The annual report will follow the format specified by NMFS in and will be submitted to NMFS and USACE annually in January.

DEBRIS CLEAN UP

The annual report will include pounds of trash collected and an inventory of the type of debris. No photos need to be included.

UMAM completed by MNFS and USACE are found in Appendix C.

X. LONG TERM MANAGEMENT PLAN

Informational buoys will be placed at the recipient sites notifying boaters of the presence of important

resources and the need for caution while boating and anchoring. These buoys will be maintained long-term to protect these areas.

The applicant is also undertaking a long-term water quality monitoring program within the harbor to look at changes throughout the life of the marina. Twelve water quality stations will be established and monitored on a quarterly basis for turbidity (NTU), dissolved oxygen (mg/l), salinity (0/00), pH, and temperature. . A few representative photos will be submitted to depict the status of seagrass and the nearest ESA coral species.

The applicant will use these data can help evaluate the BMP that has been installed and can help determine additional measures that can help improve water quality and the habitats in the bay. A summary of these data will be provided in the annual report to NMFS in USACE. When negative changes are noted, measures can be developed to help abate and minimize degradation. One annual report will be submitted to NMFS and USACE in January of each year. Each report will not exceed 10 pages including appendices or attachments) and will summarize the status of each mitigation activity, the number and date of monitoring events completed for each mitigation activity with summary statistics to demonstrate compliance with performance criteria, and corrective actions performed in the case performance criteria are not met.

XI. ADAPTIVE MANAGEMENT PLAN

If there are difficulties with the mitigation or if the mitigation does not meet the success criteria, SEG prepared to take additional steps to see that compensatory mitigation goal is achieved. SEG will follow the Adaptive Management framework supplied by NMFS and make appropriate corrective actions when necessary if the mitigation sites are not trending towards success. If necessary, extended monitoring and maintenance or additional marking of the site will be undertaken after coordination with NMFS and USACE to meet the mitigation goal.

In the event of significant storm events the transplant site will be surveyed as soon as possible after the event and any necessary re-attachments will be made. Divers will also re-attach any non-transplant corals which have been knocked loose. If numbers have been lost, they will be relocated as best as possible using previously taken photographs.

In the event of other anthropological or natural impacts, such as anchors drops or excess sediment, if the solution is straight forward such has coral re-attachment or repair it will be made right away and documented in a report. If the change is more complicated such as sedimentation caused by another project or shifts in vessel traffic, the agencies will be contacted and it will be determined if corals need to be transplanted to another location, in which case the five-year monitoring and report would reset.

All reports will be provided to USACE, CZM, NMFS-PRD and NMFS-HCD as well as SEG.

Table 2. This stable outlines the major factors that may affect mitigation work and corresponding adaptive management measures or corrective actions.

Factors	Potential Impact	Monitoring Strategy	Adaptive Management Plan Action or Corrective Actions
Other plants recruiting into mangrove restoration area	Cause smothering and loss of mangrove seedlings by limiting space	Remove potential smothering species during monitoring surveys	<ol style="list-style-type: none"> 1. Conduct damage assessment 2. Remove all other potential competitors 3. Replant seedlings if needed to reach original number planted
Plant disease or predation	Cause mortality of seedlings	Document plant condition during monitoring surveys to identify disease potential or predation events	<ol style="list-style-type: none"> 1. Conduct damage assessment 2. Remove diseased plants 3. Identify predators and implement potential protection strategies to prevent predation 3. Replant seedlings if needed to reach original number planted

Storm damage to seedlings	Cause seedling breakage, dislodging, loss of seedling. Cause shoreline damage (e.g., loss/accumulation of sediments)	Ensure seedlings are well rooted and established in restoration sites	<ol style="list-style-type: none"> 1. Conduct damage assessment 2. Regrade shoreline to appropriate elevation if needed 3. Replant seedlings if needed to reach original number planted
Sargassum inundation	Cause smothering and loss of mangrove seedlings	Remove sargassum accumulated in restoration site during monitoring surveys	<ol style="list-style-type: none"> 1. Conduct damage assessment 2. Remove excess sargassum accumulated 3. Replant seedlings if needed to reach original number planted
Coral bleaching	Cause tissue loss or mortality in outplanted corals	Outplant corals in locations with good water flow and quality	<ol style="list-style-type: none"> 1. Conduct damage assessment 2. Replace corals lost by stabilizing fragments of opportunity until reaching the required outplanted number.
Coral disease	Cause tissue loss or mortality in outplanted corals	Outplant corals in locations with good water flow and quality	<ol style="list-style-type: none"> 1. Conduct damage assessment 2. Consult with territory Disease Coordinator or Coral Reef Initiative Coordinator for the potential authorized use of disease treatment if available 3. Replace loss by stabilizing fragments of opportunity until reaching the original outplanted number.
Storm damage	Cause coral damage, dislodging, fragmenting or loss of corals	Ensure firm coral attachment to substrate	<ol style="list-style-type: none"> 1. Conduct damage assessment 2. Re-attach loose corals 3. Replace loss by stabilizing fragments of opportunity post storm until reaching the original outplanted number.

XII. FINANCIAL ASSURANCES

SEG is committed to conducting this compensative mitigation plan and will guarantee that the mitigation plan, maintenance, and monitoring will occur as proposed. SEG will secure a performance bond or some

other type of financial guarantee that is accessible to the U.S. Army Corps of Engineers in the amount necessary to complete the transplant, compensatory mitigation, required monitoring, long- term maintenance of the informational buoys as well as covering any contingencies that may occur. The bond will be prepared following the guidance set forth in the U.S. Army Corps of Engineers Regulatory Guidance Letter No. 05-1 dated 14 February 2005 SUBJECT: Guidance on the Use of Financial Assurances, and Suggested Language for Special Conditions for Department of the Army Permits Requiring Performance Bonds.

Appendix A

PLACEHOLDER FOR GOVERNOR'S LETTER

Appendix B



August 29, 2024

Amy Claire Dempsey, M.A.
President
Bioimpact, Inc.

Good day Ms. Dempsey,

I write to express the availability of Coral World Ocean and Reef Initiative (CWORI) to complete coral restoration projects in the United States Virgin Islands. CWORI is a 501(c)(3) nonprofit organization based on St. Thomas that is committed to conserve marine habitats and wildlife through rescue, rehabilitation, restoration, and research and to empower others through public education. Since its inception in 2019, CWORI has undertaken and completed numerous coral conservation and reef restoration programs across St. Thomas and St. John. These have been done through various grant-funded programs and strategic partnerships with the National Park Service, National Fish and Wildlife Foundation, National Oceanic and Atmospheric Administration, and territorial Department of Planning and Natural Resources.

CWORI operates both land-based and in-water coral nurseries at its facilities on Coki Point and has the capacity to house thousands of corals for various restoration programs. The organization has necessary infrastructure available and requisite permits in place to acquire, grow, and outplant stony corals for reef restoration programs in the territory. Most critically, CWORI has a dedicated full-time workforce composed of marine biologists and dive professionals with extensive expertise in the restoration field to carry out all project activities.

The nonprofit is always eager to develop new partnerships and increase its number of ongoing reef conservation programs locally. A new initiative focused on outplanting ~3,000 stony corals in the St. John district over the coming years falls perfectly in line with ongoing efforts. I believe CWORI is perfectly suited to take on additional programs at this time and hope we are considered for such opportunities in the near future.

Thank you very much,

Samuel Eliades, Ph.D.

Director of Research & Conservation

Coral World Ocean and Reef Initiative

Appendix C