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# COAKLEY PLANTATION, LLLP

Written Testimony for Bill No. 35-0404  
Submerged Lands Occupancy Hearing for  
RO Intake and Discharge Line

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**Applicant:** Coakley Bay Plantation, LLLP

**Project Location:** No. 14 Coakley Bay, Christiansted, St. Croix, USVI

Prepared by: Tysam Tech, LLC



# 1.00 PROJECT LOCATION

The project is located at the following physical address:

**14 Estate Coakley Bay  
Christiansted, VI 00820**

The Coakley Bay Ocean Water Intake and Brine Discharge Pipeline Project is located in St. Croix, on the shoreline of Coakley Bay and Carden Bay. The project site is located in Estate Coakley Bay at 17°45'32.5"N 64°38'29.4"W, along Route 82. The Location and Agency Review Map is presented in Figure 2.00.1 which establishes the areas of Coastal Zone Management (CZM) first tier jurisdiction (red line).

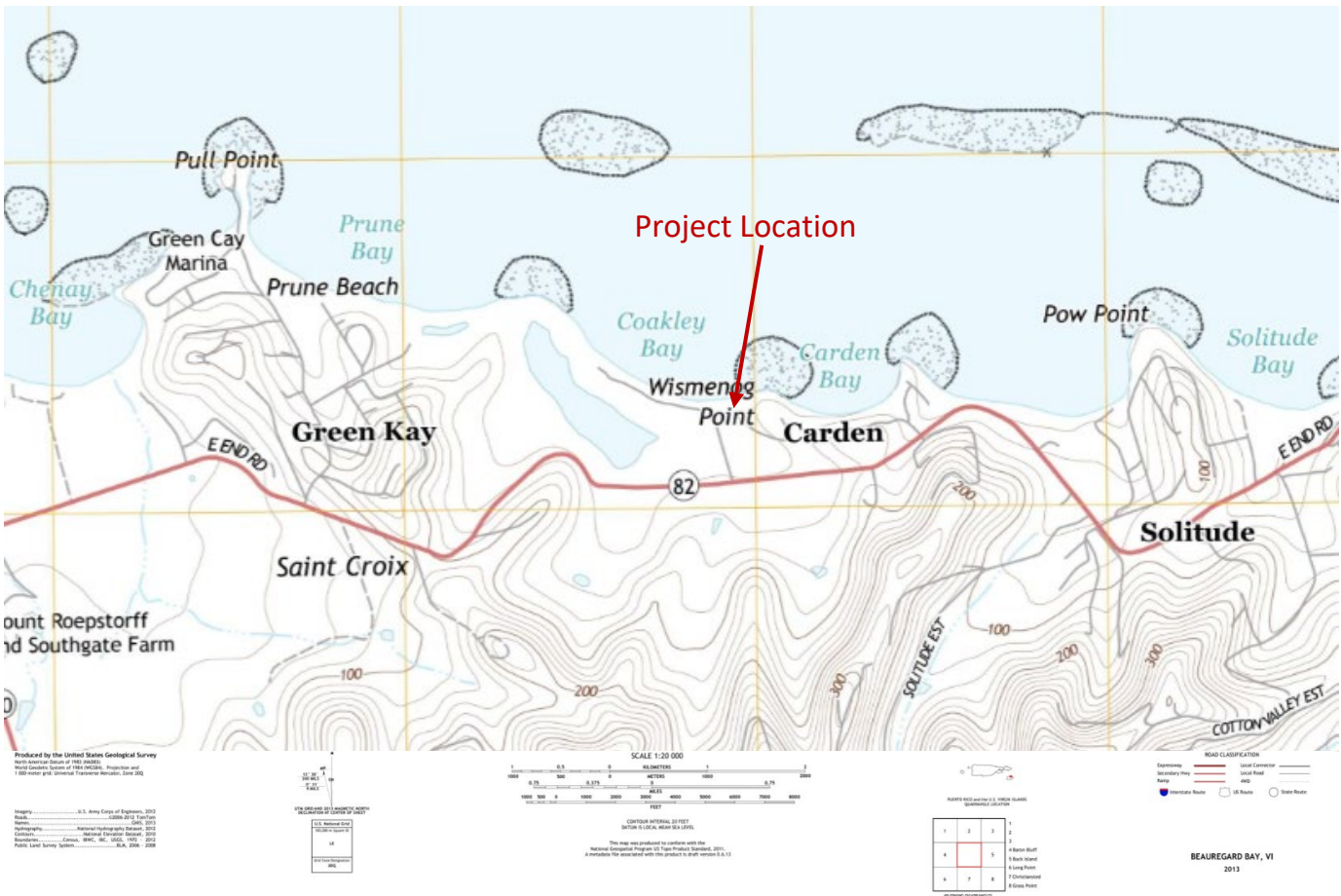


Figure 1 – Location and Agency Review Map (USGS Quadrangle Map, Beaugard Bay, 2013)

## 2.00 PROJECT SUMMARY

The proposed project area is located within 14 Estate Coakley Bay, a gated private residence located in Estate Coakley Bay along the shoreline of Carden Bay and Coakley Bay. The project seeks to construct an ocean water intake and brine discharge pipeline off the shoreline of the property at 14 Estate Coakley Bay that will yield up to 100 gallons per minute (GPM) and provide an average of 30,000 gallons per day (GPD) of potable water, and result in a discharge of an average of 45,000 GPD of brine.

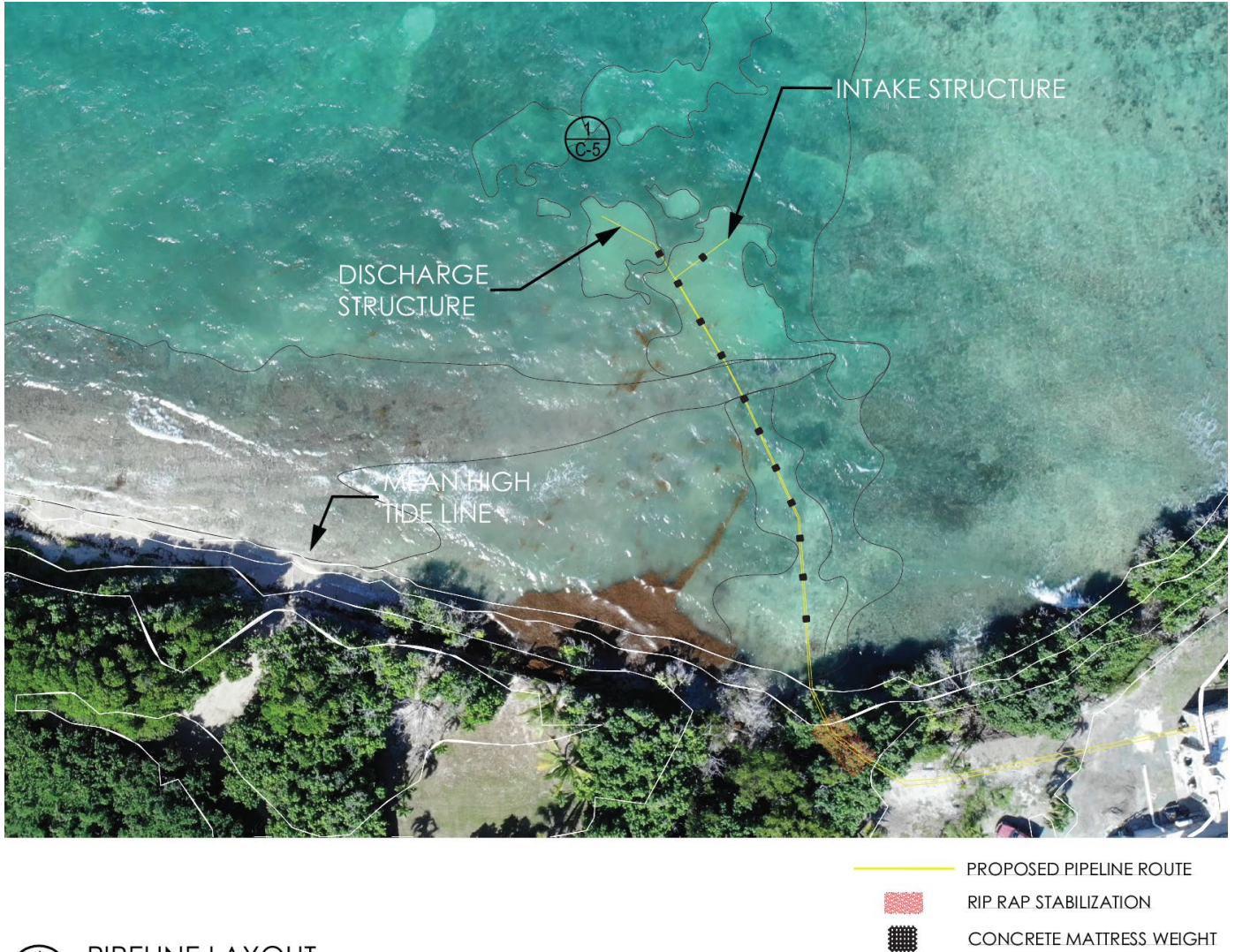


Figure 2 –Vicinity Map Showing Location of Project (Google Maps, Basemap: USGS, 2006)

Anticipated start date of this project is April of 2025. The proposed pipeline path follows a mostly sandy route for the first 110 feet, navigates over a small 16 foot section of hardbottom in approximately 3 feet of water, then routes over sandy bottom with scattered rubble and seagrass. The final location for discharge structure as well as intake structure are in sandy areas surrounded by thicker seagrass vegetation. The depth at the end

of the proposed pipeline route is approximately 6-7 feet deep and in sand where the bottom nearby rises sharply and becomes a thick seagrass area. The project approach will be to develop the pipeline route and installation according to safe and environmentally protective methods and requirements, ensuring during construction that any impact to nearshore waters or air quality is minimized. Long-term design of the entire development will ensure the lines installed in the bay will not only provide the desired water source flow rate, but also be resilient for long-term use, normal coastal and extreme weather conditions, and prevent any negative environmental impact to the shoreline or Coakley Bay waters.

The pipeline route 189 feet into Coakley Bay from the shoreline has been determined from a benthic survey used to identify the presence/absence of seagrasses, coral, hard-bottom, benthic communities, and fisheries resources that may be impacted by the pipeline installation. This survey conducted found the proposed pathway to be free of threatened, endangered and native species.

A project plan layout as well as a schedule of construction is provided with this document, below.

### 3.00 PROJECT PURPOSE

Existing wells in the area include two brackish wells at the Coakley Bay Plantation Facility. Groundwater pulled from these wells is used by Coakley Bay Plantation for potable water and is treated by existing saltwater RO units at the site. These wells have had reduced yield over the recent past and have become increasingly saline.

The purpose of the project is to allow Coakley Bay Plantation, LLLP to eliminate drawing from existing freshwater wells, and instead use seawater as the source of potable water, in order to eliminate negative impact on the availability of freshwater resources and also improve groundwater recharge. Groundwater recharge in the area is somewhat limited, as the soils are of Hydrologic Group C & D. Group D waters have very little groundwater recharge while Group C soils have some conductivity of water and will provide some recharge. This project will prevent saltwater intrusion of aquifers by focusing on water drawn from the ocean.

St. Croix, USVI is limited in the number of freshwater resources to a few wells located around the island and mostly intermittent and ephemeral streams and ponds which dry up during periods of limited rainfall. Some perennial streams and freshwater ponds/basins exist but are not a reliable source of freshwater.

This shift to a more sustainable and environmentally friendly way of producing water by moving from onsite wells to water drawn from the adjacent Coakley Bay is important to CBP for their sustainability goals.

The applicant has carefully considered how installation as well as long-term operation would affect water quality. The construction and installation phase will be carefully executed in order to protect the nearshore and in-water environment. Discharge effluent will be controlled to prevent impact to the environment during long-term operations and the system adheres to the appropriate environmental guidelines, regulations, and legislation. An Erosion and Sediment Control (E&SC) plan will be implemented and monitored during the life of the project.

Permanent controls will be setup to prevent future erosion or sediment loss from the site as well as downstream topographical watershed elements.

Conditions and process of incoming water to the desalination facility will be monitored as in any other treatment facility, for the purposes of informing plant operation and maintenance decisions. Constituents would include pH salinity, temperature, and suspended solids.

The Clean Water Act (CWA) mandated Territorial Pollutant Discharge Elimination System (TPDES) permit program requires discharges of process water into Waters of the USVI to be permitted and monitored. This project will install a discharge line for brine from processed seawater, and a TPDES permit will be applied for 180 days before anticipated discharge into the bay. Discharge will be carefully monitored to ensure it complies with the issued permit and Water Quality Standards (WQS).

The residence is designed to be self-sufficient, relying very minimally on resources outside of the area. It has an existing green power system with solar and battery storage and intends to provide potable water for personal use from a similar renewable natural resource in the area. Through careful installation and operation of a seawater intake and discharge structure system, the facility can ensure safe and environmentally protective use of this resource and allow for continued long-term enjoyment by the public of the bay area at the same time.

The use of this source instead of the existing wells will help move to long-term recovery of the existing aquifer and improve future uses of these natural water resources for CBP and all other residents in the area.

## 4.00 PROJECT LAYOUT AND DETAILS

The following figures show the general layout of the project and specific components, including the land-side pipeline, pipeline route into the bay, and intake and discharge structures.

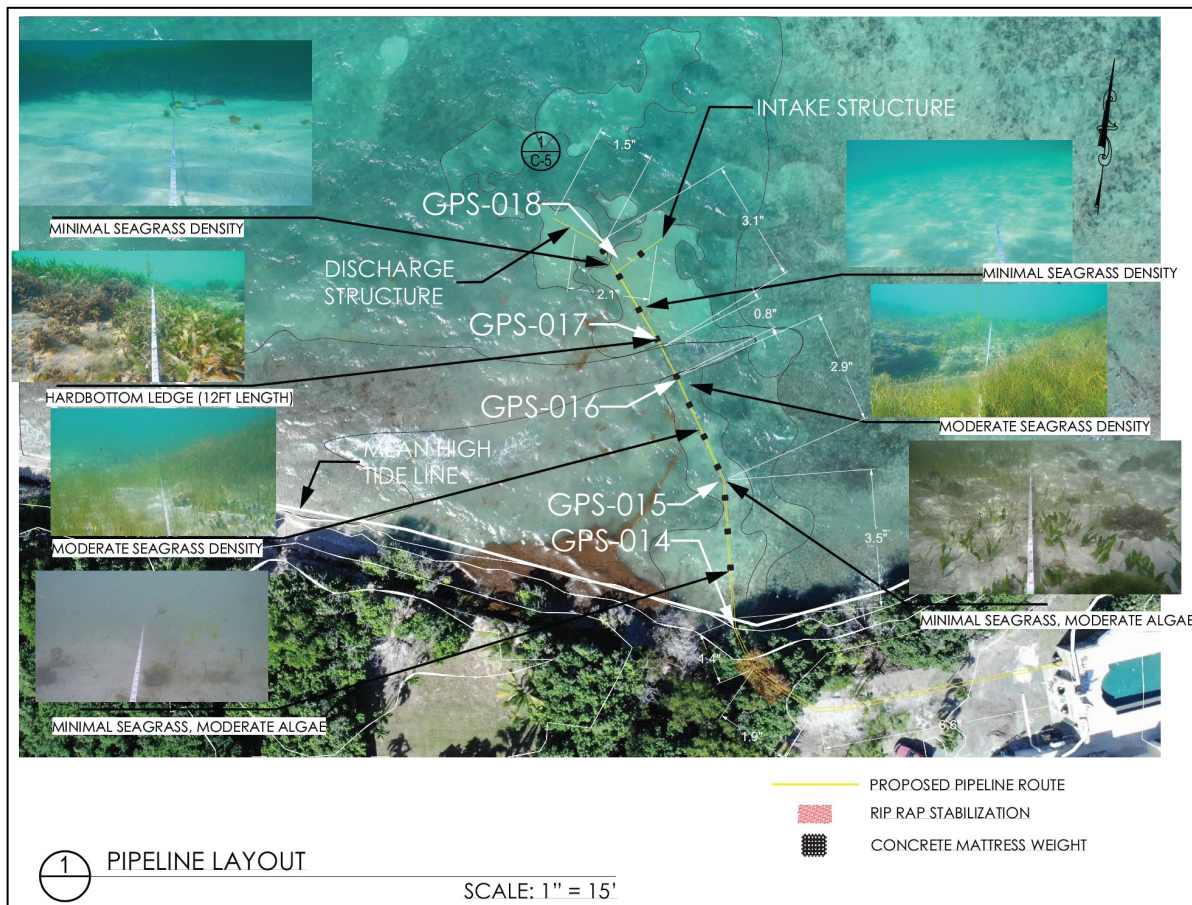
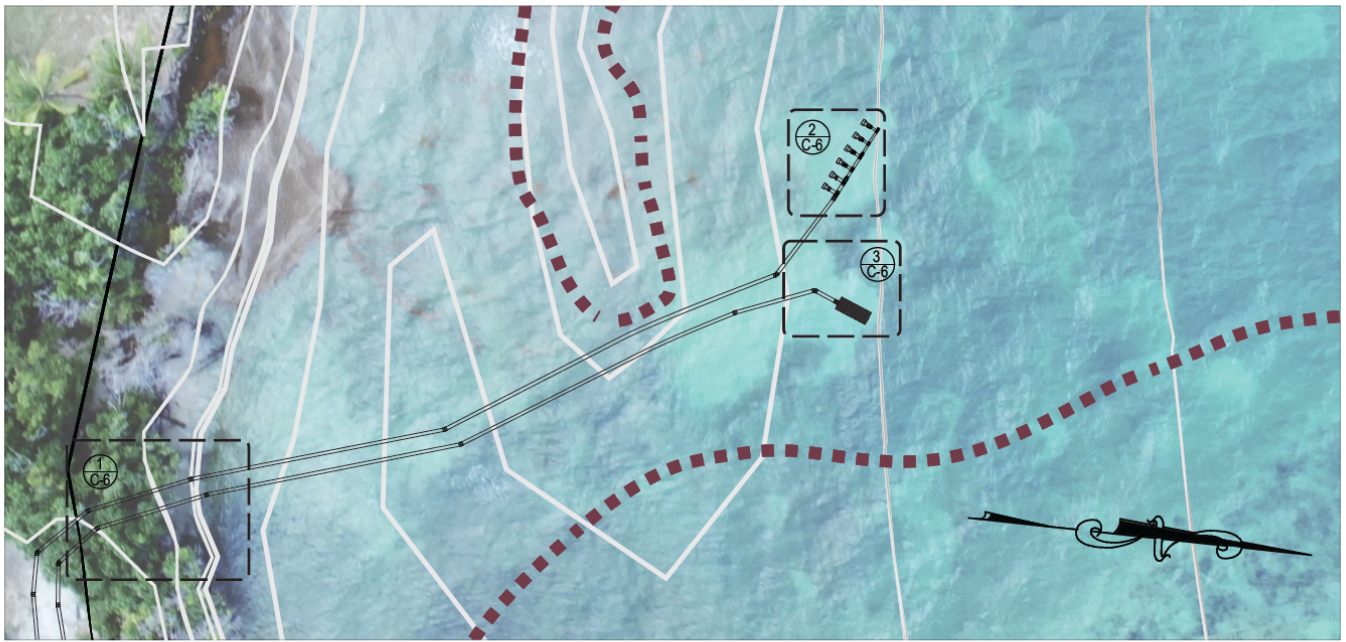
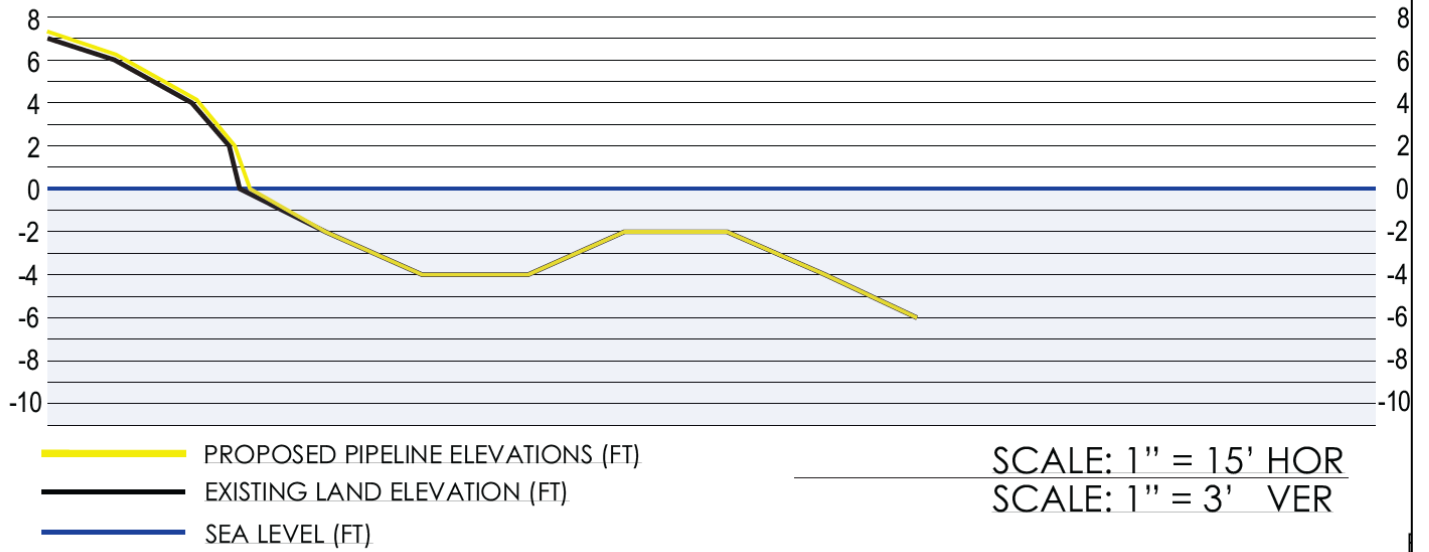


Figure 3 –Route for Pipeline and seafloor details, 2022



1 PIPELINE ROUTE & DETAILS  
 SCALE: 1" = 15'

Figure 4 – Proposed Route for pipeline from shoreline

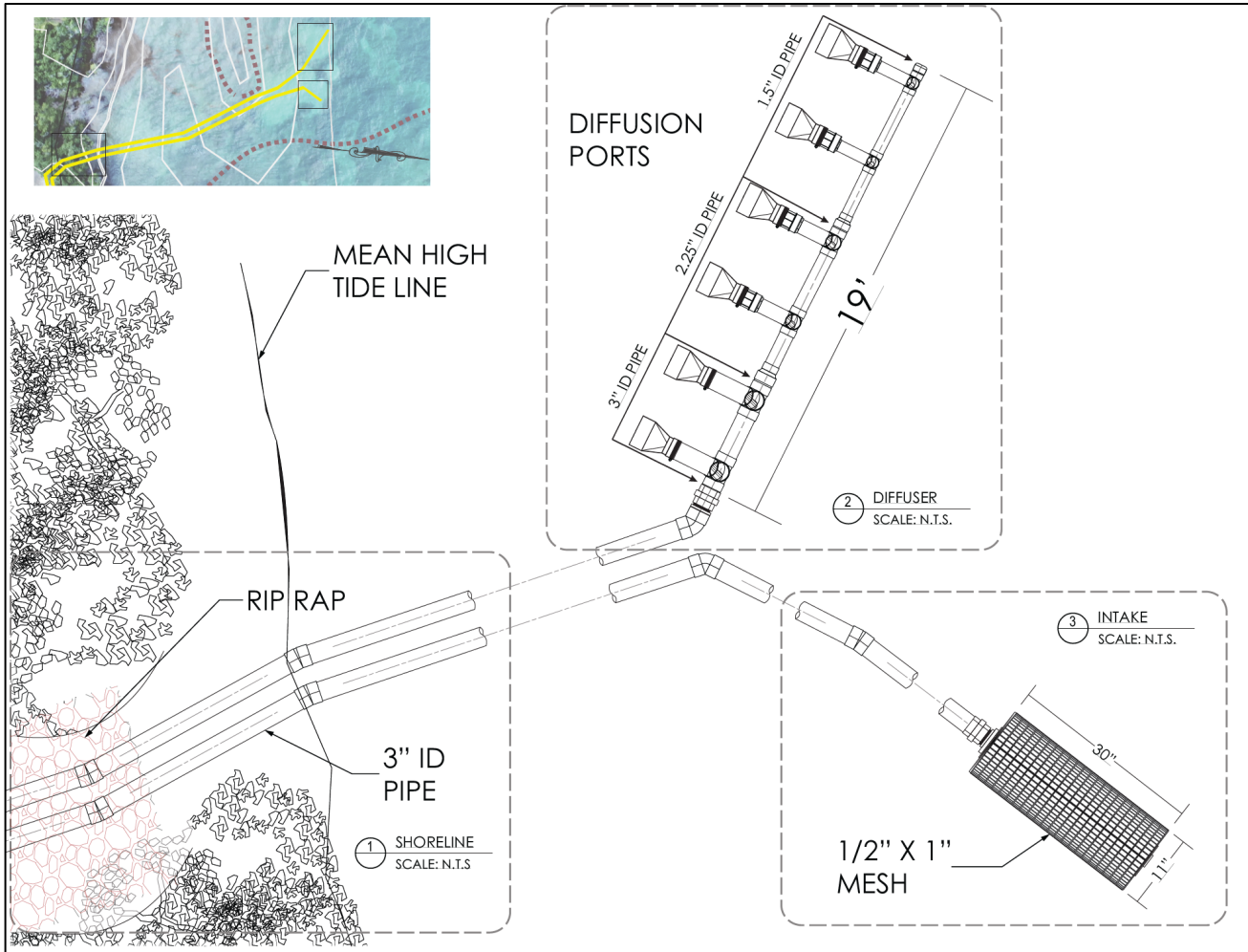


Figure 5 –Breakdown of key details, including shoreline access, diffuser discharge unit, and intake screen structure

These maps show the layout of the pipeline. It will follow a route chosen to avoid as much vegetation, hardbottom, rubble or benthic life as possible.

The shoreline transition point will be protected with riprap and buried at the shoreline transition to water. Surface placement will be carefully done by hand in the water and stabilized with concrete mattresses or weight blocks.

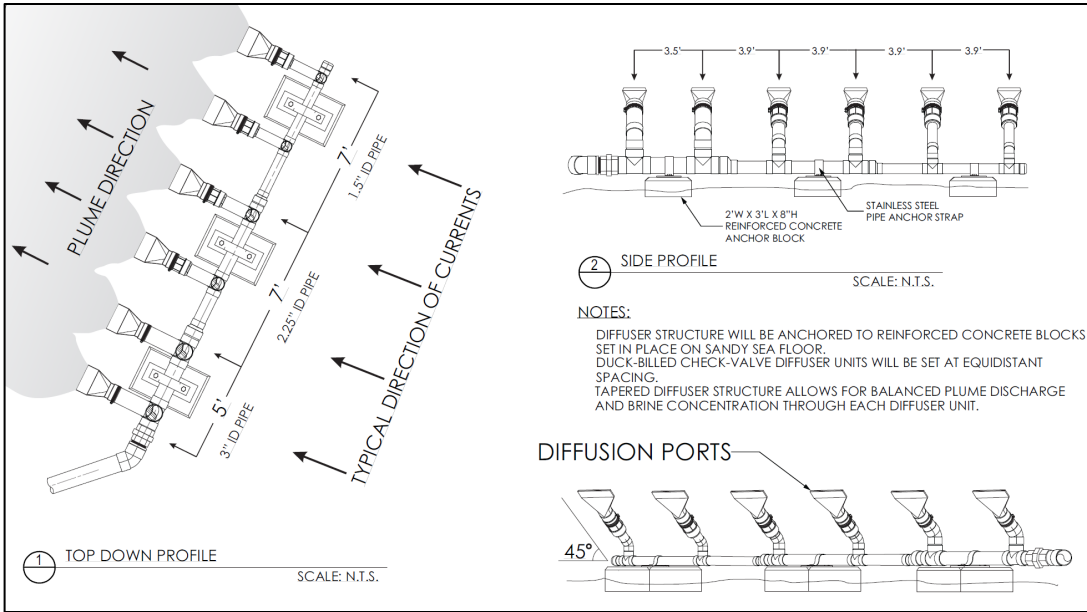


Figure 6 – Multiple Viewpoints of Diffuser Structure

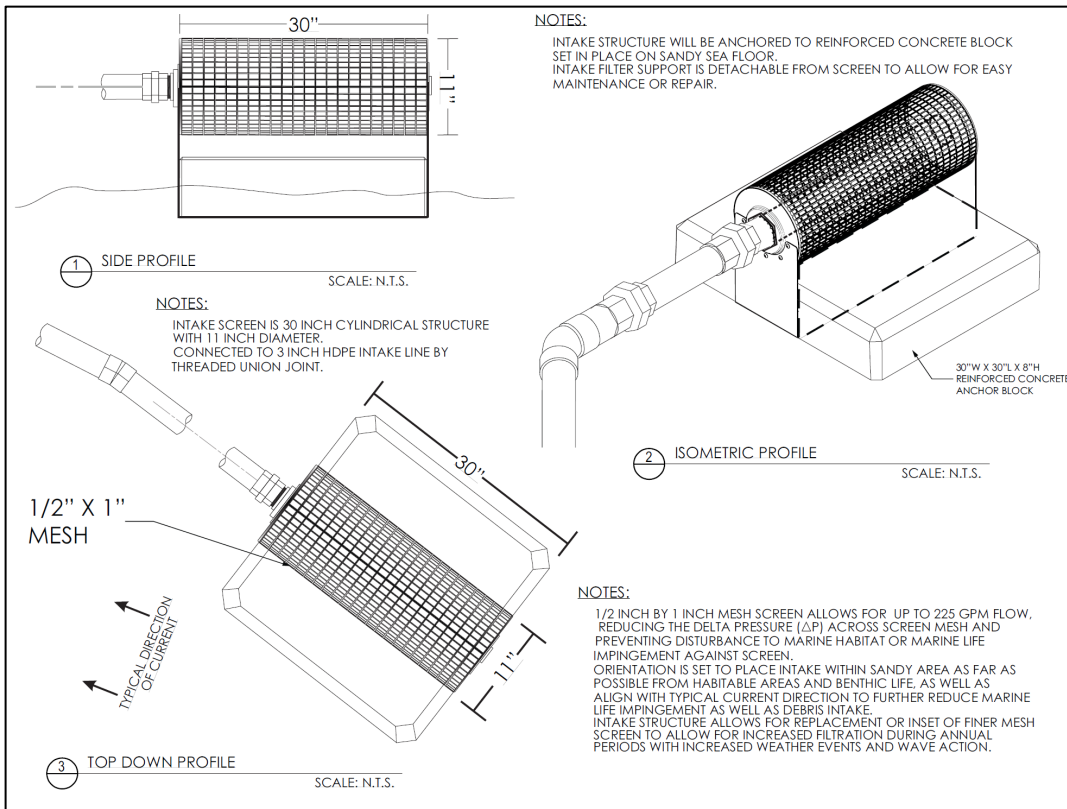


Figure 7 – Multiple Viewpoints of Intake Screen Structure

Figures showing the intake screen and diffuser ports. These will ensure safe mixing of brine and allow for low velocity discharge. They are simple construction with basic maintenance requirements and will function without harming native environment.