

STAFF REPORT

DATE: July 20, 2022

RE: 1450 Duval Street-Seaweed Barrier
(Urban Forestry Manager/Tree Commission LDR Review)

FROM: Karen DeMaria, City of Key West Urban Forestry Manager

An application has been submitted to install a floating, seaweed barrier in waters of the Atlantic Ocean, below mean high water within 600 feet of the shoreline starting at the end of Duval Street, with anchoring points at 1400 Duval Street and 508 South Street. The purpose of the floating barrier is to prevent sargassum seagrass from piling up onto the beach and shoreline areas of 1400, 1405, and 1450 Duval Street.

The project is undergoing a development plan review. Since it is a water dependent activity, a landscape plan is not required and no tree removal is involved with the project. Therefore, review by the Tree Commission is not required and a Landscape Plan review is not needed. A review of the land development regulations regarding potential impacts to the shoreline, open water, and endangered species, is below.

Review of Section 108:

1. Sec 108-232, Intergovernmental Coordination: The project requires reviews from the State and Federal environmental regulatory agencies. An environmental Resource Permit and Submerged Lands Authorization has been granted by the State Department of Environmental Protection (May 12, 2022, permit #0388535-001 EI).

Email Coordination with Florida Fish and Wildlife Conservation Commission (FWCC-November 2020) regarding sea turtle nesting areas determined that this beach area is not included on the FWCC sea turtle patrol maps but is considered marine turtle habitat and there is a potential for its use as a nesting area. FWCC staff reviewed the project for potential impacts to marine turtles and manatees and concluded that access to the sandy beach would not be impacted by the barrier. **A management plan to inspect and maintain the integrity of the barrier and report any entrapments or entanglements and inclusion of this beach area into the FWCC Sea Turtle Patrol is required.**

An Army Corps of Engineer (ACOE) permit review is required and an application has been submitted for review. At this time, the status of that application is not known. ACOE review usually involves comments from the Florida Keys National Marine Sanctuary (FKNMS), U.S. Fish and Wildlife (USFWS), and the National Marine Fisheries Service (NMFS).

2. Sec 108-242, Environmentally Sensitive Areas: The proposed project is located in waters of the Atlantic Ocean. A benthic survey has been submitted that indicates no hardbottom, benthic areas including seagrass or corals, will be impacted.

Review of Section 110:

1. Sec 110-181, Coastal Shoreline Impact: Information has been submitted that indicates no adverse impacts shall occur to living marine resources. **A management plan to daily inspect the barrier for possible entrapments or entanglements and monitoring of sea turtle nests is required.**
2. Sec 110-183, Living Marine Resources: The project has been reviewed and permitted by the State Department of Environmental Protection (FDEP) with conditions regarding the use of turbidity curtains and monitoring for endangered species during installation. ACOE review is still pending.

A Benthic Resource Assessment was conducted by Terramar Environmental Services in June 2020. This report stated that the benthic community along a 10 ft wide area at the proposed weed barrier location consisted of loose sand and rubble. The seawall and pier areas where the barrier will be attached and anchored, did not contain any coral only limited macroalgae. The area surrounding the project site was also surveyed.

3. Sec 110-185, Impacts of Coastal Development on Tidal Flushing and Circulation Patterns: Tidal flushing and circulation patterns will not be altered by this project. No alteration of tidal flow will occur. The project incorporates a floating boom that rests on the surface of the water. A semi-rigid pvc coated polyester curtain (no netting) type material with a chain will hang down approximately 1 foot into the water column and will not touch the sea bottom. The boom with curtain will be anchored to the sea bottom by a chain every 20 feet therefore, tidal flow and circulation will not be impacted.

4. Sec. 110-191, Impacts of Development on Coastal Waters: The installation of the floating seagrass barrier is in the public interest as it will deflect large mats of sargassum seagrass from being trapped on the shoreline. It is documented that excess seagrass on the beaches and nearshore areas degrade water and air quality and cause an unpleasant experience to those using the beach, pier, and park area. Installation of the seagrass boom could improve water quality in this nearshore area by allowing the seagrass mats to move along the shoreline. No impacts are expected in areas offshore or "downstream" of this barrier.

5. Sec 110-221 to 224, Wildlife Habitat Preservation and Protection of Flora and Fauna: The nearshore water area immediately adjacent to this project does not include any critical habitat for endangered or critically important species. The beach area is an important habitat for nesting sea turtles as stated by the FWCC and the open water area does support numerous fish and sea mammal species that traverse the area. It is not anticipated that movement of these species will be impacted by the barrier and all should be able to migrate through the area.

All conditions regarding endangered species monitoring during installation (manatees, sea turtles, and sawfish) should be included in any building permits, as stated on the FDEP permit. A plan to monitor the barrier daily for any possible entanglements or entrapments is required.

Other reviews and comments:

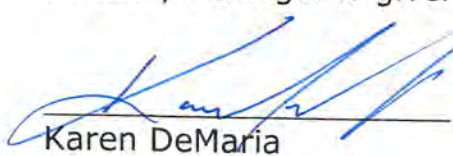
Sec 122-126, Conservation District: A benthic survey has been submitted into the file and coordination with State and Federal regulatory agencies has/is being done. The State of Florida (Clean Water Act-water quality and submerged lands lease reviews) has issued a permit for the project. The Federal review, ACOE (River and Harbors Act-structures in waters) is still being reviewed.

State Statutes 166.033 (5 & 6) says that a municipality can not hold processing of a development plan until State or Federal agencies have processed their permit. A condition should be placed that requires issuance of a ACOE permit prior to submittal of a building permit.

CONDITIONS:

1. All conditions listed on the FDEP and ACOE permits (when issued) shall be followed. ACOE permit is required prior to submittal of a building permit.
2. All materials associated with construction and placement of the barrier shall be contained in an upland storage area . No materials shall be temporarily stored on the beach area near the shoreline.
3. Best management practices for erosion control and turbidity shall be followed. Any materials that accidently fall into the water shall be immediately retrieved.
4. Endangered Species protective measures for manatees, sea turtles, and sawfish shall be followed.
5. The barrier, once installed, shall be inspected on a daily basis to insure there are no marine entanglements and all repairs that are required will be performed in a timely manner.
6. Monitoring for sea turtle nests shall be done during the turtle nesting season. Coordination with the local sea turtle club shall be initiated for the monitoring patrols and reports sent to the FWCC.

Approval for processing of the development plan through the Tree Commission/Urban Forestry Manager is given, with conditions attached.



Karen DeMaria
Urban Forestry Manager, City of Key West

PROJECT LOCATION

PARCEL ID 00036370-000000 (RAMOS)
PARCEL ID 00072082-001501 (CITY OF KEY WEST)
PARCEL ID 00036280-000000 (SUNSET CITY LLC)
BAY BTM SE OF PT LOT 3 SQR 6 TR 16;
LOT 4 & 6 SQR 5 (SOUTH BEACH LESS THE EATERY
RESTAURANT LEASE);
KW FILER BOYLE SUB N-476
KW FILER BOYLE SUB N-476 PT LOTS-1-2-3-5-7
SQR-5 TR-16 ALSO FILLED BAY BTM G45-426/27
OR18-42(II DEED 20749)
SEC/TWP/RNG 06/68/25
KEY WEST
LATITUDE: 24.546760°N LONGITUDE: 81.795885°W

DIRECTIONS:

US HIGHWAY NO 1 SOUTH TO KEY WEST. LEFT ONTO
ROOSEVELT BLVD. RIGHT ONTO BERTHA ST. LEFT ONTO
ATLANTIC BLVD. RIGHT ONTO WHITE ST. LEFT ONTO
SOUTH ST. LEFT ONTO DUVAL ST.
PROPERTY ADDRESS: 1400, 1405, 1406 DUVAL ST,
508 SOUTH STREET

ADJOINING OWNERS

KEY WEST REACH OWNER LLC
PO BOX 396
BOCA RATON FL 33429

HUGH J MORGAN
404 SOUTH ST
KEY WEST, FL 33040



REVISIONS:	
1	09/09/20

LOCATION & VICINITY MAP
SCALE: AS SHOWN

WEED BARRIER FOR CITY OF KEY WEST, SUNSET CITY LLC
& MATILDE GENEROSA RAMOS REV TRUST 5/25/2007
KEY WEST, MONROE COUNTY, FL

GLEN BOE AND ASSOCIATES, INC. # 4061
5800 OVERSEAS HIGHWAY, SUITE 4, MARATHON, FL 33050
Telephone (305) 743-9121 Fax (305) 743-9197
Email: glenboe@bellsouth.net

DATE: 03/30/20



SITE PLAN
SCALE: 1" = 100'



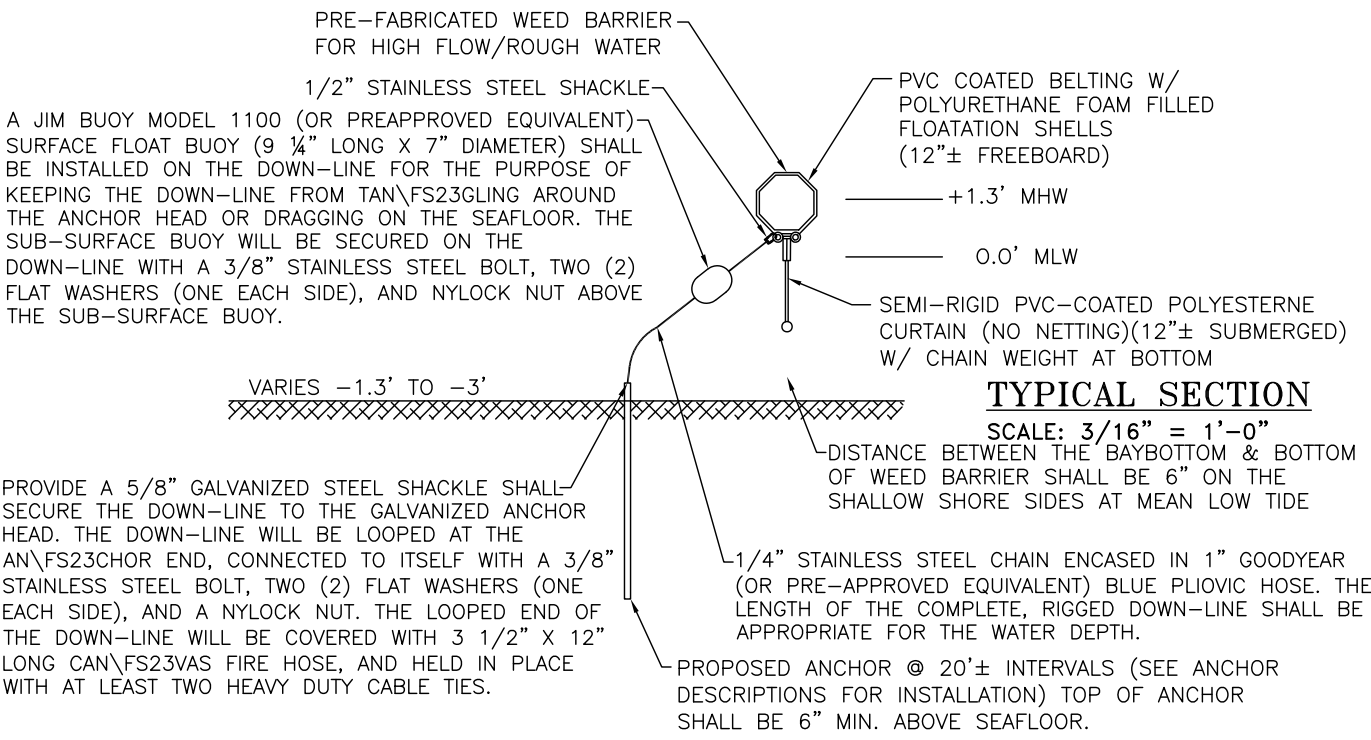
REVISIONS:	
1	09/09/20
2	07/11/22

CERTIFIED BY:
SEAN KIRWAN, P.E. #57506

WEED BARRIER FOR CITY OF KEY WEST, SUNSET CITY LLC
& MATILDE GENEROSA RAMOS REV TRUST 5/25/2007
KEY WEST, MONROE COUNTY, FL

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Email: glenboe@bellsouth.net

DATE: 03/30/20



A JIM BUOY MODEL 1100 (OR PREAPPROVED EQUIVALENT) SURFACE FLOAT BUOY (9 1/4" LONG X 7" DIAMETER) SHALL BE INSTALLED ON THE DOWN-LINE FOR THE PURPOSE OF KEEPING THE DOWN-LINE FROM TANGLING AROUND THE ANCHOR HEAD OR DRAGGING ON THE SEAFLOOR. THE SUB-SURFACE BUOY WILL BE SECURED ON THE DOWN-LINE WITH A 3/8" STAINLESS STEEL BOLT, TWO (2) FLAT WASHERS (ONE EACH SIDE), AND NYLOCK NUT ABOVE THE SUB-SURFACE BUOY.

PROVIDE A 5/8" GALVANIZED STEEL SHACKLE SHALL SECURE THE DOWN-LINE TO THE GALVANIZED ANCHOR HEAD. THE DOWN-LINE WILL BE LOOPED AT THE ANCHOR END, CONNECTED TO ITSELF WITH A 3/8" STAINLESS STEEL BOLT, TWO (2) FLAT WASHERS (ONE EACH SIDE), AND A NYLOCK NUT. THE LOOPED END OF THE DOWN-LINE WILL BE COVERED WITH 3 1/2" X 12" LONG CANVAS FIRE HOSE, AND HELD IN PLACE WITH AT LEAST TWO HEAVY DUTY CABLE TIES.

TYPICAL SECTION

SCALE: 3/16" = 1'-0"

DISTANCE BETWEEN THE BAYBOTTOM & BOTTOM OF WEED BARRIER SHALL BE 6" ON THE SHALLOW SHORE SIDES AT MEAN LOW TIDE

1/4" STAINLESS STEEL CHAIN ENCASED IN 1" GOODYEAR (OR PRE-APPROVED EQUIVALENT) BLUE PLOVIC HOSE. THE LENGTH OF THE COMPLETE, RIGGED DOWN-LINE SHALL BE APPROPRIATE FOR THE WATER DEPTH.

PROPOSED ANCHOR @ 20'± INTERVALS (SEE ANCHOR DESCRIPTIONS FOR INSTALLATION) TOP OF ANCHOR SHALL BE 6" MIN. ABOVE SEAFLOOR.

NOTE: IN-WATER ROPE, CABLE OR CHAIN SHALL BE INDUSTRIAL GRADE METAL CHAINS OR HEAVY CABLES THAT DO NOT READILY LOOP AND TANGLE AND SHALL BE INSTALLED SO LINE IS TAUT AND WITHOUT EXCESS LINE IN THE WATER. LINES SHALL BE ENCLOSED IN A PLASTIC OR RUBBER SLEEVE/TUBE TO ADD RIGIDITY.

CONSTRUCTION NOTES:

1. CONTRACTOR SHALL OBTAIN ALL APPLICABLE PERMITS PRIOR TO COMMENCING WORK. THE REQUIREMENTS OF THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, THE ARMY CORPS OF ENGINEERS & LOCAL REGULATIONS SHALL GOVERN ALL WORK.
2. WORK SHOWN ON DRAWINGS IS DESIGNED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE 2017. FOLLOW ALL APPLICABLE PROVISIONS FOR ALL PHASES OF CONSTRUCTION. THE PROPOSED STRUCTURE(S) IS DESIGNED FOR A MINIMUM LIVE LOAD OF 40 PSF/DEAD LOAD 10 PSF, 180 MPH (3 SECOND GUST), EXPOSURE D, ASCE 7-10.
3. CONTRACTOR SHALL ADHERE TO THE STANDARD MANATEE CONSTRUCTION CONDITIONS (LATEST EDITION). IF NEEDED, THE CONTRACTOR CAN CONTACT THE ARMY CORPS OF ENGINEERS OR THIS OFFICE TO OBTAIN A COPY OF THE STANDARD MANATEE CONSTRUCTION CONDITIONS.
4. BEST MANAGEMENT PRACTICES, INCLUDING THE USE OF TURBIDITY SCREENS, ARE REQUIRED TO ISOLATE THE CONSTRUCTION AREA FROM THE ADJACENT WATERS. CONTRACTOR SHALL INSTALL TURBIDITY SCREENS AROUND THE IMMEDIATE PROJECT AREA PRIOR TO CONSTRUCTION. THE TURBIDITY SCREENS REMAIN IN PLACE UNTIL WATER QUALITY CONDITIONS RETURN TO PRECONSTRUCTION CONDITIONS. WATER QUALITY MONITORING SHALL ADHERE TO STATE REGULATIONS.
5. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS & WATER DEPTHS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE COMMENCING WORK.
6. THE STRUCTURAL INTEGRITY OF THE COMPLETED STRUCTURE DEPENDS ON INTERACTION OF VARIOUS CONNECTED COMPONENTS. PROVIDE ADEQUATE BRACING, SHORING, AND OTHER TEMPORARY SUPPORTS AS REQUIRED TO SAFELY COMPLETE THE WORK.
7. EXERCISE EXTREME CARE AND CAUTION WHEN EXCAVATING AND FILLING ADJACENT TO EXISTING STRUCTURES. UNDER NO CIRCUMSTANCES SHALL THE STRUCTURAL INTEGRITY OF THE EXISTING STRUCTURES BE IMPAIRED IN ANY WAY BY CONSTRUCTION OPERATIONS AND PROCEDURES. DO NOT EXCAVATE OR DISTURB SOIL ADJACENT TO OR BENEATH EXISTING FOOTINGS.

ANCHOR DETAIL BASED ON SUBSTRATE:

FOR SUBSTRATE OF UP TO 5' OF SAND/MUD OVERBURDEN ABOVE A HARD ROCK SUBSTRATE THE ANCHOR SHALL BE A ROCK PENETRATING HELICAL EMBEDMENT ANCHOR. THE ANCHOR SHALL BE A MINIMUM OF 6' LONG, WITH A MINIMUM HELICAL DISK SIZE OF 6", WITH A MINIMUM SHAFT DIAMETER OF 1 1/4". THE ANCHOR SHALL BE GALVANIZED STEEL. THE ANCHOR SHALL BE SECURELY EMBEDDED A MINIMUM OF 5 1/2' INTO THE SEAFLOOR WITH THE HEAD EXPOSED APPROXIMATELY 6" TO ALLOW FOR ATTACHMENT OF THE DOWNLINE. THE ANCHOR SHALL BE INSTALLED IN A MANNER WHICH PROVIDES FOR REMOVAL, VIA HEAVY EQUIPMENT, IF AND WHEN NECESSARY.

FOR SUBSTRATE GREATER THAN 5' OF SAND/MUD THE ANCHOR SHALL BE A SOFT BOTTOM HELICAL EMBEDMENT ANCHOR. THE ANCHOR SHALL BE A MINIMUM OF 6' LONG, WITH A MINIMUM HELICAL DISK SIZE OF 8", WITH A MINIMUM SHAFT DIAMETER OF 1 1/4". THE ANCHOR SHALL BE GALVANIZED STEEL. THE ANCHOR SHALL BE SECURELY EMBEDDED A MINIMUM OF 5 1/2' INTO THE SEAFLOOR WITH THE HEAD EXPOSED APPROXIMATELY 6" TO ALLOW FOR ATTACHMENT OF THE DOWNLINE. THE ANCHOR SHALL BE INSTALLED IN A MANNER WHICH PROVIDES FOR REMOVAL, VIA HEAVY EQUIPMENT, IF AND WHEN NECESSARY.

FOR EXPOSED ROCK SUBSTRATE THE ANCHOR SHALL BE THE HALAS PIN SYSTEM (OR PRE-APPROVED EQUIVALENT) WITH A MINIMUM EMBEDMENT DEPTH OF 18", MINIMUM PIN SIZE OF 5/8" DIAMETER BY 18" LENGTH, 316 STAINLESS STEEL; INSTALLED IN A 2" DIAMETER BY 18" DEEP DRILLED HOLE, AND GROUTED WITH CONCRETE. CAST IN PLACE CONCRETE SHALL BE TYPE II CONCRETE WITH A COMPRESSIVE STRENGTH OF 5,000 PSI AT 28 DAYS. MAXIMUM WATER-CEMENTIOUS MATERIALS RATIO BY WEIGHT RATIO SHALL BE 0.40. SLUMP SHALL NOT EXCEED 5" (1"±).

REVISIONS:	
1	09/09/20
2	07/11/22

CERTIFIED BY:
SEAN KIRWAN, P.E. #67506

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DATE: 03/30/20



FLORIDA DEPARTMENT OF Environmental Protection

South District Branch Office
2796 Overseas Highway, Suite 221
Marathon, FL 33050
SouthDistrict@FloridaDEP.gov

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Shawn Hamilton
Secretary

Permittee/Authorized Entity:

City of Key West
1100 White St
Key West, FL 33040
gveliz@cityofkeywest-fl.gov

Seaweed Barrier

Authorized Agent:

Sean Kirwan
5800 Overseas Hwy Ste 4
Marathon, FL 33050
glenboe@bellsouth.net

**Environmental Resource Permit
State-owned Submerged Lands Authorization – Granted Pending Document
Execution**

**U.S. Army Corps of Engineers Authorization – Separate Corps Authorization
Required**

Permit No.: 0388535-001 EI
Lease No.:

**Permit Issuance Date: May 12, 2022
Permit Construction Phase Expiration Date: May 12, 2027**

Consolidated Environmental Resource Permit and Sovereignty Submerged Lands Authorization

Permittee: City of Key West
Permit No: 0388535-001 EI

PROJECT LOCATION

The activities authorized by this permit and sovereignty submerged lands authorization are located adjacent to 508 South Street, involving Parcel IDs 00036280000000, 00072082001501, and 00036360000000, Key West, FL, 33040, in Section 06, Township 68, Range 25, in Monroe County.

PROJECT DESCRIPTION

The permittee is authorized to install a 495 linear-foot floating seaweed barrier with 30 anchors, in the Atlantic Ocean, Class III Outstanding Florida Waters. Those activities include the preemption of 61,791 square feet of state-owned sovereignty submerged lands. Authorized activities are depicted on the attached exhibits.

AUTHORIZATIONS

Seaweed Barrier

Environmental Resource Permit

The Department has determined that the activity qualifies for an Environmental Resource Permit. Therefore, the Environmental Resource Permit is hereby granted, pursuant to Part IV of Chapter 373, Florida Statutes (F.S.), and Chapter 62-330, Florida Administrative Code (F.A.C.).

Sovereignty Submerged Lands Authorization

As staff to the Board of Trustees under Sections 253.002, F.S., the Department has determined that the activity within the Atlantic Ocean (**Page 2 of 3 in attached drawings**) qualifies for and requires a lease, as long as the work performed is located within the boundaries as described and is consistent with the terms and conditions herein.

The final documents required to execute the lease will be sent to the lessee by the Department's Division of State Lands for execution. The Department intends to issue the public easement, upon satisfactory execution of those documents, including payment of required fees and compliance with the conditions in this permit. **You may not begin construction of the activities described until you receive a copy of the executed public easement from the Department.**

Federal Authorization

Your proposed activity as outlined on your application and attached drawings does not qualify for Federal authorization pursuant to the State Programmatic General Permit and a SEPARATE permit or authorization shall be required from the Corps. You must apply separately to the Corps using their *APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT*, ENG FORM 4345, or alternative as allowed by their regulations. More information on Corps permitting may be found online in the Jacksonville District Regulatory Division Source Book at:

<https://www.saj.usace.army.mil/Missions/Regulatory/Source-Book/>.

Authority for review - an agreement with the USACOE entitled “Coordination Agreement Between the U. S. Army Corps of Engineers (Jacksonville District) and the Florida Department of Environmental Protection, or Duly Authorized Designee, State Programmatic General Permit”, Section 10 of the Rivers and Harbor Act of 1899, and Section 404 of the Clean Water Act.

Coastal Zone Management

Issuance of this authorization also constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Zone Management Act.

Water Quality Certification

This permit also constitutes a water quality certification under Section 401 of the Clean Water Act, 33 U.S.C. 1341.

Other Authorizations

You are advised that authorizations or permits for this activity may be required by other federal, state, regional, or local entities including but not limited to local governments or municipalities. This permit does not relieve you from the requirements to obtain all other required permits or authorizations.

The activity described may be conducted only in accordance with the terms, conditions and attachments contained in this document. Issuance and granting of the permit and authorizations herein do not infer, nor guarantee, nor imply that future permits, authorizations, or modifications will be granted by the Department.

PERMIT SOVEREIGNTY SUBMERGED LANDS CONDITIONS

The activities described must be conducted in accordance with:

- **The Specific Conditions**
- **The General Conditions**
- **The limits, conditions and locations of work shown in the attached drawings**
- **The term limits of this authorization**

You are advised to read and understand these conditions and drawings prior to beginning the authorized activities, and to ensure the work is conducted in conformance with all the terms, conditions, and drawings herein. If you are using a contractor, the contractor also should read and understand these conditions and drawings prior to beginning any activity. Failure to comply

with these conditions, including any mitigation requirements, shall be grounds for the Department to revoke the permit and authorization and to take appropriate enforcement action.

Operation of the facility is not authorized except when determined to be in conformance with all applicable rules and this permit and sovereignty submerged lands authorization, as described.

SPECIFIC CONDITIONS – ADMINISTRATIVE

1. All required submittals, such as certifications, monitoring reports, notifications, etc., shall be submitted to the Florida Department of Environmental Protection, South District Office, Submerged Lands and Environmental Resource Permitting, P.O. Box 2549, Fort Myers, FL 33902-2549 or via e-mail to FTMERP_Compliance@dep.state.fl.us . All submittals shall include the project name and indicated permit number when referring to this project.

Note: In the event of an emergency, the Permittee should contact the Department by calling (800)320-0519. During normal business hours, the permittee should call (239)344-5600.

SPECIFIC CONDITIONS – CONSTRUCTION ACTIVITIES

2. The project shall comply with applicable State Water Quality Standards, namely:
Rule 62-302.500, F.A.C. – Surface Waters: Minimum Criteria, General Criteria;
Rule 62-302.530, F.A.C. – Table: Surface Water Quality Criteria, Class III Waters
3. Best management practices for erosion control shall be implemented and maintained at all times during construction of the permitted activity to prevent siltation and turbid discharges in excess of State water standards pursuant to Rule 62-302, F.A.C. The Permittee shall be responsible for ensuring that erosion and turbidity control devices and procedures are inspected and maintained daily during all phases of construction authorized by this permit until all areas that were disturbed during construction are sufficiently stabilized to prevent erosion, siltation, and turbid discharges.
4. Storage or stockpiling of tools and materials (i.e., lumber, pilings, debris,) within wetlands, along the shoreline, within the littoral zone, or elsewhere within wetlands or other surface waters is prohibited. This includes floating of pilings in surface waters. All vegetative material and debris shall be removed to a self-contained upland disposal area with no stockpiling of debris within wetland areas.

SPECIFIC CONDITIONS LISTED SPECIES

7. This permit does not authorize the permittee to cause any adverse impact to or “take” of state listed species and other regulated species of fish and wildlife. Compliance with state laws regulating the take of fish and wildlife is the responsibility of the owner or applicant associated with this project. Please refer to Chapter 68A-27 of the Florida Administrative Code for definitions of “take” and a list of fish and wildlife species. If listed species are observed onsite, FWC staff are available to provide decision support information or assist in obtaining the appropriate FWC permits. Most marine endangered and threatened species are

statutorily protected and a “take” permit cannot be issued. Requests for further information or review can be sent to FWCConservationPlanningServices@MyFWC.com.

SPECIFIC MANATEE PROTECTION CONDITIONS

8. If a manatee appears to be in distress after coming in contact with drilling mud, work vessels or equipment, it shall be reported immediately by calling the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1-888-404-3922. Any collision with or injury to a manatee shall also be reported immediately. A follow-up written report shall be sent to FWC as soon as practicable at ImperiledSpecies@myfwc.com, including the permit number, dates, details and status of the event.

9. During in-water construction activities, the following manatee conditions shall be followed:
 - a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.

 - b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" while in the project area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible and follow any posted speed zones.

 - c. If used, siltation, turbidity barriers, booms or curtains shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.

 - d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shut-down if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.

 - e. Temporary signs concerning manatees shall be posted on all vessels associated with the project. This sign shall measure at least 8 ½" by 11" and explain the requirements for "Idle Speed/No Wake" and the shutdown of in-water operations. Information on this sign is available at: <https://myfwc.com/wildlifehabitats/wildlife/manatee/education-for-marinas/>.

SPECIFIC CONDITIONS – MONITORING/REPORTING REQUIREMENTS

10. The City of Key West shall be operated and maintained under the current Management Plan. The barrier shall be inspecting on a daily basis to insure there are no marine entanglements and all repairs that are required will be performed in a timely manner.

SPECIAL CONSENT CONDITIONS

1. The applicant agrees to indemnify, defend and hold harmless the Board of Trustees and the State of Florida from all claims, actions, lawsuits and demands in any form arising out of the authorization to use sovereignty submerged lands or the applicant's use and construction of structures on sovereignty submerged lands. This duty to indemnify and hold harmless will include any and all liabilities that are associated with the structure or activity including special assessments or taxes that are now or in the future assessed against the structure or activity during the period of the authorization.
2. Failure by the Board of Trustees to enforce any violation of a provision of the authorization or waiver by the Board of Trustees of any provision of the authorization will not invalidate the provision not enforced or waived, nor will the failure to enforce or a waiver prevent the Board of Trustees from enforcing the unenforced or waived provision in the event of a violation of that provision.
3. Applicant binds itself and its successors and assigns to abide by the provisions and conditions set forth in the authorization. If the applicant or its successors or assigns fails or refuses to comply with the provisions and conditions of the authorization, the authorization may be terminated by the Board of Trustees after written notice to the applicant or its successors or assigns. Upon receipt of such notice, the applicant or its successors or assigns will have thirty (30) days in which to correct the violations. Failure to correct the violations within this period will result in the automatic revocation of this authorization.
4. All costs incurred by the Board of Trustees in enforcing the terms and conditions of the authorization will be paid by the applicant. Any notice required by law will be made by certified mail at the address shown on page one of the authorization. The applicant will notify the Board of Trustees in writing of any change of address at least ten days before the change becomes effective.
5. This authorization does not allow any activity prohibited in a conservation easement or restrictive covenant that prohibits the activity.

GENERAL CONDITIONS FOR INDIVIDUAL PERMITS

The following general conditions are binding on all individual permits issued under chapter 62-330, F.A.C., except where the conditions are not applicable to the authorized activity, or where the conditions must be modified to accommodate project-specific conditions.

1. All activities shall be implemented following the plans, specifications and performance criteria approved by this permit. Any deviations must be authorized in a permit modification in accordance with Rule 62-330.315, F.A.C. Any deviations that are not so authorized may subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S.
2. A complete copy of this permit shall be kept at the work site of the permitted activity during the construction phase, and shall be available for review at the work site upon request by the Agency staff. The permittee shall require the contractor to review the complete permit prior to beginning construction.
3. Activities shall be conducted in a manner that does not cause or contribute to violations of state water quality standards. Performance-based erosion and sediment control best management practices shall be installed immediately prior to, and be maintained during and after construction as needed, to prevent adverse impacts to the water resources and adjacent lands. Such practices shall be in accordance with the *State of Florida Erosion and Sediment Control Designer and Reviewer Manual (Florida Department of Environmental Protection and Florida Department of Transportation June 2007)*, and the *Florida Stormwater Erosion and Sedimentation Control Inspector's Manual (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008)*, which are both incorporated by reference in subparagraph 62-330.050(9)(b)5., F.A.C., unless a project-specific erosion and sediment control plan is approved or other water quality control measures are required as part of the permit.
4. At least 48 hours prior to beginning the authorized activities, the permittee shall submit to the Agency a fully executed Form 62-330.350(1), "Construction Commencement Notice," [October 1, 2013], which is incorporated by reference in paragraph 62-330.350(1)(d), F.A.C., indicating the expected start and completion dates. A copy of this form may be obtained from the Agency, as described in subsection 62-330.010(5), F.A.C. If available, an Agency website that fulfills this notification requirement may be used in lieu of the form.
5. Unless the permit is transferred under Rule 62-330.340, F.A.C., or transferred to an operating entity under Rule 62-330.310, F.A.C., the permittee is liable to comply with the plans, terms and conditions of the permit for the life of the project or activity.
6. Within 30 days after completing construction of the entire project, or any independent portion of the project, the permittee shall provide the following to the Agency, as applicable:
 - a. For an individual, private single-family residential dwelling unit, duplex, triplex, or quadruplex "Construction Completion and Inspection Certification for Activities Associated With a Private Single-Family Dwelling Unit" [Form 62-330.310(3)]; or

- b. For all other activities “As-Built Certification and Request for Conversion to Operational Phase” [Form 62-330.310(1)].
 - c. If available, an Agency website that fulfills this certification requirement may be used in lieu of the form.
7. If the final operation and maintenance entity is a third party:
- a. Prior to sales of any lot or unit served by the activity and within one year of permit issuance, or within 30 days of as- built certification, whichever comes first, the permittee shall submit, as applicable, a copy of the operation and maintenance documents (see sections 12.3 thru 12.3.3 of Volume I) as filed with the Department of State, Division of Corporations and a copy of any easement, plat, or deed restriction needed to operate or maintain the project, as recorded with the Clerk of the Court in the County in which the activity is located.
 - b. Within 30 days of submittal of the as- built certification, the permittee shall submit “Request for Transfer of Environmental Resource Permit to the Perpetual Operation Entity” [Form 62-330.310(2)] to transfer the permit to the operation and maintenance entity, along with the documentation requested in the form. If available, an Agency website that fulfills this transfer requirement may be used in lieu of the form.
8. The permittee shall notify the Agency in writing of changes required by any other regulatory agency that require changes to the permitted activity, and any required modification of this permit must be obtained prior to implementing the changes.
9. This permit does not:
- a. Convey to the permittee any property rights or privileges, or any other rights or privileges other than those specified herein or in Chapter 62-330, F.A.C.;
 - b. Convey to the permittee or create in the permittee any interest in real property;
 - c. Relieve the permittee from the need to obtain and comply with any other required federal, state, and local authorization, law, rule, or ordinance; or
 - d. Authorize any entrance upon or work on property that is not owned, held in easement, or controlled by the permittee.
10. Prior to conducting any activities on state-owned submerged lands or other lands of the state, title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund, the permittee must receive all necessary approvals and authorizations under Chapters 253 and 258, F.S. Written authorization that requires formal execution by the Board of Trustees of the Internal Improvement Trust Fund shall not be considered received until it has been fully executed.
11. The permittee shall hold and save the Agency harmless from any and all damages, claims, or liabilities that may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any project authorized by the permit.
12. The permittee shall notify the Agency in writing:
- a. Immediately if any previously submitted information is discovered to be inaccurate; and
 - b. Within 30 days of any conveyance or division of ownership or control of the property or the system, other than conveyance via a long-term lease, and the new owner shall request transfer

of the permit in accordance with Rule 62-330.340, F.A.C. This does not apply to the sale of lots or units in residential or commercial subdivisions or condominiums where the stormwater management system has been completed and converted to the operation phase.

13. Upon reasonable notice to the permittee, Agency staff with proper identification shall have permission to enter, inspect, sample and test the project or activities to ensure conformity with the plans and specifications authorized in the permit.

14. If any prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, work involving subsurface disturbance in the immediate vicinity of such discoveries shall cease. The permittee or other designee shall contact the Florida Department of State, Division of Historical Resources, Compliance and Review Section, at (850) 245-6333 or (800) 847-7278, as well as the appropriate permitting agency office. Such subsurface work shall not resume without verbal or written authorization from the Division of Historical Resources. If unmarked human remains are encountered, all work shall stop immediately and notification shall be provided in accordance with Section 872.05, F.S.

15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this permit or a formal determination under Rule 62-330.201, F.A.C., provides otherwise.

16. The permittee shall provide routine maintenance of all components of the stormwater management system to remove trapped sediments and debris. Removed materials shall be disposed of in a landfill or other uplands in a manner that does not require a permit under Chapter 62-330, F.A.C., or cause violations of state water quality standards.

17. This permit is issued based on the applicant's submitted information that reasonably demonstrates that adverse water resource-related impacts will not be caused by the completed permit activity. If any adverse impacts result, the Agency will require the permittee to eliminate the cause, obtain any necessary permit modification, and take any necessary corrective actions to resolve the adverse impacts.

18. A Recorded Notice of Environmental Resource Permit may be recorded in the county public records in accordance with subsection 62-330.090(7), F.A.C. Such notice is not an encumbrance upon the property.

NOTICE OF RIGHTS

This action is final and effective on the date filed with the Clerk of the Department unless a petition for an administrative hearing is timely filed under Sections 120.569 and 120.57, F.S., before the deadline for filing a petition. On the filing of a timely and sufficient petition, this action will not be final and effective until further order of the Department. Because the

administrative hearing process is designed to formulate final agency action, the hearing process may result in a modification of the agency action or even denial of the application.

Petition for Administrative Hearing

A person whose substantial interests are affected by the Department's action may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. Pursuant to Rule 28-106.201, F.A.C., a petition for an administrative hearing must contain the following information:

- (a) The name and address of each agency affected and each agency's file or identification number, if known;
- (b) The name, address, any email address, any facsimile number, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests are or will be affected by the agency determination;
- (c) A statement of when and how the petitioner received notice of the agency decision;
- (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
- (e) A concise statement of the ultimate facts alleged, including the specific facts that the petitioner contends warrant reversal or modification of the agency's proposed action;
- (f) A statement of the specific rules or statutes that the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specific rules or statutes; and
- (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wishes the agency to take with respect to the agency's proposed action.

The petition must be filed (received by the Clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000. Also, a copy of the petition shall be mailed to the applicant at the address indicated above at the time of filing.

Time Period for Filing a Petition

In accordance with Rule 62-110.106(3), F.A.C., petitions for an administrative hearing by the applicant must be filed within 14 days of receipt of this written notice. Petitions filed by any persons other than the applicant, and other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of publication of the notice or within 14 days of receipt of the written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who has asked the Department for notice of agency action may file a petition within 14 days of receipt of such notice, regardless of the date of publication. The failure to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

Extension of Time

Under Rule 62-110.106(4), F.A.C., a person whose substantial interests are affected by the Department's action may also request an extension of time to file a petition for an administrative hearing. The Department may, for good cause shown, grant the request for an extension of time. Requests for extension of time must be filed with the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, before the applicable deadline for filing a petition for an administrative hearing. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

Mediation

Mediation is not available in this proceeding.

FLAWAC Review

The applicant, or any party within the meaning of Section 373.114(1)(a) or 373.4275, F.S., may also seek appellate review of this order before the Land and Water Adjudicatory Commission under Section 373.114(1) or 373.4275, F.S. Requests for review before the Land and Water Adjudicatory Commission must be filed with the Secretary of the Commission and served on the Department within 20 days from the date when this order is filed with the Clerk of the Department.

Judicial Review

Once this decision becomes final, any party to this action has the right to seek judicial review pursuant to Section 120.68, F.S., by filing a Notice of Appeal pursuant to Rules 9.110 and 9.190, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, M.S. 35, Tallahassee, Florida 32399-3000; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this action is filed with the Clerk of the Department.

Executed in Orlando, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION



Jon M. Iglehart
District Director
South District Office

Attachments:

3 project drawing(s)

Weed Barrier Management Plan

'Post Issuance' forms: <https://floridadep.gov/water/submerged-lands-environmental-resources-coordination/content/forms-environmental-resource>

CERTIFICATE OF SERVICE

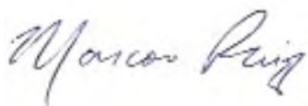
The undersigned duly designated deputy clerk hereby certifies that this document and all attachments, including all copies, were sent to the addressee and to the following listed persons:

U.S. Army Corps of Engineers, Miami Office, SEAppls@usace.army.mil

Matilde Gererosa Ramos Rev Trust 05/25/2007, mhpa@bellsouth.net

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section 120.52(7), F.S., with the designated Department clerk, receipt of which is hereby acknowledged.



Clerk

May 12, 2022

Date

PROJECT LOCATION

PARCEL ID 00036370-000000 (RAMOS)
PARCEL ID 00072082-001501 (CITY OF KEY WEST)
PARCEL ID 00036280-000000 (SUNSET CITY LLC)
BAY BTM SE OF PT LOT 3 SQR 6 TR 16;
LOT 4 & 6 SQR 5 (SOUTH BEACH LESS THE EATERY RESTAURANT LEASE);
KW FILER BOYLE SUB N-476
KW FILER BOYLE SUB N-476 PT LOTS-1-2-3-5-7
SQR-5 TR-16 ALSO FILLED BAY BTM G45-426/27
OR18-42(II DEED 20749)
SEC/TWP/RNG 06/68/25
KEY WEST
LATITUDE: 24.546760°N LONGITUDE: 81.795885°W

DIRECTIONS:

US HIGHWAY NO 1 SOUTH TO KEY WEST. LEFT ONTO ROOSEVELT BLVD. RIGHT ONTO BERTHA ST. LEFT ONTO ATLANTIC BLVD. RIGHT ONTO WHITE ST. LEFT ONTO SOUTH ST. LEFT ONTO DUVAL ST.
PROPERTY ADDRESS: 1400, 1405, 1406 DUVAL ST, 508 SOUTH STREET

ADJOINING OWNERS

KEY WEST REACH OWNER LLC
PO BOX 396
BOCA RATON FL 33429

HUGH J MORGAN
404 SOUTH ST
KEY WEST, FL 33040



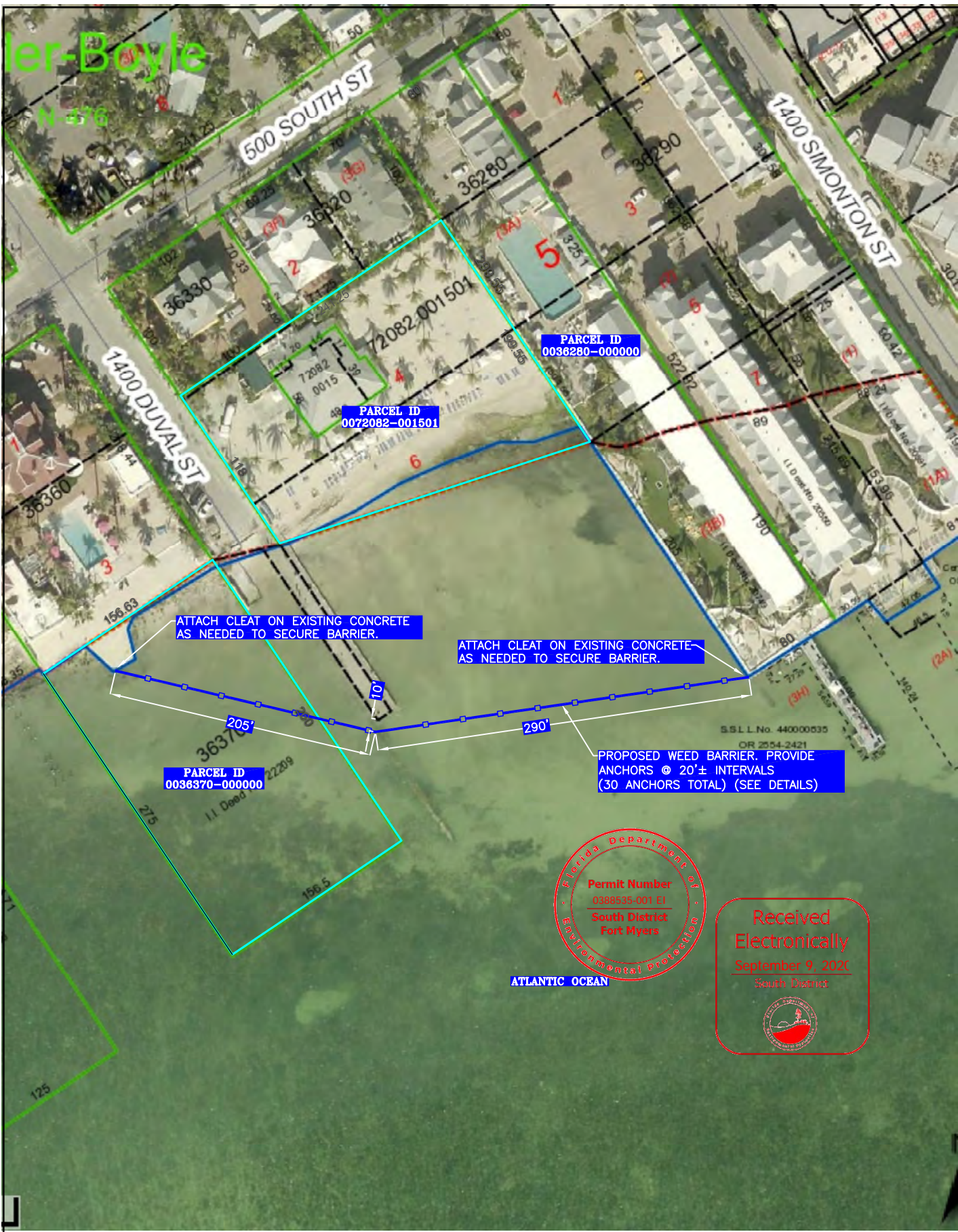
REVISIONS:	09/09/20
1	

LOCATION & VICINITY MAP
SCALE: AS SHOWN

WEED BARRIER FOR CITY OF KEY WEST, SUNSET CITY LLC
& MATILDE GENEROSA RAMOS REV TRUST 5/25/2007
KEY WEST, MONROE COUNTY, FL

GLEN BOE AND ASSOCIATES, INC. # 4061
5800 OVERSEAS HIGHWAY, SUITE 4, MARATHON, FL 33050
Telephone (305) 743-9121 Fax (305) 743-9197
Email: glenboe@bellsouth.net

DATE: 03/30/20



ler-Boyle
N 576

REVISIONS:	
1	09/09/20

CERTIFIED BY:
SEAN KIRWAN, P.E. #57506

WEED BARRIER FOR CITY OF KEY WEST, SUNSET CITY LLC
& MATILDE GENEROSA RAMOS REV TRUST 5/25/2007
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DATE: 03/30/20

SITE PLAN
SCALE: 1" = 100'



PRE-FABRICATED WEED BARRIER FOR HIGH FLOW/ROUGH WATER

1/2" STAINLESS STEEL SHACKLE

A JIM BUOY MODEL 1100 (OR PREAPPROVED EQUIVALENT) SURFACE FLOAT BUOY (9 1/4" LONG X 7" DIAMETER) SHALL BE INSTALLED ON THE DOWN-LINE FOR THE PURPOSE OF KEEPING THE DOWN-LINE FROM TANGLING AROUND THE ANCHOR HEAD OR DRAGGING ON THE SEAFLOOR. THE SUB-SURFACE BUOY WILL BE SECURED ON THE DOWN-LINE WITH A 3/8" STAINLESS STEEL BOLT, TWO (2) FLAT WASHERS (ONE EACH SIDE), AND NYLOCK NUT ABOVE THE SUB-SURFACE BUOY.

PVC COATED BELTING W/ POLYURETHANE FOAM FILLED FLOATATION SHELLS (12"± FREEBOARD)

+1.3' MHW

0.0' MLW

SEMI-RIGID PVC-COATED POLYESTERNE CURTAIN (NO NETTING)(12"± SUBMERGED) W/ CHAIN WEIGHT AT BOTTOM

VARIES -1.3' TO -3'

TYPICAL SECTION

SCALE: 3/16" = 1'-0"

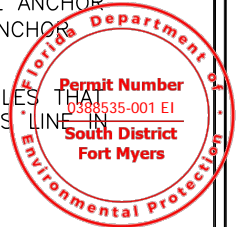
DISTANCE BETWEEN THE BAYBOTTOM & BOTTOM OF WEED BARRIER SHALL BE 6" ON THE SHALLOW SHORE SIDES AT MEAN LOW TIDE

PROVIDE A 5/8" GALVANIZED STEEL SHACKLE SHALL SECURE THE DOWN-LINE TO THE GALVANIZED ANCHOR HEAD. THE DOWN-LINE WILL BE LOOPED AT THE ANCHOR END, CONNECTED TO ITSELF WITH A 3/8" STAINLESS STEEL BOLT, TWO (2) FLAT WASHERS (ONE EACH SIDE), AND A NYLOCK NUT. THE LOOPED END OF THE DOWN-LINE WILL BE COVERED WITH 3 1/2" X 12" LONG CANVAS FIRE HOSE, AND HELD IN PLACE WITH AT LEAST TWO HEAVY DUTY CABLE TIES.

1/4" STAINLESS STEEL CHAIN ENCASED IN 1" GOODYEAR (OR PRE-APPROVED EQUIVALENT) BLUE PLOVIC HOSE. THE LENGTH OF THE COMPLETE, RIGGED DOWN-LINE SHALL BE APPROPRIATE FOR THE WATER DEPTH.

PROPOSED ANCHOR @ 20'± INTERVALS (SEE ANCHOR DESCRIPTIONS FOR INSTALLATION) TOP OF ANCHOR SHALL BE 6" MIN. ABOVE SEAFLOOR.

NOTE: IN-WATER ROPE, CABLE OR CHAIN SHALL BE INDUSTRIAL GRADE METAL CHAINS OR HEAVY CABLES THAT DO NOT READILY LOOP AND TANGLE AND SHALL BE INSTALLED SO LINE IS TAUT AND WITHOUT EXCESS LINE IN THE WATER. LINES SHALL BE ENCLOSED IN A PLASTIC OR RUBBER SLEEVE/TUBE TO ADD RIGIDITY.



CONSTRUCTION NOTES:

1. CONTRACTOR SHALL OBTAIN ALL APPLICABLE PERMITS PRIOR TO COMMENCING WORK. THE REQUIREMENTS OF THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, THE ARMY CORPS OF ENGINEERS & LOCAL REGULATIONS SHALL GOVERN ALL WORK.
2. WORK SHOWN ON DRAWINGS IS DESIGNED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE 2017. FOLLOW ALL APPLICABLE PROVISIONS FOR ALL PHASES OF CONSTRUCTION. THE PROPOSED STRUCTURE(S) IS DESIGNED FOR A MINIMUM LIVE LOAD OF 40 PSF/DEAD LOAD 10 PSF, 180 MPH (3 SECOND GUST), EXPOSURE D, ASCE 7-10.
3. CONTRACTOR SHALL ADHERE TO THE STANDARD MANATEE CONSTRUCTION CONDITIONS (LATEST EDITION). IF NEEDED, THE CONTRACTOR CAN CONTACT THE ARMY CORPS OF ENGINEERS OR THIS OFFICE TO OBTAIN A COPY OF THE STANDARD MANATEE CONSTRUCTION CONDITIONS.
4. BEST MANAGEMENT PRACTICES, INCLUDING THE USE OF TURBIDITY SCREENS, ARE REQUIRED TO ISOLATE THE CONSTRUCTION AREA FROM THE ADJACENT WATERS. CONTRACTOR SHALL INSTALL TURBIDITY SCREENS AROUND THE IMMEDIATE PROJECT AREA PRIOR TO CONSTRUCTION. THE TURBIDITY SCREENS REMAIN IN PLACE UNTIL WATER QUALITY CONDITIONS RETURN TO PRECONSTRUCTION CONDITIONS. WATER QUALITY MONITORING SHALL ADHERE TO STATE REGULATIONS.
5. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS & WATER DEPTHS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE COMMENCING WORK.
6. THE STRUCTURAL INTEGRITY OF THE COMPLETED STRUCTURE DEPENDS ON INTERACTION OF VARIOUS CONNECTED COMPONENTS. PROVIDE ADEQUATE BRACING, SHORING, AND OTHER TEMPORARY SUPPORTS AS REQUIRED TO SAFELY COMPLETE THE WORK.
7. EXERCISE EXTREME CARE AND CAUTION WHEN EXCAVATING AND FILLING ADJACENT TO EXISTING STRUCTURES. UNDER NO CIRCUMSTANCES SHALL THE STRUCTURAL INTEGRITY OF THE EXISTING STRUCTURES BE IMPAIRED IN ANY WAY BY CONSTRUCTION OPERATIONS AND PROCEDURES. DO NOT EXCAVATE OR DISTURB SOIL ADJACENT TO OR BENEATH EXISTING FOOTINGS.

ANCHOR DETAIL BASED ON SUBSTRATE:

FOR SUBSTRATE OF UP TO 5' OF SAND/MUD OVERBURDEN ABOVE A HARD ROCK SUBSTRATE THE ANCHOR SHALL BE A ROCK PENETRATING HELICAL EMBEDMENT ANCHOR. THE ANCHOR SHALL BE A MINIMUM OF 6' LONG, WITH A MINIMUM HELICAL DISK SIZE OF 6", WITH A MINIMUM SHAFT DIAMETER OF 1 1/4". THE ANCHOR SHALL BE GALVANIZED STEEL. THE ANCHOR SHALL BE SECURELY EMBEDDED A MINIMUM OF 5 1/2' INTO THE SEAFLOOR WITH THE HEAD EXPOSED APPROXIMATELY 6" TO ALLOW FOR ATTACHMENT OF THE DOWNLINE. THE ANCHOR SHALL BE INSTALLED IN A MANNER WHICH PROVIDES FOR REMOVAL, VIA HEAVY EQUIPMENT, IF AND WHEN NECESSARY.

FOR SUBSTRATE GREATER THAN 5' OF SAND/MUD THE ANCHOR SHALL BE A SOFT BOTTOM HELICAL EMBEDMENT ANCHOR. THE ANCHOR SHALL BE A MINIMUM OF 6' LONG, WITH A MINIMUM HELICAL DISK SIZE OF 8", WITH A MINIMUM SHAFT DIAMETER OF 1 1/4". THE ANCHOR SHALL BE GALVANIZED STEEL. THE ANCHOR SHALL BE SECURELY EMBEDDED A MINIMUM OF 5 1/2' INTO THE SEAFLOOR WITH THE HEAD EXPOSED APPROXIMATELY 6" TO ALLOW FOR ATTACHMENT OF THE DOWNLINE. THE ANCHOR SHALL BE INSTALLED IN A MANNER WHICH PROVIDES FOR REMOVAL, VIA HEAVY EQUIPMENT, IF AND WHEN NECESSARY.

FOR EXPOSED ROCK SUBSTRATE THE ANCHOR SHALL BE THE HALAS PIN SYSTEM (OR PRE-APPROVED EQUIVALENT) WITH A MINIMUM EMBEDMENT DEPTH OF 18", MINIMUM PIN SIZE OF 5/8" DIAMETER BY 18" LENGTH, 316 STAINLESS STEEL; INSTALLED IN A 2" DIAMETER BY 18" DEEP DRILLED HOLE, AND GROUTED WITH CONCRETE. CAST IN PLACE CONCRETE SHALL BE TYPE II CONCRETE WITH A COMPRESSIVE STRENGTH OF 5,000 PSI AT 28 DAYS. MAXIMUM WATER-CEMENTIOUS MATERIALS RATIO BY WEIGHT RATIO SHALL BE 0.40. SLUMP SHALL NOT EXCEED 5" (1"±).

Received Electronically
September 9, 2021
South District

09/09/20

WEED BARRIER FOR CITY OF KEY WEST, SUNSET CITY LLC & MATILDE GENEROSA RAMOS REV TRUST 5/25/2007 KEY WEST, MONROE COUNTY, FL

GLEN BOE AND ASSOCIATES, INC. # 4061
5800 OVERSEAS HIGHWAY, SUITE 4, MARATHON, FL 33050
Telephone (305) 743-9121 Fax (305) 743-9197
Email: glenboe@bellsouth.net

DATE: 03/30/20

CERTIFIED BY: SEAN KIRWAN, P.E. #57506



Weed Barrier Management Plan

The seagrass barrier will be visually inspected by the applicant to assure that the barrier is intact and operating properly on a daily basis. An in-water inspection, to verify the integrity of the connections and barrier will be performed on a quarterly basis. An interim in-water inspection will be performed if the daily visual inspection results in observations of maintenance being required to the barrier. Any maintenance or repairs that are required will be performed in a timely manner.

All entrapments or entanglements of manatees or marine turtles shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1-888-404-3922 (or #FWC).

**BENTHIC RESOURCE ASSESSMENT
WEED BARRIER AT SOUTH END OF DUVAL STREET
CITY OF KEY WEST
KEY WEST, MONROE COUNTY**



Prepared for:

Glen Boe and Associates, inc.
5800 Overseas Highway
Marathon, Florida 33050

Prepared by:

Terramar Environmental Services, Inc.
1241 Crane Boulevard
Sugarloaf Key, Florida 33042
terramar.env@gmail.com

June 15, 2020

The City of Key West is proposing to install a weed barrier at the southern end of Duval Street, Key West, Monroe County. The weed barrier is designed to prevent the significant accumulations of waterborne marine debris, primarily the floating marine algae Sargassum, that accumulates at this location as a result of irregular shoreline configuration. The weed barrier is a floating system anchored to the seafloor, extending 4950' linear feet across the open water area at the terminus of Duval Street. Details of the proposed weed barrier are included in project plans for the project prepared by Glen Boe and Associates that were submitted as part of FDEP and USACE permit applications for the project (Attachment 1).

In order to evaluate the impacts of the proposed project to the marine environment, a current assessment of the biological resources that could potentially be impacted by the project is needed. The objective of this benthic resource assessment is to document living marine resources present in the vicinity of the proposed weed barrier, including the location of attachment and the area that will be confined by the barrier system. Included in this assessment is a specific-purpose survey for stony corals required to fulfill Florida Keys National Marine Sanctuary (FKNMS) regulatory requirements.

METHODS

A primary and secondary survey area was established using the project plans. The survey areas included the following areas:

- The alignment of the weed barrier system including a buffer area extending 5' on either side of the centerline of weed barrier attachment;
- The seafloor within the area of the seafloor that will be confined by the weed barrier system;
- The surfaces of the seawalls, piers and shoreline riprap that will be confined by the weed barrier system;

An in-water assessment of the survey area described above was conducted on June 11, 2020. The timing of the survey was scheduled at high tide to allow for improved water clarity at the site, which was approximately 3-5' visibility at the time of survey.

Benthic habitat characterization of the seafloor within survey area consisted of performing an assessment of habitat types throughout survey areas following the alignment of the weed barrier. This was facilitated by the fact that the barrier will be attached at fixed points, providing accurate reference locations for survey area location. A Keson fiberglass measuring tape was placed on the seafloor along the barrier alignment to facilitate project location. Observed benthic resources were categorized into generalized habitat classifications adapted for nearshore conditions typically encountered in the Florida Keys. Habitats present were assessed using general descriptors, and described qualitatively based on the following criteria:

Habitat Type	Cover Description	Cover Class
Seagrass	Sparse	5-25%
Seagrass	Moderate	25-75%
Seagrass	Dense	75-100%
Hardbottom	Sparse	5-25%
Hardbottom	Moderate	25-75%
Hardbottom	Dense	75-100%
Sand and Rubble, Scour	NA	NA
Mud and organics	NA	NA

Reference photographs representing dominant benthic species, examples of seagrass and macro-algal communities encountered, and other applicable reference photographs were also taken (Attachment 2).

Each stony coral encountered was identified to species, measured for size along three axes (length, width, height), and their location recorded. Following the guidelines established in the “Protocol for Benthic Surveys of Coral Resources in FKNMS”, coral surface area for colonies <10cm was determined simply as length x width. However, surface area calculations for corals ≥10 cm

diameter take into account a third dimension (e.g. height). Because the surface area of a dome (or ½ of the surface area of an oblate, prolate, or scalene ellipsoid) cannot be easily expressed by a simple elementary function, the formula for an ellipsoid developed by the Danish mathematician Knud Thomsen in 2004 was utilized, and then divided in half to estimate the surface area of a dome.

$$S \approx 4\pi \left(\frac{a^p b^p + a^p c^p + b^p c^p}{3} \right)^{1/p}, \text{ where } p=1.6075 \text{ (relative error of at most 1.178\%).}$$

The ellipsoid formula is programmed into a spreadsheet as:

$$=IF(D2<10,(D2*E2),(2*(3.141596)*((((((D2/2)^1.6075)*((E2/2)^1.6075))+(((D2/2)^1.6075)*(F2^1.6075))+(((E2/2)^1.6075)*(F2^1.6075)))/3)^(1/1.6075))))$$

where D, E and F are data columns: D = colony length, E = colony width and F = colony height.

RESULTS

BENTHIC HABITATS

The benthic habitats identified along the weed barrier alignment, effectively a 10' wide swath along the alignment was uniformly loose sand and occasional small, scattered small rubble lacking a defined benthic community (e.g. seagrass, macroalgae, sponges). See attached benthic habitat map.

The seawall along the eastern project boundary (Southernmost Hotel), the face of the public pier at the Duval Street terminus and the riprap / concrete shoreline at the Southernmost House were all assessed for attached corals. These hard structures did not support any corals; only limited macroalgae including Batophora, Acetabularia and filamentous green algae.

PROJECT IMPACTS

The proposed weed barrier will have negligible impacts to the marine environment as a result of installation. The seafloor along the proposed weed barrier is uniformly sandy bottom with water depths recorded at 48"-54" during the survey. The installation of 5/8" anchors into the seafloor will have no direct impact to living marine resources. There were no hard or soft corals observed within the survey area, therefore no coral impacts will result from this project.

The area enclosed by the proposed weed barrier system is a sand area lacking defined benthic communities. Considering the proposed weed barrier will allow for water exchange via the mesh fabric, water quality should not be impacted at this location.

Beyond the project limits extending waterward are intact, natural macroalgae / seagrass habitats. The installation of the weed barrier would not impact these habitats since the design assumes that floating weeds will be carried to the southwest along the barrier and dispersed at other locations along the Key West shoreline or carried out to sea by the currents. Significant accumulations of seaweed against the seaweed barrier that could impact marine habitats are not anticipated as a result of the project design.

Currently, significant accumulations of marine seaweed accumulate at this location, and decomposition of organic material was observable. The Southernmost Hotel beach area has ongoing weed removal however the shoreline at the Southernmost House is a hardened riprap / concrete shoreline that does not allow for efficient cleaning and weed removal. By preventing the accumulations of seaweed and marine organics that presently characterize this area, water quality could be improved at this location as a result of the proposed weed barrier system.



SITE PLAN
SCALE: 1" = 100'



REVISIONS

CERTIFIED PLS
SCAM @RIVAN, P.L. #17588

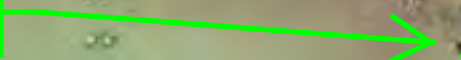
WEED BARRIER FOR CITY OF KEY WEST
& MATILDE GENEROSA RAMOS REV TRUST 5/25/2007
KEY WEST, MONROE COUNTY, FL

GLEN BOE AND ASSOCIATES, INC. # 4061
6450 OVIDASIAAS HIGHWAY, SUITE 4, WEAVERTON, FL 32030
Telephone (352) 756-0231 Fax (352) 756-0237
Email: glenboe@glboe.com

DATE 03/30/20
2
SHEET 2 OF 3

CITY OF KEY WEST
LOWER DUVAL STREET WEED BARRIER
BENTHIC HABITAT MAP

WEED BARRIER
ALIGNMENT



SAND SEAFLOOR

SEAWEED
ACCUMULATION /
WASH ZONE

SAND SEAFLOOR

SAND SEAFLOOR

SAND SEAFLOOR

MACROALGAE / SEAGRASS HABITAT
OUTSIDE OF PROJECT LIMITS

WEED BARRIER
ALIGNMENT





Photo 1. Terminus of Duval Street with significant seaweed accumulations. Note these photos were taken on June 11, 2020 during typical summer weather.



Photo 2. Terminus of Duval Street with significant seaweed accumulations. This is the east side of the jetty on the Southernmost Hotel property.



Photo 3. Terminus of Duval Street with significant seaweed accumulations. This is the west side of the jetty on the Southernmost House property.



Photo 4. Terminus of Duval Street with significant seaweed accumulations. This is the west side of the jetty on the Southernmost House property.

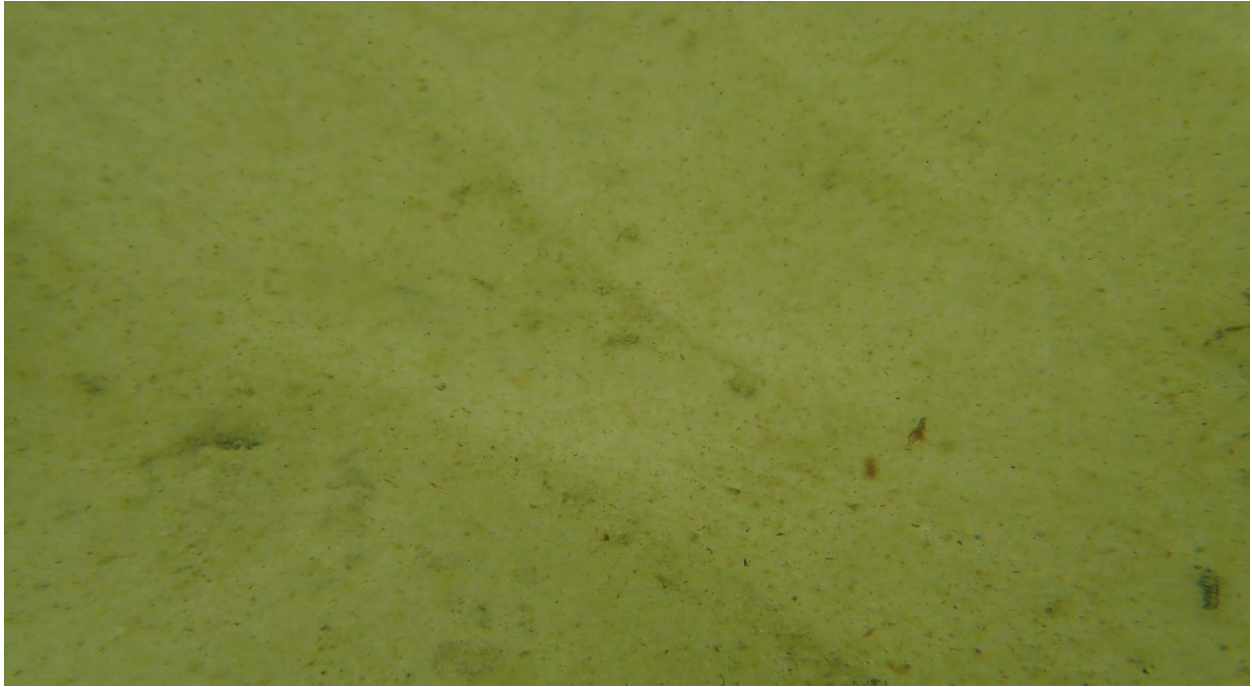


Photo 5. Typical seafloor conditions throughout the survey area, consisting of bare sand.



Photo 6 Typical seafloor conditions throughout the survey area, consisting of bare sand.



Photo 7. Jetty at the terminus of Duval Street with concrete seawall face. All hard surfaces were inspected for corals.



Photo 8. Jetty at the terminus of Duval Street with concrete seawall face showing attached filamentous algae.

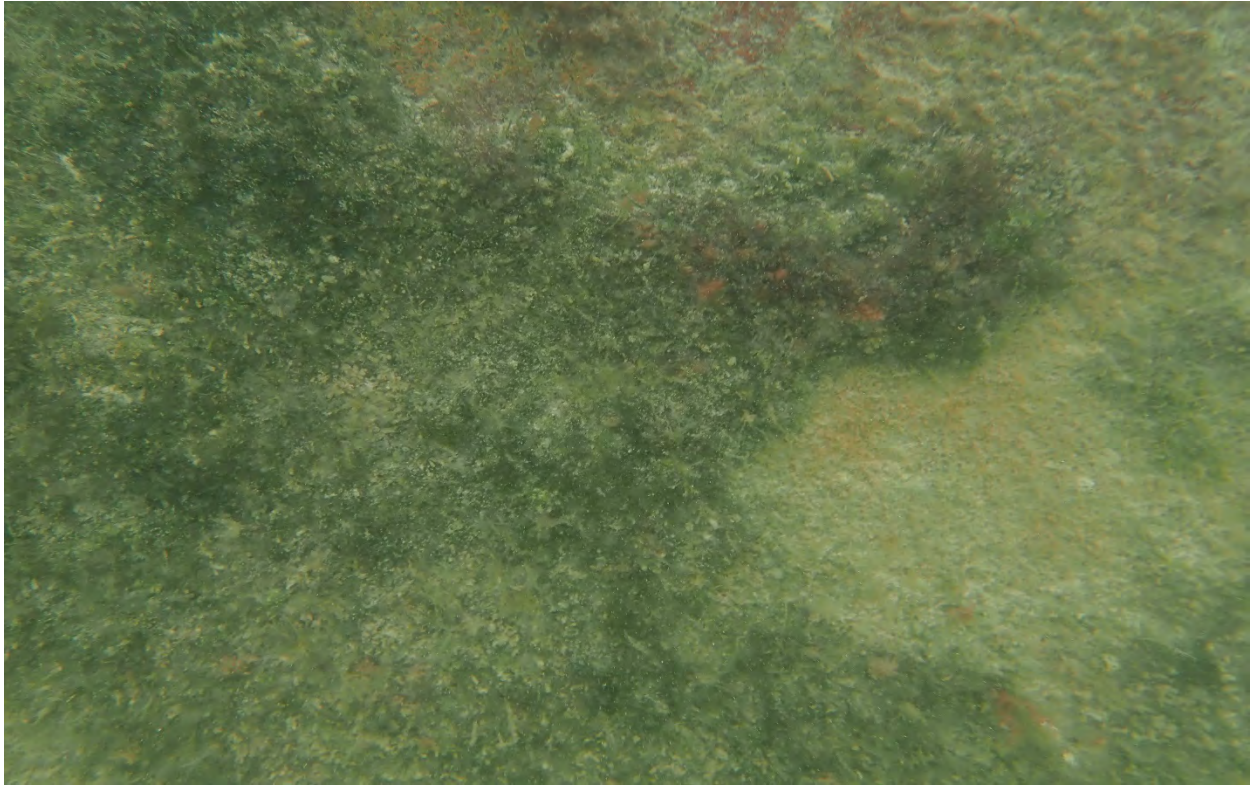


Photo 9. Jetty at the terminus of Duval Street with concrete seawall face showing attached filamentous algae.

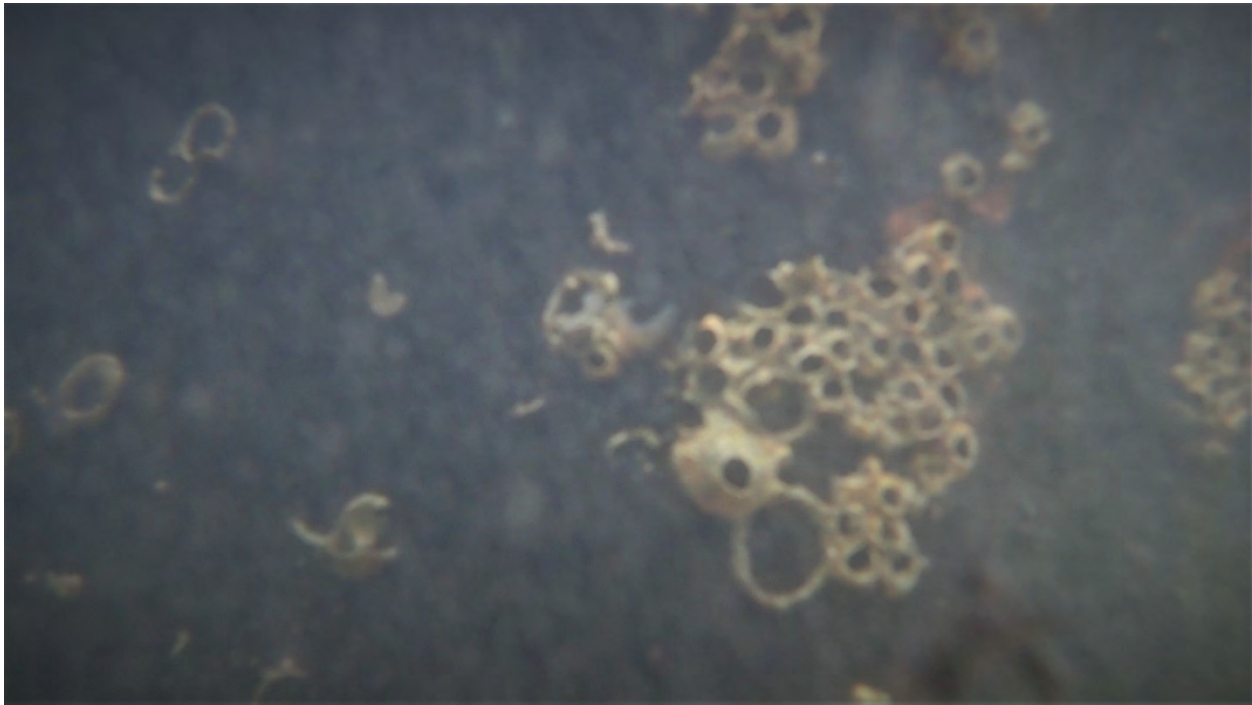


Photo 10. Steel sheetpile face along the Southernmost Hotel showing attached filamentous algae and barnacles.