BAL HARBOUR JETTY

BASIS OF DESIGN REPORT

MIKYOUNG KIM DESIGN

CADENCE | BOTEK THURLOW ENGINEERING | MU ENGINEERS | THE CHAPPELL GROUP | TIERRA SF | TWR ENGINEERS | SLS | EXACTA COMMERCIAL SURVEYORS | MIAMI LIGHTING DESIGN | TWIN STAR TECHNOLOGY

BAL HARBOUR

- VILLAGE -

MAYOR

Gabriel Groisman

ASSISTANT MAYOR

Seth E. Salver

COUNCIL MEMBERS

David Albaum

Jeffrey P. Freimark

Buzzy Sklar

VILLAGE MANAGER

Jorge M. Gonzalez

CAPITAL PROGRAM MANAGER

Matilde E. Reyes, RA

DESIGN TEAM

- **MIKYOUNG KIM DESIGN**
  prime consultant & lead landscape architect
- **CADENCE**
  local landscape architecture & graphic design
- **THE CHAPPELL GROUP**
  environmental engineering
- **MUENGINEERS**
  structural engineering
- **BOTEK THURLOW**
  civing engineering & LEED consulting
- **EXACTA COMMERCIAL SURVEYORS**
  land surveyor
- **TIERRA SF**
  geothechnical service, material testing & CEI
- **TWR ENGINEERS**
  MEP engineering
- **MIAMI LIGHTING DESIGN**
  lighting
- **TWIN STAR TECHNOLOGY**
  low-voltage
- **SLS**
  fire protection engineering & life safety

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I. EXECUTIVE SUMMARY

The Jetty and Cutwalk located at the northern tip of the Village of Bal Harbour is a well-used but unrealized amenity for the residents and visitors of Bal Harbour. The earliest inception of the southern jetty was constructed in 1927 by the Army Corps of Engineers as a utilitarian breakwater and mitigation tool to protect the Haulover Inlet. Subsequent reconstruction projects changed the alignment and shape to the current configuration as a steel sheet pile jetty reinforced by granite rubble. The last major repair and revetment of the jetty was in 1986. It's current day use as a popular destination and provides a unique vantage point to walk to the jetty terminus and view the ocean and the beachline of Bal Harbour.

The project scope is to develop a public space design that re-envisions the aesthetic and programmatic uses of the Jetty, Cutwalk and beach parking as part of a holistic vision for the public realm spaces in Bal Harbour. This project examines the public uses of the spaces, functional and technical requirements for improvements, public and resident comments and opinions, and permitting and construction feasibility of developing a cohesive waterfront destination.

Project objectives:

- Engagement with Water – develop and reinforce the visitor's connection with the water both visually and physically.
- Creating Places for Visitors and Residents – allow residents that visit the site daily and visitors that may only visit once to have equally powerful experiences.
- Establishing an Identity for Public Space – create a place that is unique and celebrates the natural and raw beauty of the site.
- Balancing Functional Performance with Placemaking – develop strategies and design solutions that fit the challenges of the site.

Community Engagement and Comments:

The design team solicited the community and stakeholders for comments through a series of planned outreach opportunities. Formal community meetings involved three meetings; 1) community presentation where we introduced the project and initial concept ideas and surveyed the attendees for there preferences, 2) community workshop where we developed two conceptual options and solicited feedback and 3) a community design presentation and open house where the community saw the evolved design and was able to interact with design members.

The team's engagement efforts also included meetings with key stakeholders including various city departments, the Village Council, representatives from the Bal Harbour Shops, the Ritz-Carlton, One Bal Harbour, as well as key members of the community. Working sessions allowed stakeholders to bring up their goals and visions, concerns and opinions about the project proposals.

The general consensus of issues and concerns from the community and stakeholder events were addressed in the proposed design iteration.

The main issues that were collected from the community were:

- Refined and elegant designs represent the community
- Improvements in safety and universal accessibility
- Design should feature the natural elements and engage the beauty of the site
- Providing shade is essential for public spaces
- Passive and quiet areas are important program elements

These comments allowed the design team to refine the proposal and achieve a general consensus in the final design iteration. This work will continue with stakeholders throughout the design process as the plans are developed into construction documents.

Schematic Design

The key elements of the developed design:

- Along the cutwalk, a series of platforms that extend past the seawall to bring visitors closer to the water and allowing visitors to view marine activities in the Haulover Cut as well as sealife in the water. These platforms connect people physically and emotionally to the ocean through a complete sensory experience.
- The placement and design of the platforms and cutwalk extensions minimizes the impacts on existing coral and wildlife while the use of artificial reef technology will help increase marine habitat and provide resiliency along the seawall.
- A series of site elements are incorporated into the design to allow for visitor comfort and safety. Railings and walls are designed along the entire jetty and cutwalk permit visitors to safely navigate the public spaces along the water's edge. A shade canopy and shade trees along with new seating elements and places to gather along the cutwalk and jetty allow for passive recreation and respite.
- To allow for increased resiliency and safety, the current jetty walkway will be capped with precast concrete slabs to raise the jetty walkway elevation culminating with a lookout promontory. Along the inside of the jetty, large steps will bring people down to the water. To achieve compliance with navigational requirements, a light beacon placed at the terminus of the jetty is designed as an iconic element that can be seen from land and on the water.
- At the beach parking under the Herman Fultz Bridge, part of the parking area is proposed to become a garden space that acts as a gateway to the cutwalk. Pedestrian and cyclist amenities such as seating elements and bike racks are integrated into the design.

Project considerations and challenges

Seawall Condition—There has been minimal information uncovered regarding the construction and detailing of the original seawall along the cutwalk. Until the ability to do destructive investigation on the wall and tieback system, the team can only speculate on the condition of the wall through surficial means. The reconstruction of the wall was not considered as part of the scope of this project.

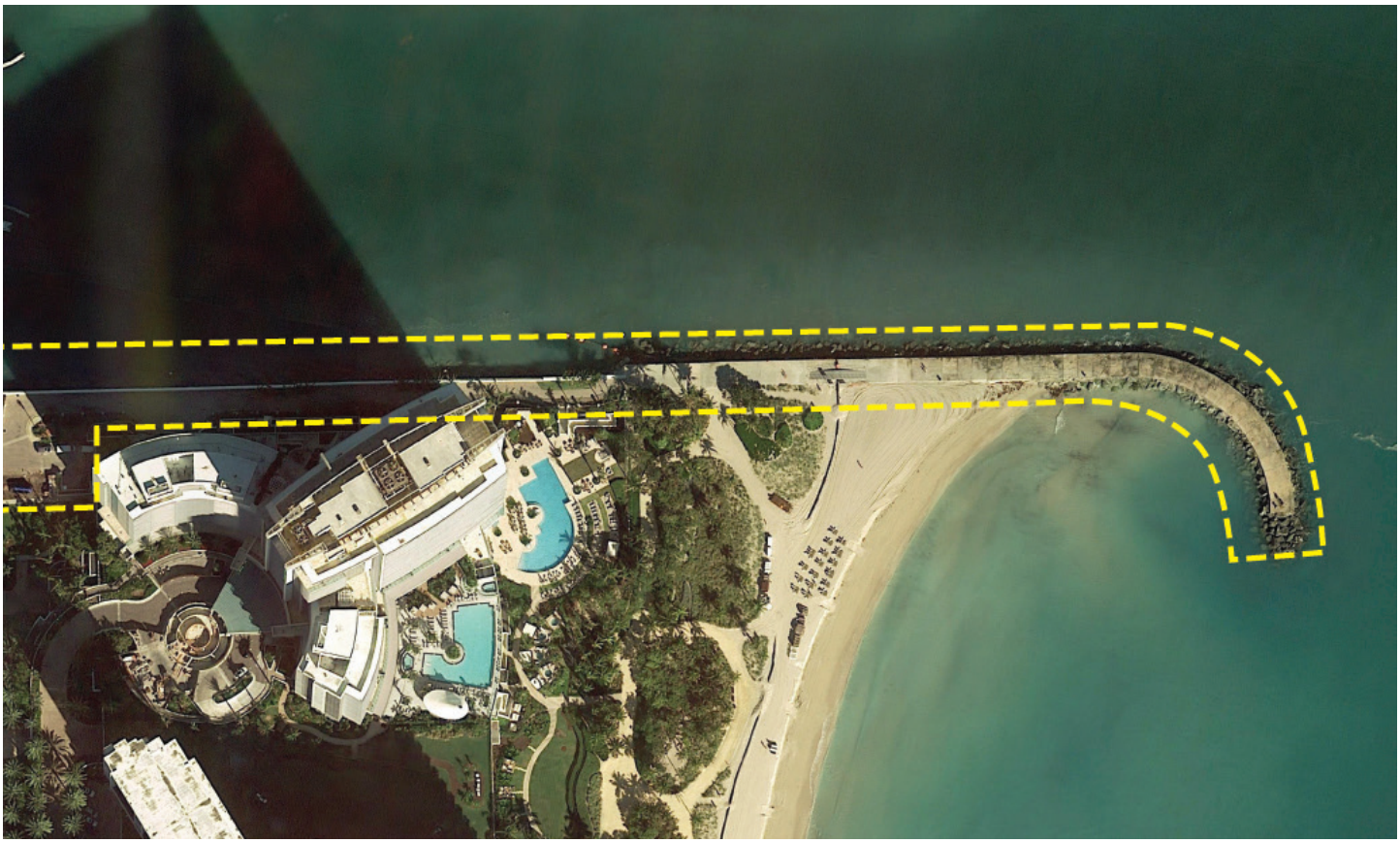
Permitting – Initial steps in permitting has been taken with the Army Corps of Engineers. It is difficult to predict how the permitting will affect the end design due to the unique conditions of the project. The team anticipates that this project will require special review considerations by jurisdictional departments.

Cost – No cost estimates were provided in the design team scope. It is anticipated that the project will go through a series of costing exercises that may result in modification to the overall project. However, the design of the project has the ability to scale and phase the project as needed to fit the future established budget up to 7.5 million dollars.

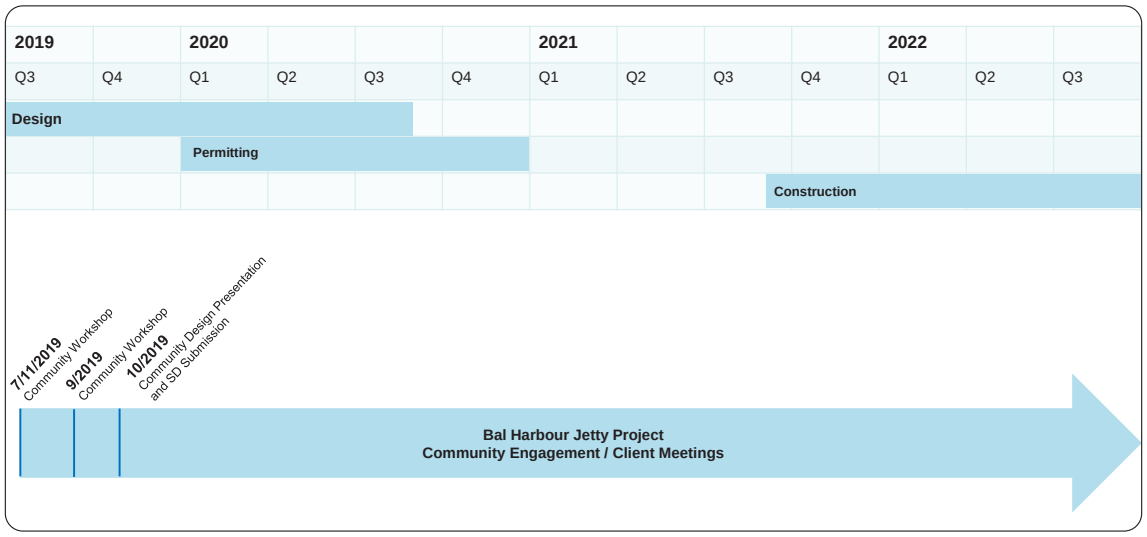
Easement rights – As part of the development of the project the Village of Bal Harbour must evaluate the need to enter into agreements with adjacent property owners of the Herman B. Fultz parking area, the cutwalk and the jetty to pursue work along the easement and right-of-way. The legal review of the project may impact the scope of work that is able to be carried out.

This document provides a developable design that incorporates the project objectives, community and stakeholder involvement and consultant's expertise to bring a much-needed update to the Jetty and Cutwalk. We believe that the schematic design presented will result in a safe, resilient, program-enriched development that will resonate with the residents and visitors of Bal Harbour.

II. PROJECT OVERVIEW



PROJECT AREA

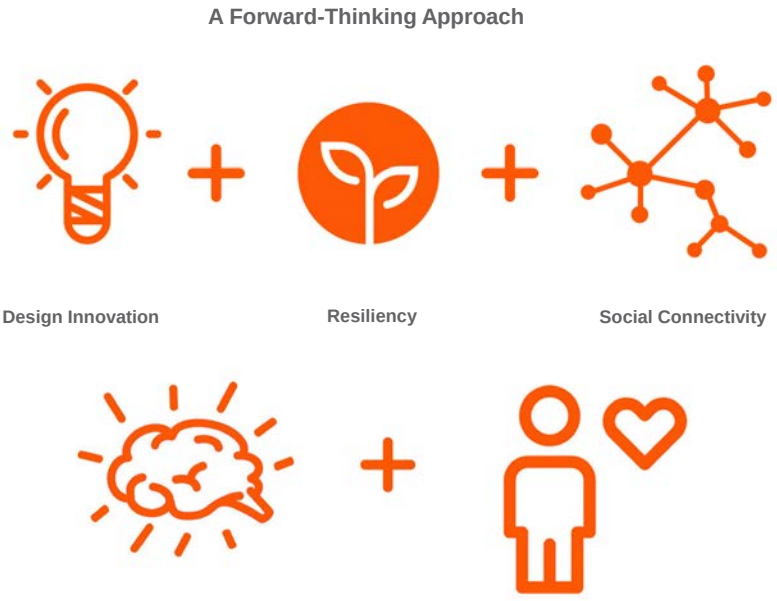


ORGANIZATION CHART / SCHEDULE

A. PROJECT SCOPE

The Jetty and Cutwalk located at the northern tip of the Village of Bal Harbour is a well-used but unrealized amenity for the residents and visitors of Bal Harbour. The earliest inception of the southern jetty was constructed in 1927 by the Army Corps of Engineers as a utilitarian breakwater and mitigation tool to protect the Haulover Inlet. Subsequent reconstruction projects changed the alignment and shape to the current configuration as a steel sheet pile jetty reinforced by granite rubble. The last major repair and revetment of the jetty was in 1986. It's current day use as a popular destination and provides a unique vantage point to walk to the jetty terminus and view the ocean and the beachline of Bal Harbour.

In the Summer of 2019, Bal Harbour Village secured the Design Services of Mikyoung Kim Design in developing a plan to enhance the current jetty and cutwalk and provide a new vision for how to utilize this public resource. The project scope is focused on the development of the public realm to address the aesthetic and programmatic uses of the Jetty, Cutwalk and Beach Parking as part of a holistic vision for the public space network in Bal Harbour. During the Schematic Design phase, the design team examined the programing and design of the spaces, functional and technical requirements for improvements, public and resident comments and opinions, and permitting and construction feasibility of developing a cohesive waterfront destination.



B. PROJECT OBJECTIVES

Project Objectives

From the initial meeting and discussions with the client, the design team developed identified the project objectives. These objective articulate important issues that will make the Jetty Project a success.

- Engagement with Water – develop and reinforce the visitor's connection with the water both visually and physically.
- Creating Places for Visitors and Residents – allow residents that visit the site daily and visitors that may only visit once to have equally powerful experiences.
- Establishing an Identity for Public Space – create a place that is unique and celebrates the natural and raw beauty of the site.
- Balancing Functional Performance with Placemaking – develop strategies and design solutions that fit the challenges of the site.

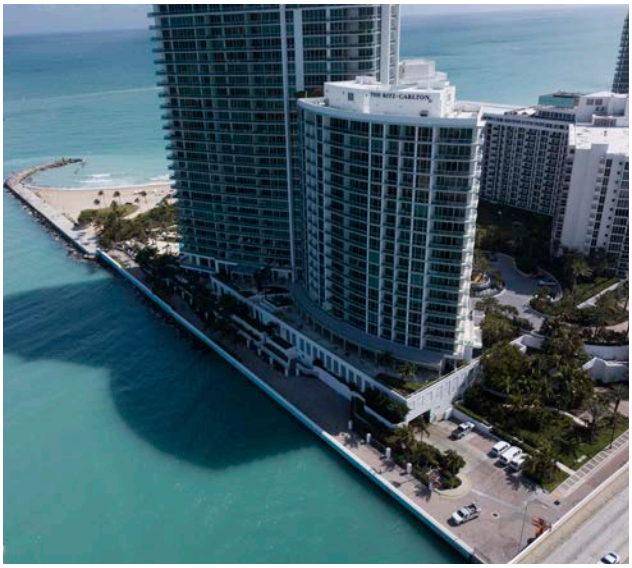
Following the development of these initial objective, additional aspirations for the project were added as the design evolved and the site analysis revealed important goals.

- Improving Site Sustainability and Resiliency – understanding the shifts in sea level and frequency of storm surges and nuisance tides that top the existing jetty, the project will be designed in a way that makes the jetty more resilient. Additionally, the design can improve the conditions for ecological biodiversity in the area.

C. EXISTING CONDITIONS

1. CONTEXT

JETTY IN THE 80S



PROJECT AREA

LAND USE

OPEN SPACE / BIKE LANE

RESIDENCE DENSITY

2. SITE CHARACTERISTICS

The site jetty is a steel sheetpile jetty with granite riprap bracing. The granite has been grouted together and capped with a concrete walkway. A navigational light beacon sits at the end of the jetty as well as a trash receptacle. The elevation of the top of the jetty is at approx. 6.00 (NAVD 88) and rises as it meets the beach and the seawall.

The seawall and cutwalk runs parallel to the Baker's Haulover navigational channel. The seawall is a concrete wall with a cap and assumed encased sheetpile. The height of the seawall varies. The cutwalk is made up of precast interlocking concrete pavers.

JETTY

LIGHT BEACON

JETTY

BOULDERS

SEAWALL WITH RIPRAP

CUTWALK

FISH HABITAT

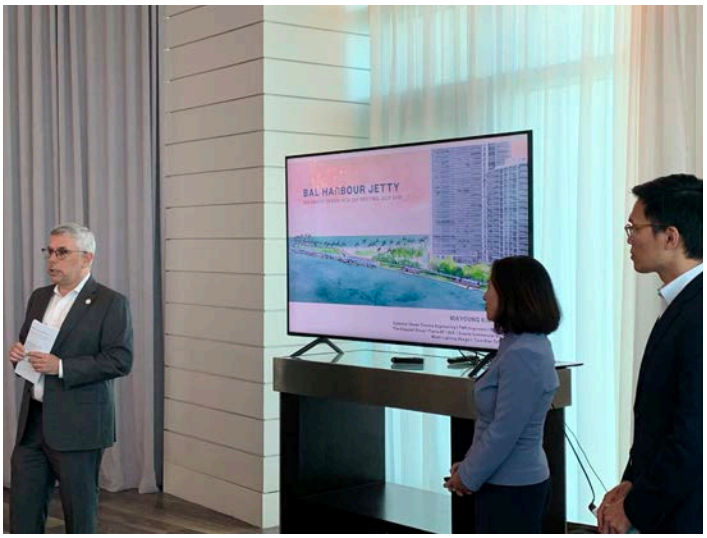
RIPRAP ALONG SEAWALL

UNDER BRIDGE PARKING

PEDESTRIAN AND CYCLIST AMENITIES

D. COMMUNITY MEETING

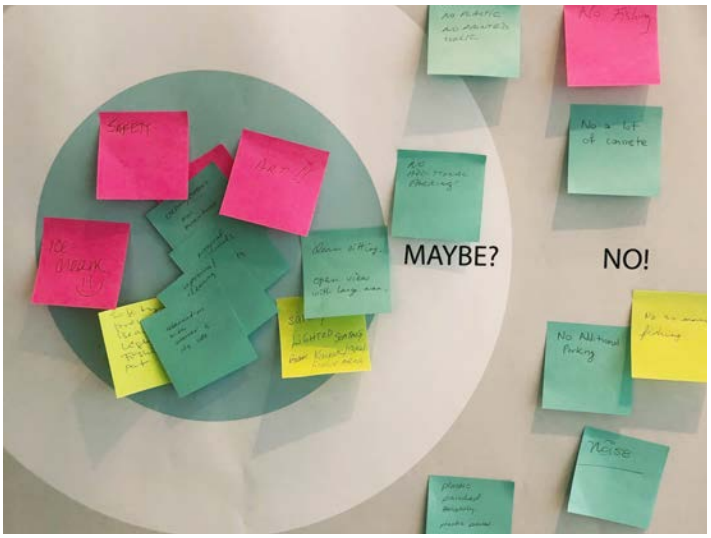
The design team solicited the community and stakeholders for comments through a series of planned outreach opportunities. Formal community meetings involved three meetings; 1) community presentation where we introduced the project and initial concept ideas and surveyed the attendees for there preferences, 2) community workshop where we developed two conceptual options and solicited feedback and 3) a community design presentation and open house where the community saw the evolved design and was able to interact with design members.



JUL. 2019 KICKOFF MEETING

JUL. 2019 KICKOFF MEETING

JUL. 2019 CHARRETTE



JUL. 2019 CHARETTE

Community Meeting #1

Agenda

- Project Introduction
- Team Introduction
- Vision
- Concept and Key Considerations
- Project Overview
- Next Steps

As part of this community meeting, activities to collect community preferences were carried out during the meeting included voting on precedents, materials, and special features, a survey and a public comment period. The presentation and examples of surveys are provided in the following pages as well as in the appendix.

Community Meeting #2

Agenda

- Concept Palettes
- Community Meeting Feedback
- Concept Options (two options)
- Next Steps

The goals for the second community meeting was to provide feedback on what was learned from the previous community meeting and present two developed concepts for the design. The two design options were: Option 1 – Engaging the Water and Option 2 – Eddy Spaces. The general preference was that Option 1 was more inline with the vision for the project.

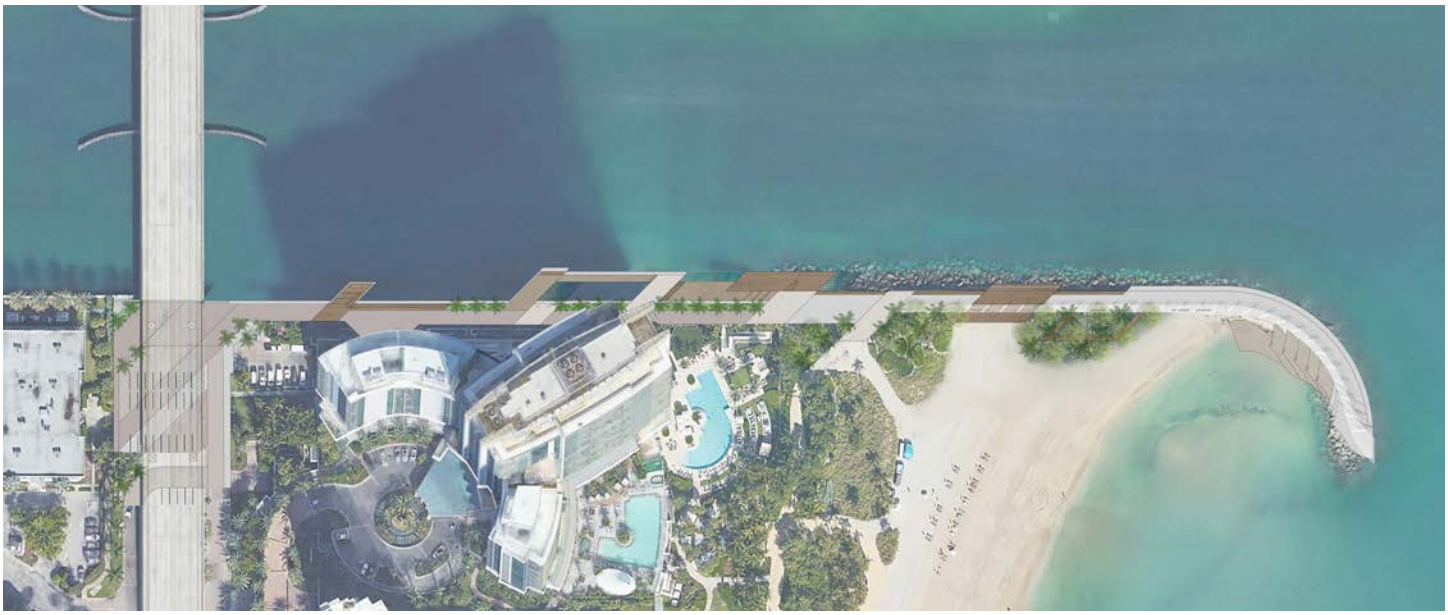
Community Meeting #3

Agenda

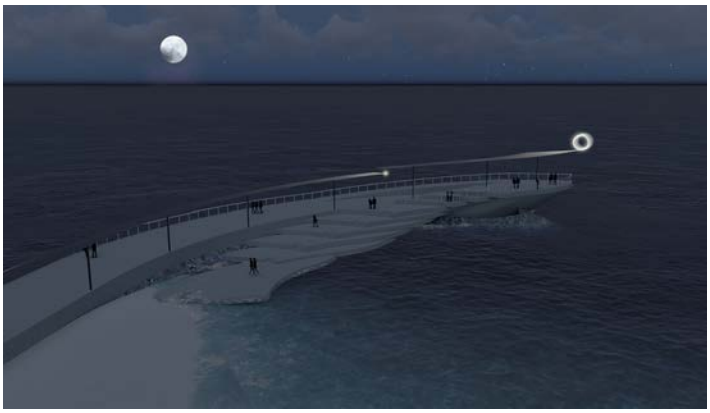
- Design Refinements Presentation
- Open House Tables

This final community meeting was set up as an open house where attendees can visit with designers on a one-to-one basis. Three stations were set up for design, environmental, and materials and the public was invited to engage with different designers and consultants around the room.

CONCEPT OPTION 1: ENGAGING THE WATER



AUG. 2019 CHARRETTE



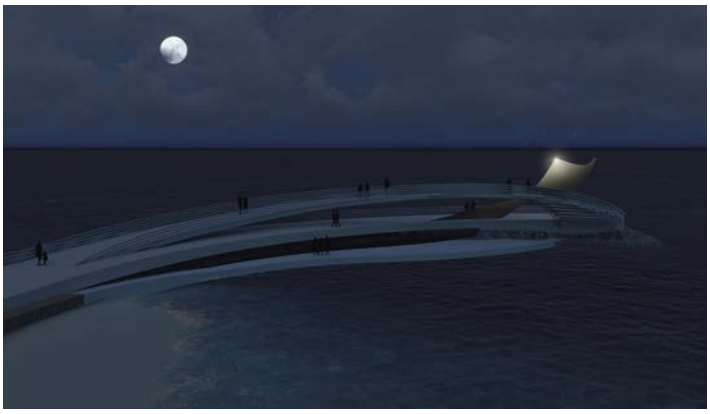
AUG. 2019 CHARRETTE

AUG. 2019 CHARRETTE

AUG. 2019 CHARRETTE

CONCEPT OPTION 2: EDDY SPACES

AUG. 2019 CHARRETTE



AUG. 2019 CHARRETTE

AUG. 2019 CHARRETTE

AUG. 2019 CHARRETTE

The team's engagement efforts also included meetings with key stakeholders including various city departments, the Village Council, abutters to the project, as well as key members of the community. Working sessions allowed stakeholders to bring up their goals and visions, concerns and opinions about the project proposals.

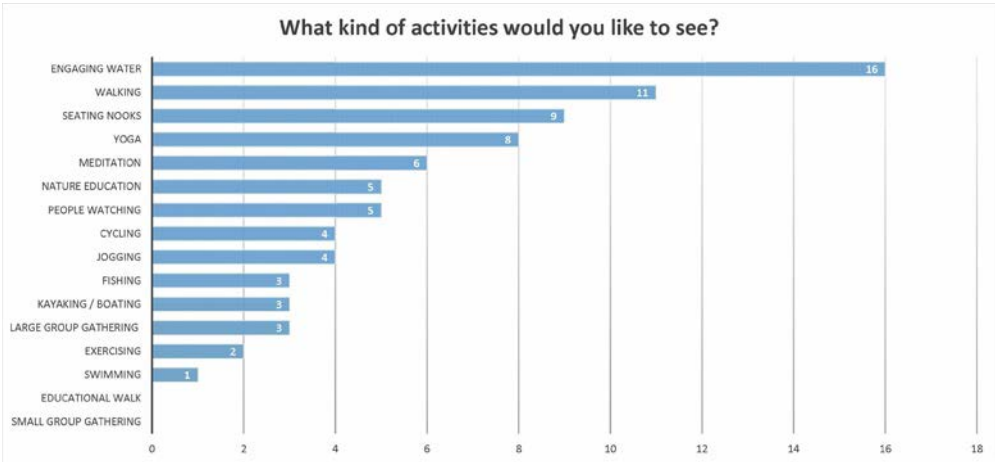
Stakeholders meetings:

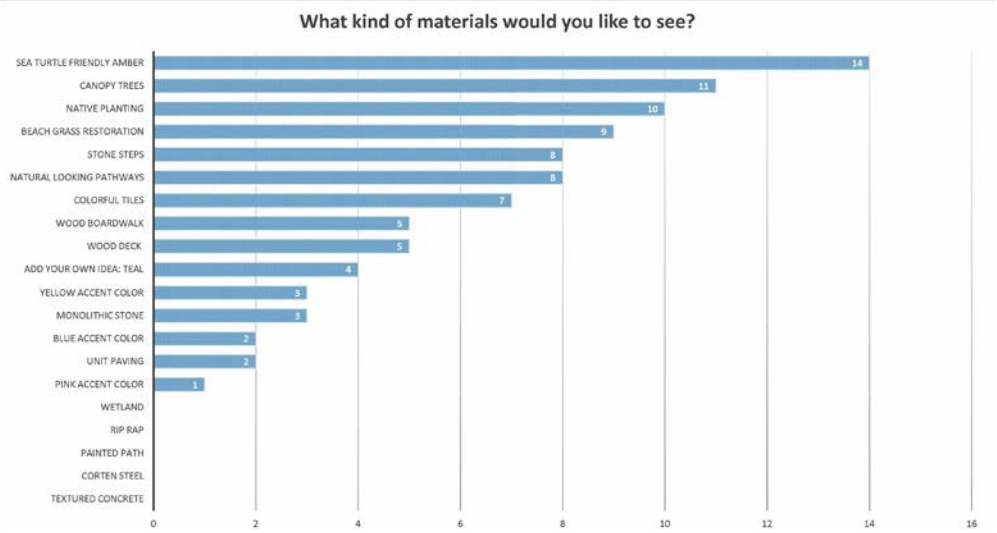
- Village Council: 7.11.19; 9.24.19; 11.13.19
- Village Staff: 7.11.19; 9.16.19; 10.18.19; 11.7.19; 11.20.19
- Bal Harbour Shops Representatives: 7.11.19
- Ritz Carlton and One Bal Harbour Residences Management Team: 7.11.19, 10.18.19, 11.13.19

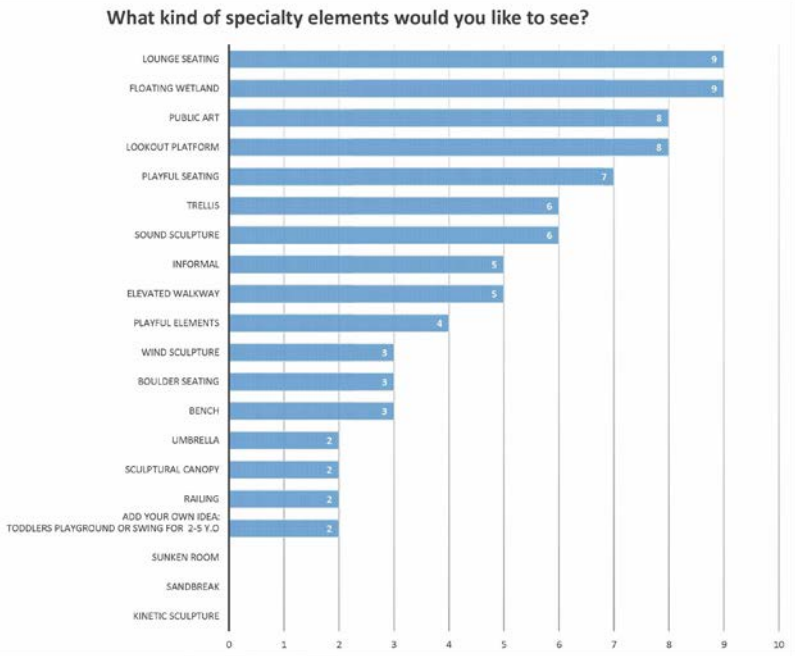
The general consensus of issues and concerns from the community and stakeholder events were addressed in the proposed design iteration. The main issues that were collected from the community were:

- **Refined and elegant designs represent the community**
- **Improvements in safety and universal accessibility**
- **Design should feature the natural elements and engage the beauty of the site**
- **Providing shade is essential for public spaces**
- **Passive and quiet areas are important program elements**

These comments allowed the design team to refine the proposal and achieve a general consensus in the final design iteration. This work will continue with stakeholders throughout the design process as the plans are developed into construction documents.



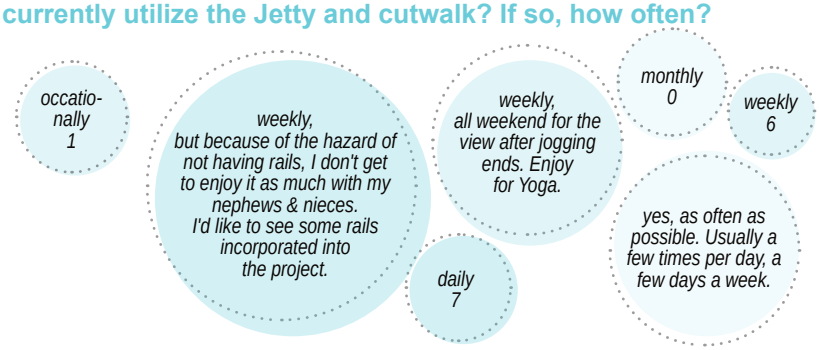




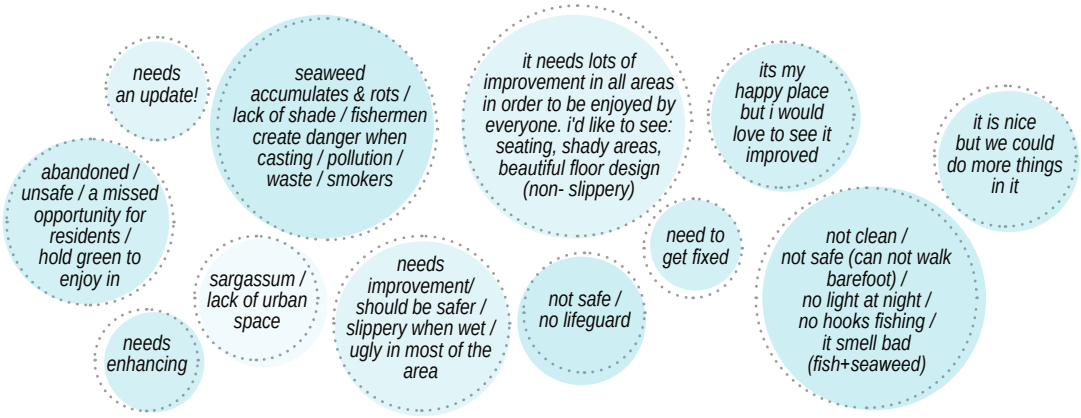
JUL. 2019 CHARETTE WORKSHEET COUNT

QUESTIONNAIRE RESULTS

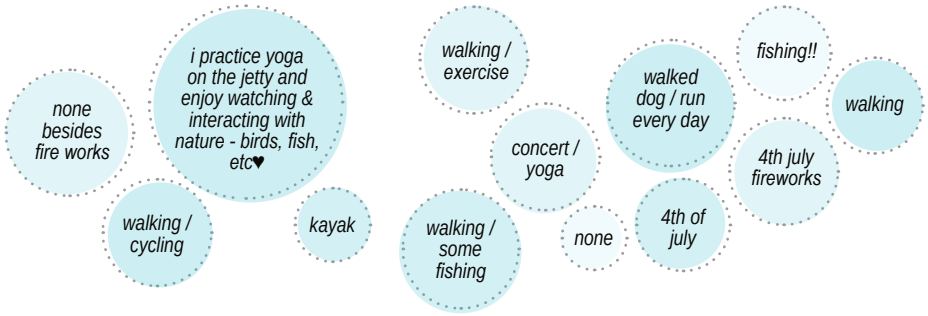
Do you currently utilize the Jetty and cutwalk? If so, how often?



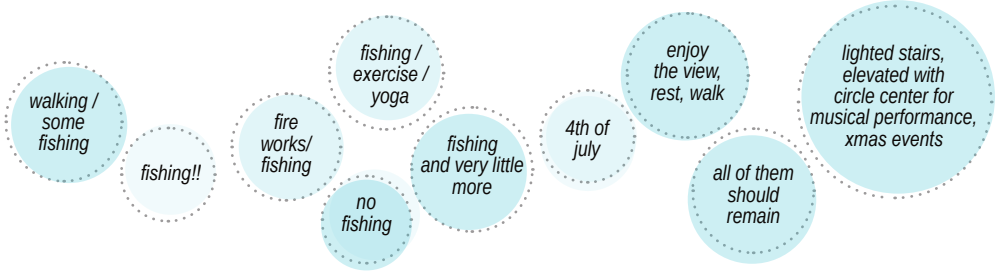
What are your opinions about the current Bal Harbour Jetty and the cutwalk?



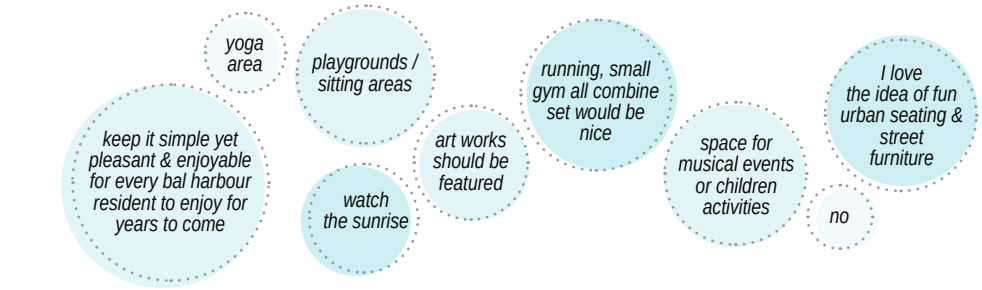
What activities or programming do you currently participate in or have participated in during the year on the Jetty?



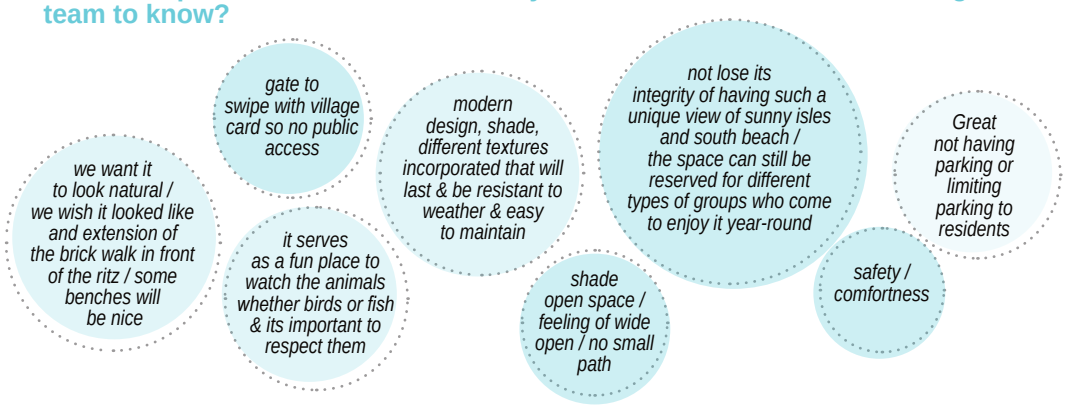
What activities or programming should remain as part of the Jetty design?



Are there new activities and programmings that should be considered?

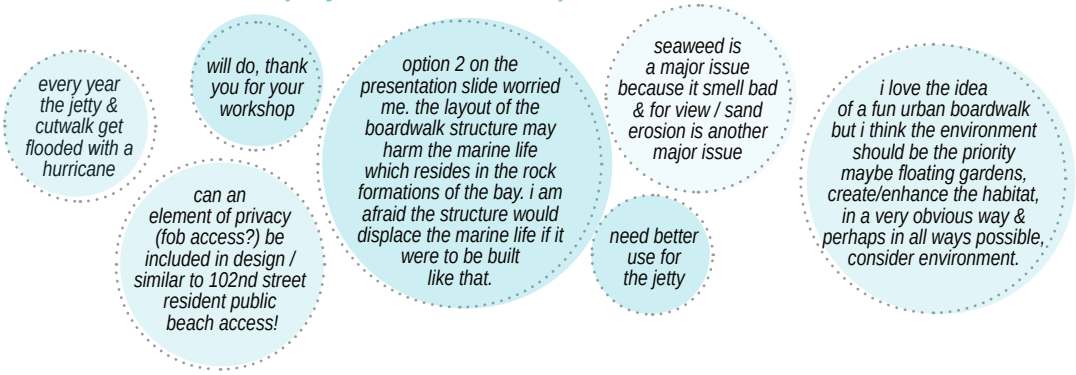


What is important to me about the Jetty and cutwalk that I want the design team to know?



What makes Bal Harbour unique from Miami Beach, Miami, and the rest of southeast Florida?

Provide any other comments you wish to communicate (or provide additional comments via our project email address):



III. BAL HARBOUR JETTY SCHEMATIC DESIGN

CHANNEL VIEW

The key elements of the jetty design:

- Along the cutwalk, a series of platforms that extend past the seawall to bring visitors closer to the water and allowing visitors to view marine activities in the Haulover Cut as well as sealife in the water. These platforms connect people physically and emotionally to the ocean through a complete sensory experience.
- The placement and design of the platforms and cutwalk extensions minimizes the impacts on existing coral and wildlife while the use of artificial reef technology will help increase marine habitat and provide resiliency along the seawall.
- A series of site elements are incorporated into the design to allow for visitor comfort and safety. Railings and walls are designed along the entire jetty and cutwalk permit visitors to safely navigate the public spaces along the water's edge. A shade canopy and shade trees along with new seating elements and places to gather along the cutwalk and jetty allow for passive recreation and respite.
- To allow for increased resiliency and safety, the current jetty walkway will be capped with precast concrete slabs to raise the jetty walkway elevation culminating with a lookout promontory. Along the inside of the jetty, large steps will bring people down to the water. To achieve compliance with navigational requirements, a light beacon placed at the terminus of the jetty is designed as an iconic element that can be seen from land and on the water.
- At the beach parking under the Herman B. Fultz Bridge, part of the parking area is proposed to become a garden space that acts as a gateway to the cutwalk. Pedestrian and cyclist amenities such as seating elements and bike racks are integrated into the design.


BAL HARBOUR

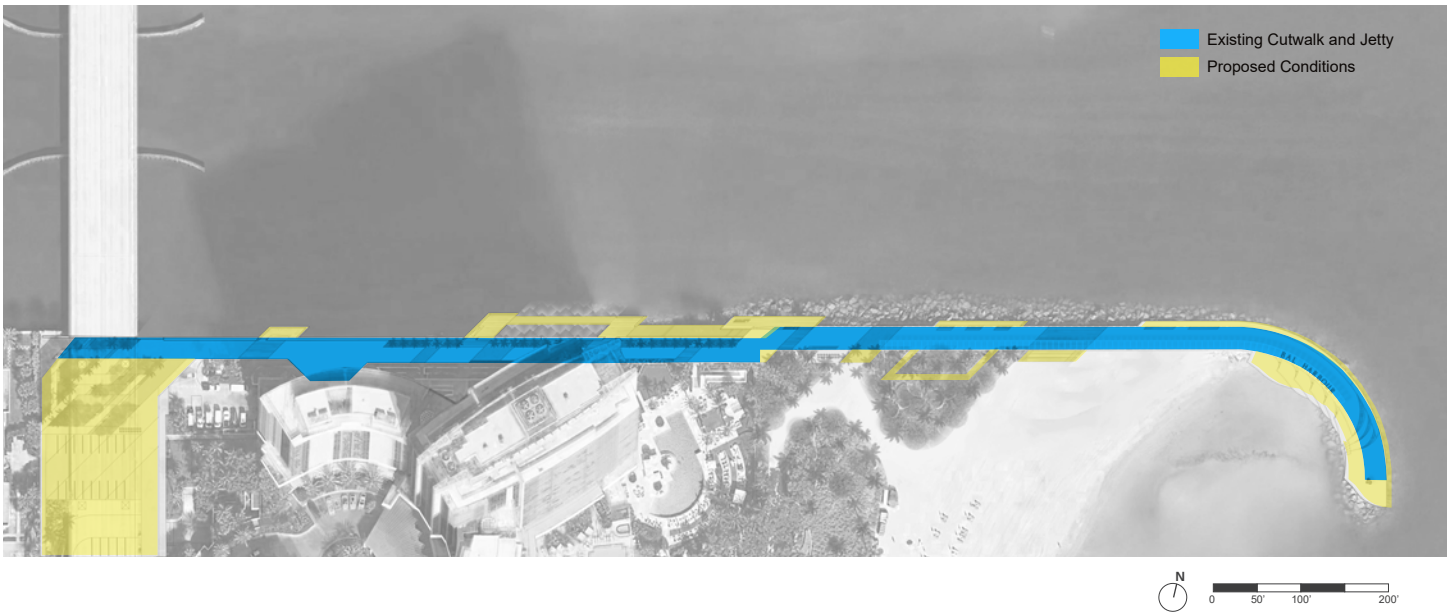

JETTY PROMONTORY
AND LIGHT BEACON
STEP-DOWN
PLATFORMS
BEACHSIDE
AMPHITHEATER
SHADE CANOPY
JETTY WALK
MAIN ENTRANCE
NATIVE BEACH
GARDEN
RAILING
EXISTING RIPRAP
BOULDERS
LOOKOUT
PLATFORM
GRATED
PLATFORM


SEA VIEW
CHAIRS
HABITAT VIEWING
CATWALK

A. SCHEMATIC DESIGN

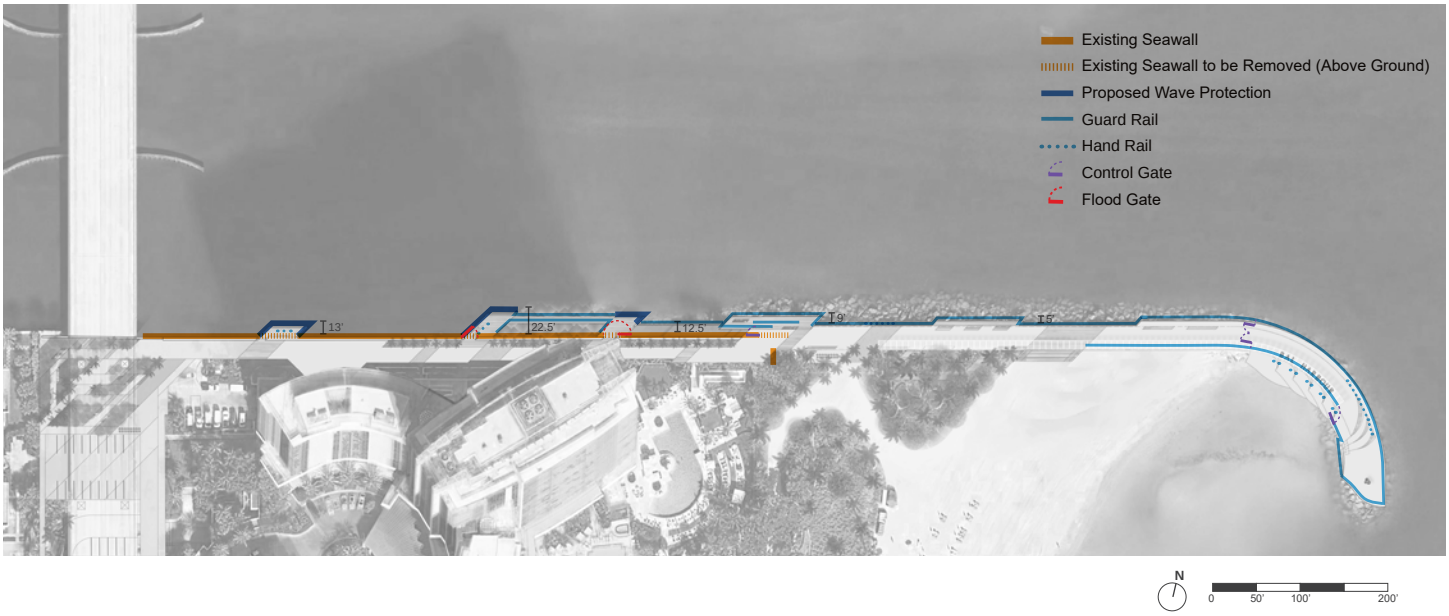
1. EXPANDING THE PUBLIC REALM

The diagram below shows the existing Cutwalk and Jetty location in blue and the proposed extension of the public realm in yellow. Various platforms are proposed along the existing Cutwalk and Jetty to enhance the waterfront experience and site access.



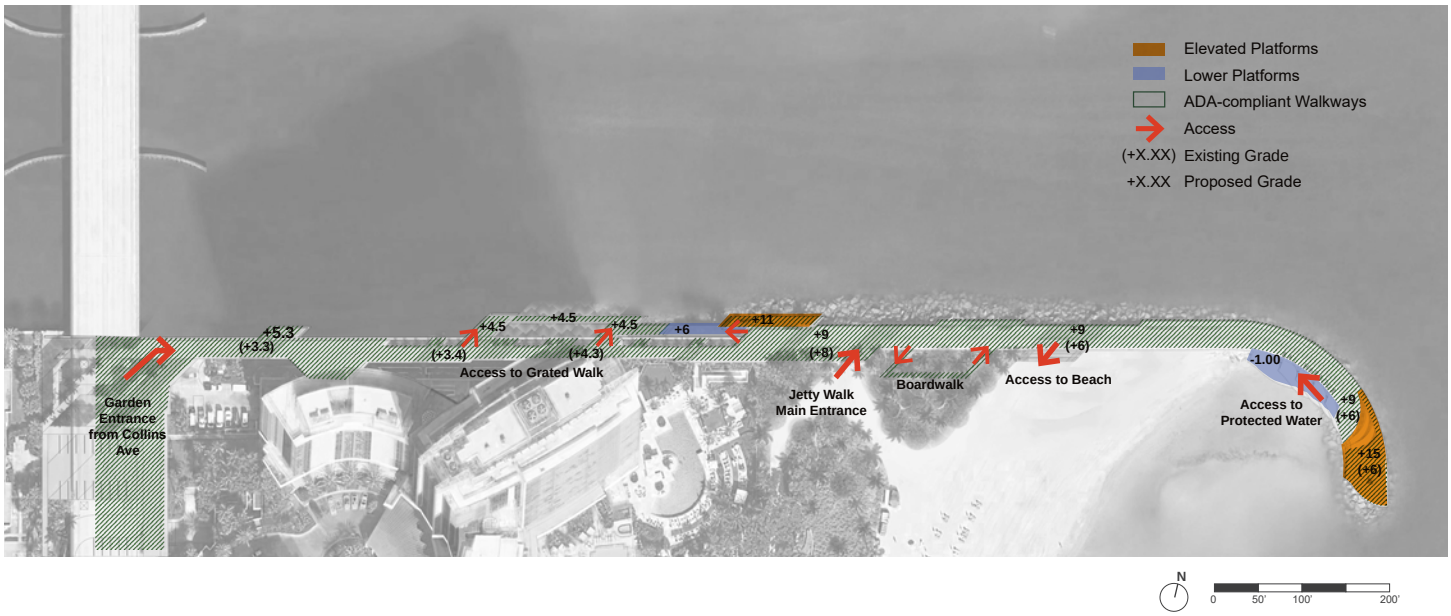
2. SAFETY AND RESILIENCY

Safety and resiliency were important factors in designing the Bal Harbour Jetty. Guardrails and monolithic concrete walls secure every platform and along the Jetty, facilitating safe encounter with water. To enhance the waterfront experience and bring people to the ocean side of the seawall, openings along the seawall were kept to a minimum and can be secured with flood gates. Alterations to the seawall were designed to maintain the same level of protection or better than the current condition for better resiliency. In extreme weather conditions, proposed control gate and flood gate ensure controlled access to the platforms and jetty promontory. The Jetty elevation was also raised higher than the existing condition to allow the Jetty to be more effective against higher wave and tide actions.



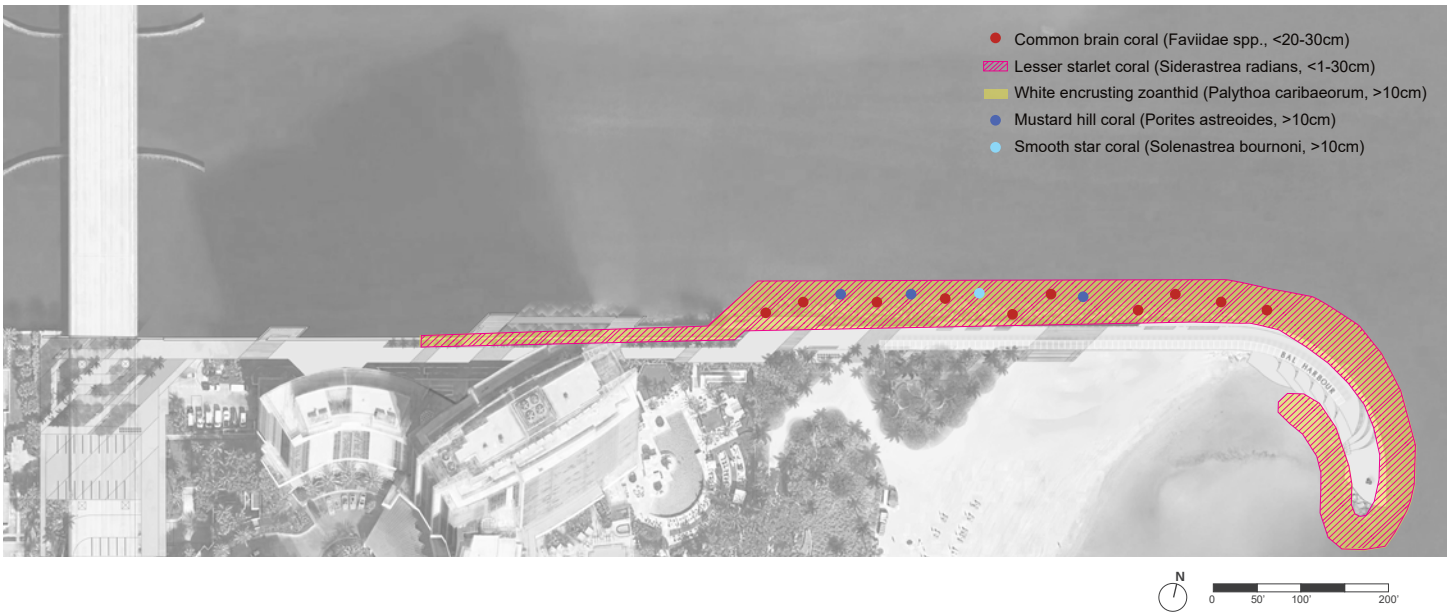
3. ACCESSIBILITY

Accessible ramps, handrails and slip-resistant surfaces throughout the site ensure that the diverse experience at waterfront and jetty promontory is available to all.



4. MARINE DIVERSITY

A lively ecosystem at Bal Harbour Jetty thrives on its benthic community. Numerous coral colonies were observed growing on the rip rap, providing significant marine habitats (see Appendix for full Benthic Resource Summary Report). The platforms at Cutwalk and Jetty are located and detailed to have as little interference as possible with the coral habitat. As part of the improvements to the area, the project also promotes and enhances marine habitat by providing artificial reef and surface technology



B. FEATURED AREAS

1. WATERFRONT

The cutwalk improvement embraces the lively marine habitat and creates a closer and safe encounter with water. Periodic openings through the existing seawall lead people to various platforms such as wood lookout platform, grated platform, habitat viewing catwalk and ocean viewing windows. The waterfront experience is further enhanced by specialty site furnishings. Custom chairs and wood reclining benches make ocean view more accessible.

CHANNEL VIEW

PLANT PALETTE VIGNETTES

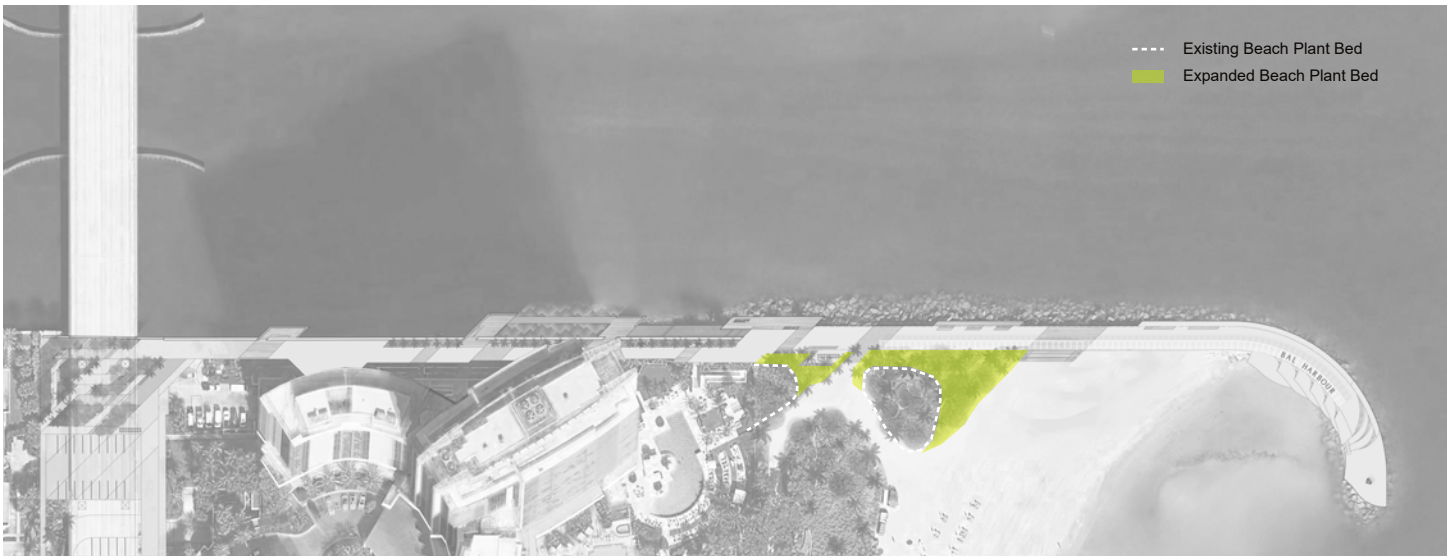

METAL SHADE CANOPY
PRECAST JETTY WALK PAVEMENT
METAL GRATING PLATFORM
WOOD DECK ON CONCRETE PLATFORM
METAL RAILING
METAL GRATING CATWALK


ARTIFICIAL REEF
SEA VIEW
CHAIRS
PRECAST
PAVERS

2. BEACH GARDEN

The native beach garden is an expansion of existing beach plant beds, featuring an elevated wood boardwalk, bench swings, and natural play elements. It’s flanked by a wood amphitheater and an at-grade platform, both serving as beach access points from the jetty walk.

PLANT PALETTE VIGNETTES


Existing Beach Plant Bed
Expanded Beach Plant Bed
BAL HARBOUR
N
0
50'
100'
200'


WOOD LOOKOUT
PLATFORM
ADVENTURE BOARDWALK
JETTY WALK
MAIN ENTRANCE
NATIVE BEACH GARDEN
PLAY ELEMENTS
EXPANDED PLANT BED
EXISTING PLANT BED


METAL SHADE CANOPY
BEACHSIDE WOOD
AMPHITHEATER
EXISTING
RIPRAP BOULDERS

3. JETTY PROMONTORY AND LIGHT HOUSE

The raised jetty promontory promotes resiliency and provides a destination for Jetty. An amphitheater with elements of wood creates an “Ocean Room” at the end of the promontory. Along the inside of the Jetty large stair slabs step-down to the water allowing another experience for users.

A louvered shade canopy along the southern edge of the jetty walk allows for comfortable seating opportunities. “BAL HARBOUR” lettering on the top of the canopy allows for Bal Harbor to be recognized from a birds-eye view.

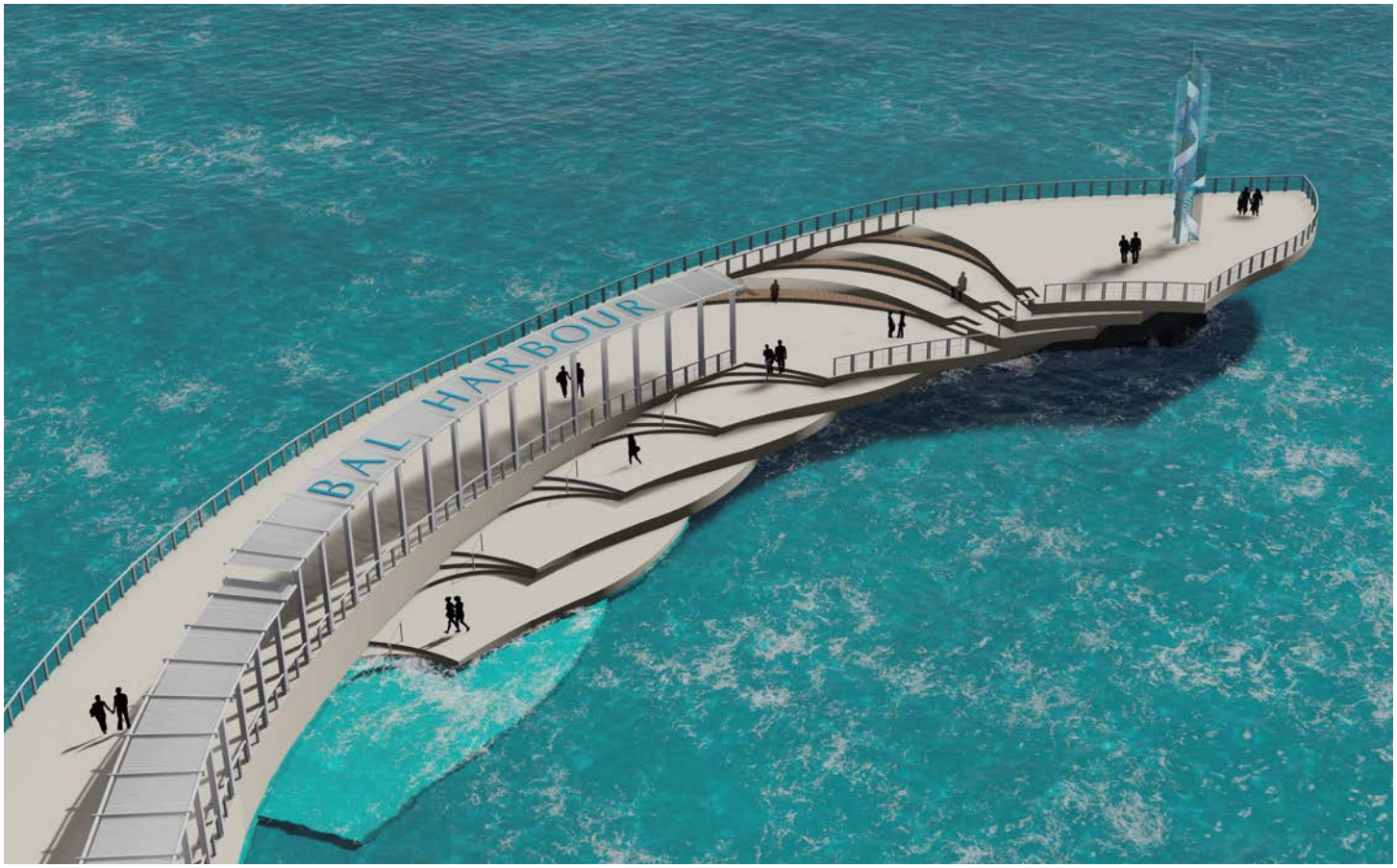
The light beacon aims to be an iconic feature at the jetty promontory terminus. It encompasses metal spiral staircases with colored cable wire mesh and a navigational strobe beacon. RGB LED lighting, integrated into the spires, can be both wildlife friendly and utilized for special events.

VIEW FROM BOAT

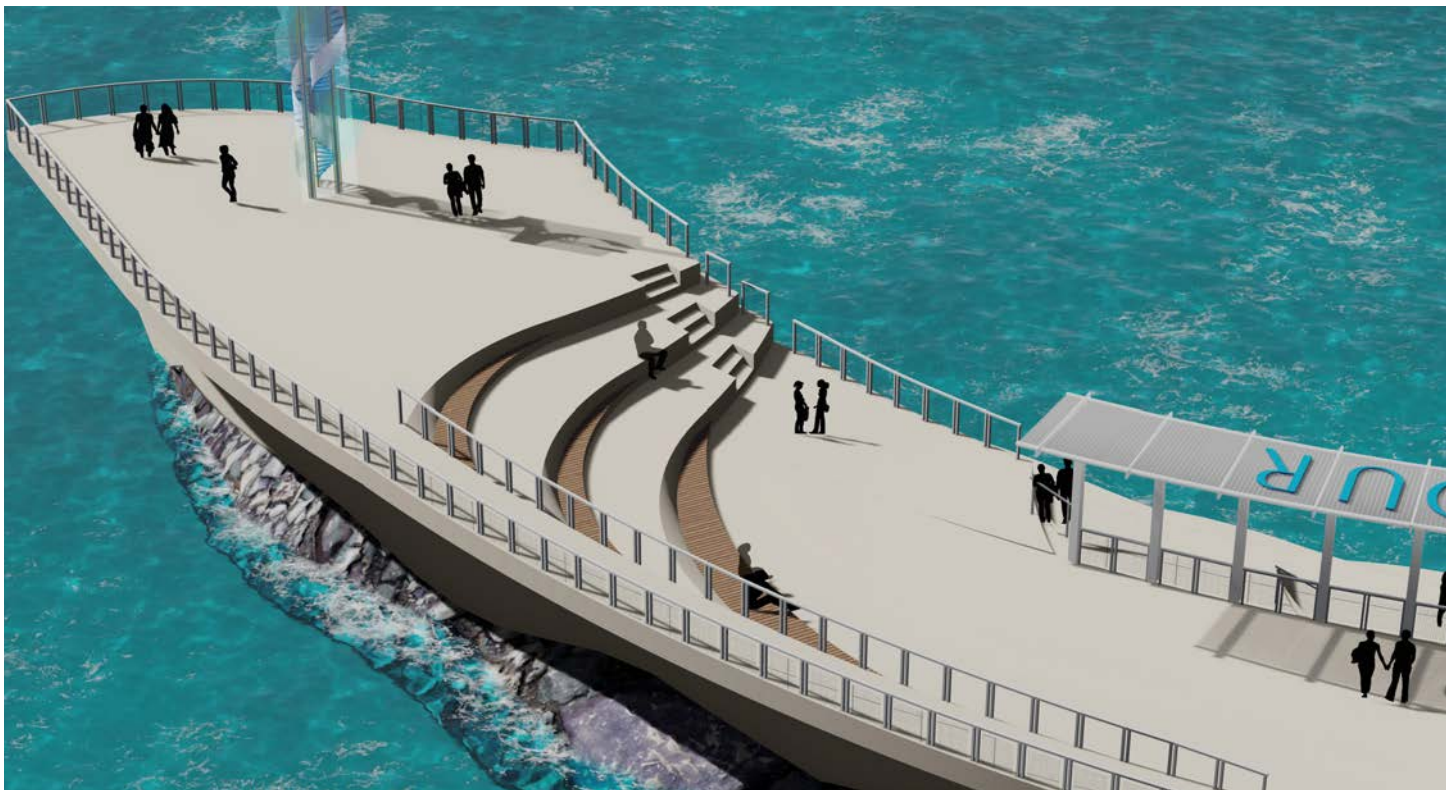
VIEW FROM BEACH

Stepping Platform

Canopy Signage



Reclined Stepped Amphitheater



Light Beacon

Light Beacon at Promontory

DAY VIEW

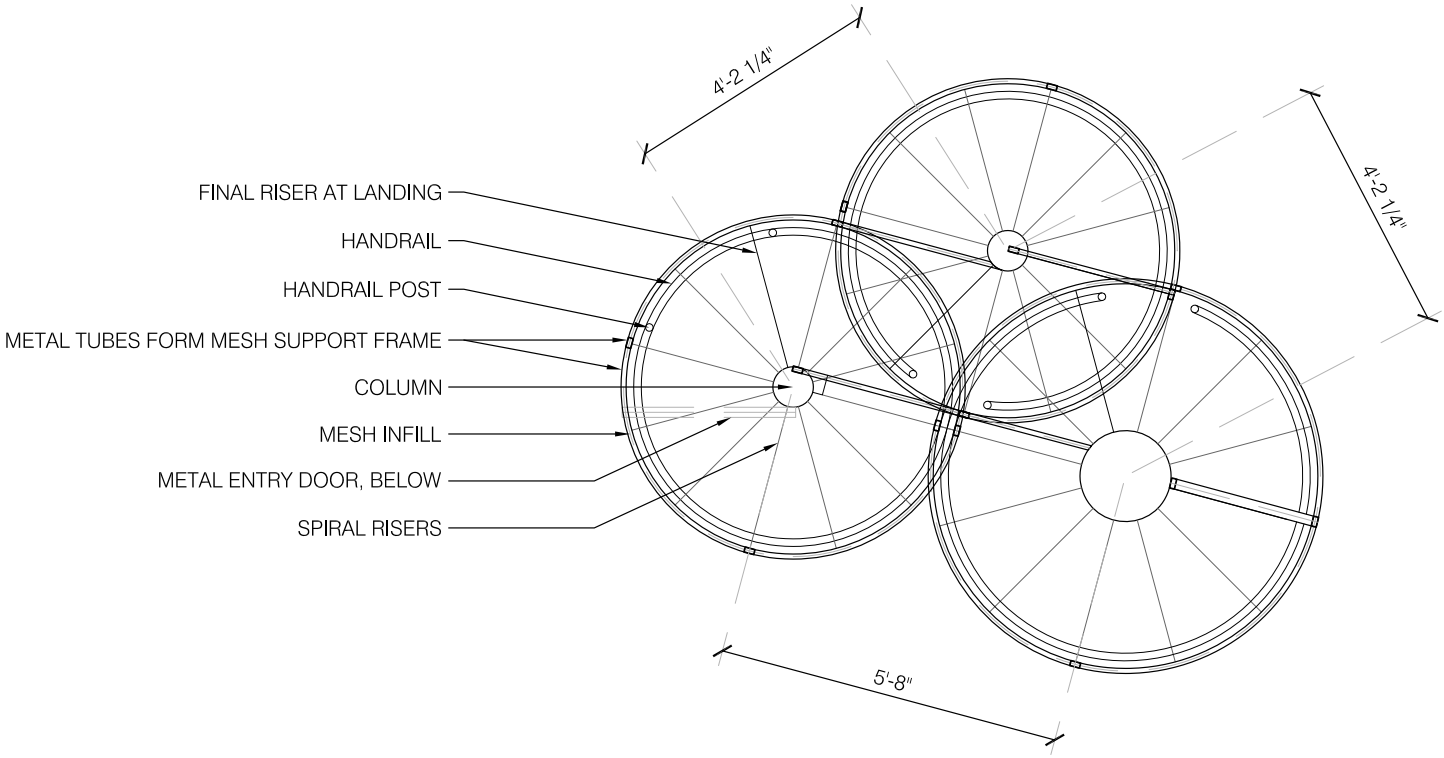
Light Beacon at Promontory

DAY VIEW

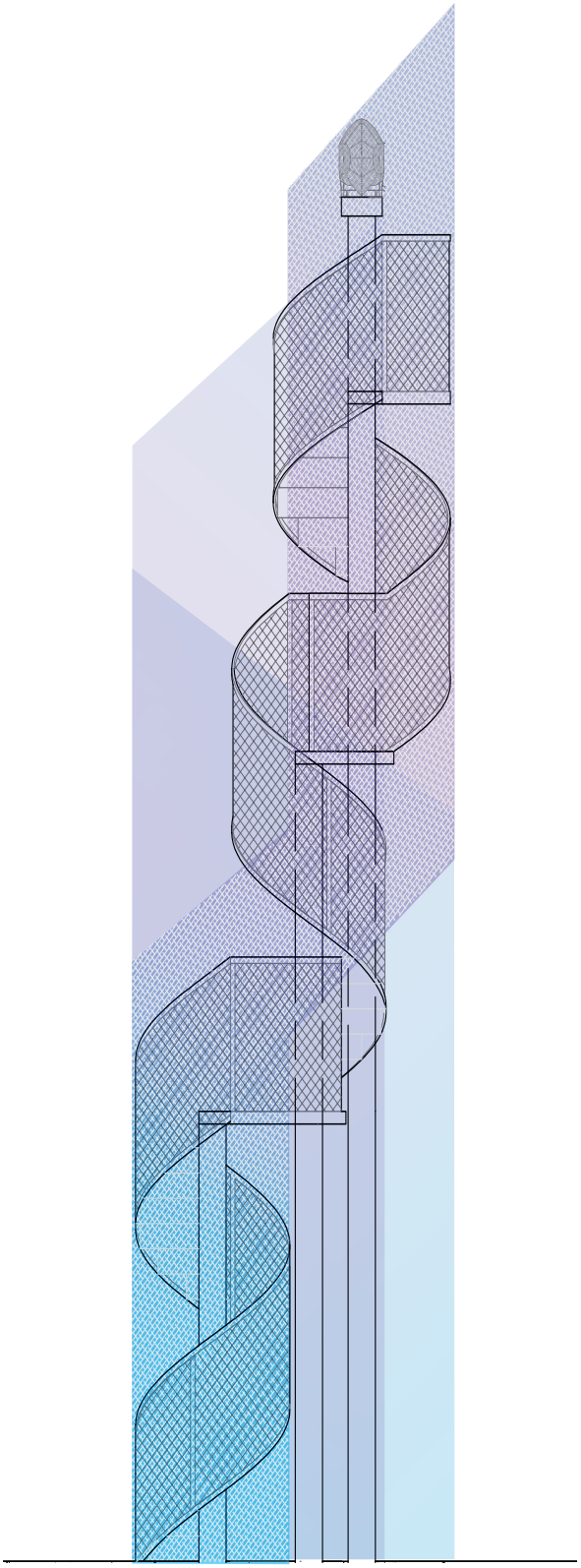
Light Beacon with Wildlife Safe Lighting

NIGHT VIEW - SEASON FOR SEA TURTLES

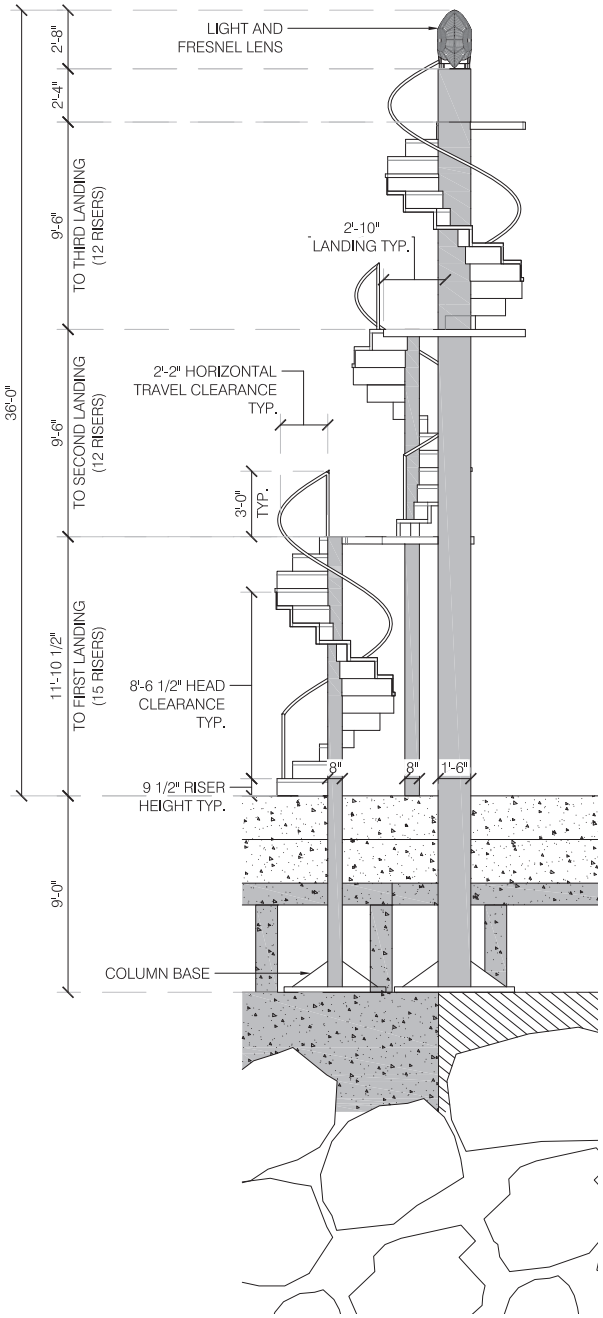
Light Beacon with Special Event Lighting



LIGHT BEACON PLAN



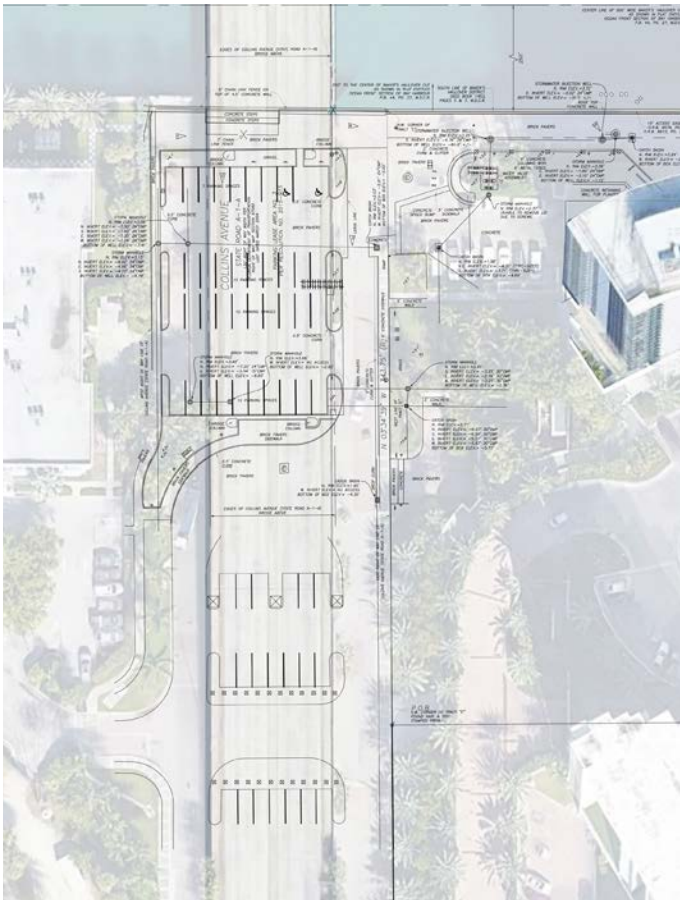
ELEVATION

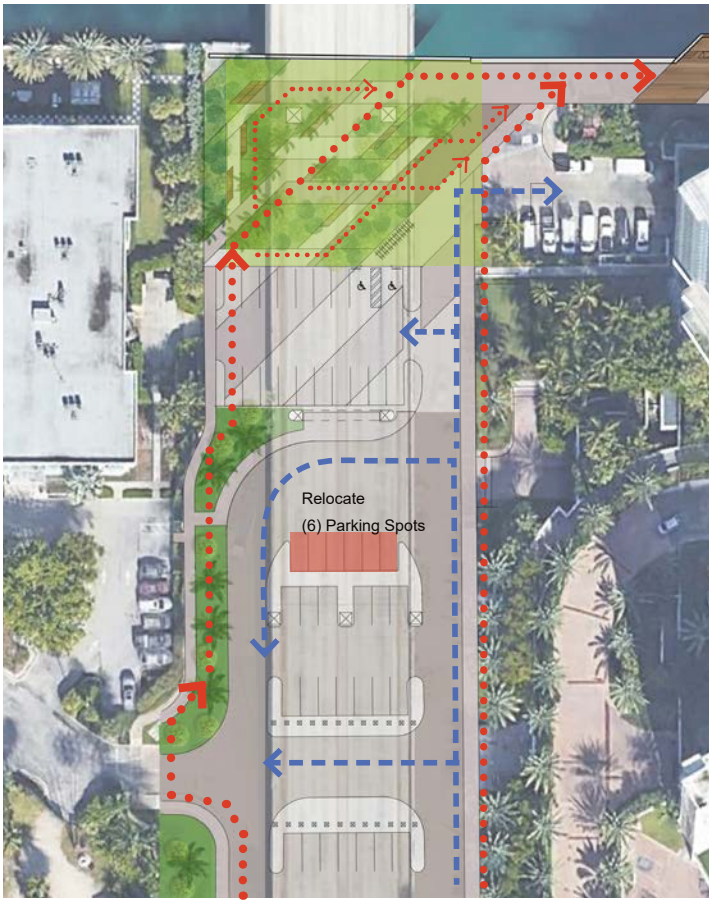


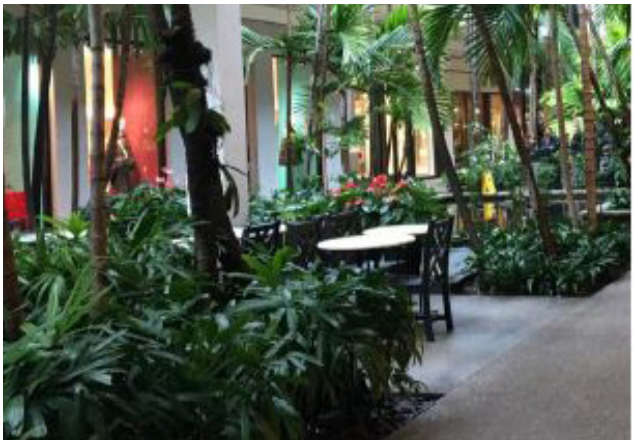
STRUCTURAL SECTION

4. HERMAN FULTZ PARKING AREA

One parking bay is transformed into a garden entrance to the Cutwalk from Collins Ave. Garden nooks along directional pathway to the Cutwalk provides a passively programed hub at the north end of Collins Ave.







Activity Zone
Specialty Pavement
Pedestrian Circulation
Vehicular Circulation

PARKING SPOTS:45
(6 SPOTS RELOCATED)

Planting

Lush shade-tolerant garden plantings make up the character of the public space under the Herman Fultz Bridge.

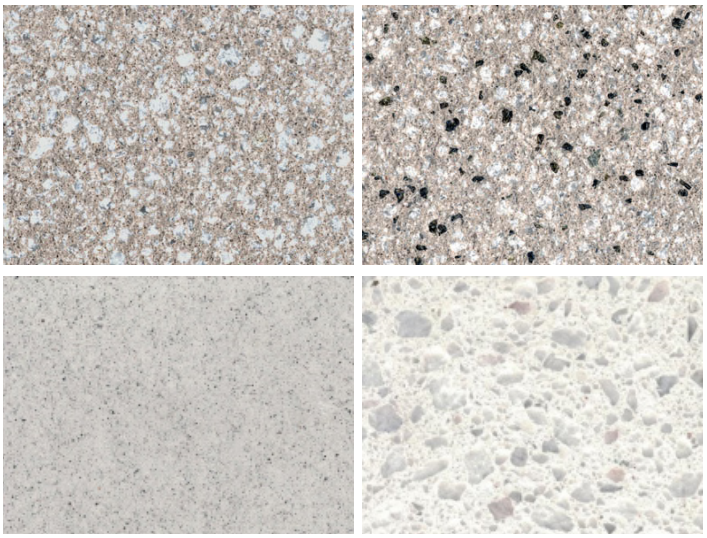
PLANT PALETTE VIGNETTES


Cutwalk
Seating
Seating
Seating
Service Drive
Entry Garden
Bike Rack
Existing Parking with
New Paving Design

C. MATERIALS AND SITE FURNISHINGS

1. CONCRETE

Concrete is a durable material that can withstand the extreme conditions that exist along the Cutwalk and Jetty. Precast concrete allows fabrication off site and faster onsite construction times as well as controlled finishes. Artificial reef concrete technology can be design to help promote biodiversity.



CONCRETE PAVING

PRECAST CONCRETE

ARTIFICIAL REEF BLOCKS

ARTIFICIAL REEF MATTRESS

2. WOOD

There are many new options for wood that is exterior rated and can be used for marine conditions. Mockups and testing is recommended to select the best option for wood on the Jetty and Cutwalk.

WATERFRONT WOOD DECK

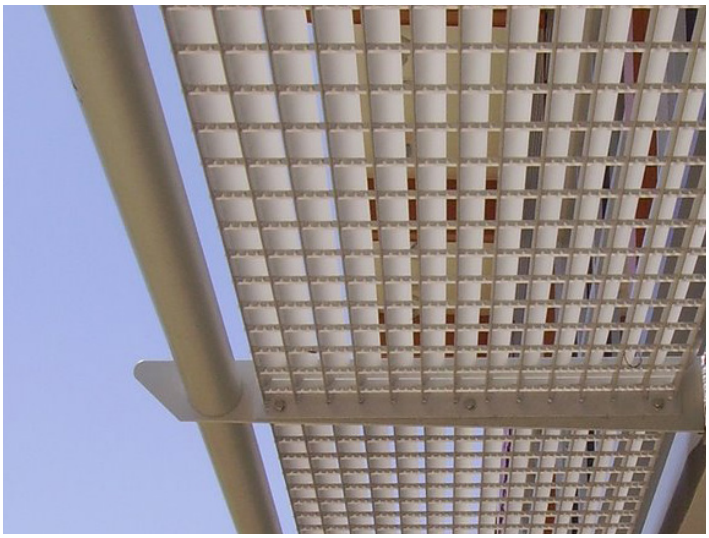
SEATING AT HIGHLINE NYC

EXTERIOR WOOD

3. STEEL

Marine grade stainless steel will be used for railings, guard rails, and guardrail mesh infill. Layers of colored stainless steel mesh will be used to create the light beacon and aluminum louvers used at the shade canopy.

STAINLESS STEEL GUARDRAIL WITH STEEL MESH



METAL CANOPY

STAINLESS STEEL GRATING

COLOR MESH

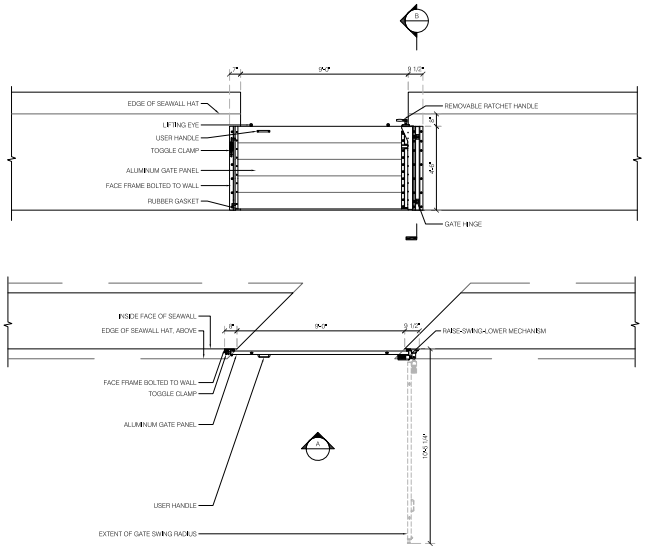
4. SPECIALTY SITE FURNISHINGS

Custom designed Sea View Chairs will allow people to sit and look over the existing seawall. Swings and play furnishings will be designed for certain areas of the project. Flood Gates will be provided at locations along the seawall where needed.

EAST RIVER WATERFRONT ESPLANADE, NYC

SWING BENCHES

FLOOD GATE



FLOODGATE DETAILS

5. PLANTS

ENTRY GARDEN AND HERMAN FULTZ PARKING AREA		
Botanical Name	**Common Name**	**Native**
Arachis glabrata	Perennial Peanut	N
Bromeliads spp.	Bromeliads	N
Chrysobalanus icao 'Horizontal'	Horizontal Cocoplum	Y
Conocarpus erectus 'Sericeus'	Silver Buttonwood	Y
Eugenia foetida	Spanish Stopper	Y
Eugenia rhombea	Red Stopper	Y
Ficus elastica	Rubber Plant	N
Heliotropium angiospermum	Scorpion's Tail	Y
Ipomoea pes-caprae subsp. brasilliensis	Railroad Vine	Y
Philodendron 'Rojo Congo'	Rojo Congo Philodendron	N
Psychotria ligustrifolia	Bahama Wild Coffee	Y
Rhapis excelsa	Lady Palm	N
Sabal palmetto	Sabal Palm	Y
Stachytarpheta jamaicensis	Blue Porterweed	Y
Zamia integrifolia	Coontie	Y

CUTWALK		
Botanical Name	**Common Name**	**Native**
Arachis glabrata	Perennial Peanut	N
Bulbine spp.	Bulbine	N
Cocos nucifera	Coconut Palm	N
Ernodea littoralis	Beach Creeper	Y
Borrichia frutescens	Silver Sea-ox-eye Daisy	Y
Sabal palmetto	Sabal Palm	Y
Scaevola plumieri	Inkberry	Y
Spartina patens	Marshhay Cordgrass	Y
Thrinax radiata	Florida Thatch Palm	Y
Zamia integrifolia	Coontie	Y

EXPANDED NATIVE BEACH GARDEN		
Botanical Name	**Common Name**	**Native**
Casasia clusiifolia	Seven-year-apple	Y
Chrysobalanus icao 'Horizontal'	Horizontal Cocoplum	Y
Coccoloba uvifera	Seagrape	Y
Conocarpus erectus	Green Buttonwood	Y
Ernodea littoralis	Beach Creeper	Y
Gaillardia pulchella	Blanket-flower	Y
Helianthus debilis	Dune Sunflower	Y
Ipomoea pes-caprae subsp. brasilliensis	Railroad Vine	Y
Jacquina keyensis	Joewood	Y
Sabal palmetto	Sabal Palm	Y
Scaevola plumieri	Inkberry	Y
Serenoa repens 'Sericea'	Silver Saw Palmetto	Y
Spartina patens	Marshhay Cordgrass	Y
Suriana marítima	Bay Cedar	Y
Thrinax radiata	Florida Thatch Palm	Y
Union paniculata	Sea Oats	Y

CONTEXT MAP

D. ASSESSMENTS

1. BENTHIC REPORT

A benthic survey was conducted by The Chappell Group for the site. The survey reports the identification of 5 types of corals found along the riprap edge of the jetty. See Appendix for the full benthic report.

Table 1. Corals Observed

Common Name	Scientific Name	No. Observed	Size
Lesser starlet coral	*Siderastrea radians*	224	<1-30cm
Common brain coral	*Faviidae spp.*	10	20-30cm
Mustard hill coral	*Porites astreoides*	3	>10cm
White encrusting zoanthid	*Palythoa caribaeorum*	139	>10cm
Smooth star coral	*Solenastrea bournoni*	1	>10cm

Table 2. Species Observed

Common Name	Scientific Name
Fish	
Butterflyfish	*Chaetodon capistratus*
Atlantic tarpon	*Megalops atlanticus*
Rainbow parrotfish	*Scarus guacamaia*
Lionfish	*Pterois volitans*
Sheepshead	*Archosargus probatocephalus*
Sergeant major	*Abudefduf saxatilis*
Mangrove snapper	*Lutjanus griseus*
Checkered puffer	*Sphoeroides testudineus*
Coral	
Lesser starlet coral	*Siderastrea radians*
Common brain coral	*Faviidae spp.*
Mustard hill coral	*Porites astreoides*
White encrusting zoanthid	*Palythoa caribaeorum*
Smooth star coral	*Solenastrea bournoni*

2. STRUCTURAL

MU Structural Engineers conducted a visual inspection and assessment of the existing seawall. Due to the limited information on the structure of the wall the structural engineer believes repairs or replacement is needed for the seawall. Until the ability to do destructive investigation on the wall and tieback system, the team can only speculate on the condition of the wall through surficial means. The reconstruction of the wall was not considered as part of the scope of this project. See full structural report in the Appendix.

3. CIVIL REPORT

The pervious/impervious ratios will not be increased and therefore will not adversely affect the existing drainage design. There will be no increase in water quality volume required and no increased run off volume to the existing drainage system.

The cutwalk will be re-graded to maintain existing elevations and available storage volume. Surface water run off will be maintained to the existing storm drainage inlets located along the cutwalk, if planter drains are required/desired yard drains can be added and connected by piping to the existing storm drainage structures. Surface water licenses (Department of Environmental Resources – DERM) can be modified as applicable.

See Civil Design Narrative in Appendix

IV. APPENDIX

A. SURVEY

B. TECHNICAL DRAWINGS

C. BENTHIC REPORT

D. STRUCTURAL REPORT

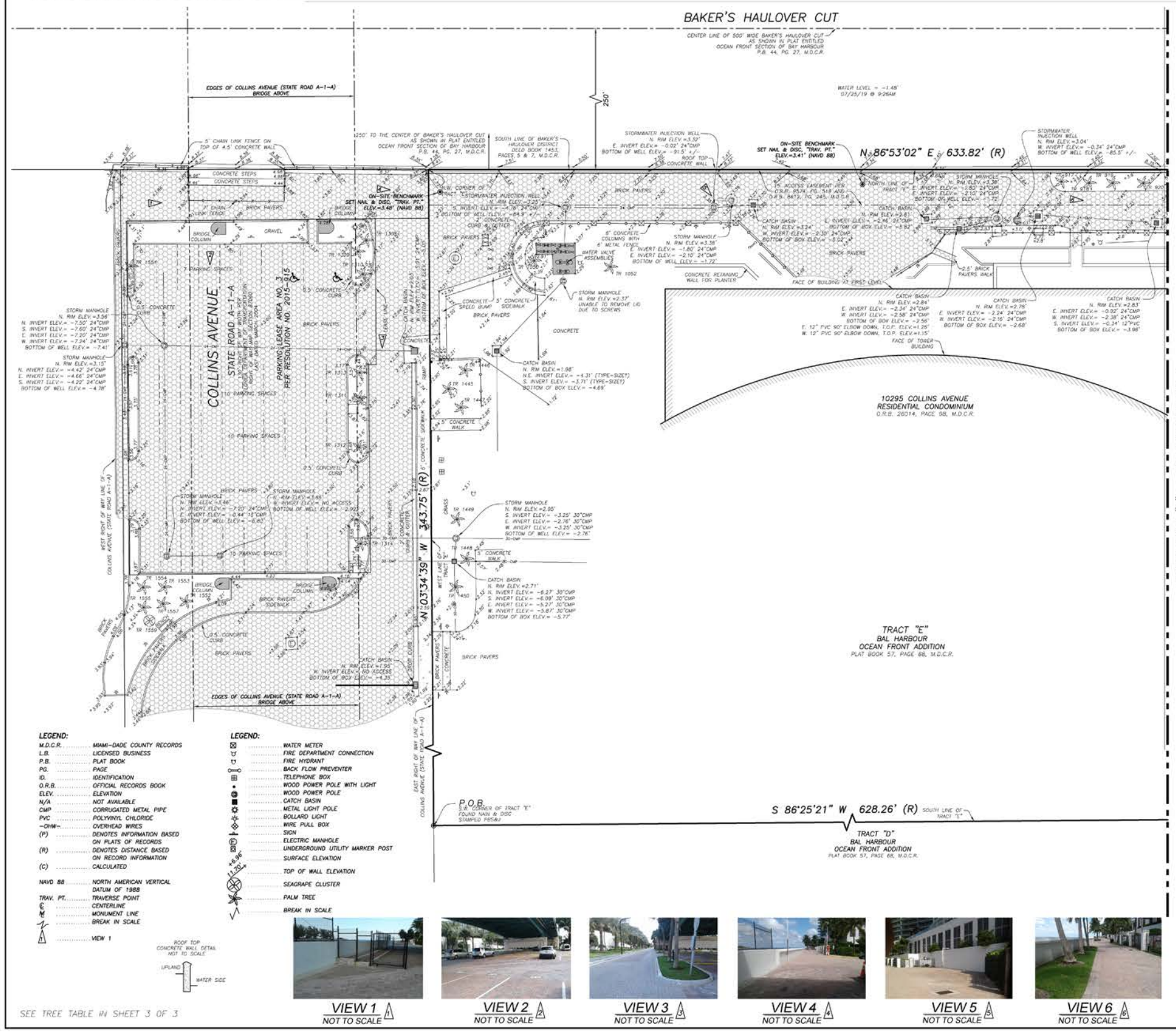
E. CIVIL REPORT

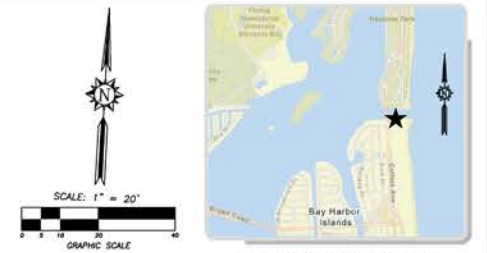
F. DESIGN PRESENTATIONS

A. SURVEY

SKETCH OF BOUNDARY AND TOPOGRAPHIC SURVEY OF:

THE CUT WALK AND JETTY, BAKERS HAULOVER CUT, BAL HARBOUR, FL





LOCATION MAP
NOT TO SCALE

LEGAL DESCRIPTION:

A PARCEL OF LAND BEING ALL OF TRACT E BAL HARBOUR FRONT OCEAN ADDITION AS RECORDED IN PLAT BOOK 57, PAGE 68 OF THE PUBLIC RECORDS OF DADE COUNTY, FLORIDA, AND ALSO A PORTION OF SECTION 26, TOWNSHIP 53 SOUTH, RANGE 42 EAST OF AND ADJACENT TO SAID TRACT E ALL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT THE SOUTHWEST CORNER OF SAID TRACT E; THENCE ON A GRID BEARING NORTH 03°34'39" WEST ALONG THE WEST LINE OF TRACT E A DISTANCE OF 343.75 FEET TO THE NORTHWEST CORNER OF SAID TRACT E; THENCE NORTH 86°53'02" EAST ALONG THE NORTH LINE OF SAID TRACT E A DISTANCE OF 633.82 FEET TO THE NORTHEAST CORNER OF SAID TRACT E; THENCE SOUTH 03°34'39" EAST ALONG THE EAST LINE OF SAID TRACT E A DISTANCE OF 1.33 FEET; THENCE SOUTH 86°53'02" WEST A DISTANCE OF 4.20 FEET TO A POINT ON THE EASTERLY LINE OF SAID TRACT E; SOUTH 03°08'48" EAST ALONG THE EAST LINE OF SAID TRACT E A DISTANCE OF 73.70 FEET; THENCE NORTH 86°53'02" EAST A DISTANCE OF 24.99 FEET TO A POINT ON THE BEACH EROSION CONTROL LINE AS SHOWN ON BEACH EROSION CONTROL PROJECT, DADE COUNTY, FLORIDA FOR BAL HARBOUR ON SHEET 2, D. O. FILE NO. 24-33.368 DATED OCTOBER 1988; THENCE SOUTH 02°08'48" EAST ALONG SAID EROSION CONTROL LINE A DISTANCE OF 123.50 FEET; THENCE SOUTH 06°29'22" WEST ALONG SAID EROSION CONTROL LINE A DISTANCE OF 142.15 FEET TO A POINT ON THE EASTERLY EXTENSION OF THE SOUTH LINE OF SAID TRACT E; THENCE SOUTH 88°25'21" WEST ALONG THE SOUTH LINE OF SAID TRACT E AND THE EASTERLY EXTENSION THEREOF A DISTANCE OF 628.26 FEET TO THE POINT OF BEGINNING.

SAID LAND SITUATED WITHIN THE VILLAGE OF BAL HARBOUR, MIAMI-DADE COUNTY, FLORIDA.

SURVEY NOTES:

1. THIS SURVEY REPRESENTS A BOUNDARY AND TOPOGRAPHIC SURVEY AS DEFINED BY STANDARDS OF PRACTICE FOR SURVEYING AND MAPPING, CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODES. THIS SURVEY IS NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

2. THE BEARINGS SHOWN HEREON ARE BASED ON A GRID BEARING OF NORTH 03°34'39" WEST ALONG THE WEST LINE OF TRACT "E", BAL HARBOUR OCEAN FRONT ADDITION, RECORDED IN PLAT BOOK 57, PAGE 68, PUBLIC RECORDS OF MIAMI-DADE COUNTY RECORDS AND ARE RELATIVE TO THE FLORIDA STATE PLANE COORDINATES SYSTEM, EAST ZONE, 1983 (1990) ADJUSTMENT.

3. THE ELEVATIONS SHOWN HEREON ARE BASED UPON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88), ESTABLISHED FROM THE NATIONAL GEODETIC SURVEY TIDAL BENCHMARK DESIGNATED AS BH 1, A SURVEY DISK SET IN A CONCRETE RETAINING WALL, 199.5' SOUTHWEST OF THE SOUTHWEST CORNER OF A BRICK BUILDING. IN THE HAULOVER BEACH PARK. ELEVATION= 3.96'.

4. THE UPLAND PORTION OF THE PROPERTY SHOWN HEREON LIES WITHIN FLOOD ZONES AE (ELEV 8 NGVD 29) X, AS SHOWN IN FLOOD INSURANCE RATE MAP NUMBER 12086C 0163 L, COMMUNITY NUMBER 120636, TOWN OF BAL HARBOUR VILLAGE, MIAMI-DADE COUNTY, FLORIDA. MAP EFFECTIVE DATE: SEPTEMBER 11, 2009.

5. THE SYMBOLS REFLECTED IN THE LEGEND AND ON THIS SURVEY MAY HAVE BEEN ENLARGED FOR CLARITY. THE SYMBOLS HAVE BEEN PLOTTED AT THE CENTER OF THE FIELD LOCATION AND MAY NOT REPRESENT THE ACTUAL SHAPE OR SIZE OF THE FEATURE.

6. THE INFORMATION DEPICTED ON THIS SURVEY REPRESENTS THE RESULTS OF A FIELD SURVEY ON THE DATE INDICATED AND CAN ONLY BE CONSIDERED AS A REPRESENTATION OF THE GENERAL CONDITIONS EXISTING AT THAT TIME.

7. THE SURVEYOR DID NOT INSPECT THE PROPERTY SHOWN HEREON FOR ENVIRONMENTAL HAZARDS. OWNERSHIP OF WALLS OR FENCES WAS NOT DETERMINED.

8. BUILDING DIMENSIONS WERE MEASURED AT GROUND LEVEL AND ARE OVERALL. ARCHITECTURAL DETAILS MAY NOT BE SHOWN.

9. OWNERSHIP OF WALLS OR FENCES WAS NOT DETERMINED.

10. THE INFORMATION CONTAINED IN THIS DOCUMENT WAS PREPARED BY ECS LAND SURVEYORS, INC. ECS LAND SURVEYORS HAS TAKEN ALL REASONABLE STEPS TO ENSURE THE ACCURACY OF THIS DOCUMENT. WE CANNOT GUARANTEE THAT ALTERATIONS AND/OR MODIFICATIONS WILL NOT BE MADE BY OTHERS AFTER IT LEAVES OUR POSSESSION. THIS DOCUMENT MUST BE COMPARED TO THE ORIGINAL HARD COPY (WHICH BEARS THE RAISED SURVEYOR'S CERTIFICATION SEAL IF APPLICABLE) TO ENSURE THE ACCURACY OF THE INFORMATION CONTAINED HEREON AND TO FURTHER ENSURE THAT ALTERATIONS AND/OR MODIFICATIONS HAVE NOT BEEN MADE. ECS LAND SURVEYORS MAKES NO WARRANTIES, EXPRESS OR IMPLIED, CONCERNING THE ACCURACY OF THE INFORMATION CONTAINED IN THIS OR ANY DOCUMENT TRANSMITTED OR REVIEWED BY COMPUTER OR OTHER ELECTRONIC MEANS. CONTACT ECS LAND SURVEYORS DIRECTLY FOR VERIFICATION OF ACCURACY.

11. SUBSURFACE UTILITIES, FOUNDATIONS AND ENCROACHMENTS WERE NOT LOCATED AND ARE NOT SHOWN HEREON. THIS SITE COULD HAVE UNDERGROUND INSTALLATIONS THAT ARE NOT SHOWN HEREON. BEFORE DESIGN, CONSTRUCTION OR EXCAVATION, CONTACT SUNSHINE STATE ONE CALL OF FLORIDA (1-800-432-4770) AND THE APPROPRIATE UTILITY COMPANIES FOR FIELD VERIFICATION OF UTILITIES. THIS SURVEY IS LIMITED TO ABOVEGROUND FEATURES ONLY.

12. THE PROPERTY SHOWN HEREON, THE 10295 COLLINS AVENUE RESIDENTIAL CONDOMINIUM CONTAINS 5.04 ACRES (219,330 SQUARE FEET), MORE OR LESS.

13. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES ARE PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.

14. THIS FIRM HAS ATTEMPTED TO IDENTIFY THE VARIOUS TYPES OF TREES LOCATED ON THIS SITE. A QUALIFIED LANDSCAPE ARCHITECT SHOULD BE EMPLOYED FOR POSITIVE IDENTIFICATION. TREE DIAMETERS ARE APPROXIMATE AND WERE MEASURED 3 FEET ABOVE THE GROUND. HEDGES AND GROUND COVER NOT LOCATED OR SHOWN HEREON.

15. HEDGES, ORNAMENTAL PLANTS, WELLS, IRRIGATION LINES AND SPRINKLERS HEADS (IF ANY), NOT LOCATED OR SHOWN HEREON.

THIS SURVEY IS CERTIFIED TO:

MIKYOUNG KIM DESIGN

CERTIFICATE:

THIS IS TO CERTIFY THAT THIS BOUNDARY AND TOPOGRAPHIC SURVEY WAS MADE UNDER MY RESPONSIBLE CHARGE AND IS ACCURATE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

JAVIER DE LA ROCHA
PROFESSIONAL SURVEYOR AND MAPPER NO. 6080
STATE OF FLORIDA

ECS LAND SURVEYORS, INC. L.B. 7551
email:javier@ecssurveyors.com

LEGEND:

M.D.C.R.	MIAMI-DADE COUNTY RECORDS
L.B.	LICENSED BUSINESS
P.B.	PLAT BOOK
PG.	PAGE
ID.	IDENTIFICATION
O.R.B.	OFFICIAL RECORDS BOOK
ELEV.	ELEVATION
N/A	NOT AVAILABLE
CMP	CORRUGATED METAL PIPE
PVC	POLYVINYL CHLORIDE
-OHW-	OVERHEAD WIRES
(P)	DENOTES INFORMATION BASED ON PLATS OF RECORDS
(R)	DENOTES DISTANCE BASED ON RECORD INFORMATION
(C)	CALCULATED
NAVD 88	NORTH AMERICAN VERTICAL DATUM OF 1988
TRAV. PT.	TRAVERSE POINT
℄	CENTERLINE
M	MONUMENT LINE
	BREAK IN SCALE
1	VIEW 1

ROOF TOP CONCRETE WALL DETAIL
NOT TO SCALE

LEGEND:

	WATER METER
	FIRE DEPARTMENT CONNECTION
	FIRE HYDRANT
	BACK FLOW PREVENTER
	TELEPHONE BOX
	WOOD POWER POLE WITH LIGHT
	WOOD POWER POLE
	CATCH BASIN
	METAL LIGHT POLE
	BOLLARD LIGHT
	WIRE PULL BOX
	SIGN
	ELECTRIC MANHOLE
	UNDERGROUND UTILITY MARKER POST
+6.96	SURFACE ELEVATION
T.O.W. +7.29	TOP OF WALL ELEVATION
	SEAGRAPE CLUSTER
	PALM TREE
	BREAK IN SCALE

SEE TREE TABLE IN SHEET 3 OF 3

VIEW 1 NOT TO SCALE 1

VIEW 2 NOT TO SCALE 2

VIEW 3 NOT TO SCALE 3

VIEW 4 NOT TO SCALE 4

VIEW 5 NOT TO SCALE 5

VIEW 6 NOT TO SCALE 6

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ECS LAND SURVEYORS, INC.
L.B. 7551
3460 FAIRLANE FARMS ROAD, SUITE 6, WELLINGTON, FL 33414
TELEPHONE NO. 561-314-0769 FAX NO. 561-314-0770

SEAL
NOT VALID UNLESS SEALED HERE WITH AN EMBOSSED SURVEYOR'S SEAL

SKETCH OF BOUNDARY AND TOPOGRAPHIC SURVEY
THE CUT WALK AND JETTY
BAKERS HAULOVER CUT @
10295 COLLINS AVENUE
RESIDENTIAL CONDOMINIUM
10295 COLLINS AVENUE, BAL HARBOUR, FL 33154

CLIENT: MIKYOUNG KIM DESIGN
DATE: 08/23/19
DRWN BY J.E.C.
CHKD BY J.D.L.R.
LAST FIELD DATE: 08/15/19
REVISIONS
JOB NO. ECS1657
SHEET NO. 01 OF 03

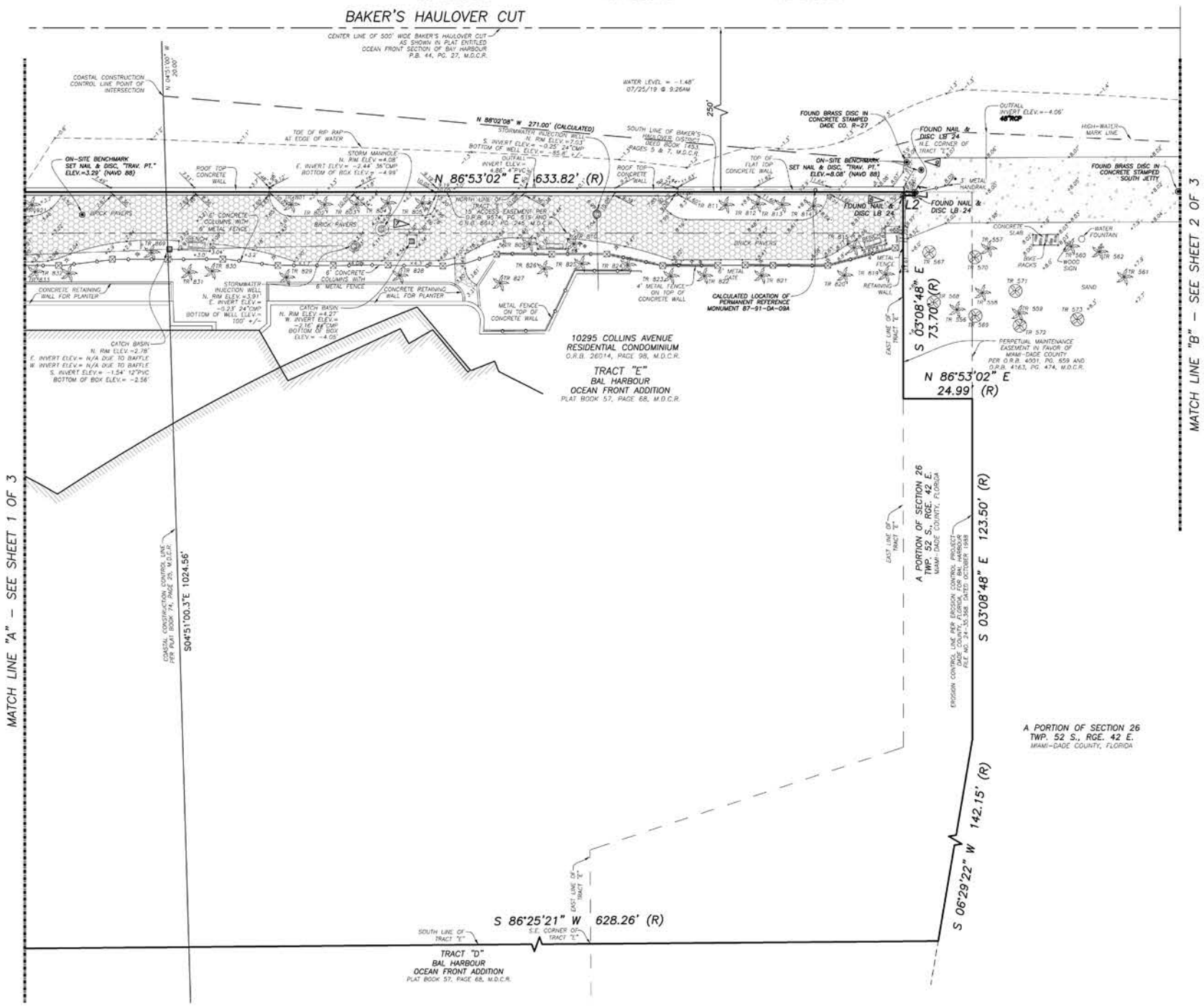
SKETCH OF BOUNDARY AND TOPOGRAPHIC SURVEY OF:

THE CUT WALK AND JETTY, BAKERS HAULOVER CUT, BAL HARBOUR, FL

VIEW 7
NOT TO SCALE

VIEW 8
NOT TO SCALE

VIEW 9
NOT TO SCALE



SEE LEGEND IN SHEET 1 OF 3
SEE TREE TABLE IN SHEET 3 OF 3

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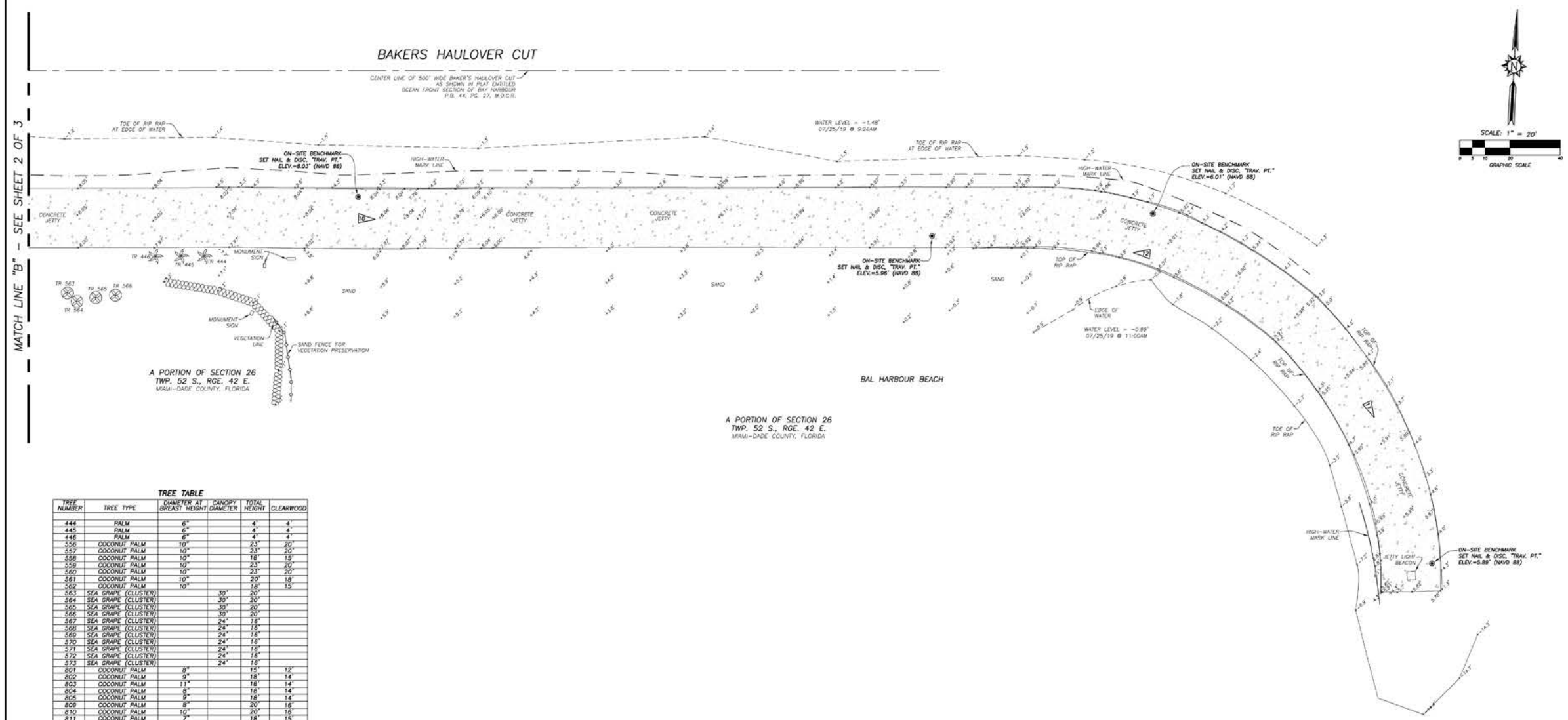
SKETCH OF BOUNDARY AND TOPOGRAPHIC SURVEY

THE CUT WALK AND JETTY
BAKERS HAULOVER CUT @
10295 COLLINS AVENUE
RESIDENTIAL CONDOMINIUM
10295 COLLINS AVENUE, BAL HARBOUR, FL 33154

CLIENT: MIKYOUNG KIM DESIGN
DATE: 08/23/19
DRWN BY J.E.C.
CHKD BY JDLR
LAST FIELD DATE: 08/15/19
REVISIONS
JOB NO. ECS1657
SHEET NO. 02 OF 03

SKETCH OF BOUNDARY AND TOPOGRAPHIC SURVEY OF: THE CUT WALK AND JETTY, BAKERS HAULOVER CUT, BAL HARBOUR, FL



TREE TABLE

TREE NUMBER	TREE TYPE	DIAMETER AT BREAST HEIGHT	CANOPY DIAMETER	TOTAL HEIGHT	CLEARWOOD
444	PALM	6"		4'	4'
445	PALM	6"		4'	4'
446	PALM	6"		4'	4'
556	COCONUT PALM	10"		23'	20'
557	COCONUT PALM	10"		23'	20'
558	COCONUT PALM	10"		18'	15'
559	COCONUT PALM	10"		23'	20'
560	COCONUT PALM	10"		23'	20'
561	COCONUT PALM	10"		20'	18'
562	COCONUT PALM	10"		18'	15'
563	SEA GRAPE (CLUSTER)		30'	20'	
564	SEA GRAPE (CLUSTER)		30'	20'	
565	SEA GRAPE (CLUSTER)		30'	20'	
566	SEA GRAPE (CLUSTER)		30'	20'	
567	SEA GRAPE (CLUSTER)		24'	18'	
568	SEA GRAPE (CLUSTER)		24'	18'	
569	SEA GRAPE (CLUSTER)		24'	16'	
570	SEA GRAPE (CLUSTER)		24'	16'	
571	SEA GRAPE (CLUSTER)		24'	16'	
572	SEA GRAPE (CLUSTER)		24'	16'	
573	SEA GRAPE (CLUSTER)		24'	16'	
801	COCONUT PALM	8"		15'	12'
802	COCONUT PALM	9"		18'	14'
803	COCONUT PALM	11"		18'	14'
804	COCONUT PALM	8"		18'	14'
805	COCONUT PALM	9"		18'	14'
809	COCONUT PALM	8"		20'	16'
810	COCONUT PALM	10"		20'	16'
811	COCONUT PALM	7"		18'	15'
812	COCONUT PALM	9"		18'	15'
813	COCONUT PALM	9"		18'	15'
814	COCONUT PALM	8"		15'	15'
815	COCONUT PALM	7"		15'	14'
819	COCONUT PALM	12"		20'	14'
820	COCONUT PALM	15"		22'	20'
821	COCONUT PALM	12"		20'	17'
822	COCONUT PALM	8"		12'	12'
823	COCONUT PALM	10"		15'	15'
824	COCONUT PALM	11"		15'	15'
825	COCONUT PALM	11"		15'	15'
826	COCONUT PALM	12"		22'	18'
827	COCONUT PALM	10"		16'	14'
828	COCONUT PALM	9"		20'	12'
829	COCONUT PALM	13"		20'	14'
830	COCONUT PALM	12"		20'	18'
831	COCONUT PALM	9"		20'	15'
832	COCONUT PALM	12"		22'	20'
833	COCONUT PALM	13"		22'	20'
869	COCONUT PALM	12"		18'	16'
917	COCONUT PALM	9"		20'	15'
918	COCONUT PALM	12"		23'	20'
919	COCONUT PALM	12"		23'	20'
920	COCONUT PALM	9"		20'	16'
921	COCONUT PALM	8"		18'	14'
1050	COCONUT PALM	10"		15'	12'
1051	COCONUT PALM	12"		20'	18'
1052	COCONUT PALM	12"		20'	18'
1053	COCONUT PALM	12"		20'	18'
1308	MEXICAN PALM	12"		20'	20'
1309	MEXICAN PALM	12"		20'	20'
1310	MEXICAN PALM	12"		20'	20'
1311	MEXICAN PALM	12"		20'	20'
1312	MEXICAN PALM	12"		20'	20'
1313	MEXICAN PALM	12"		18'	16'
1314	MEXICAN PALM	12"		18'	16'
1445	COCONUT PALM	10"		12'	10'
1446	COCONUT PALM	10"		12'	10'
1447	COCONUT PALM	10"		12'	10'
1448	COCONUT PALM	10"		20'	17'
1449	UNKNOWN PALM	18"		25'	20'
1450	UNKNOWN PALM	20"		22'	22'
1552	COCONUT PALM	12"		25'	22'
1553	COCONUT PALM	12"		25'	22'
1554	COCONUT PALM	12"		25'	22'
1555	COCONUT PALM	12"		25'	22'
1556	COCONUT PALM	12"		25'	22'
1557	COCONUT PALM	12"		6'	22'
1559	SEA GRAPE (CLUSTER)		40'	25'	

VIEW 10 (10)
NOT TO SCALE

VIEW 11 (11)
NOT TO SCALE

VIEW 12 (12)
NOT TO SCALE

SEE LEGEND IN SHEET 1 OF 3

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TELEPHONE NO. 561-314-0769 FAX NO. 561-314-0770

SEAL
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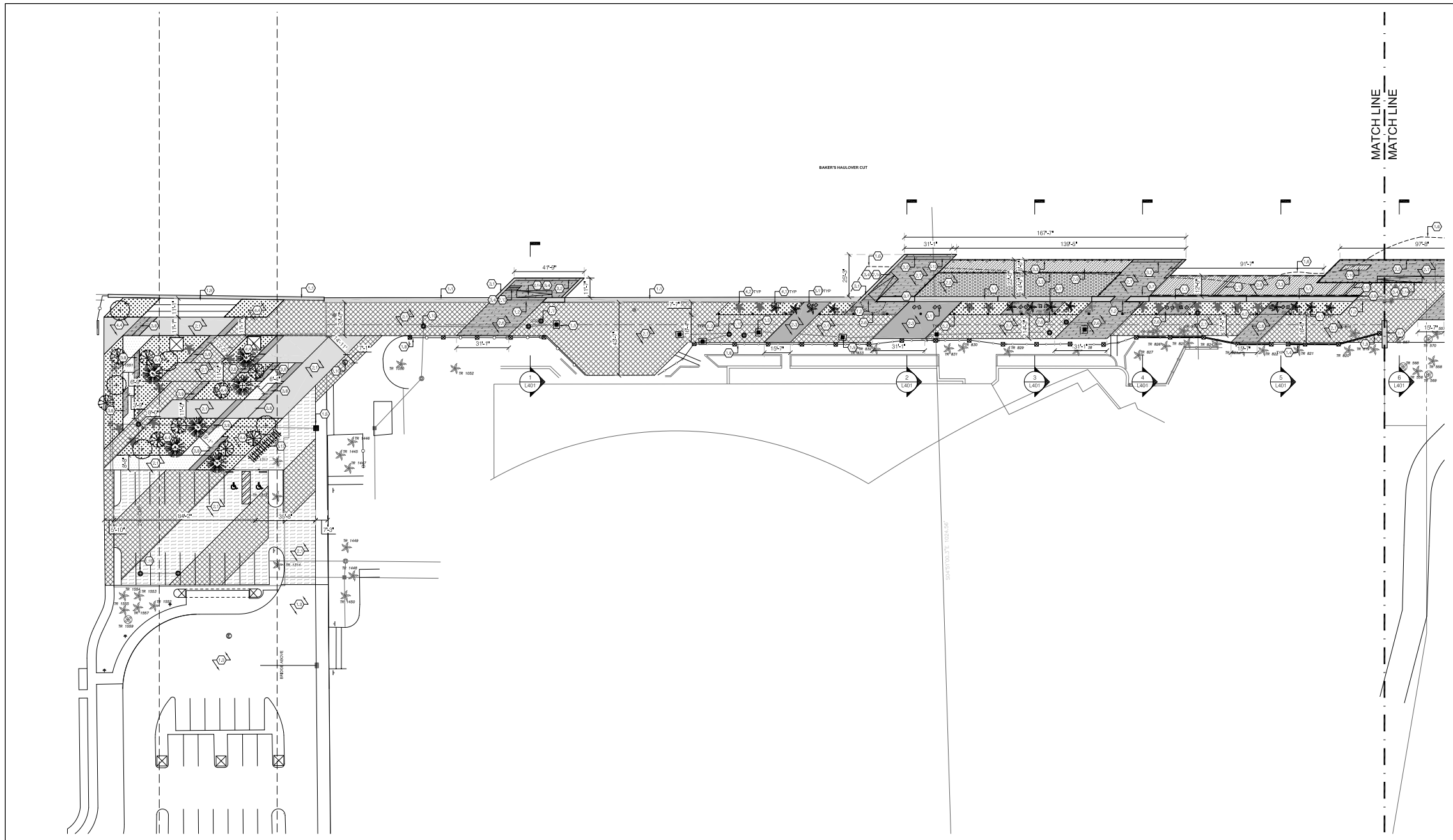
SKETCH OF BOUNDARY AND TOPOGRAPHIC SURVEY
THE CUT WALK AND JETTY
BAKERS HAULOVER CUT @
10295 COLLINS AVENUE
RESIDENTIAL CONDOMINIUM
10295 COLLINS AVENUE, BAL HARBOUR, FL 33154

CLIENT: MIKYOUNG KIM DESIGN
DATE: 08/23/19
DRWN BY J.E.C.
CHKD BY JDLR
LAST FIELD DATE: 08/15/19
REVISIONS

JOB NO. ECS1657
SHEET NO. 03 OF 03

B. TECHNICAL DRAWINGS



LAYOUT AND MATERIALS PLAN KEY

1.0 EXISTING/ PROPOSED SITE CONDITIONS BY OTHERS

- (1.1) EXISTING SEAWALL TO REMAIN AND RECONDITIONED
- (1.2) EXISTING SEAWALL TO BE REMOVED (ABOVE GROUND)
- (1.3) EXISTING PAVEMENT TO REMAIN AND BE PROTECTED
- (1.4) EXISTING LIGHTING TO BE PROTECTED
- (1.5) EXISTING CATCH BASIN
- (1.6) APPROX. WATERLINE AT RIPRAP
- (1.7) EDGE OF EXISTING JETTY, BELOW
- (1.8) EXISTING FENCE TO REMAIN AND BE PROTECTED
- (1.9) EXISTING STAIRS TO REMAIN
- (1.10) EXISTING UTILITY

2.0 PAVEMENT, SURFACES, STEPS, AND RAMPS

- (2.1) PRECAST CONCRETE PAVER, COLOR VARIES
  - COLOR 1
  - COLOR 2
  - COLOR 3
  - COLOR 4
- (2.2) PRECAST CONCRETE PAVEMENT
- (2.3) CONCRETE PLATFORM AT GRADE
- (2.4) PRECAST CONCRETE PLATFORM W/ CONCRETE FOUNDATION
- (2.5) ARTIFICIAL REEF
- (2.6) WOOD PLATFORM AT GRADE
- (2.7) WOOD DECKING ON CANTILEVER CONCRETE SLAB
- (2.8) WOOD ELEVATED BOARDWALK
- (2.9) METAL GRATING CATWALK
- (2.10) METAL GRATING WINDOW
- (2.11) STAIRS, CONCRETE
- (2.12) STAIRS, WOOD
- (2.13) STAIRS, METAL
- (2.14) ACCESSIBLE RAMP, WOOD
- (2.15) ACCESSIBLE RAMP, CONCRETE
- (2.16) SEATING STEPS, WOOD

3.0 SITE ELEMENTS

- (3.1) MONOLITHIC CONCRETE GUARDRAIL
- (3.2) MONOLITHIC CONCRETE GUARDRAIL W/ WOOD CLADDING
- (3.3) METAL GUARDRAIL
- (3.4) METAL HANDRAIL
- (3.5) METAL CANOPY
- (3.6) METAL GATE
- (3.7) FLOOD GATE
- (3.8) WOOD BENCH
- (3.9) WOOD RECLINING BENCH
- (3.10) WOOD SEATING PLATFORM
- (3.11) SEA VIEW CHAIRS
- (3.12) BIKE RACK
- (3.13) SIGNAGE
- (3.14) TRASH RECEPTACLE
- (3.15) SWING
- (3.16) WATER FROUNTAIN

4.0 PLANTING AND LANDSCAPE

- (4.1) EXISTING PALM TREE
- (4.2) PALM TREE
- (4.3) NATIVE BEACH GARDEN PLANTING
- (4.4) PLANTBED WITH SHADE TOLERANT PLANT MIX

5.0 LIGHTING

- (5.1) LIGHT BEACON
- (5.2) BOLLARD LIGHT

BAL HARBOUR

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MYKD PROJECT NUMBER: XXX

SCHEMATIC DESIGN

DATE: 10/30/2019

REVISIONS:

SCALE:

DRAWING NAME:
LAYOUT AND MATERIALS PLAN 1

Ref. North

DRAWING NUMBER:
L101

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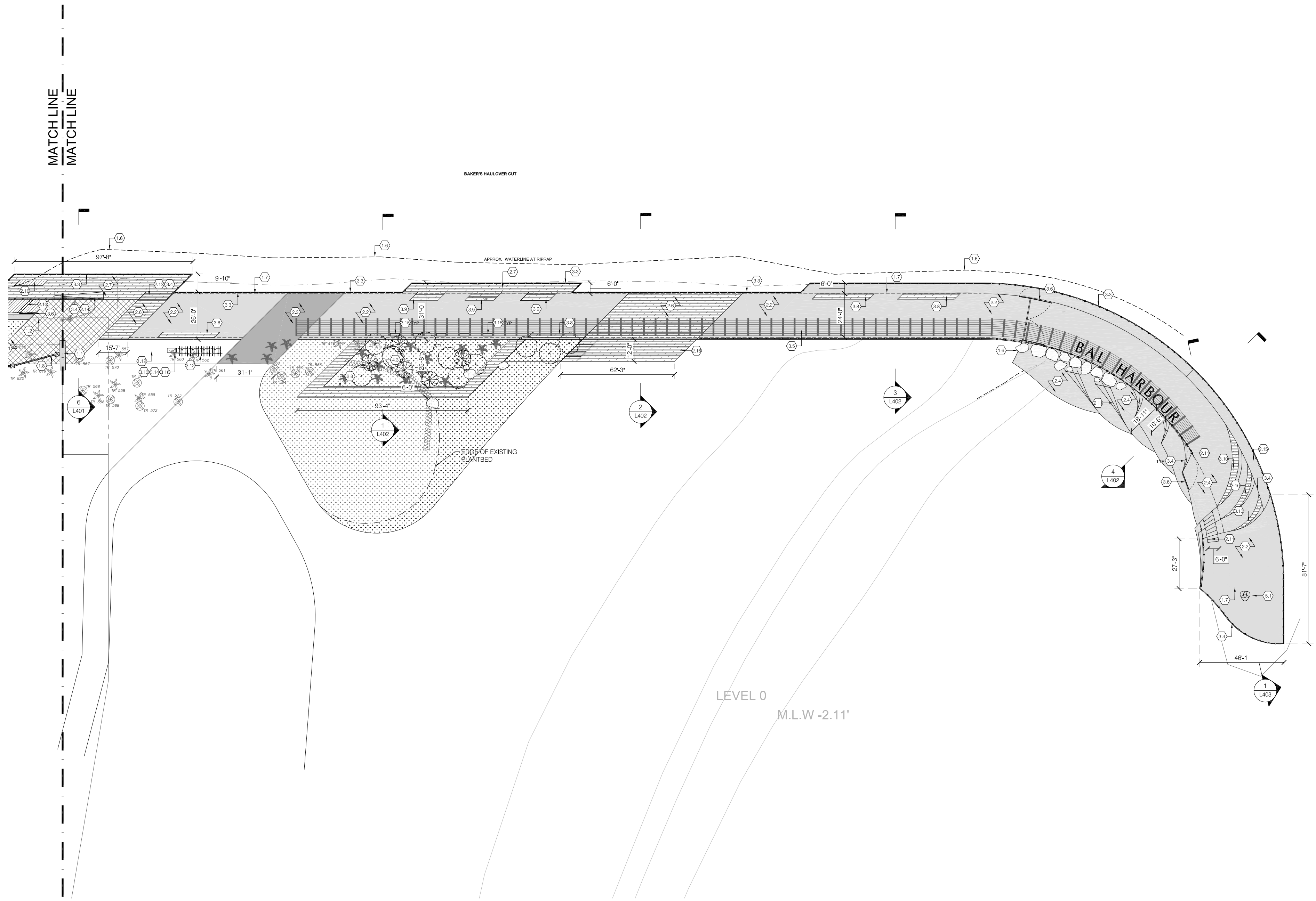

LAYOUT AND MATERIALS PLAN KEY

1.0 EXISTING/ PROPOSED SITE CONDITIONS BY OTHERS

- 1.1 EXISTING SEAWALL TO REMAIN AND RECONDITIONED
- 1.2 EXISTING SEAWALL TO BE REMOVED (ABOVE GROUND)
- 1.3 EXISTING PAVEMENT TO REMAIN AND BE PROTECTED
- 1.4 EXISTING LIGHTING TO BE PROTECTED
- 1.5 EXISTING CATCH BASIN
- 1.6 APPROX. WATERLINE AT RIPRAP
- 1.7 EDGE OF EXISTING JETTY, BELOW
- 1.8 EXISTING FENCE TO REMAIN AND BE PROTECTED
- 1.9 EXISTING STAIRS TO REMAIN
- 1.10 EXISTING UTILITY

2.0 PAVEMENT, SURFACES, STEPS, AND RAMPS

- 2.1 PRECAST CONCRETE PAVER, COLOR VARIES
  - COLOR 1
  - COLOR 2
  - COLOR 3
  - COLOR 4
- 2.2 PRECAST CONCRETE PAVEMENT
- 2.3 CONCRETE PLATFORM AT GRADE
- 2.4 PRECAST CONCRETE PLATFORM W/ CONCRETE FOUNDATION
- 2.5 ARTIFICIAL REEF
- 2.6 WOOD PLATFORM AT GRADE
- 2.7 WOOD DECKING ON CANTILEVER CONCRETE SLAB
- 2.8 WOOD ELEVATED BOARDWALK
- 2.9 METAL GRATING CATWALK
- 2.10 METAL GRATING WINDOW
- 2.11 STAIRS, CONCRETE
- 2.12 STAIRS, WOOD
- 2.13 STAIRS, METAL
- 2.14 ACCESSIBLE RAMP, WOOD
- 2.15 ACCESSIBLE RAMP, CONCRETE
- 2.16 SEATING STEPS, WOOD

3.0 SITE ELEMENTS

- 3.1 MONOLITHIC CONCRETE GUARDRAIL
- 3.2 MONOLITHIC CONCRETE GUARDRAIL W/ WOOD CLADDING
- 3.3 METAL GUARDRAIL
- 3.4 METAL HANDRAIL
- 3.5 METAL CANOPY
- 3.6 METAL GATE
- 3.7 FLOOD GATE
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- 3.10 WOOD SEATING PLATFORM
- 3.11 SEA VIEW CHAIRS
- 3.12 BIKE RACK
- 3.13 SIGNAGE
- 3.14 TRASH RECEPTACLE
- 3.15 SWING
- 3.16 WATER FROUNTAIN

4.0 PLANTING AND LANDSCAPE

- 4.1 EXISTING PALM TREE
- 4.2 PALM TREE
- 4.3 NATIVE BEACH GARDEN PLANTING
- 4.4 PLANTBED WITH SHADE TOLERANT PLANT MIX

5.0 LIGHTING

- 5.1 LIGHT BEACON
- 5.2 BOLLARD LIGHT

BAL HARBOUR

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SCHEMATIC DESIGN

DATE: 10/30/2019

REVISIONS:

SCALE:

DRAWING NAME:
LAYOUT AND MATERIALS PLAN 2

Ref. North

DRAWING NUMBER:
L102

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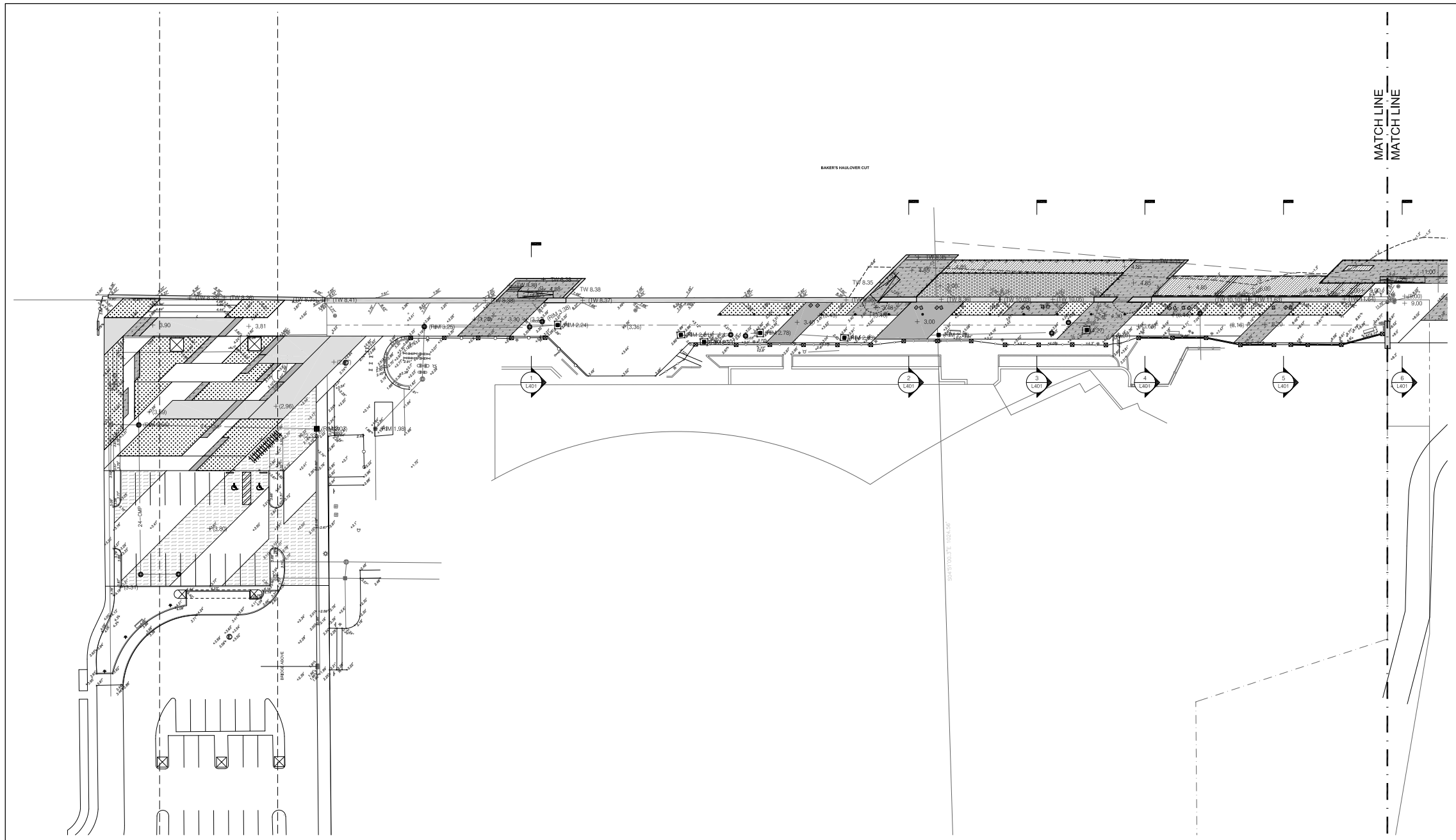

GRADING PLAN LEGEND

~~XXX~~	EXISTING CONTOUR
XXX	PROPOSED CONTOUR
(XX.XX)	EXISTING SOFT ELEVATION (VF.)
XX.XX	PROPOSED SPOT ELEVATION
+HP	HIGH POINT ELEVATION
+LP	LOW POINT ELEVATION
X:X	RATIO OF DOWN SLOPE (HOR:VERT)
0.0%	DIRECTION/ PERCENTAGE OF DOWN SLOPE
– – – –	GRADE BREAK

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SCHEMATIC DESIGN

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GRADING PLAN 1

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DRAWING NUMBER:
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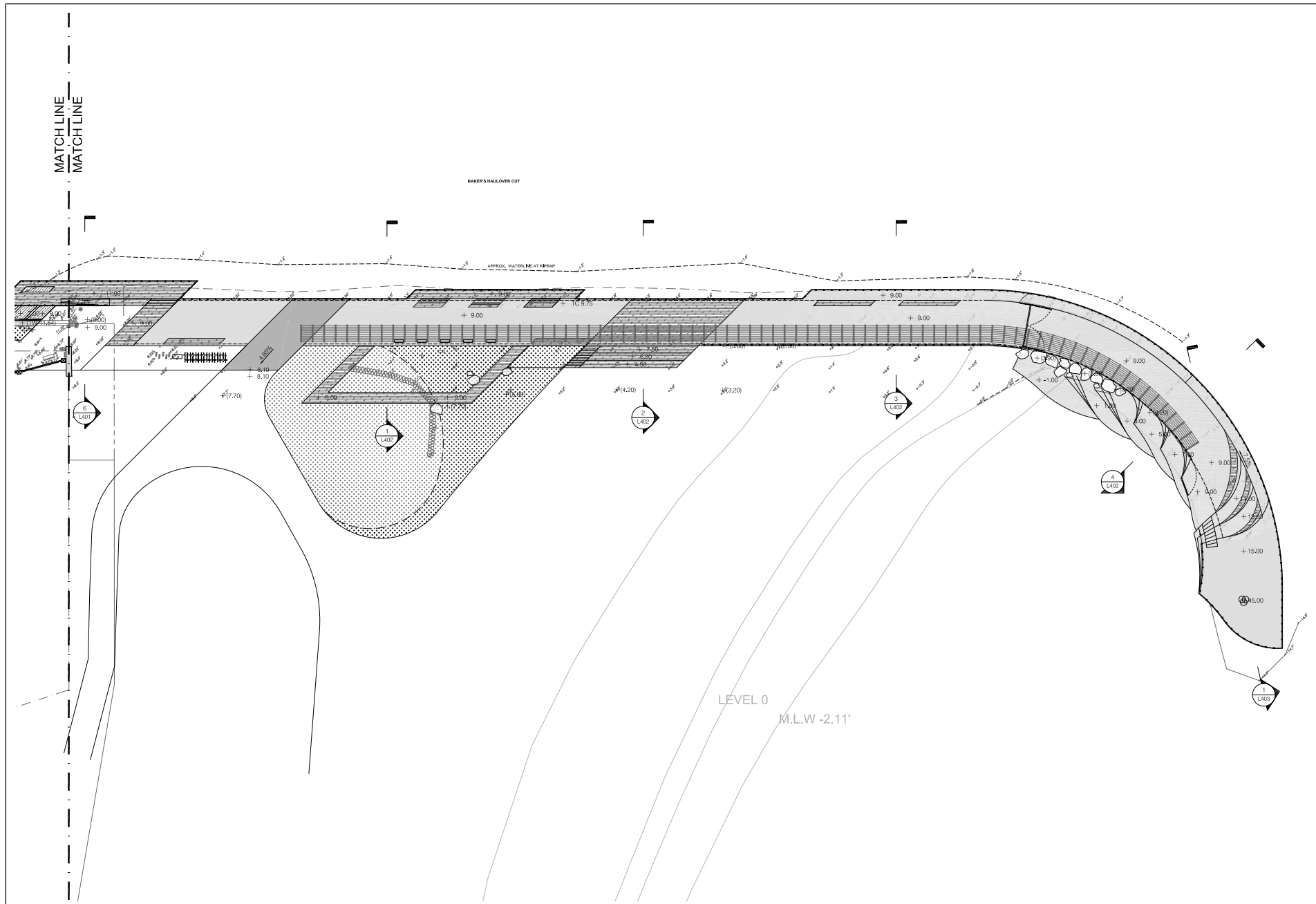

GRADING PLAN LEGEND

--XXX--	EXISTING CONTOUR
XXX	PROPOSED CONTOUR
(XX.XX)	EXISTING SOPT ELEVATION (VIF.)
XX.XX	PROPOSED SPOT ELEVATION
+HP	HIGH POINT ELEVATION
+LP	LOW POINT ELEVATION
X:X	RATIO OF DOWN SLOPE (HOIZ:VERT)
0.0%	DIRECTION/ PERCENTAGE OF DOWN SLOPE
– – – –	GRADE BREAK

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SCHEMATIC DESIGN

DATE: 10/30/2019

REVISIONS:

SCALE:

DRAWING NAME:
GRADING PLAN 2

Ref. North

DRAWING NUMBER:
L202

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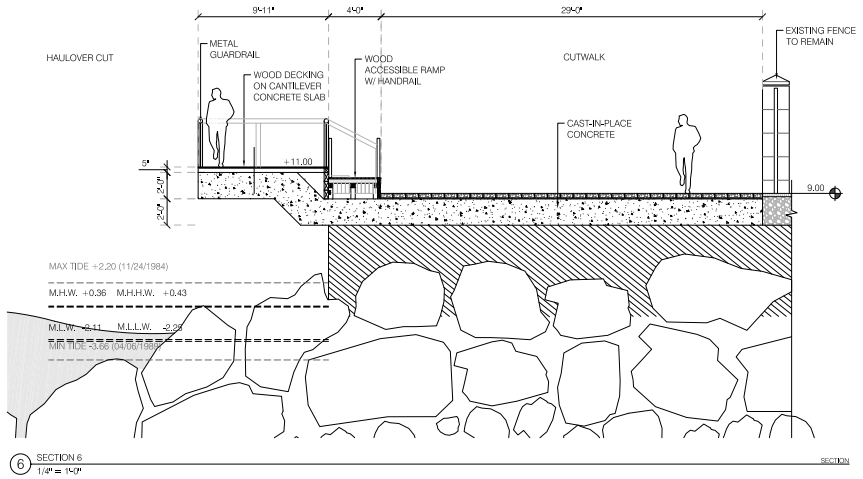
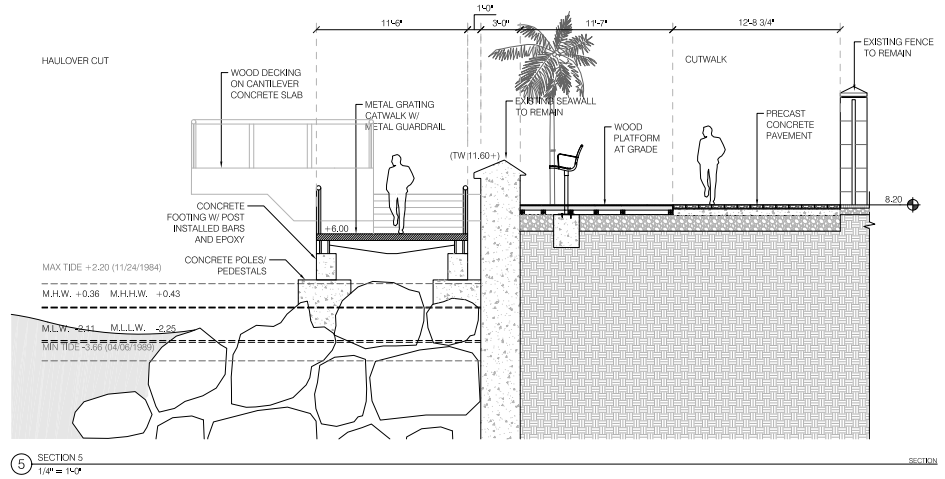


6 SECTION 6
1/4" = 1'-0"



5 SECTION 5
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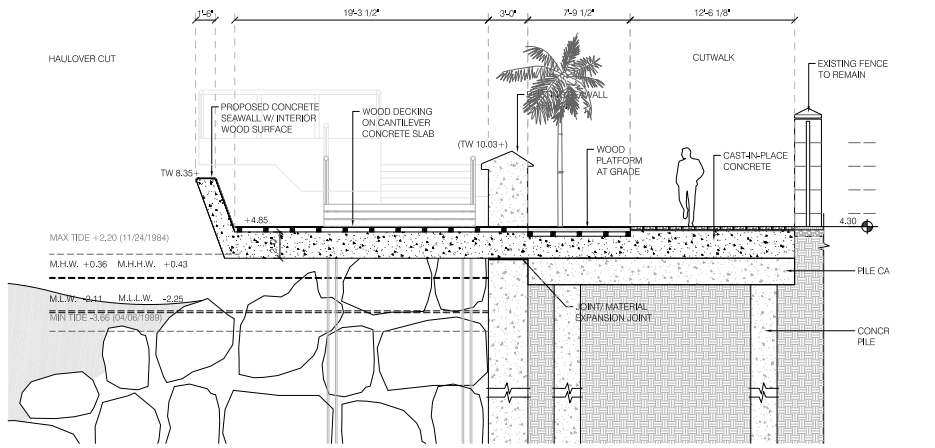

4 SECTION 4
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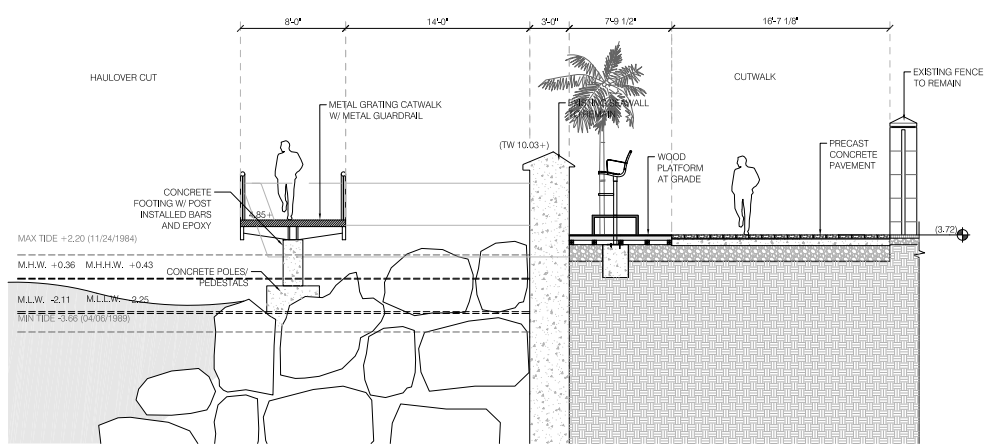

3 SECTION 3
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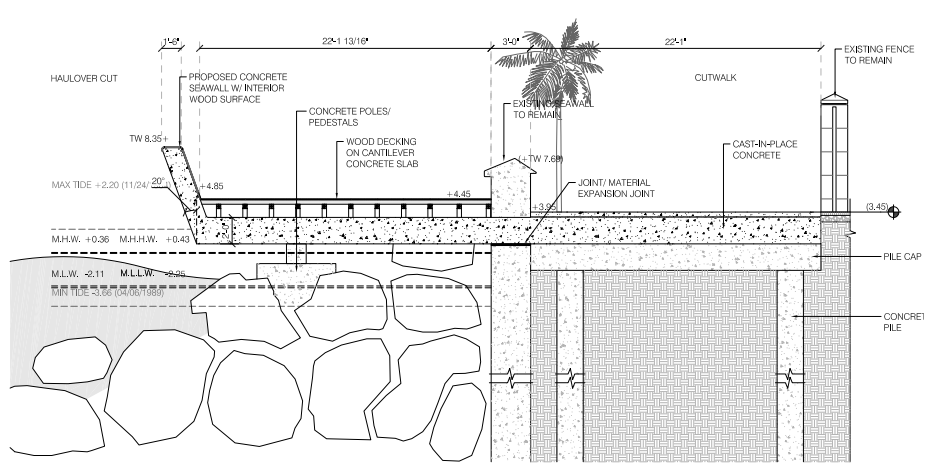
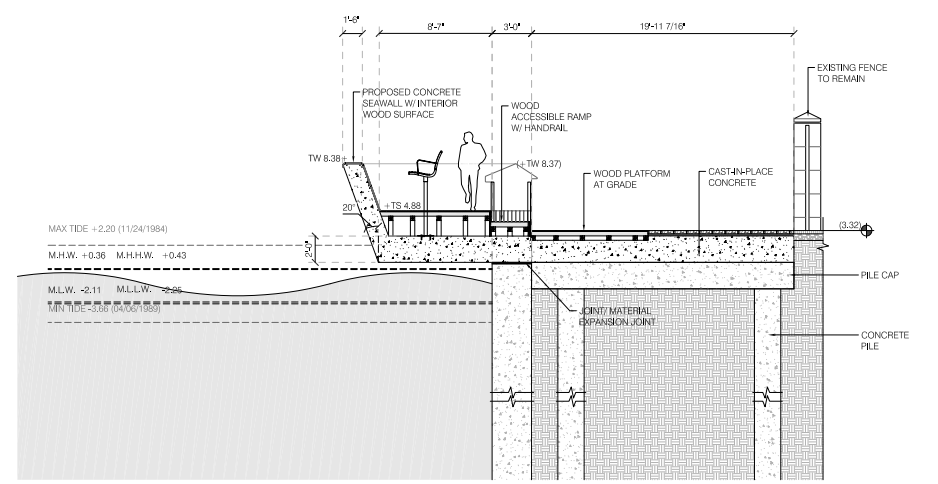


2 SECTION 2
1/4" = 1'-0"



1 SECTION 1
1/4" = 1'-0"

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MYKD PROJECT NUMBER: XXX

SCHEMATIC DESIGN

DATE: 10/30/2019

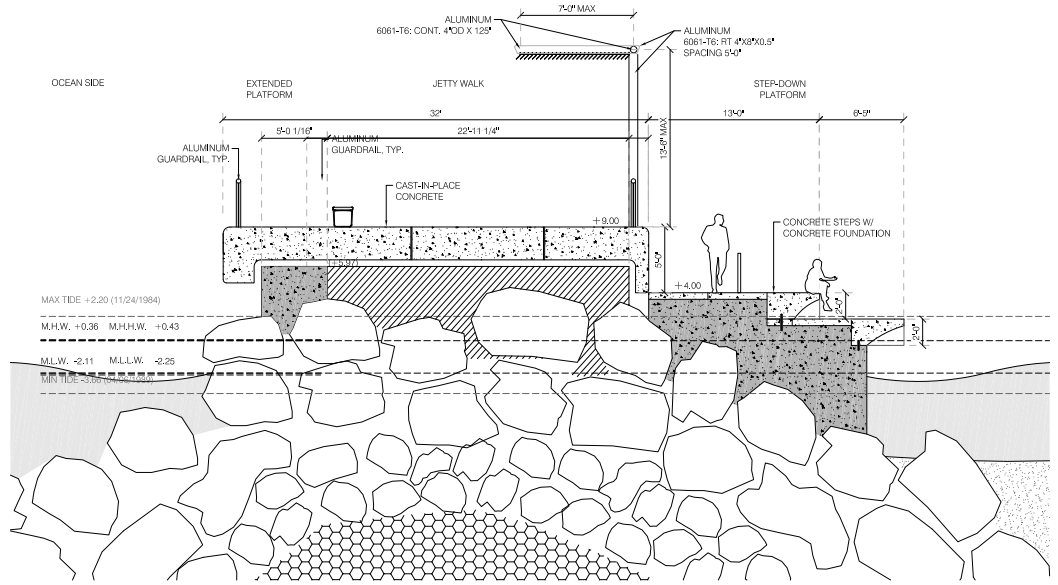
REVISIONS:

SCALE: AS NOTED

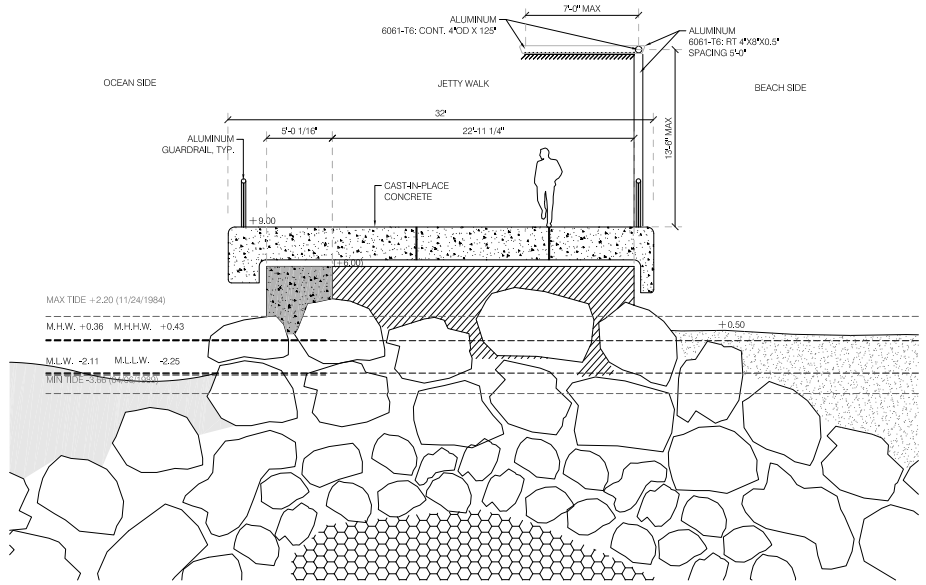
DRAWING NAME:
SITE SECTIONS 1

DRAWING NUMBER:
L401

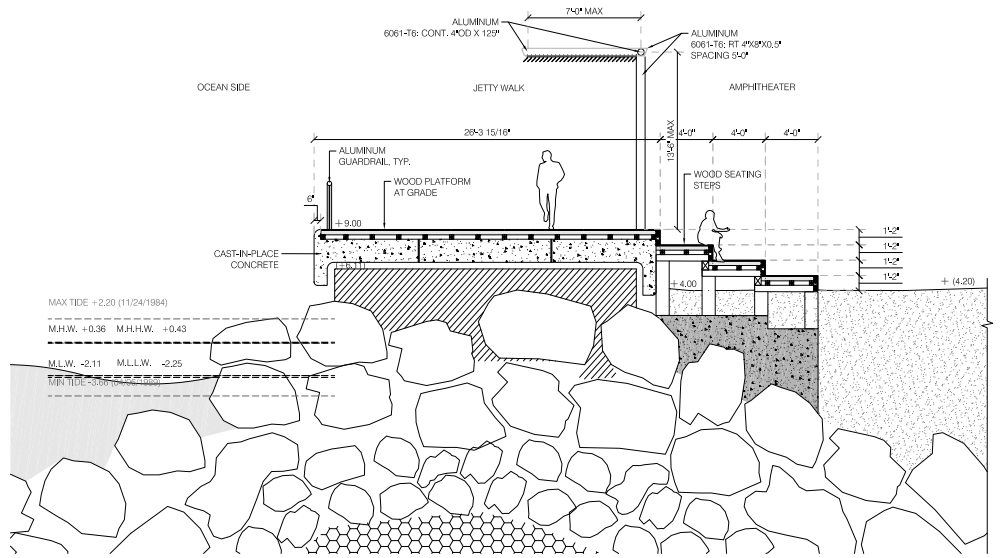
NOT FOR CONSTRUCTION



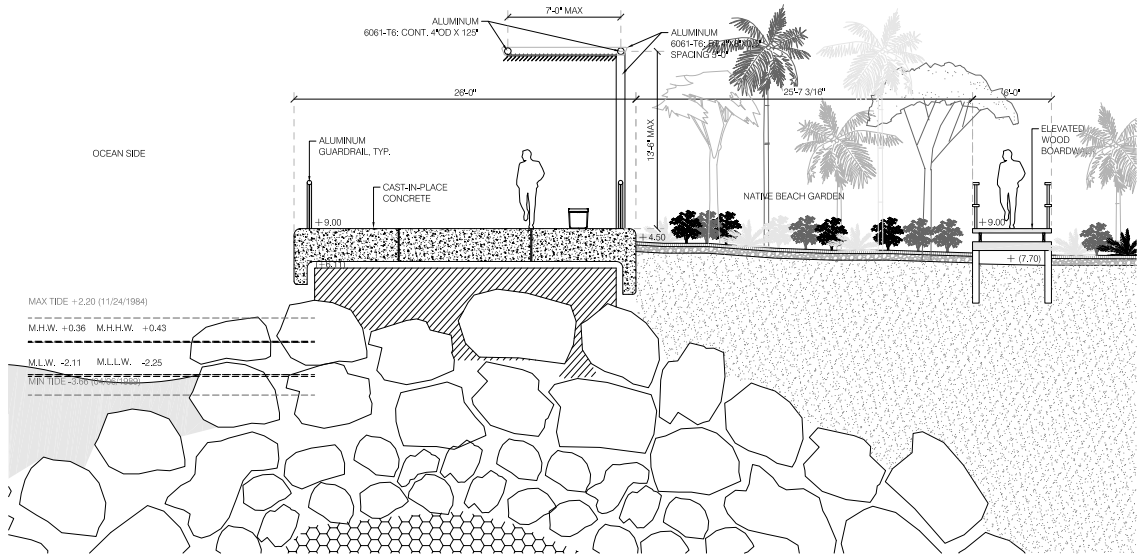
4 STEP-DOWN PLATFORMS
1/4" = 1'-0" SECTION



3 EXTENDED JETTY PLATFORM
1/4" = 1'-0" SECTION



2 AMPHITHEATER
1/4" = 1'-0" SECTION



1 NATIVE GARDEN BOARDWALK
1/4" = 1'-0" SECTION

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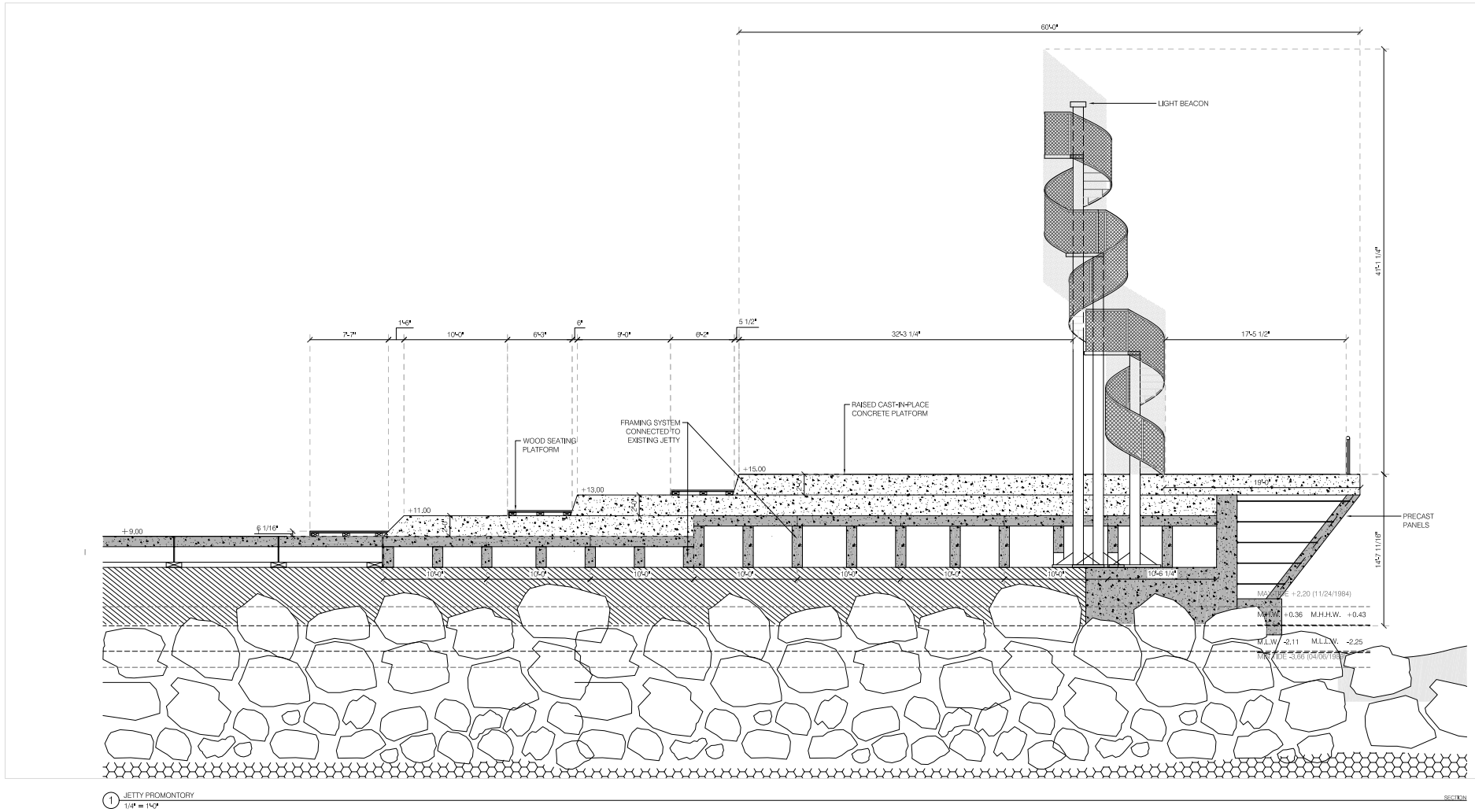

1 JETTY PROMONTORY
1/4" = 1'-0"

SECTION

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SCHEMATIC DESIGN

DATE: 10/30/2019

REVISIONS:

SCALE:

DRAWING NAME:
SITE SECTIONS 3

Ref. North

DRAWING NUMBER:
L403

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C. BENTHIC REPORT

BENTHIC RESOURCE SURVEY
SUMMARY REPORT

BAL HARBOUR CUTWALK AND JETTY
TCG PROJECT NO. 19-0049

SEPTEMBER 2019

PREPARED FOR:
MIKYOUNG KIM DESIGN
119 BRAINTREE STREET, NO. 103
BOSTON, MA 02134

714 East McNab Road. Pompano Beach, FL 33060 *tel*. 954. 782.1908 *fax*. 954.782.1108 www.thechappellgroup.com

Environmental Consultants | Marina & Wetland Permitting | Phase I ESAs | Mitigation Design & Monitoring | T & E Species Surveys

I. Introduction

The proposed project site is a cutwalk and jetty located along the Haulover Inlet and on A1A/Collins Avenue in the Village of Bal Harbour, Miami-Dade County, Florida (Figure 1). The project site is located along the Haulover Inlet and the Atlantic Ocean.

These waters are tidal waters with a direct connection to the Atlantic Ocean. As the project site is located along the Haulover Inlet, the incoming tidal waters (flood) at the site move to the west while the outgoing waters move to the east (ebb).

The project site contains an existing seawall, rip rap jetty and cutwalk. The proposed project is the improvement of the existing seawall, jetty and cutwalk. As such, due to environmental permitting regulations related to the modification of docking facilities, the investigation of the presence and location of benthic resources within the submerged bottoms is warranted.

II. Purpose

The purpose of this benthic resource study is to identify and locate any seagrass species (*Halophila decipiens, Halophila johnsonii, Thalassia testudinum, Halodule wrightii, Ruppia maritima,* etc.) or other benthic resources that may be present within the property boundaries of the subject site. Environmental regulatory agencies require representative data to be acquired from any site that has potential seagrass habitat.

III. Method

The field work for the benthic resource survey was conducted on September 17, 2019 and September 18, 2019 by four (4) qualified biologists from The Chappell Group, Inc. This work was performed at high tide (incoming). Line transects were conducted parallel to the existing seawall, cutwalk and jetty within the proposed project footprint. The survey area was approximately ±1,433’ adjacent to the existing shoreline and extended ±60’ waterward of the existing shoreline in the north and extended ±40’ waterward of the existing shoreline in the south, respectively. Each diver conducted three (3) line transects parallel to the length of the property within the Haulover Inlet and adjacent to the Bal Harbour Beach jetty to ensure complete coverage of the survey area (Figure 2). The biologists traversed each line along the bottom of the inlet to determine the presence of any seagrass species and/or other submerged benthic resources. In addition to the line transects, each diver conducted a meandering transect to ensure complete

714 East McNab Road. Pompano Beach, FL 33060 *tel*. 954.782.1908 *fax*. 954.782.1108 www.thechappellgroup.com

visual coverage and that no additional benthic resources were present adjacent to the subject site. Due to visibility (<20'), spacing between transects was limited to 20' to ensure complete coverage of the survey area.

IV. Findings

The benthic community of the subject site consisted of sand, crushed shell and rip rap (Appendix A). Depths within the survey area varied from 5'-20' with depths increasing with distance towards the center of the inlet. No species of seagrass were observed. Resources observed within the survey area included numerous coral growing on the rip rap, including at least three (3) mustard hill coral colonies (*Porites astreoides*, >10cm), 139 colonies of white encrusting zoanthid (*Palythoa caribaeorum*, >10cm), 224 lesser starlet coral colonies (*Siderastrea radians*, <1 cm – 30 cm), ten (10) common brain coral (*Faviidae spp.*, 20 cm – 30 cm) and one (1) smooth star coral (*Solenastrea bournoni*, >10cm) as shown in Table 1. A total of 205 riprap boulders were documented to contain 90% coverage of coral species, predominately the white encrusting zoanthid *P. caribaeorum*. Coral colonies were observed on rip rap throughout the survey area, beginning at the mean low water line approximately 8' waterward of the cutwalk. Field work was limited to two (2) days due to budget and time constraints for the schematic design phase; therefore, a more detailed assessment of corals may be documented by TCG and agencies during the future permitting process.

Table 1. Corals Observed

Common Name	Scientific Name	No. Observed	Size
Lesser starlet coral	*Siderastrea radians*	224	<1-30cm
Common brain coral	*Faviidae spp.*	10	20-30cm
Mustard hill coral	*Porites astreoides*	3	>10cm
White encrusting zoanthid	*Palythoa caribaeorum*	139	>10cm
Smooth star coral	*Solenastrea bournoni*	1	>10cm

Fish species observed within the survey area included foureye butterflyfish (*Chaetodon capistratus*), sergeant major (*Abudefduf saxatilis*), Atlantic tarpon (*Megalops atlanticus*), rainbow parrotfish (*Scarus guacamaia*), lionfish (*Pterois volitans*), sheepshead (*Archosargus probatocephalus*), mangrove snapper (*Lutjanus griseus*) and checkered puffer (*Sphoeroides testudineus*). A complete listing of species observed is included in Table 2 below:

714 East McNab Road. Pompano Beach, FL 33060 *tel*. 954.782.1908 *fax*. 954.782.1108 www.thechappellgroup.com

Table 2. Species Observed

Common Name	Scientific Name
Fish	
Butterflyfish	*Chaetodon capistratus*
Atlantic tarpon	*Megalops atlanticus*
Rainbow parrotfish	*Scarus guacamaia*
Lionfish	*Pterois volitans*
Sheepshead	*Archosargus probatocephalus*
Sergeant major	*Abudefduf saxatilis*
Mangrove snapper	*Lutjanus griseus*
Checkered puffer	*Sphoeroides testudineus*
Coral	
Lesser starlet coral	*Siderastrea radians*
Common brain coral	*Faviidae spp.*
Mustard hill coral	*Porites astreoides*
White encrusting zoanthid	*Palythoa caribaeorum*
Smooth star coral	*Solenastrea bournoni*

V. Conclusions

As seagrass and coral are protected natural resources, potential impacts to resources will need to be eliminated and/or minimized to the greatest extent possible. Due to the location of corals within the project survey area, modifications to the project may be necessary. Permit issuance may entail a similar investigation by the Miami-Dade County Department of Environmental Resource Management (DERM), the Florida Department of Environmental Protection (FDEP) and the United States Army Corps of Engineers (USACOE).

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This report is submitted in partial completion of the regulatory requirements anticipated to be required in the processing of the applicable environmental permits for the proposed project. This report and the information contained herein is based on the existing site conditions observed at the time of the survey inspection. Please note that while not anticipated, site conditions, including the presence, absence, location and/or coverage of seagrass or other benthic resources within the project vicinity is subject to change based on varying environmental conditions. Should you have any questions or comments regarding the report or the information contained herein, please do not hesitate to contact the undersigned at your convenience.

Sincerely,

THE CHAPPELL GROUP INC.

Hayley De Marchis
Project Biologist

Sarah Chappell
President

714 East McNab Road. Pompano Beach, FL 33060 *tel*. 954.782.1908 *fax*. 954.782.1108 www.thechappellgroup.com

FIGURE 1

LOCATION MAP

714 East McNab Road. Pompano Beach, FL 33060 *tel*. 954.782.1908 *fax*. 954.782.1108 www.thechappellgroup.com

THE Chappell GROUP INC.
714 East McNab Road
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- *Environmental Consultants*
- *Marina & Wetland Permitting*
- *Mitigation Design & Monitoring*
- *T&E Species Surveys*
- *Phase I ESAs*

BAL HARBOUR CUTWALK & JETTY

PREPARED FOR:
MIKYOUNG KIM DESIGN

FIGURE 1 - LOCATION MAP

Date:	Sheet :	of :
10/1/2019	1	1
Proj No.: 19-0049		

FIGURE 2

SURVEY AERIAL EXHIBIT

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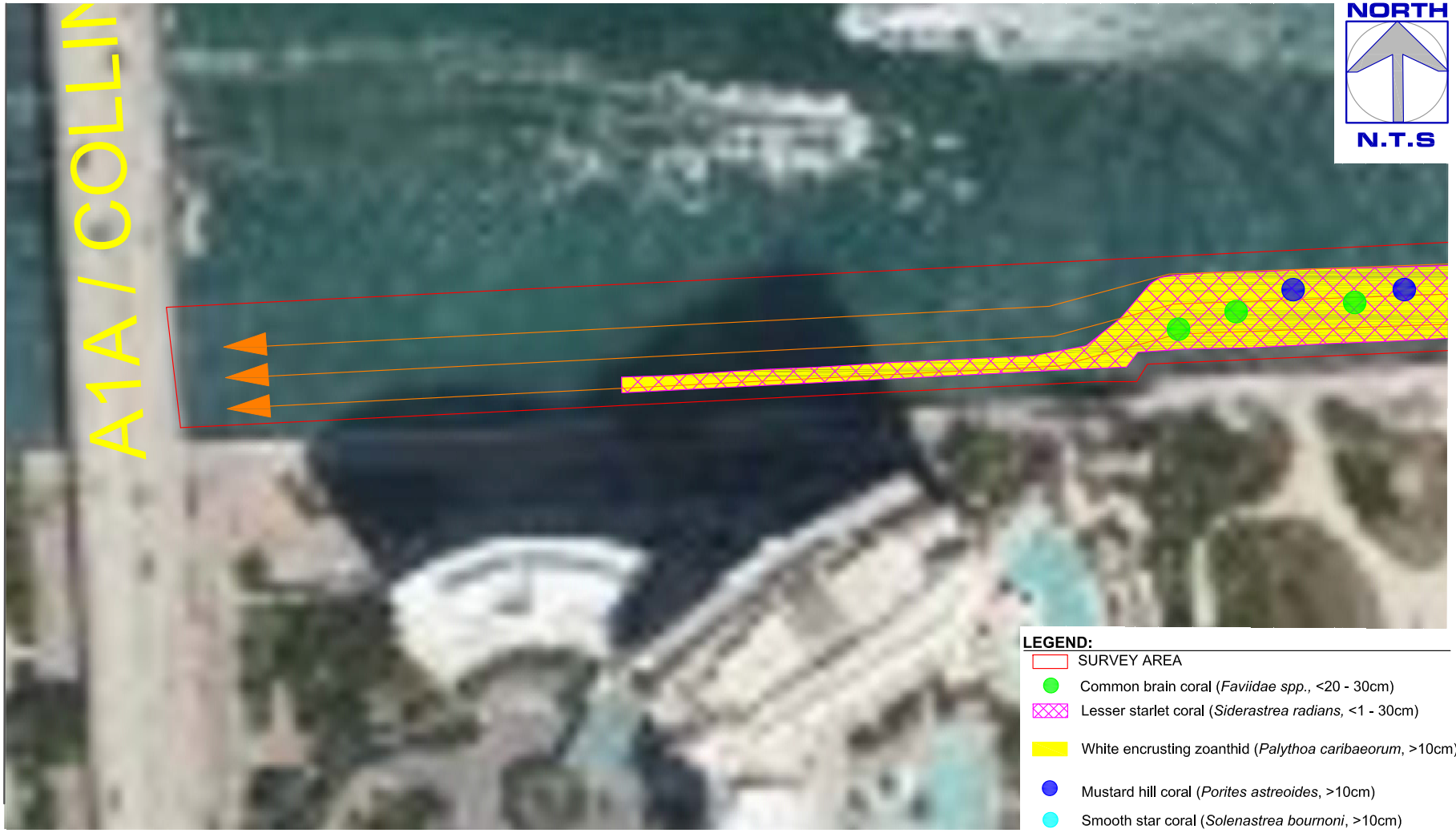
BAL HARBOUR CUTWALK & JETTY

PREPARED FOR:
MIKYOUNG KIM DESIGN

FIGURE 2: CORAL EXHIBIT

Date:	Sheet :	of :
10/1/2019	1	3
Proj No.: 19-0049		



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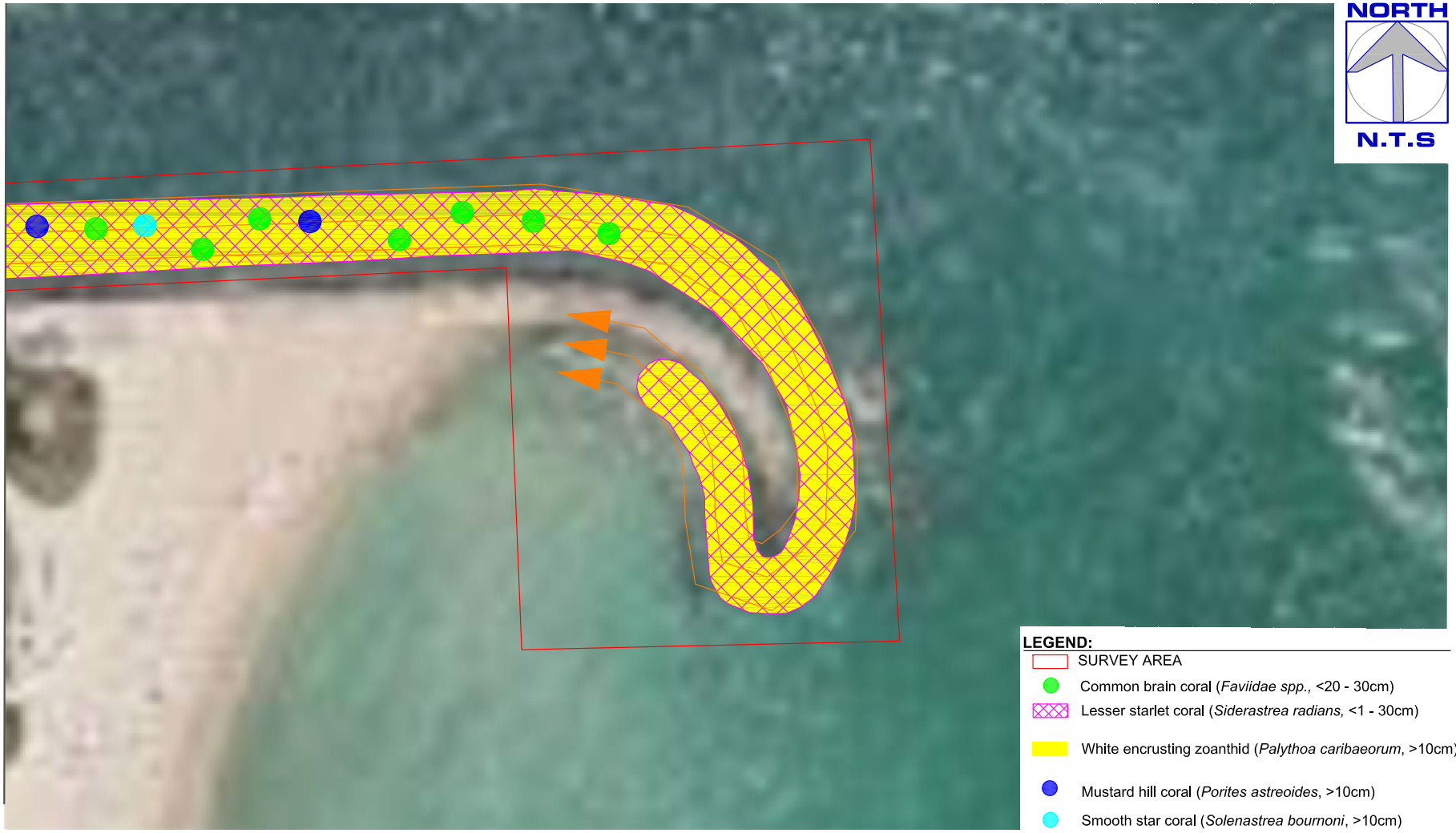
BAL HARBOUR CUTWALK & JETTY

PREPARED FOR:
MIKYOUNG KIM DESIGN

FIGURE 2: CORAL EXHIBIT

Date:	Sheet :	of :
10/1/2019	2	3
Proj No.: 19-0049		



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BAL HARBOUR CUTWALK & JETTY

PREPARED FOR:
MIKYOUNG KIM DESIGN

FIGURE 2: CORAL EXHIBIT

Date:	Sheet :	of :
10/1/2019	3	3
Proj No.: 19-0049		

APPENDIX A

SITE PHOTOGRAPHS

1. **Western portion of the property, facing southwest along the Haulover Inlet.**

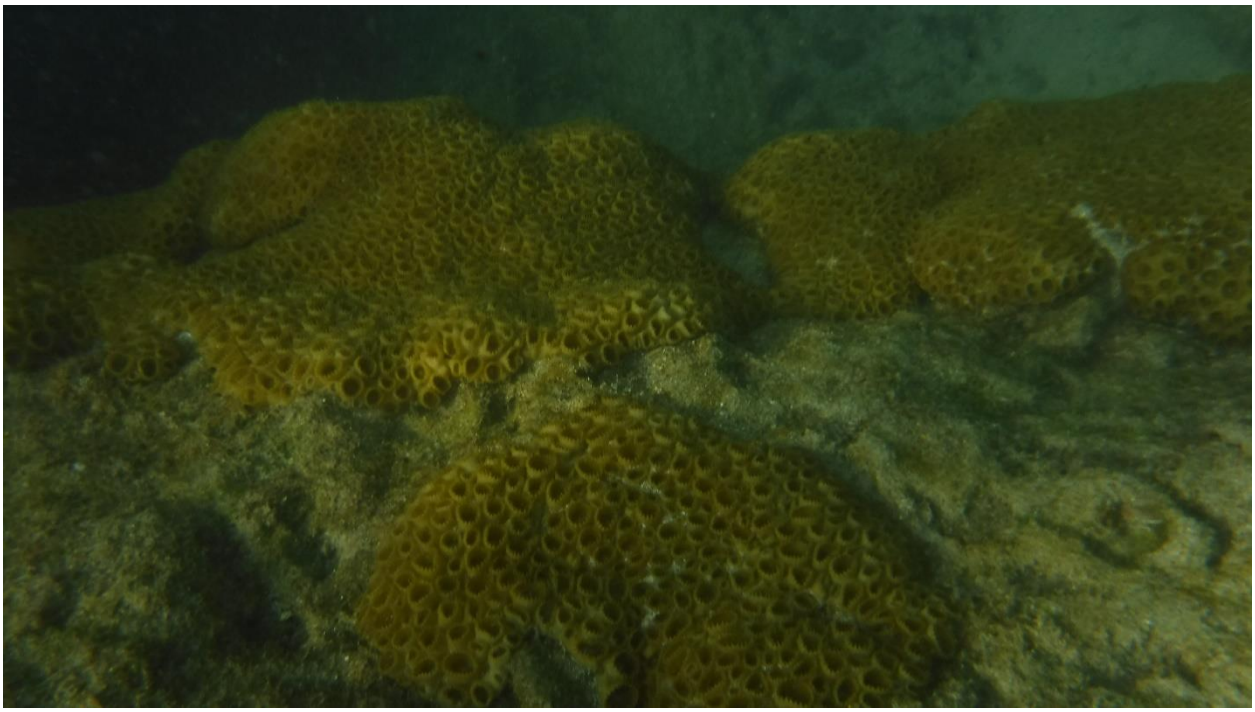
2. **Central portion of the property, facing south along the Haulover Inlet.**

3. **Eastern portion of the property, facing east along the Haulover Inlet.**

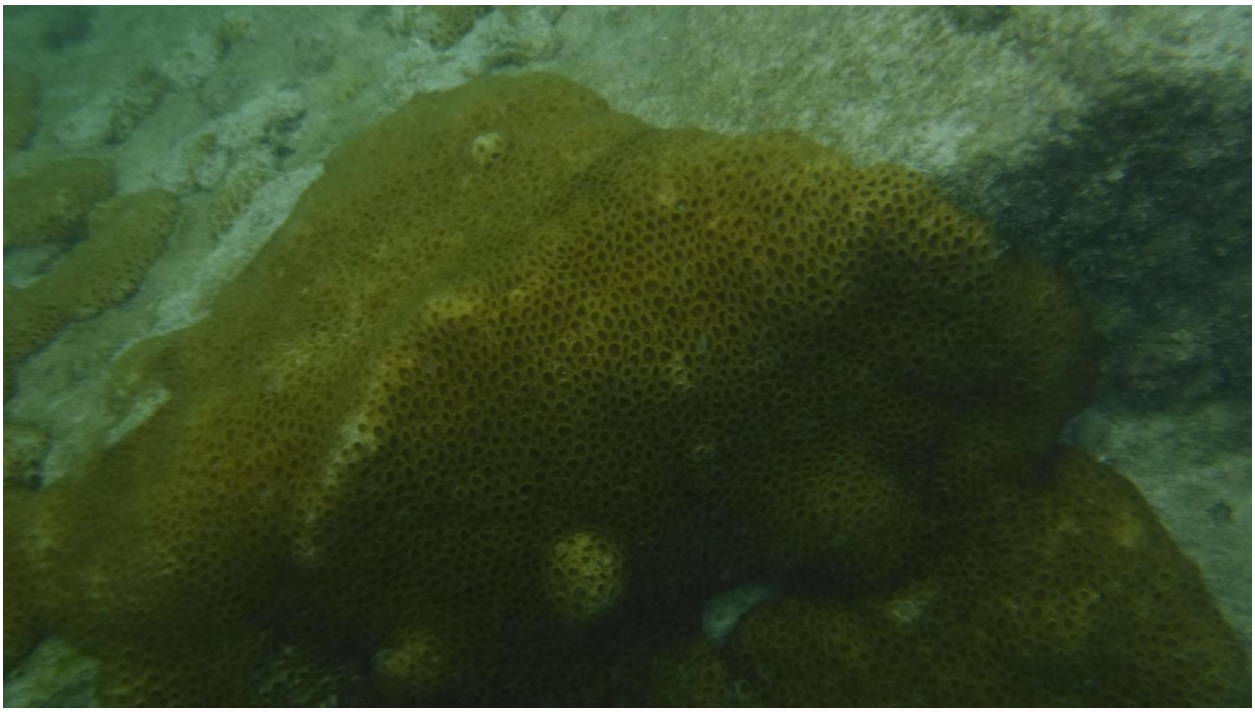
4. **Southern portion of the property, facing north along the jetty.**

5. Southeastern portion of the property, facing northeast along the jetty.

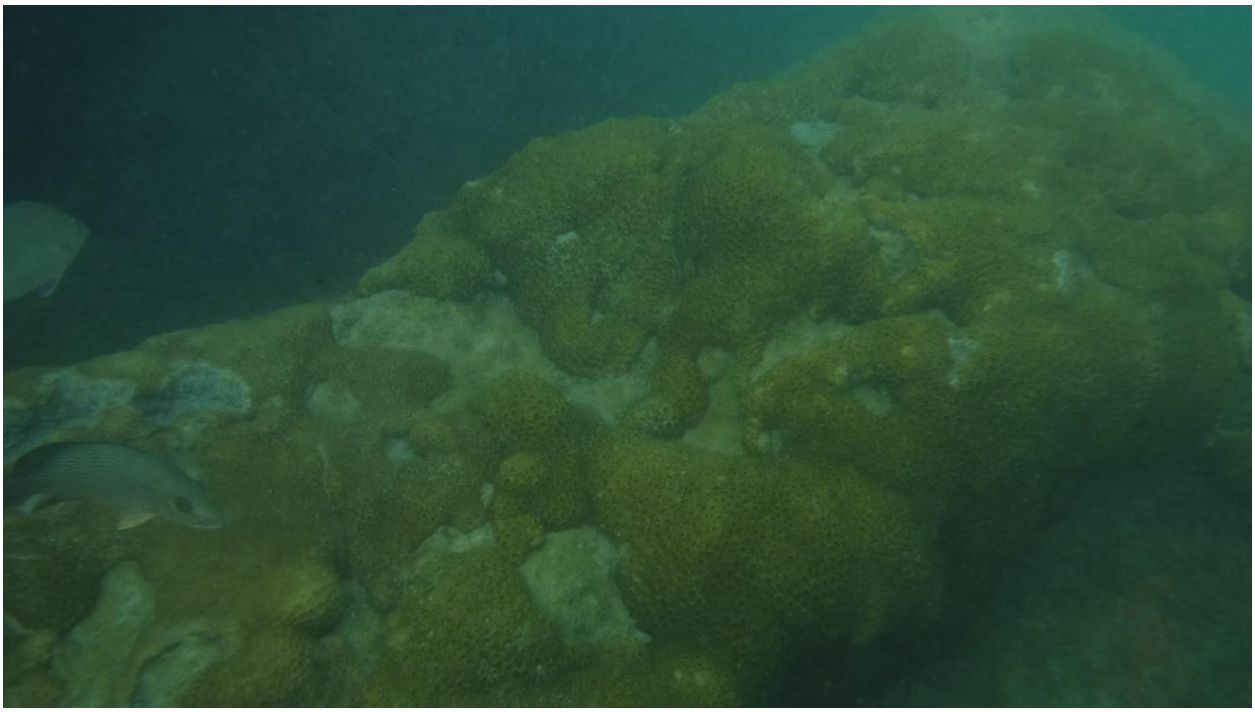
6. Southeastern portion of the survey area south of the jetty, ±10' waterward of the existing cutwalk and ±1,270' east of the Haulover Inlet Bridge. Note lesser starlet coral (*Siderastrea radians*, >1cm).



7. **Southeastern portion of the survey area south of the jetty, ±15’ waterward of the existing cutwalk and ±1,290’ east of the Haulover Inlet Bridge. Note *Palythoa caribaeorum* on rip rap (>10cm).**



8. **Southeastern portion of the survey area south of the jetty, ±20’ waterward of the existing cutwalk and ±1,300’ east of the Haulover Inlet Bridge. Note *Palythoa caribaeorum* on rip rap (>10cm).**



9. **Southeastern portion of the survey area south of the jetty, ±30’ waterward of the existing cutwalk and ±1,320’ east of the Haulover Inlet Bridge. Note *Palythoa caribaeorum* covering riprap (>10cm).**

10. **Southeastern portion of the survey area south of the jetty, ±40’ waterward of the existing cutwalk and ±1,330’ east of the Haulover Inlet Bridge. Note *Palythoa caribaeorum* on rip rap (>10cm).**

11. Southeastern portion of the survey area south of the jetty, ±40' waterward of the existing cutwalk and ±1,340' east of the Haulover Inlet Bridge. Note common brain coral (*Faviidae spp.*, >10cm).

12. Eastern portion of the survey area, ±10' waterward of the existing cutwalk and ±1,340' east of the Haulover Inlet Bridge. Note white encrusting zoanthid (*Palythoa caribaeorum*, >10cm) on rip rap.

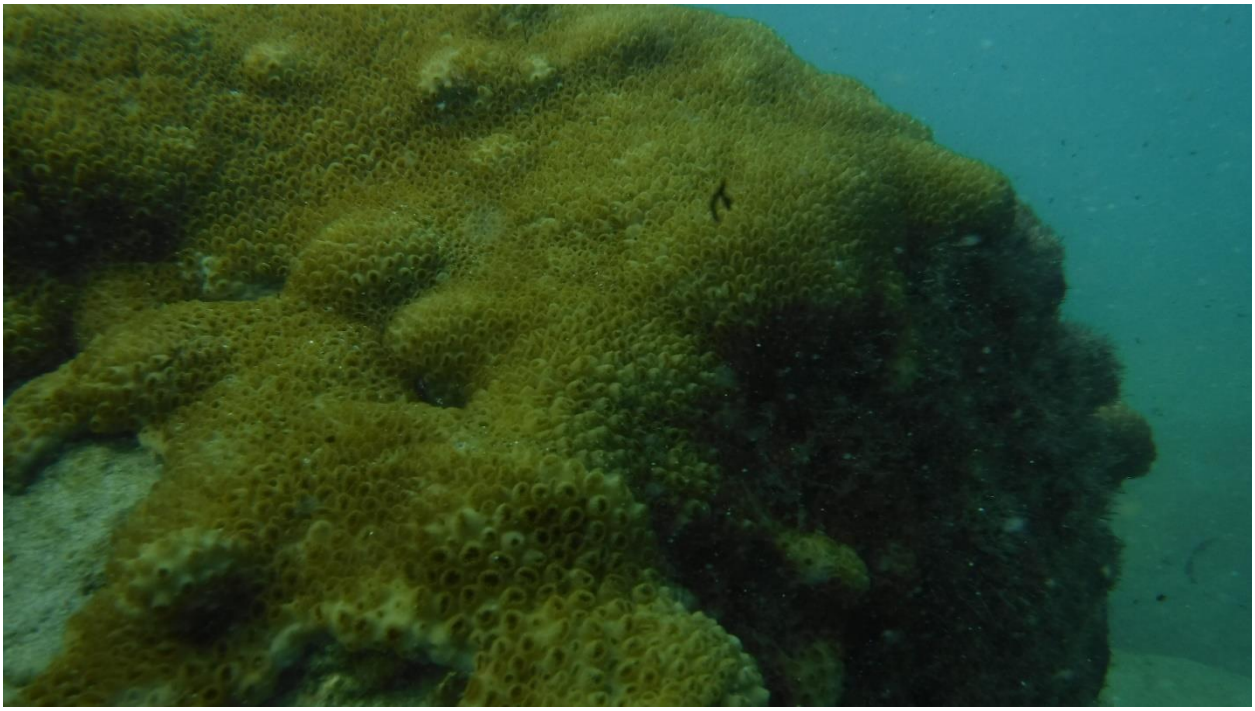
13. **Eastern portion of the survey area, ±10’ waterward of the existing cutwalk and ±1,300’ east of the Haulover Inlet Bridge. Note white encrusting zoanthid (*Palythoa caribaeorum*, >10cm) on rip rap.**

14. **Eastern portion of the survey area, ±15’ waterward of the existing cutwalk and ±1,250’ east of the Haulover Inlet Bridge. Note white encrusting zoanthid (*Palythoa caribaeorum*, >10cm) on rip rap.**

15. Eastern portion of the survey area, ±15' waterward of the existing cutwalk and ±1,200' east of the Haulover Inlet Bridge. Note common brain coral on rip rap (*Faviidae spp.*, >10cm).

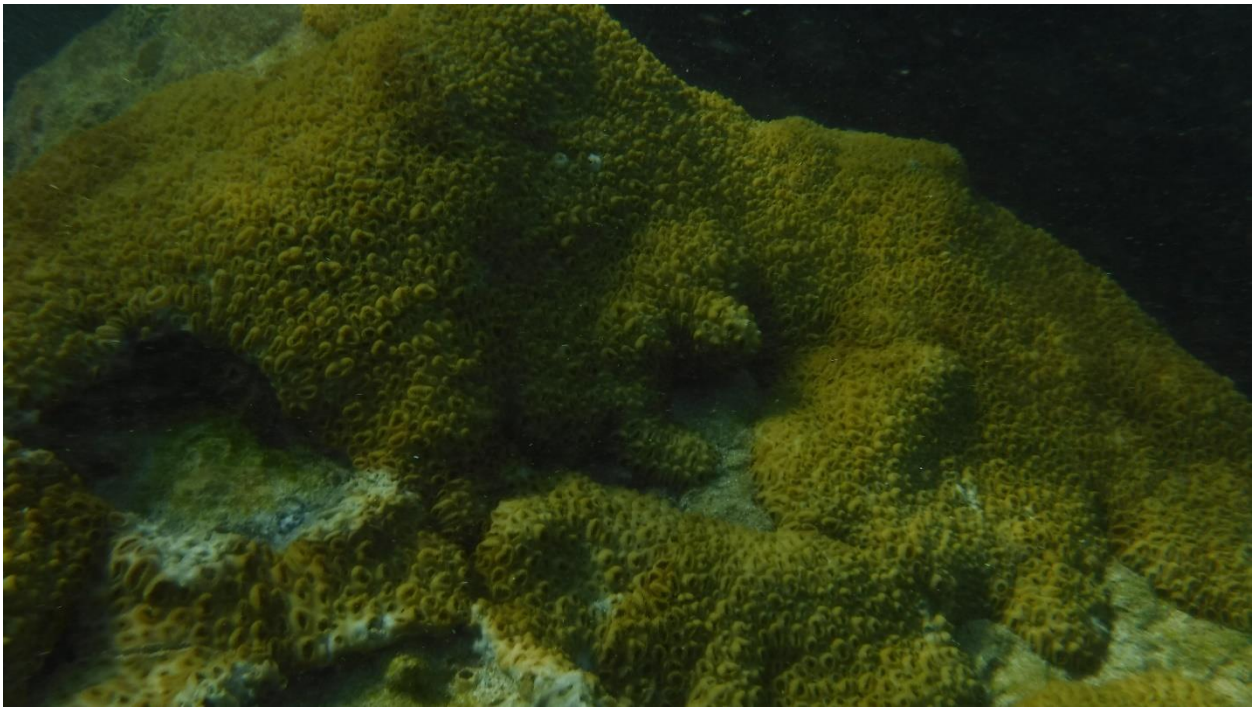
16. Eastern portion of the survey area, ±20' waterward of the existing cutwalk and ±1,150' east of the Haulover Inlet Bridge. Note *Palythoa caribaeorum* on rip rap (>10cm).

17. **Eastern portion of the survey area, ±20’ waterward of the existing cutwalk and ±1,000’ east of the Haulover Inlet Bridge. Note lesser starlet coral (*Siderastrea radians*, >10 cm).**



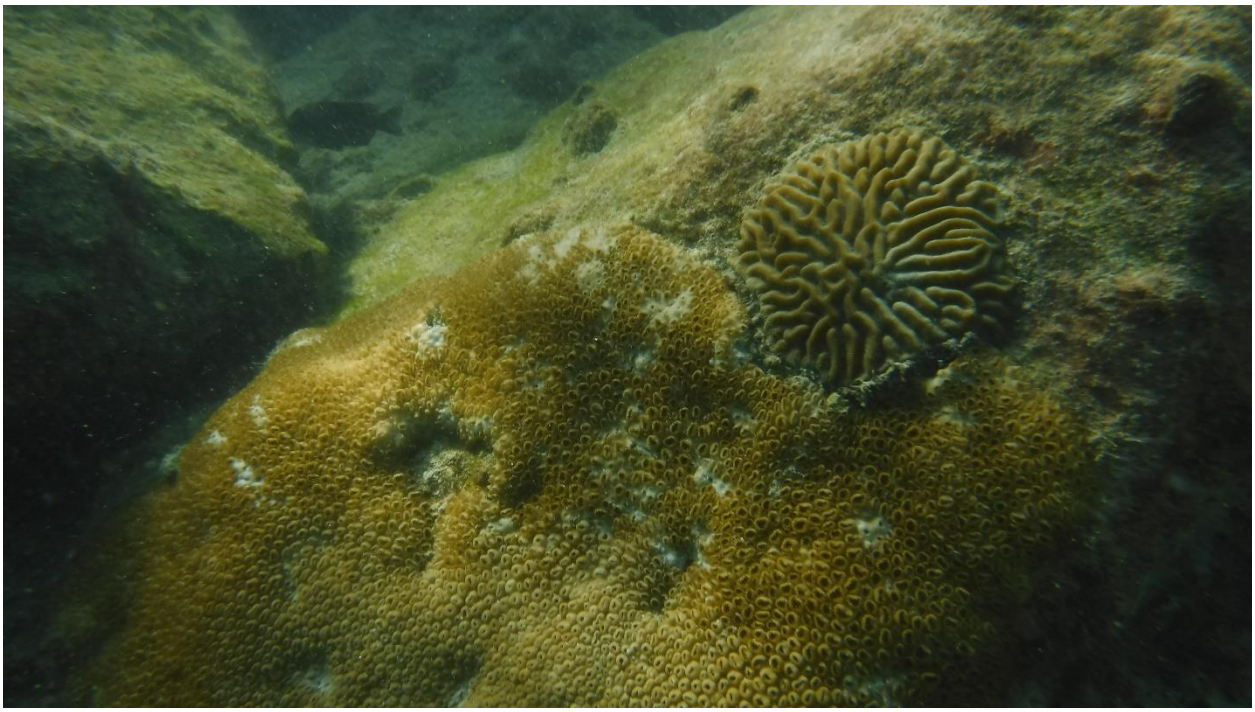
18. **Eastern portion of the survey area, ±25’ waterward of the existing cutwalk and ±950’ east of the Haulover Inlet Bridge. Note *Palythoa caribaeorum* on rip rap (>10cm).**

19. Central portion of the survey area, ±30’ waterward of the existing cutwalk and ±900’ east of the Haulover Inlet Bridge. Note *Palythoa caribaeorum* on rip rap (>10cm).



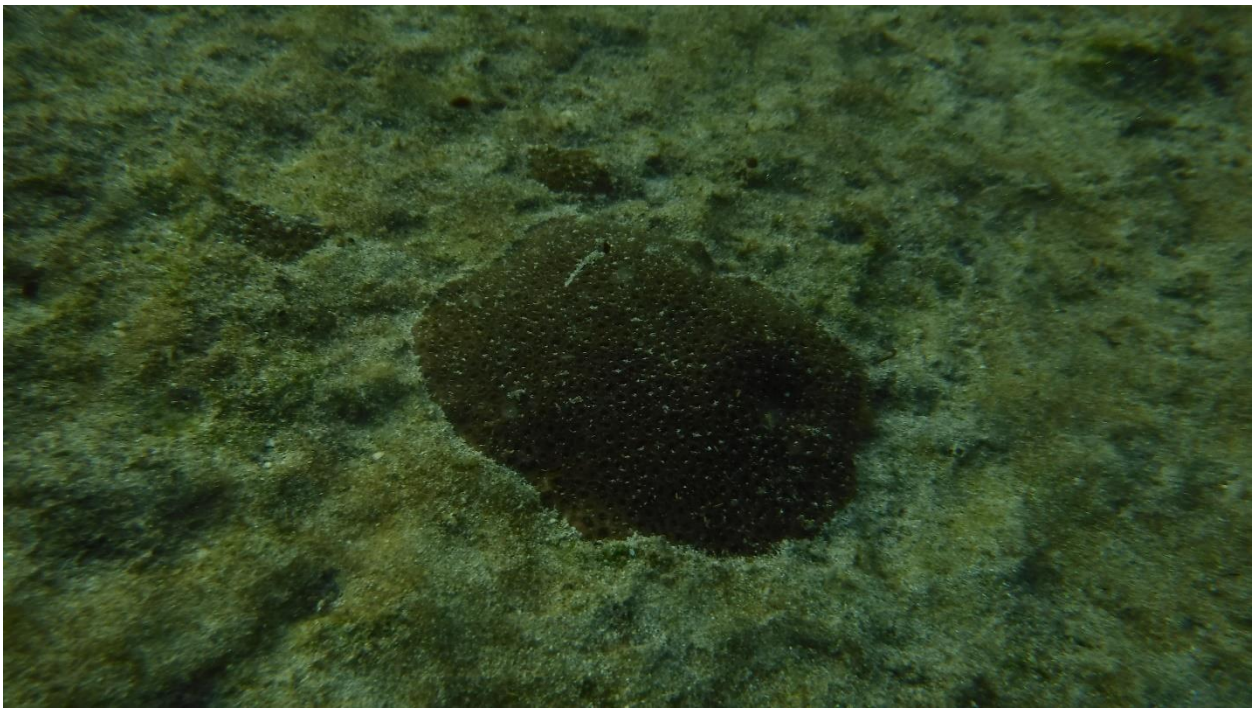
20. Eastern portion of the survey area, ±40’ waterward of the existing cutwalk and ±850’ east of the Haulover Inlet Bridge. Note *Palythoa caribaeorum* on rip rap (>10cm).

21. Eastern portion of the survey area, ±50’ waterward of the existing cutwalk and ±800’ east of the Haulover Inlet Bridge. Note *Palythoa caribaeorum* on rip rap (>10cm).

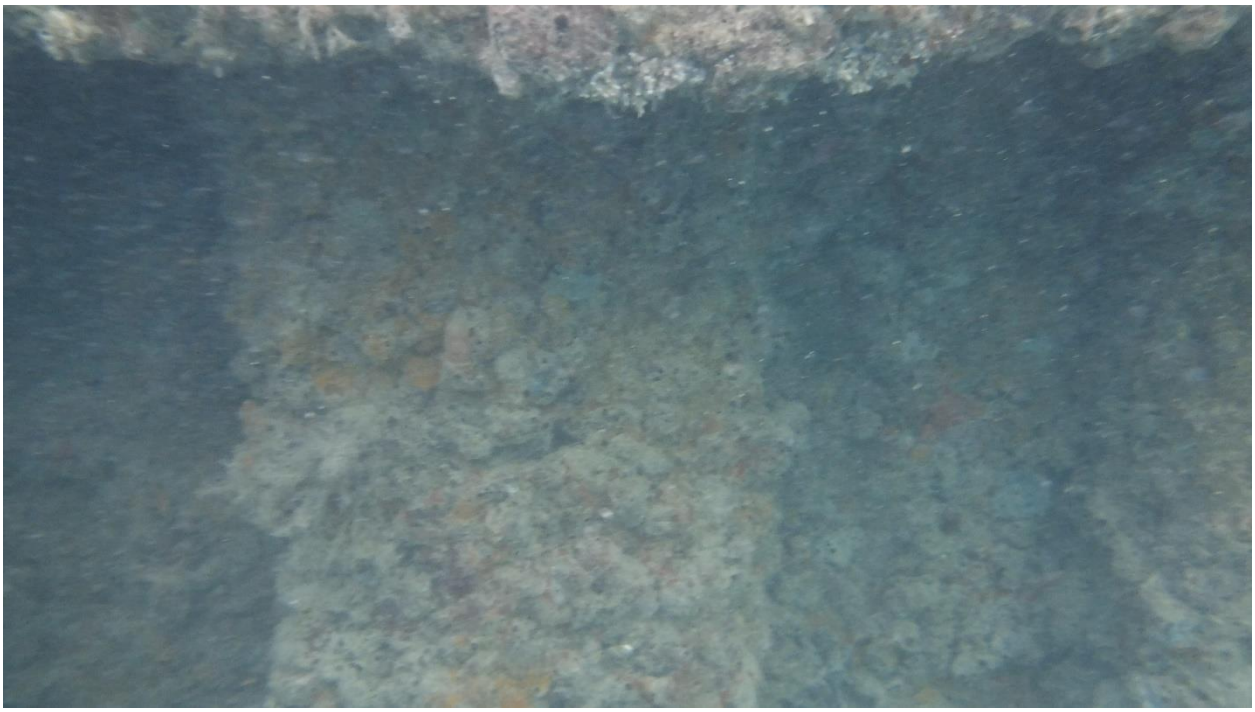


22. Eastern portion of the survey area, ±60’ waterward of the existing cutwalk and ±750’ east of the Haulover Inlet Bridge. Note *Palythoa caribaeorum* (>10cm) and common brain coral (*Faviidae spp*.) on rip rap.

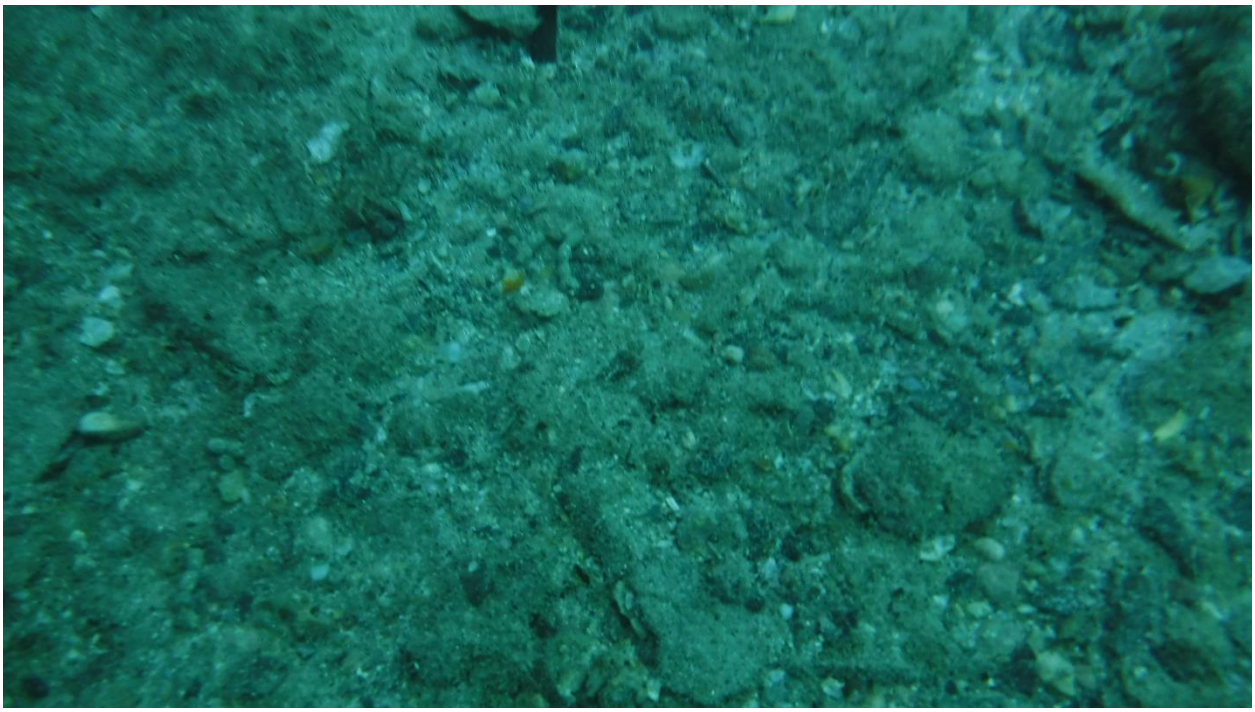
23. Eastern portion of the survey area, ±60' waterward of the existing cutwalk and ±700' east of the Haulover Inlet Bridge. Note *Palythoa caribaeorum* on rip rap (>10cm).



24. Eastern portion of the survey area, ±60' waterward of the existing cutwalk and ±650' east of the Haulover Inlet Bridge. Note lesser starlet coral (*Siderastrea radians*, >10 cm).



25. Western portion of the survey area, ±60’ waterward of the existing cutwalk and ±550’ east of the Haulover Inlet Bridge. Note seawall.



26. Western portion of the survey area, ±60’ waterward of the existing cutwalk and ±200’ east of the Haulover Inlet Bridge. Note rock substrate.

D. STRUCTURAL REPORT

MUEngineers, Inc.
3440 NE 12th Avenue
Oakland Park, FL 33334
Phone: (954) 324-4730
CA#: 29348
www.MUEngineers.com

Existing Seawall – Structural Assessment

Preliminary Report

Prepared For:

Mikyoung Kim Design

119 Braintree Street, No. 103

Boston, MA 02134

December 3rd, 2019

MUE PN: MUE18110201

Prepared By:

3440 NE 12th Avenue, Oakland Park, FL 33334
Phone: (954) 324-4730; Fax: (954) 653-4170
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Marcus Unterweger

STATE OF FLORIDA
MARCUS O. UNTERWEGER
LICENSE
No 63860
PROFESSIONAL ENGINEER

Digitally signed by Marcus Unterweger
DN: C=US, E=munterweger@MUEngineers.com, O="MUEngineers, Inc.", OU=MUEngineers, CN=Marcus Unterweger
Date: 2019.12.03 13:56:09-05'00'

Marcus Unterweger
Florida P.E.#: 063860
12/3/2019 13:54

MUEngineers, Inc

Table of Contents

MUEngineers, Inc

1. SCOPE

Mikyoung Kim Design commissioned MUEngineers, Inc. to perform a limited structural assessment of the existing seawall east of federal highway and south of the Bakers Haulover Inlet based on review of available construction documents and non-destructive site observation.

The purpose of this excersise was to gather information about the existing seawall conditions that would enable us to render an opinion concerning its overall structural integrity. Neither the inspection, nor this report, is intended to cover hidden defects, mechanical or electrical features

2. 1. LIMITATIONS:

MUEngineers did not use any special tools or instruments, nor did we perform any destructive testing but performed visual observations of readily accessible seawall sections only.

Structural elements and their connections which were not indicated on the record set of drawings and which could not be visually observed without destructive testing have not been reviewed, cannot be commented on and are excluded from this report. It shall further be noted that our field observations represent only a small sample of the complete structure. This report, our findings and evaluations are based on these sample observations.

3. AVAILABLE RECORD DOCUMENTS

3.1. Sketch To Accompany Report On Beach Erosion – Showing Proposed Location Of Groins

- Prepared By: Zurwelle – Whittaker Inc.
- Dated: May 9th, 1957
- Pages, Sheets available: S-1

3.2. Repairs And Improvements To Shoreline, Protection Tracts "C", "D", & "E" Ocean Front Addition – Bal Harbour Village Dade County

- Prepared By: Zurwelle – Whittaker Inc.
- Dated: January 28th, 1958
- Pages, Sheets available: S-1

3.3. Repair South Bulkhead Bakers Haulover Inlet

- Prepared By: Dade County Public Works Department
- Dated: May 2nd, 1968
- Pages, Sheets available: Sheet information not available

MUEngineers, Inc

3.4. BAL Harbour Beach Restoration Project – Groin Details

- Prepared By: Zurwelle – Whittaker Inc.
- Dated: August 26th, 1972
- Pages, Sheets available: J1

3.5. Bal Harbour, Florida: Jetty Plan and Sections

- Prepared By: Hardway Contracting Company – Columbus Georgia
- Dated: March 23rd, 1973
- Pages, Sheets available: 32273-8A

3.6. Groin Repair – Bal Harbour Village

- Prepared By: Henry Von Oesen & Associates
- Dated: December 1986
- Pages, Sheets available: 3 of 3

3.7. Repairs to Jetty Structure – Bakers Haulover Inlet

- Prepared By: Henry Von Oesen & Associates
- Dated: April 16th, 1986
- Pages, Sheets available: 1 of 1

3.8. South Underbridge Restoration – Bakers Haulover Cut Bride Rehabilitation

- Prepared By: TranSystems
- Dated: March 31st, 2016
- Pages, Sheets available: B1-37, B1-38, B1-39, B1-40, BW-6, BW-8,

4. GENERAL DESCRIPTION OF THE EXISTING SEAWALL COMPONENTS:

Based on our review of the available record documents and field observations it appears that the existing seawall / bulk head consists of metal sheet piles, concrete wall panels and a poured in placed concrete parapet wall and cap. The record documents do not indicate the structural specifications and properties or the existing seawall components such as sheet pile type and depth, anchor rod size

MUEngineers, Inc

and spacing, soil anchor type, size and layout, concrete strengths and reinforcing of any existing concrete components.

5. STRUCTURAL COMPONENT REVIEW AND FINDINGS AND RECOMMENDATIONS:

5.1. FINDINGS

5.1.1.Concrete Cap

Inspection of the seawall revealed continuous cracks and gaps along the joint/interface between the concrete cap and parapet. The interior face of the concrete parapet and cap along the walkway has been previously painted and likely repaired and patched, therefore no cracks were observed at the time of our inspection. Blistered paint and water stains were observed at several scattered locations.

5.1.2.CONCRETE WALL PANELS

The concrete wall panels exhibit continuous cracks running throughout the front face of the seawall. Additionally, spalling, delaminated concrete, and exposed and corroded sections of metal sheet piles were observed at several locations.

5.1.3.Soil anchors, dead men and tie-back rods

It is likely that there are existing tie-back rods and anchors installed to stabilize the top of the existing sheet pile but these seawall components (if existing) could not be observed and assessed since they are covered by the existing paved walkway finish.

5.1.4.Metal sheet pile panels

Zurwelle – Whittaker Inc in 1957, suggests that the existing seawall consists of metal sheet piles; The type, depth, profile and tie-back conditions are not indicated on any of the available record documents and cannot be commented on without further destructive testing and exposing the back / landside face of the existing seawall.

5.2. RECOMMENDATION:

It is our recommendation to expose the landside face of the seawall to an elevation of not less than the mean low water elevation, locate and identify all the tie-back anchor rods and soil anchors and further assess the structural condition and the expected remaining service life of those seawall components. We further recommend having the seawall section below the mean low water line inspected and photo and video documented along its complete length by commercial divers.

Depending on the results of these further investigations it will then be possible to assess the existing conditions more accurately and determine and advise if it is feasible to repair the existing seawall including all cracked, spalled and delaminated concrete sections or if the existing seawall should be partially or completely replaced instead with a new metal sheet pile seawall immediately south / landside along the existing seawall.

6. SUMMARY

Based on our limited evaluation of the structure based on the construction documents provided, it is our professional opinion that the existing seawall is most likely reaching its expected service life. Further destructive testing will be required to determine if it is feasible to repair the existing seawall or otherwise to partially or completely replace the existing seawall with a new sheet pile wall, reinforced concrete wall panel and reinforced concrete parapet wall and cap.

7. LIMITATIONS AND SUFFICIENCY

This report is based primarily on the information available from the available construction record documents. Structural elements and their connections which were not indicated on the available record documents and could not be readily observed cannot be commented on and will require further investigations.
Nothing in this report shall be construed directly or indirectly as a guarantee or warrantee of any portion of the structure.

Please note that our opinions and recommendations are based upon our professional engineering judgment to an extent normal for a structural assessment of this type. Our evaluation was analytical in nature.

This report is prepared for the sole benefit of Mikyoung Kim Design only. Unauthorized use of the information contained in this report without our permission shall result in no liability or legal exposure to MUEngineers, Inc.

MUEngineers, Inc

We appreciate this opportunity to be of service to you. If you require any additional information, please feel free to contact us at your convenience.

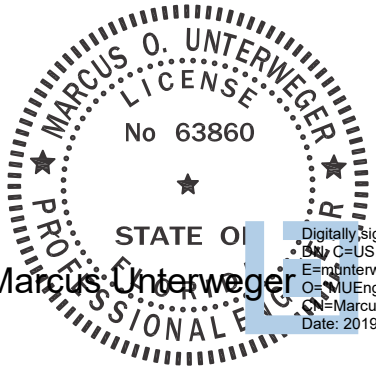
Very truly yours,

MUEngineers, Inc.

Luis A. Sanchez

Digitally signed by Luis A. Sanchez
DN: C=US, E=lsanchez@muengineers.com, O="MUEngineers, Inc.", CN=Luis A. Sanchez
Date: 2019.12.03 15:31:30-05'00'

Luis A. Sanchez Herrera, P.E. LEED AP
Project Manager



Marcus Unterweger

Digitally signed by Marcus Unterweger
DN: C=US, E=munterweger@MUEngineers.com, O="MUEngineers, Inc.", OU=MUEngineers, CN=Marcus Unterweger
Date: 2019.12.03 13:55:59-05'00'

Marcus Unterweger, P.E., S.I., LEED AP
President
MUEngineers, Inc.
Florida Reg. No: 63860
Certificate of Authorization No. 29348

E. CIVIL REPORT

Botek Thurlow Engineering, Inc.
Civil Engineers

Date: December 5, 2019

BTE Proj. No. 19-0402 Bal Harbor Cut walk and Jetty

SCHEMATIC DESIGN NARRATIVE - CIVIL

Scope of work to include removal of existing cut walk pavers and landscape (planters) and reconfiguration of cut walk pavers and landscape (planters).

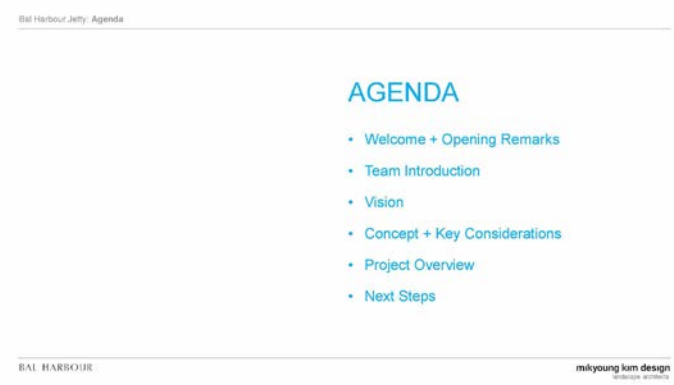
The pervious/impervious ratios will not be increased and therefore will not adversely affect the existing drainage design. There will be no increase in water quality volume required and no increased run off volume to the existing drainage system.

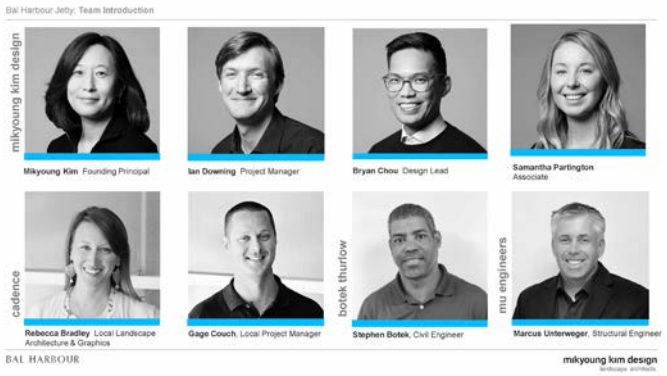
The cut walk will be re-graded to maintain existing elevations and available storage volume. Surface water run off will be maintained to the existing storm drainage inlets located along the cut walk, if planter drains are required/desired yard drains can be added and connected by piping to the existing storm drainage structures. Surface water licenses (Department of Environmental Resources – DERM) can be modified as applicable.

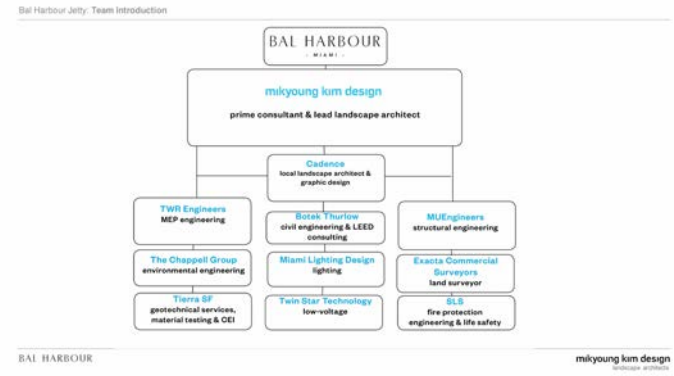
3409 NW 9th Avenue • Suite 1102 • Fort Lauderdale, FL 33309 • p. 954-568-0888, f. 954-568-0757

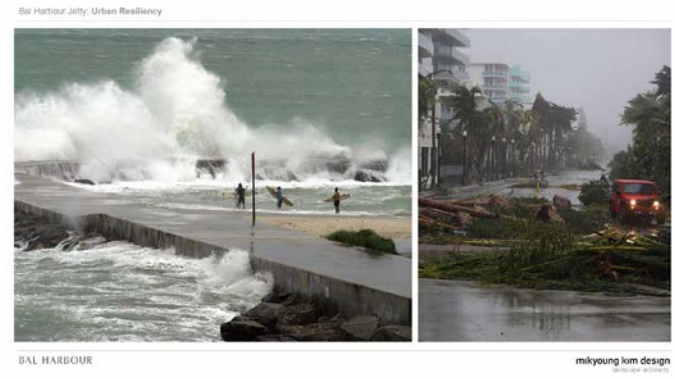
F.DESIGNPRESENTATIONS

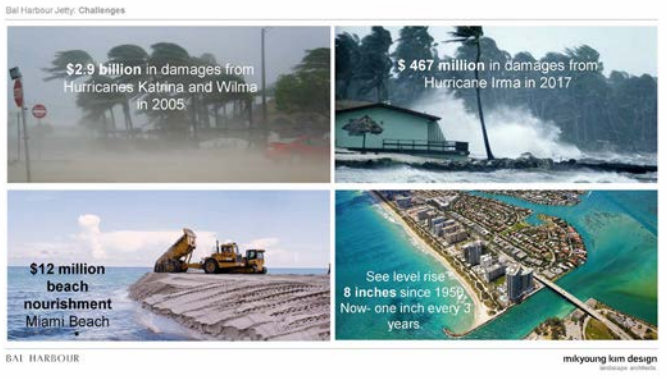
COMMUNITY MEETING JULY 2019

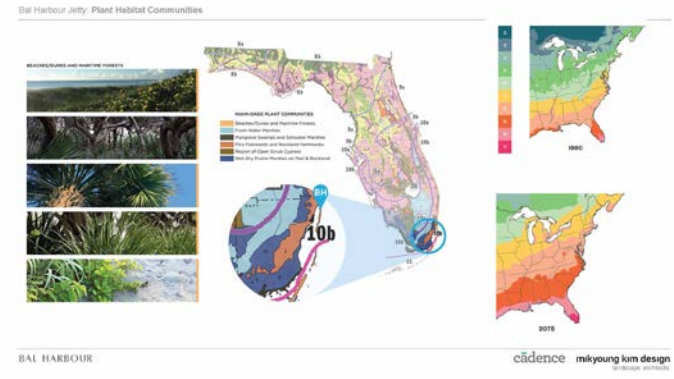













Bal Harbour Jetty: Plant Habitat Communities
BAL HARBOUR
cadence
mikyoung kim design


Bal Harbour Jetty: Concept + Key Considerations
DRAWING TITLE
People + Resiliency
Social infrastructure:
how does resiliency infrastructure benefit people?
BAL HARBOUR
mikyoung kim design


Bal Harbour Jetty: Vision
Engagement with Water
-Resiliency
-Wildlife Impacts
Establishing an Identity for Public Space
-Gateways, Integration of Art & Landscape
Creating Places for Visitors and Residents
-Neighbors
-Regulatory Process
Balancing Functional Performance with Placemaking
-Structural Requirements
-Durability & Maintenance
-Placemaking
BAL HARBOUR
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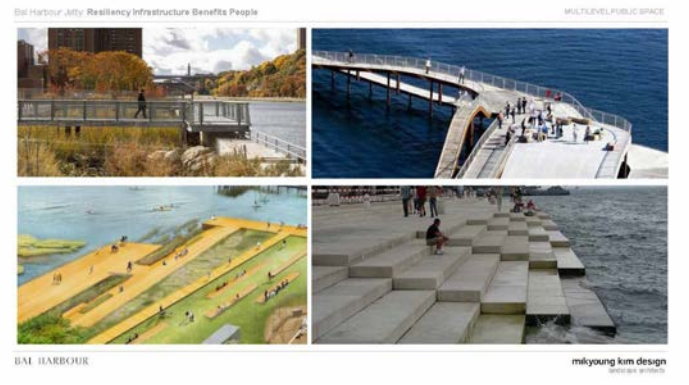
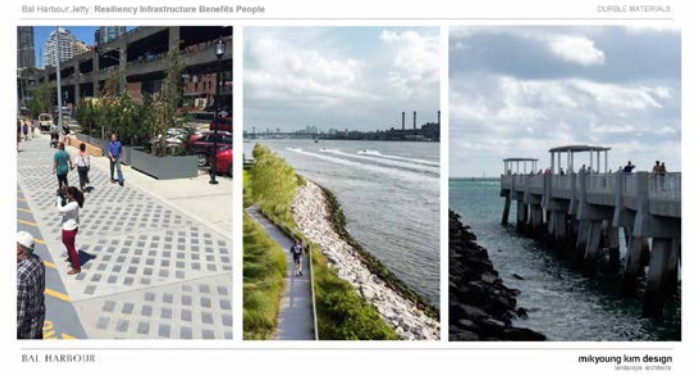
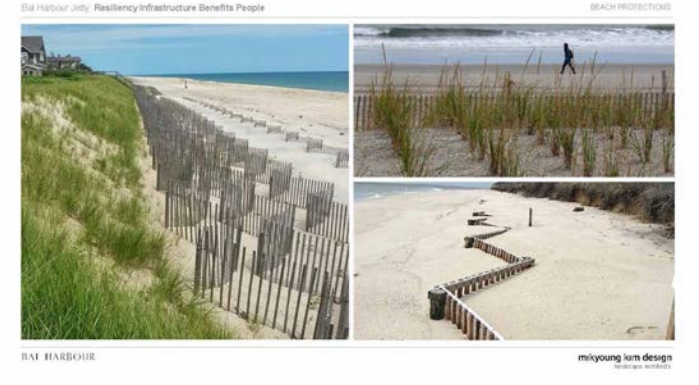
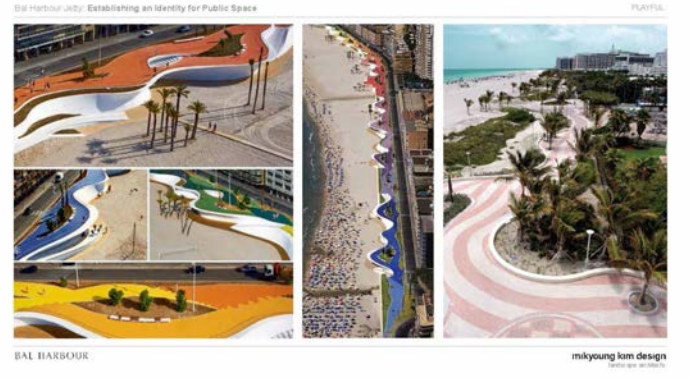
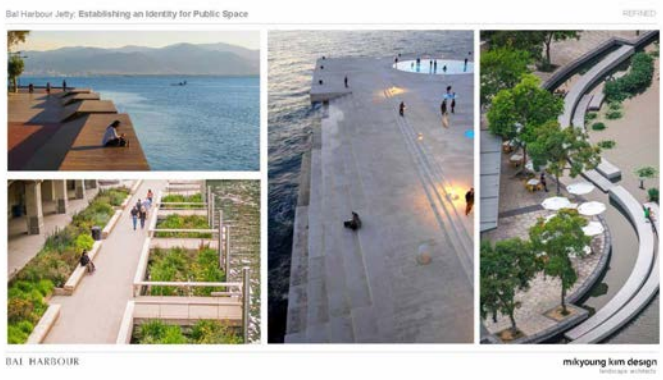

Bal Harbour Jetty: Resiliency Infrastructure Benefits People
MULTILEVEL PUBLIC SPACE
BAL HARBOUR
mikyoung kim design

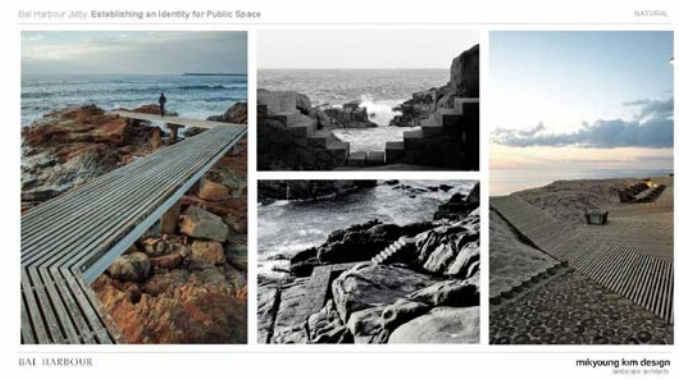

Bal Harbour Jetty: Resiliency Infrastructure Benefits People
DURBLE MATERIALS
BAL HARBOUR
mikyoung kim design

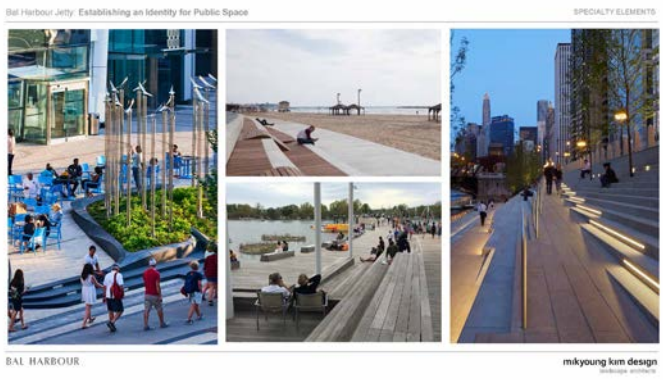

Bal Harbour Jetty: Resiliency Infrastructure Benefits People
CONSTRUCTED WETLANDS
BAL HARBOUR
mikyoung kim design

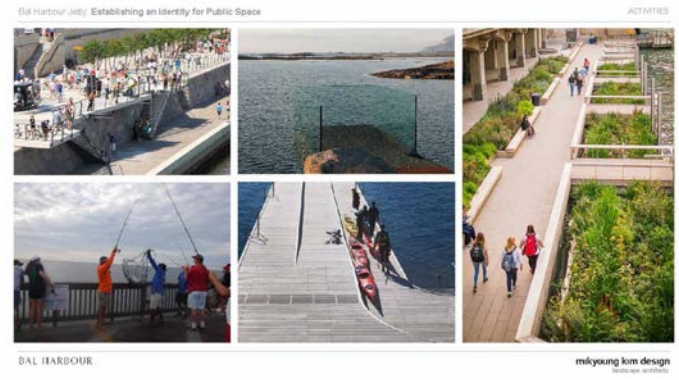

Bal Harbour Jetty: Resiliency Infrastructure Benefits People
BEACH PROTECTIONS
BAL HARBOUR
mikyoung kim design


Bal Harbour Jetty: Establishing an Identity for Public Space
PLAYFUL
BAL HARBOUR
mikyoung kim design


Bal Harbour Jetty: Establishing an Identity for Public Space
REFINED
BAL HARBOUR
mkyoung kim design


Bal Harbour Jetty: Establishing an Identity for Public Space
NATURAL
BAL HARBOUR
mkyoung kim design

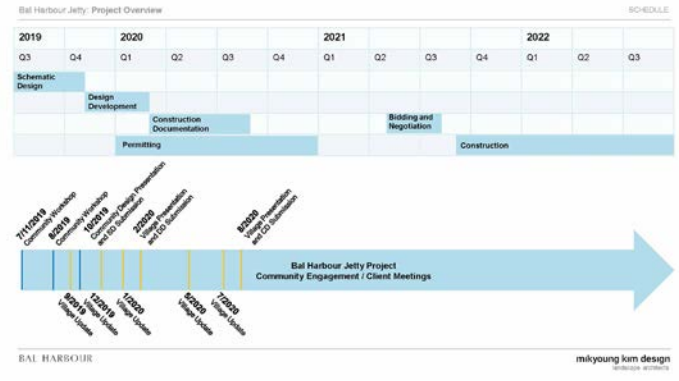

Bal Harbour Jetty: Establishing an Identity for Public Space
SPECIALTY ELEMENTS
BAL HARBOUR
mkyoung kim design


Bal Harbour Jetty: Establishing an Identity for Public Space
ACTIVITIES
BAL HARBOUR
mkyoung kim design


Bal Harbour Jetty: Establishing Gateways and Iconic Elements
ARCHITECTURAL ELEMENTS
BAL HARBOUR
mkyoung kim design


Bal Harbour Jetty: Establishing an Identity for Public Space
ART ELEMENTS
BAL HARBOUR
mkyoung kim design


Bal Harbour Jetty: Project Overview
AERIAL PHOTO
BAL HARBOUR
mkyoung kim design


Bal Harbour Jetty: Project Overview
SCHEDULE
2019
2020
2021
2022
Q3
Q4
Q1
Q2
Q3
Q4
Q1
Q2
Q3
Q4
Q1
Q2
Q3
Schematic Design
Design Development
Construction Documentation
Bidding and Negotiation
Permitting
Construction
7/11/2019 Community Workshop
8/28/19 Community Workshop
10/2019 Village Presentation and DO Submission
2/2020 Village Presentation and CO Submission
8/2020 Village Presentation and CO Submission
Bal Harbour Jetty Project
Community Engagement / Client Meetings
9/2019 Village Update
12/2019 Village Update
1/2020 Village Update
5/2020 Village Update
7/2020 Village Update
BAL HARBOUR
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Bal Harbour Jetty: **Project Overview** SCHEDULE

2019		2020				2021				2022		
Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Design												
		Permitting										
									Construction			

7/11/2019 Community Workshop
8/2019 Community Workshop
10/2019 Concept Design Presentation and BD Submission
Bal Harbour Jetty Project
Community Engagement / Client Meetings

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Bal Harbour Jetty: **Project Overview** AERIAL PHOTO

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Bal Harbour Jetty: **Project Overview** CONTEXT DIAGRAM




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Bal Harbour Jetty: **Project Overview** CONTEXT DIAGRAM


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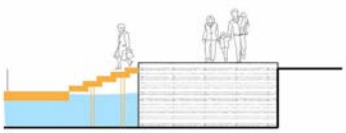
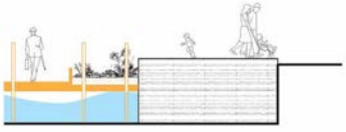
Bal Harbour Jetty: **Site Area** BAL HARBOUR JETTY

BAL HARBOUR mikyoung kim design landscape architects

Bal Harbour Jetty: **Concept + Key Considerations** SKETCH PERSPECTIVE

BAL HARBOUR mikyoung kim design landscape architects

Bal Harbour Jetty: **Creating Destinations** CONTEXT DIAGRAM

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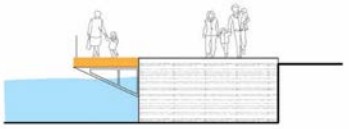
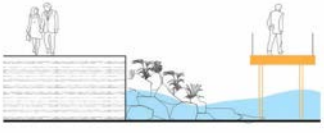
Bal Harbour Jetty: **Creating Destinations** SECTION DIAGRAM

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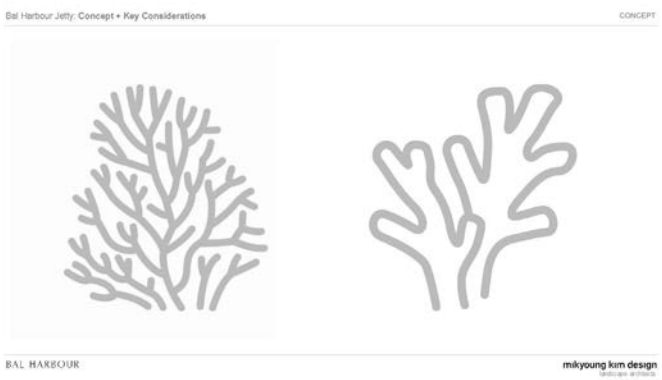

Bal Harbour Jetty: **Concept + Key Considerations**

CONCEPT

BAL HARBOUR

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Bal Harbour Jetty: **Concept + Key Considerations**

OPTION 1

BAL HARBOUR

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Bal Harbour Jetty: **Concept + Key Considerations**

OPTION 1

BAL HARBOUR

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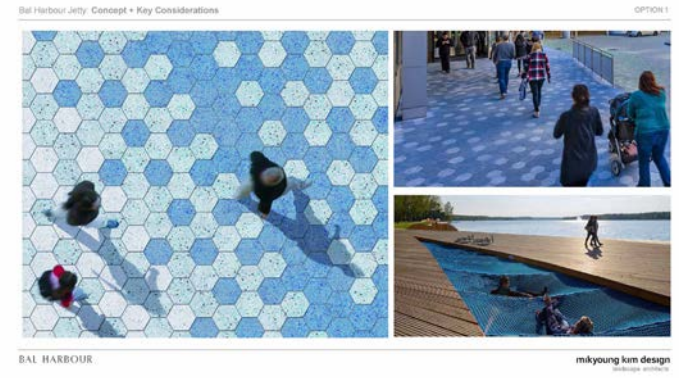

Bal Harbour Jetty: **Concept + Key Considerations**

OPTION 1

BAL HARBOUR

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Bal Harbour Jetty: **Concept + Key Considerations**

OPTION 1

BAL HARBOUR

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Bal Harbour Jetty: **Concept + Key Considerations**

OPTION 1

BAL HARBOUR

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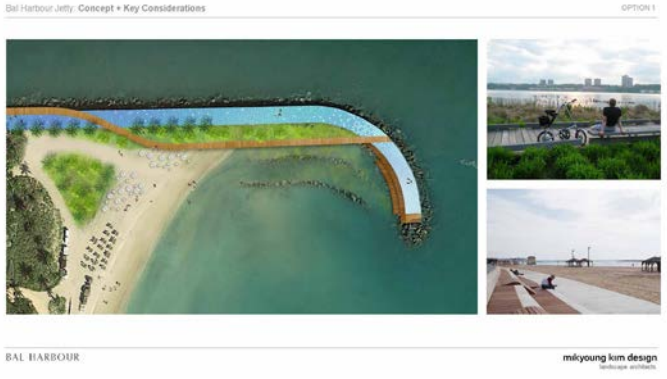

Bal Harbour Jetty: **Concept + Key Considerations**

OPTION 1

BAL HARBOUR

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Bal Harbour Jetty: **Concept + Key Considerations**

OPTION 2

BAL HARBOUR

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Bal Harbour Jetty: Concept + Key Considerations
OPTION 2
BAL HARBOUR
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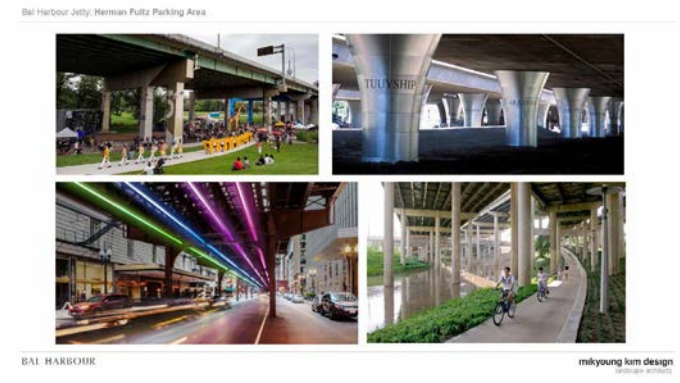
Bal Harbour Jetty: Concept + Key Considerations
OPTION 2
BAL HARBOUR
mikyoung kim design


Bal Harbour Jetty: Herman Fultz Parking Area
BAL HARBOUR
mikyoung kim design


Bal Harbour Jetty: Herman Fultz Parking Area
BAL HARBOUR
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Bal Harbour Jetty: Herman Fultz Parking Area
BISCAYNE BAY
ATLANTIC OCEAN
OPEN SPACE
BIKING FACILITIES
BIKE LANES
BIKE-FRIENDLY ROAD
TRAILS
CITI BIKE STATIONS
BAL HARBOUR
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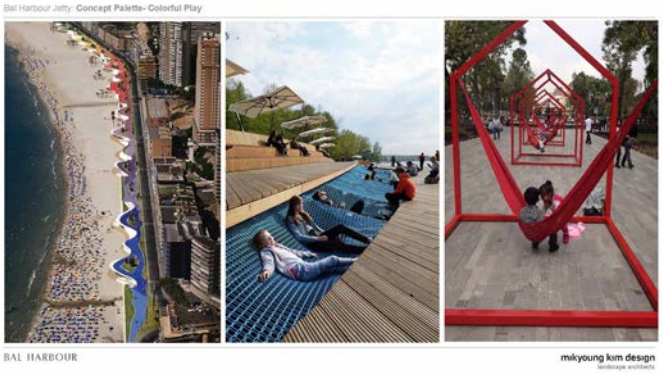
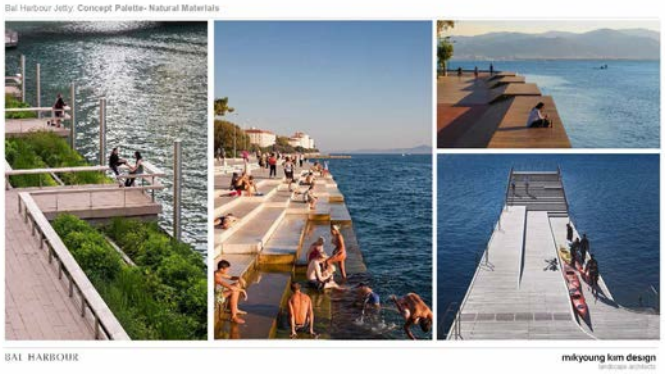
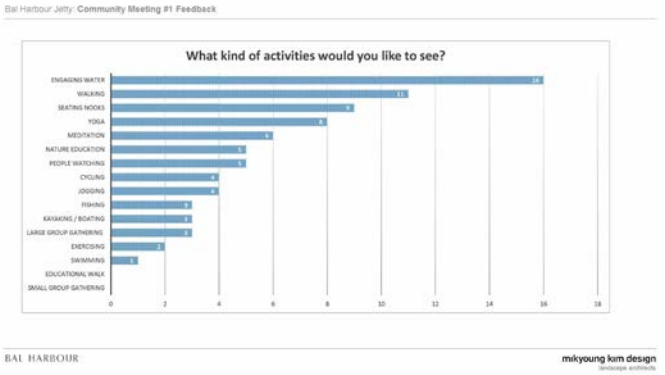
Bal Harbour Jetty
Kickoff Meeting Presentation | July 2019
BAL HARBOUR
mikyoung kim design

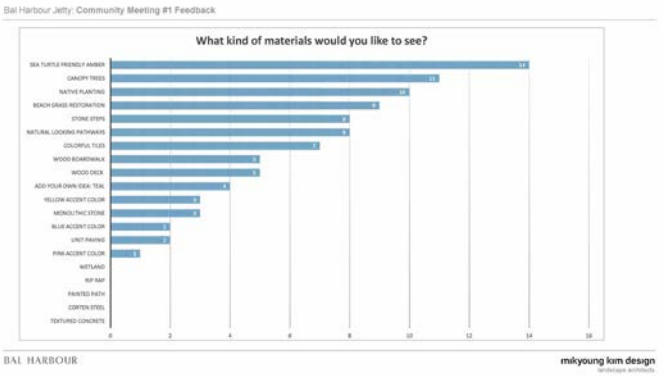
COMMUNITY MEETING: SEPTEMBER 2019

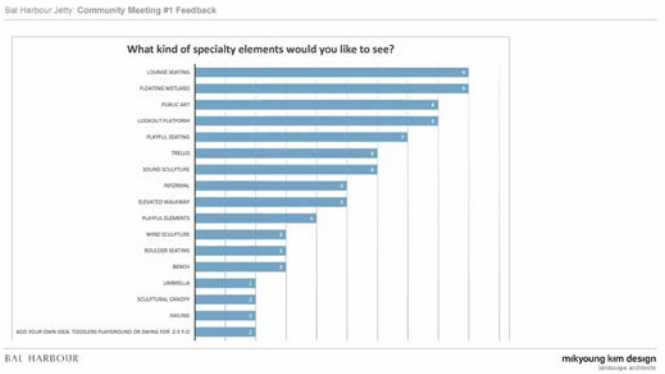
BAL HARBOUR JETTY DESIGN OPTIONS











Bal Harbour Jetty: **Agenda**

COMMUNITY FEEDBACK

- More Engagement with Waterfront
- Contemplative Experiences
- Diversity of Landscape Spaces
- Native Planting
- Highlighting Aquatic Life

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OPTION 1: ENGAGING THE WATER

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Bal Harbour Jetty: **Concept + Key Considerations** CONCEPT DESIGN SKETCH

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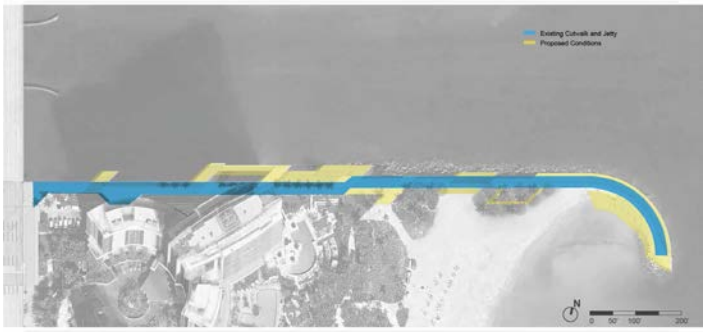
Bal Harbour Jetty: **Option 1** PLAN

BAL HARBOUR mikyoung kim design landscape architects

Bal Harbour Jetty: **Option 1** DIAGRAM



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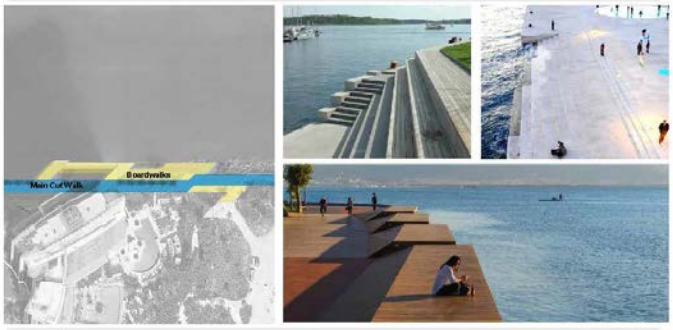
Bal Harbour Jetty: **Option 1** PERSPECTIVE

Bal Harbour Jetty: **Option 1 - Cutwalk** PRECEDENTS



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Bal Harbour Jetty: Option 1 – Waterfront Experience
ENHANCED HABITATS


Bal Harbour Jetty: Option 1 - Cutwalk
ENHANCED HABITATS
BAL HARBOUR
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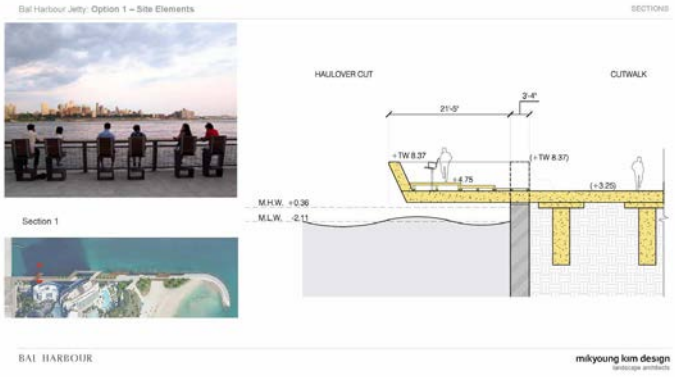
Bal Harbour Jetty: Option 1 – Enhanced Beach Access
PERSPECTIVE
BAL HARBOUR
mkyoung kim design


Bal Harbour Jetty: Option 1 – Beach Planting Palette
PLANTING PALETTE
BAL HARBOUR
cadence
mkyoung kim design


Bal Harbour Jetty: Option 1 – Site Elements
SECTIONS
HAULOVER CUT
CUTWALK
Section 1
M.H.W. +0.36
M.L.W. -2.11
BAL HARBOUR
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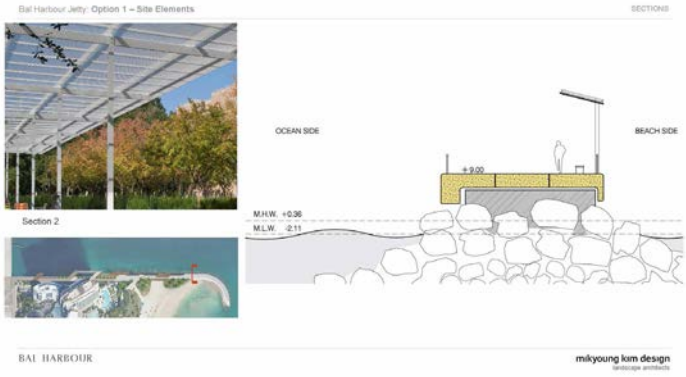
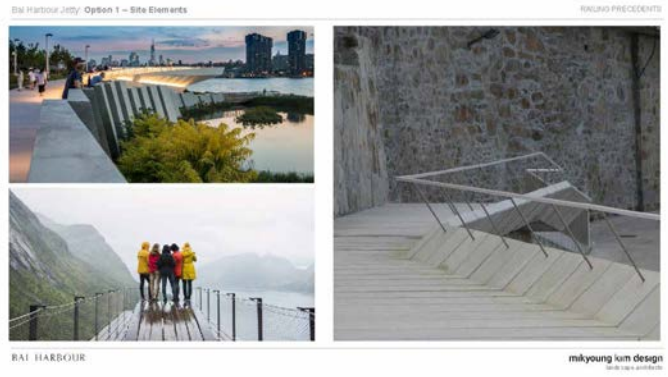

Bal Harbour Jetty: Option 1 – Site Elements
SECTIONS
OCEAN SIDE
BEACH SIDE
Section 2
M.H.W. +0.36
M.L.W. -2.11
BAL HARBOUR
mkyoung kim design


Bal Harbour Jetty: Option 1 – Site Elements
RAILING PRECEDENTS
BAL HARBOUR
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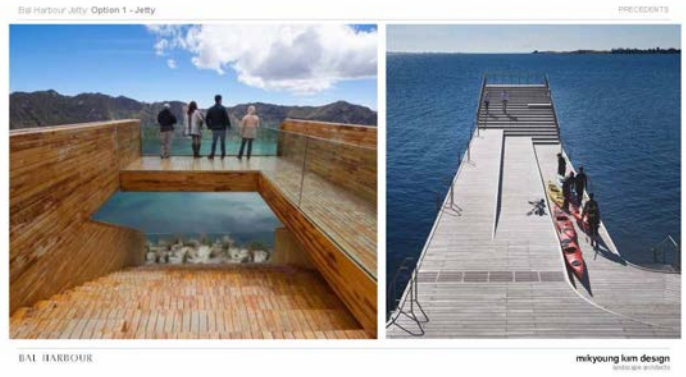
Bal Harbour Jetty: Option 1 - Jetty
PRECEDENTS
BAL HARBOUR
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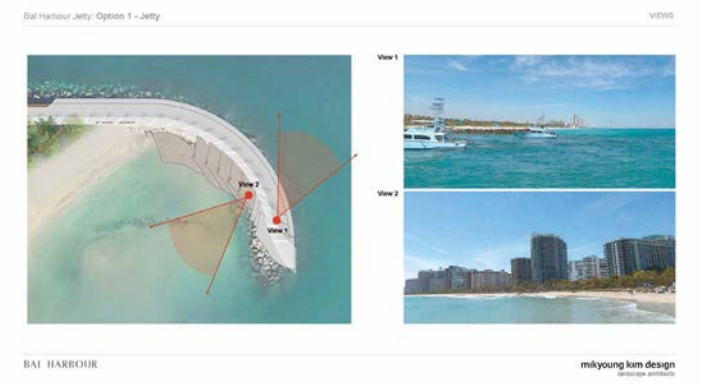
Bal Harbour Jetty: Option 1 - Jetty
VIEWS
View 1
View 2
View 2
View 1
BAL HARBOUR
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landscape architects


Bal Harbour Jetty: Option 1 - Jetty
VIEWING PLATFORM AT THE JETTY
BAL HARBOUR
mikyoung kim design
landscape architects


Bal Harbour Jetty: Option 1 - Jetty
VIEWING PLATFORM AT THE JETTY
BAL HARBOUR
mikyoung kim design
landscape architects


Bal Harbour Jetty: Option 1 - Jetty
LIGHT HOUSE
BAL HARBOUR
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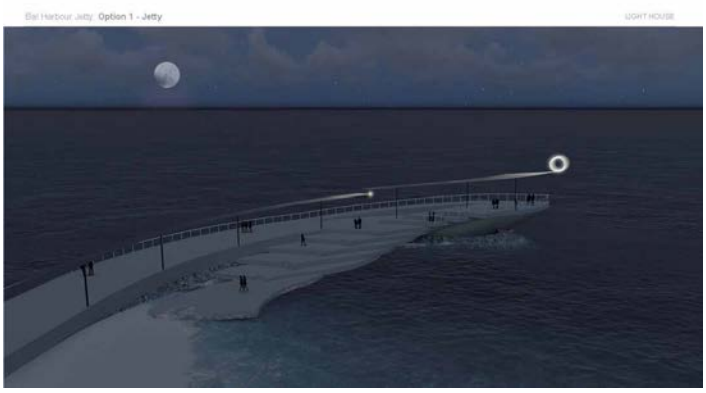
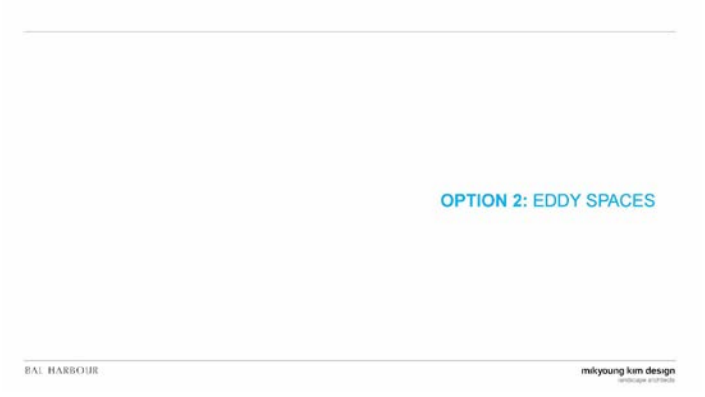
landscape architects


Bal Harbour Jetty: Option 1 - Jetty
LIGHT HOUSE


Bal Harbour Jetty: Option 1
VIEWING PLATFORM AT THE JETTY
BAL HARBOUR
mikyoung kim design
landscape architects


OPTION 2: EDDY SPACES
BAL HARBOUR
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landscape architects


Bal Harbour Jetty: Option 2
PLAN
BAL HARBOUR
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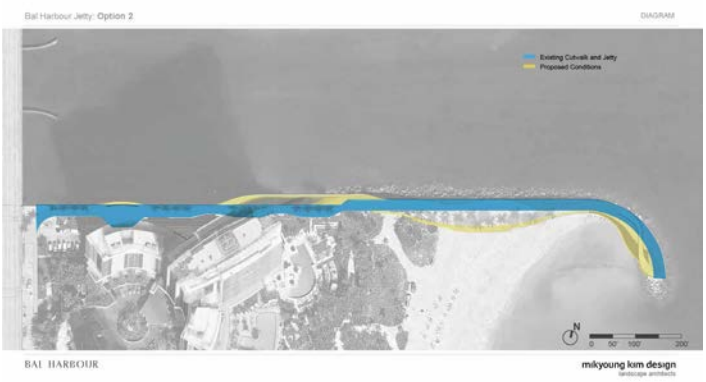
landscape architects


Bal Harbour Jetty: Option 2
DIAGRAM
Existing Cutwalk and Jetty
Proposed Conditions
N
0 50 100 200
BAL HARBOUR
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Bal Harbour Jetty: Option 2
PERSPECTIVE
BAL HARBOUR
mikyoung kim design


Bal Harbour Jetty: Option 2 - Cutwalk
PRECEDENTS
BAL HARBOUR
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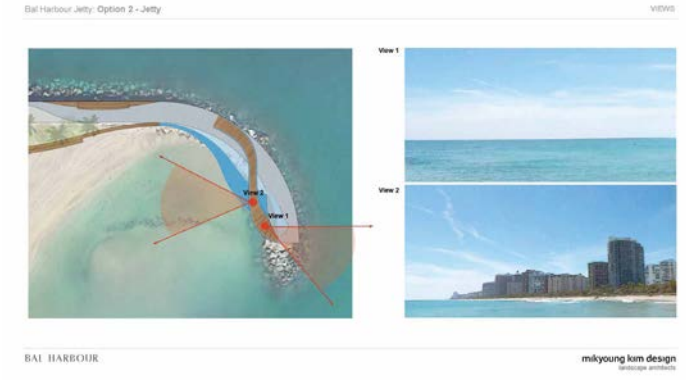
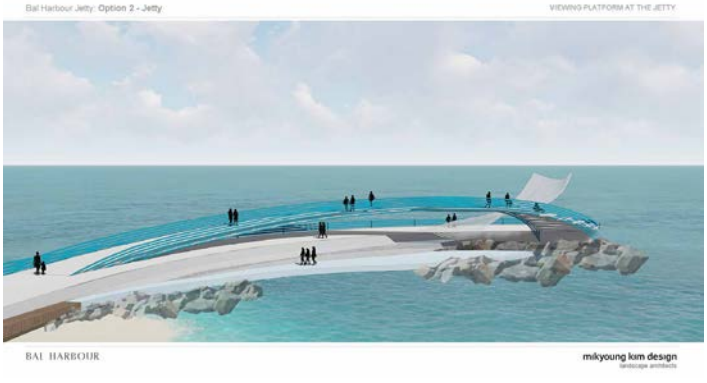
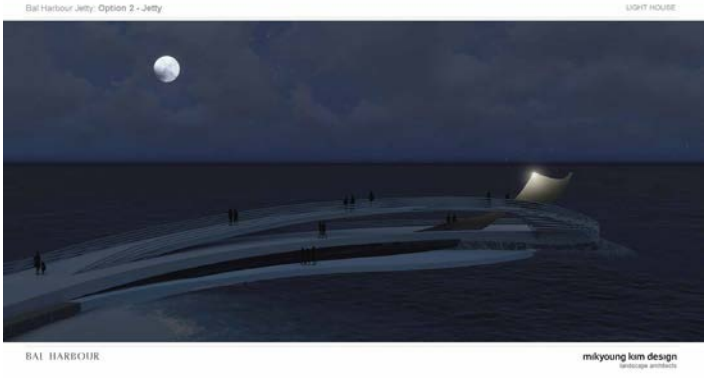
Bal Harbour Jetty: Option 2 – Beach Access
PERSPECTIVE
BAL HARBOUR
mikyoung kim design


Bal Harbour Jetty: Option 2 - Jetty
VIEWS
View 1
View 2
View 2
View 1
BAL HARBOUR
mikyoung kim design


Bal Harbour Jetty: Option 2 - Jetty
VIEWING PLATFORM AT THE JETTY
BAL HARBOUR
mikyoung kim design


Bal Harbour Jetty: Option 2 - Jetty
VIEWING PLATFORM AT THE JETTY
BAL HARBOUR
mikyoung kim design


Bal Harbour Jetty: Option 2 - Jetty
LIGHT HOUSE
BAL HARBOUR
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HERMAN FULTZ PARKING AREA

BAL HARBOUR

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Bal Harbour Jetty: Herman Fultz Parking Area

PLAN

BAL HARBOUR

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Bal Harbour Jetty: Herman Fultz Parking Area

EXISTING CONDITIONS

Activity Zone
Pedestrian Circulation
Vehicular Circulation

Parking Spots:39

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Bal Harbour Jetty: Herman Fultz Parking Area

OPTION A

Activity Zone
Specialty Pavement
Pedestrian Circulation
Vehicular Circulation

Parking Spots:33
(6 Spots relocated)

BAL HARBOUR

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Bal Harbour Jetty: Herman Fultz Parking Area

OPTION A

Specialty Pavement
Pedestrian Circulation
Vehicular Circulation

Parking Spots:26
(6 Spots relocated)

BAL HARBOUR

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Bal Harbour Jetty: Project Overview

SCHEDULE

2019		2020				2021				2022		
Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Design												
		Permitting										
									Construction			

7/11/2019 Community Workshop
9/2019 Community Workshop
10/2019 Community Design Presentation and BD Submission

Bal Harbour Jetty Project
Community Engagement / Client Meetings

BAL HARBOUR

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QUESTIONS?

BAL HARBOUR

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OPTION A & B

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Bal Harbour Jetty: Option 1
PLAN
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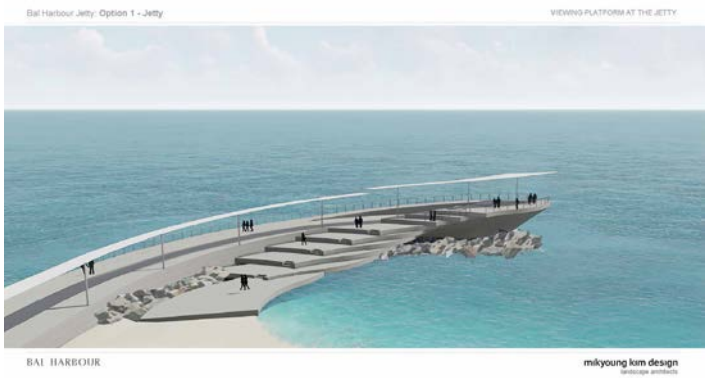
Bal Harbour Jetty: Option 1
PERSPECTIVE

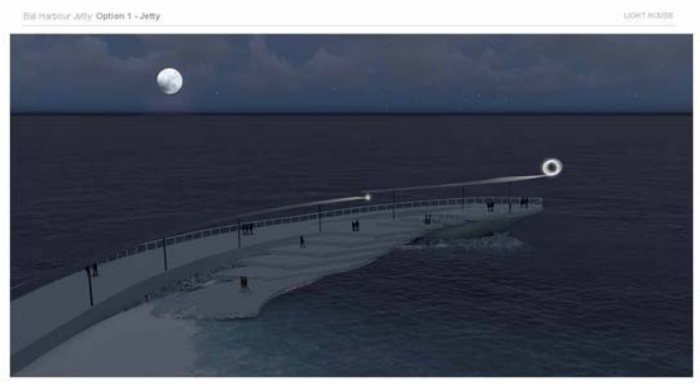

Bal Harbour Jetty: Option 1 – Waterfront Experience
ENHANCED HABITATS


Bal Harbour Jetty: Option 1 – Enhanced Beach Access
PERSPECTIVE
BAL HARBOUR
mikyoung kim design


Bal Harbour Jetty: Option 1 - Jetty
VIEWING PLATFORM AT THE JETTY
BAL HARBOUR
mikyoung kim design


Bal Harbour Jetty: Option 1 - Jetty
VIEWING PLATFORM AT THE JETTY
BAL HARBOUR
mikyoung kim design


Bal Harbour Jetty: Option 1 - Jetty
LIGHT HOUSE
BAL HARBOUR
mikyoung kim design


Bal Harbour Jetty: Option 1 - Jetty
LIGHT HOUSE


Bal Harbour Jetty: Option 1
PLAN
BAL HARBOUR
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Bal Harbour Jetty: Option 2
PERSPECTIVE
BAL HARBOUR
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Bal Harbour Jetty: Option 2 - Jetty
VIEWING PLATFORM AT THE JETTY
BAL HARBOUR
mikyoung kim design


Bal Harbour Jetty: Option 2 - Jetty
VIEWING PLATFORM AT THE JETTY
BAL HARBOUR
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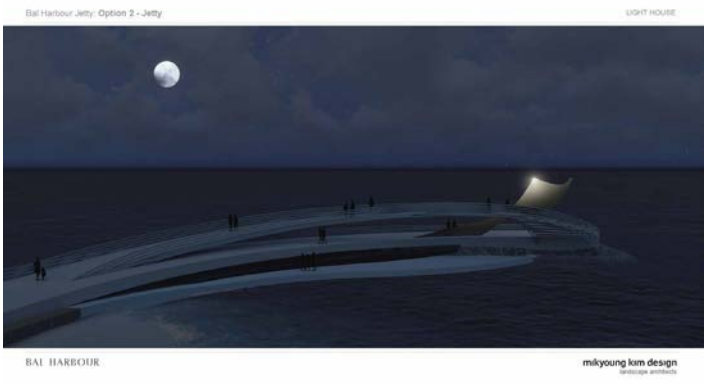
Bal Harbour Jetty: Option 2 - Jetty
LIGHT HOUSE
BAL HARBOUR
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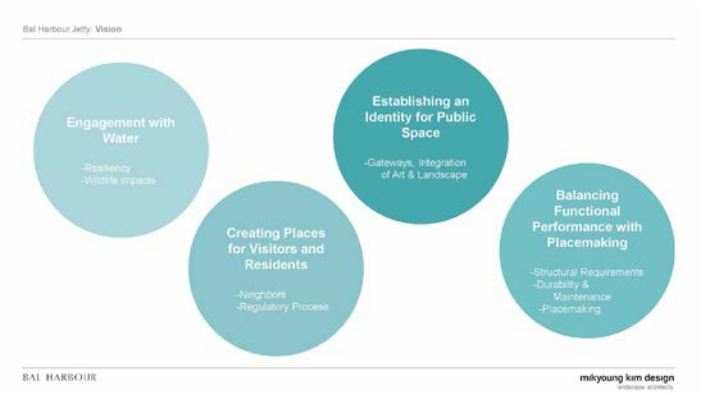
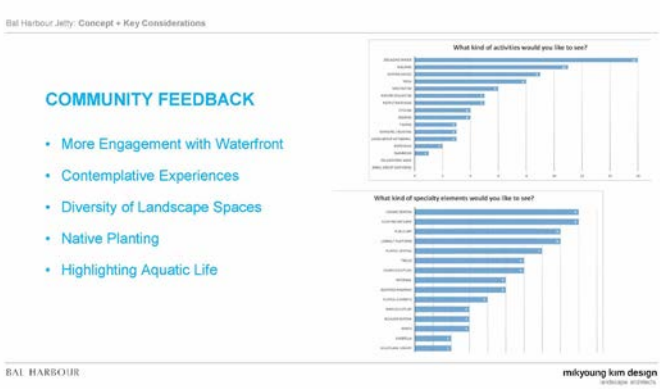
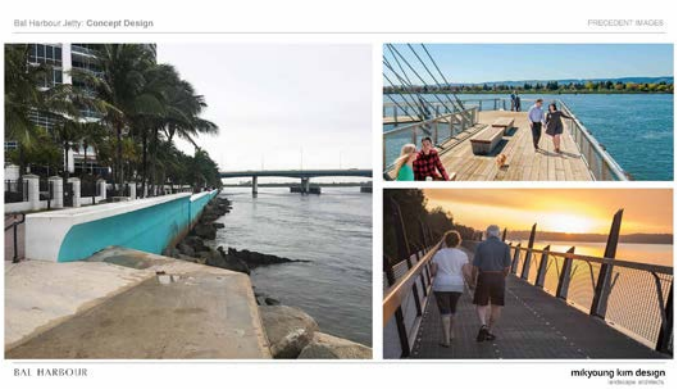
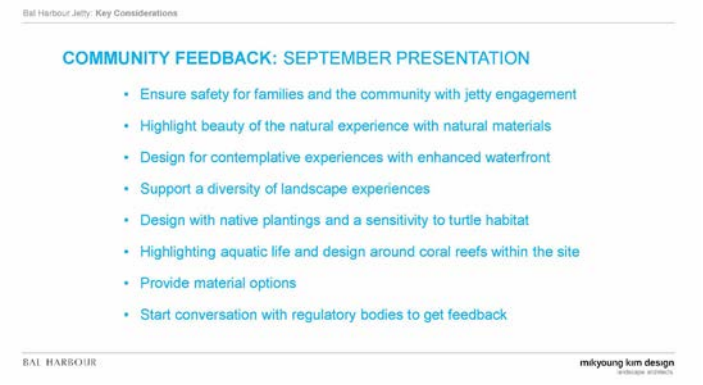
COMMUNITY MEETING: NOVEMBER 2019

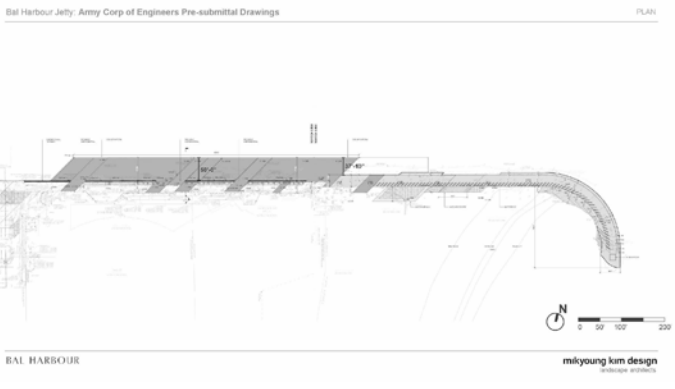


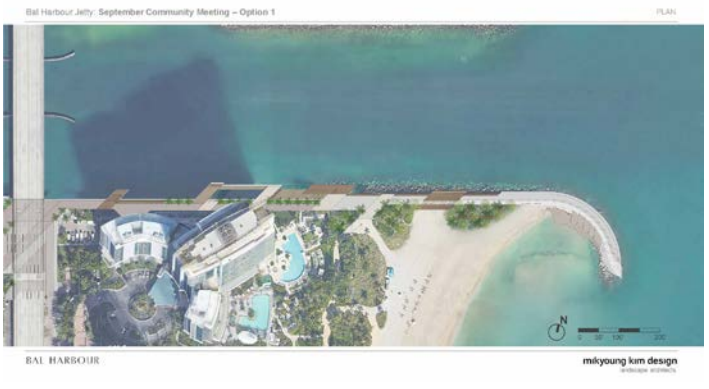


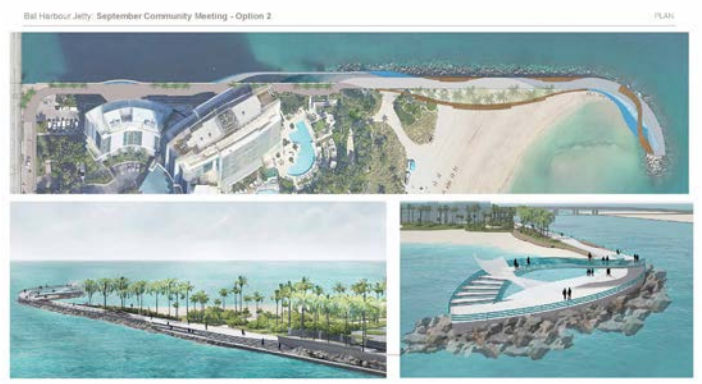


BAL HARBOUR JETTY SCHEMATIC DESIGN








Bal Harbour Jetty: September Community Meeting - Option 2
PLAN


Bal Harbour Jetty: September Community Meeting – Option 1
PLAN
BAL HARBOUR
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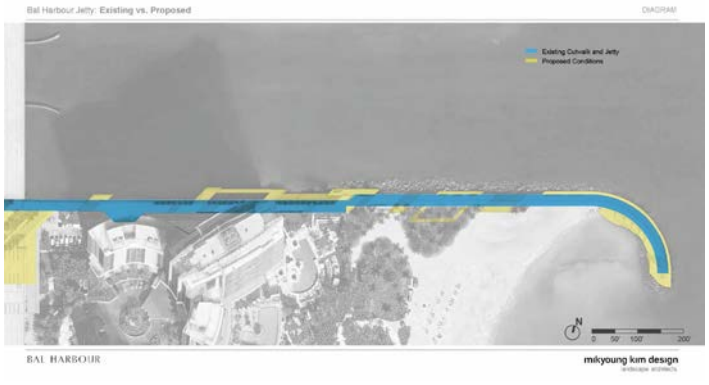
Bal Harbour Jetty: Final Schematic Design Plan- November
PLAN
BAL HARBOUR
mikyoung kim design


Bal Harbour Jetty: Existing vs. Proposed
DIAGRAM
Existing Cutwalk and Jetty
Proposed Conditions
BAL HARBOUR
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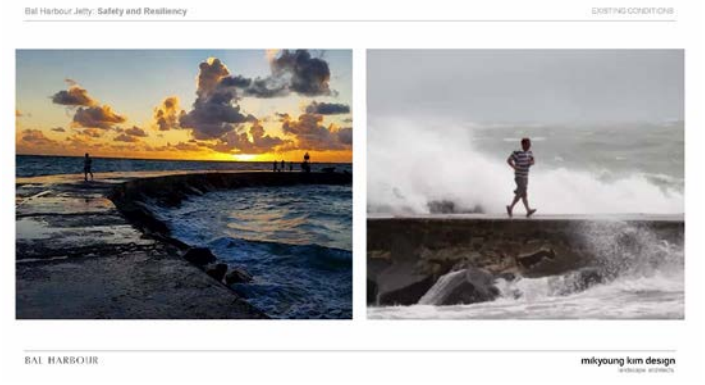
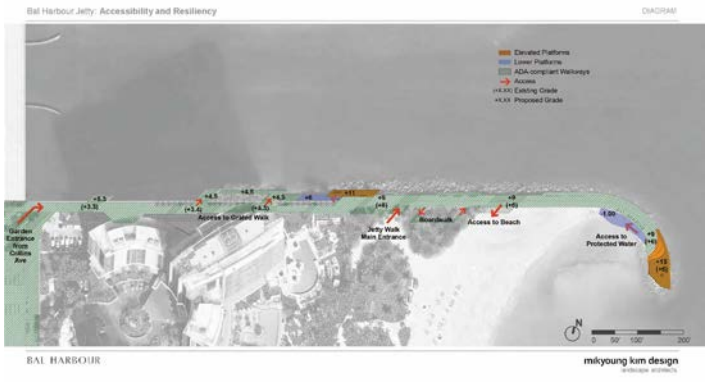

Bal Harbour Jetty: Safety and Resiliency
EXISTING CONDITIONS
BAL HARBOUR
mikyoung kim design


Bal Harbour Jetty: Accessibility and Resiliency
DIAGRAM
Elevated Platforms
Lower Platforms
ADA-compliant Walkways
Access
(+X.XX) Existing Grade
+X.XX Proposed Grade
Garden Entrance from Collins Ave
Access to Grand Walk
Jetty Walk Main Entrance
Boardwalk
Access to Beach
Access to Protected Water
BAL HARBOUR
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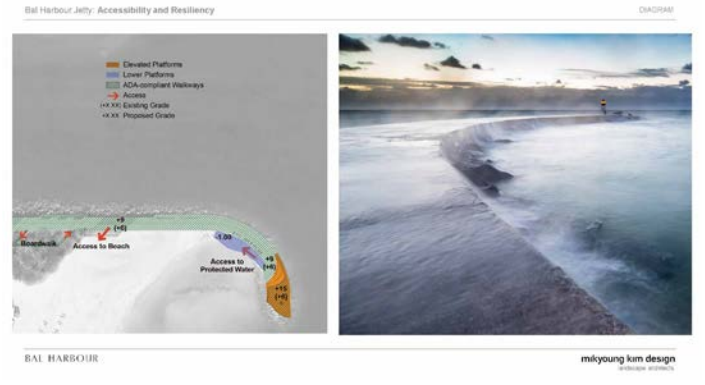
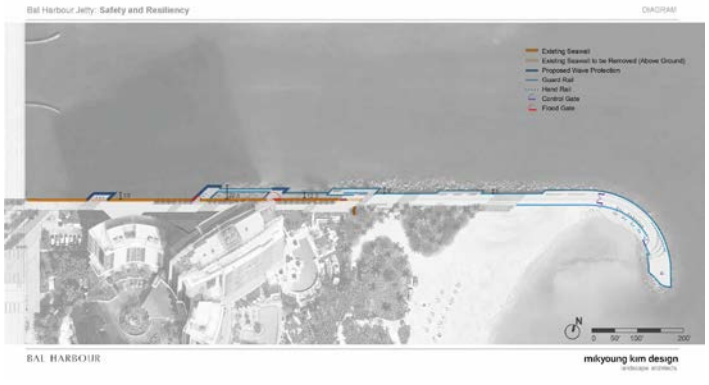

Bal Harbour Jetty: Accessibility and Resiliency
DIAGRAM
Elevated Platforms
Lower Platforms
ADA-compliant Walkways
Access
(+X.XX) Existing Grade
+X.XX Proposed Grade
Boardwalk
Access to Beach
Access to Protected Water
BAL HARBOUR
mikyoung kim design


Bal Harbour Jetty: Safety and Resiliency
DIAGRAM
Existing Seawall
Existing Seawall to be Removed (Above Ground)
Proposed Wave Protection
Guard Rail
Hand Rail
Control Gate
Fixed Gate
BAL HARBOUR
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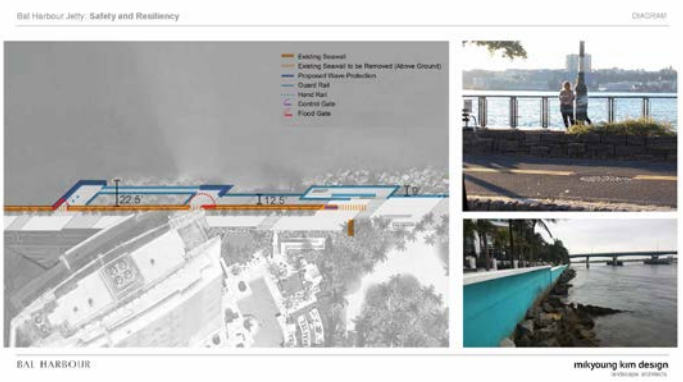
Bal Harbour Jetty: Safety and Resiliency
DIAGRAM
Existing Seawall
Existing Seawall to be Removed (Above Ground)
Proposed Wave Protection
Guard Rail
Hand Rail
Control Gate
Flood Gate
22.5
12.5
BAL HARBOUR
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Bal Harbour Jetty
PERSPECTIVE
Toe of RipRap at Edge of Water
BAL HARBOUR
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Bal Harbour Jetty
PERSPECTIVE
BAL HARBOUR
mkyoung kim design


Bal Harbour Jetty: September Community Meeting
PERSPECTIVE
BAL HARBOUR
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Bal Harbour Jetty: Final Schematic Design View
PERSPECTIVE
BAL HARBOUR
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Bal Harbour Jetty: Final Schematic Design View
PERSPECTIVE
BAL HARBOUR
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Bal Harbour Jetty: Marine Biodiversity
BENTHIC REPORT
NORTH
N.T.S
HAULOVER INLET
LEGEND
SURVEY AREA
Table 2. Species Observed
BAL HARBOUR
Cheppell
mkyoung kim design


Bal Harbour Jetty: Coral Location Diagram
DIAGRAM
BAL HARBOUR
Cheppell
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Bal Harbour Jetty: **Cutwalk Design** PERSPECTIVE

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Bal Harbour Jetty: **Waterfront Experience** PERSPECTIVE

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Bal Harbour Jetty: **Precast Concrete** SAMPLES

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Bal Harbour Jetty: **Cutwalk Extension Materials** PRECEDENTS

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Bal Harbour Jetty: **Guardrail and Canopy** PRECEDENT IMAGES

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Bal Harbour Jetty: **Waterfront Experience** PERSPECTIVE

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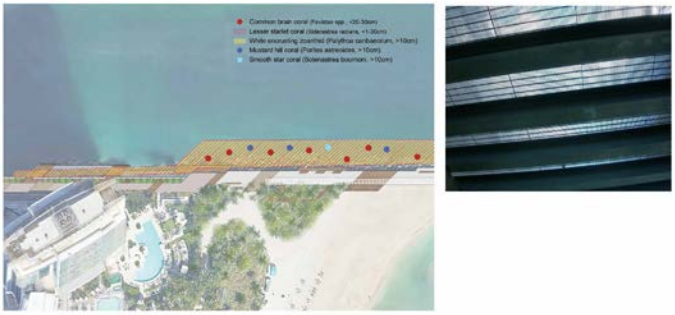
Bal Harbour Jetty: **Coral Location Diagram** DIAGRAM



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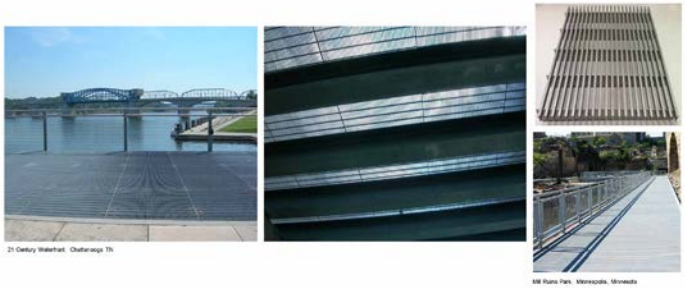
Bal Harbour Jetty: **Aqua Grate** SAMPLES



21 Century Waterfront, Chattanooga TN

Mill Ruins Park, Minneapolis, Minnesota

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Bal Harbour Jetty: **Artificial Reef** PRECEDENT IMAGES

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Bal Harbour Jetty: **Beach Access – September Community Meeting** PERSPECTIVE

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Bal Harbour Jetty: **Enhanced Beach Access** PERSPECTIVE

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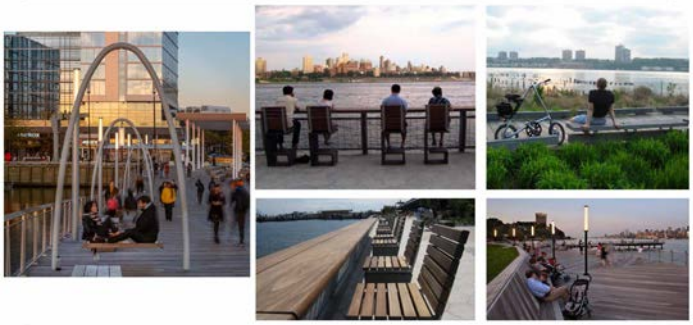
Bal Harbour Jetty: **Boardwalk Activities** PRECEDENT IMAGES



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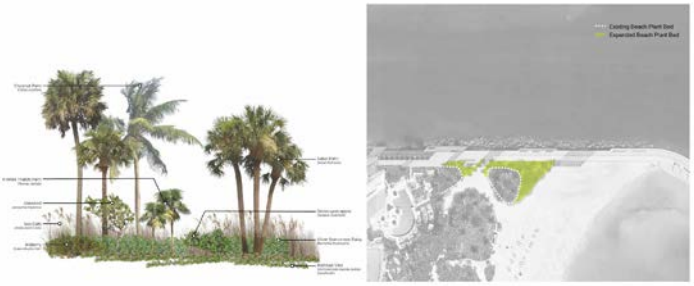
Bal Harbour Jetty: **Enhanced Beach Boardwalk** DIAGRAM



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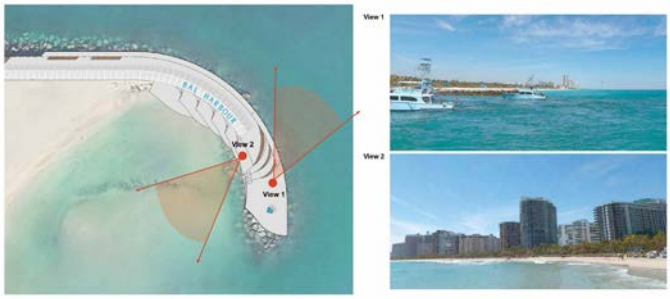
Bal Harbour Jetty: **Jetty** VIEWS



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Bal Harbour Jetty: **Promontory View** PRECEDENTS

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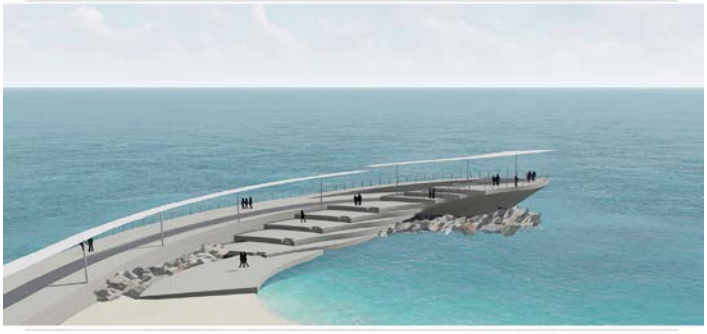
Bal Harbour Jetty: **Jetty – September Community Meeting** PERSPECTIVE



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Bal Harbour Jetty: **Revised Jetty** PERSPECTIVE

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Bal Harbour Jetty: **Amphitheater and Step-down Platforms** PERSPECTIVE

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Bal Harbour Jetty: **Canopy Signage** DETAIL

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Bal Harbour Jetty: **Detail of Steps** DETAIL

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Bal Harbour Jetty: **Lighthouse at the Jetty** PRECEDENT IMAGES

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Bal Harbour Jetty: **Viewing Platform at the Jetty** PERSPECTIVE

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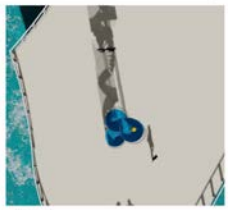
Bal Harbour Jetty: **Light Beacon** DETAIL



Plan View

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Bal Harbour Jetty: **Light Beacon** DETAIL

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Bal Harbour Jetty: **Light Beacon** PERSPECTIVE

BAL HARBOUR mkyoung kim design landscape architects

Bal Harbour Jetty: **Light Beacon – Season for Sea Turtles** PERSPECTIVE

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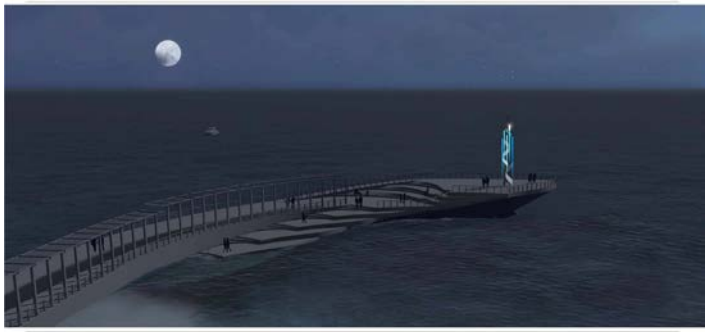
Bal Harbour Jetty: **Light Beacon – Special Program** PERSPECTIVE



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BAL HARBOUR ENTRY GARDEN
HERMAN FULTZ PARKING AREA

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Bal Harbour Jetty: **Herman Fultz Parking Area** EXISTING CONDITIONS

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Bal Harbour Jetty: **Bal Harbour Entry Garden** DIAGRAM

BAL HARBOUR mkyoung kim design landscape architects

Bal Harbour Jetty: **Bal Harbour Entry Garden** PLAN

BAL HARBOUR mkyoung kim design landscape architects

Bal Harbour Jetty: **Bal Harbour Entry Garden** PRECEDENT IMAGES

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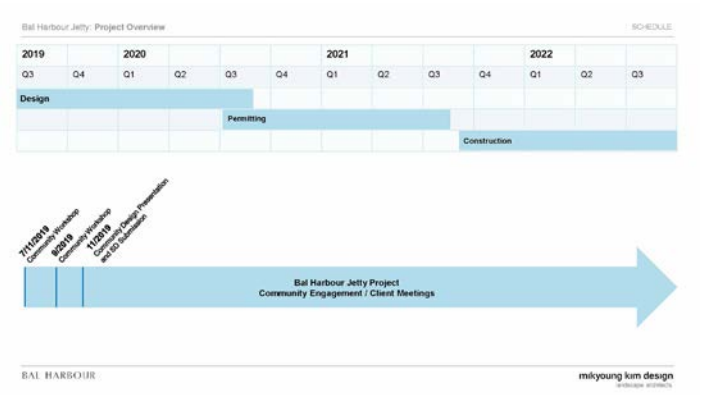
BAL HARBOUR JETTY
FINAL SCHEMATIC DESIGN: November 2019
MIKYOUNG KIM DESIGN
Cadence | Botek Thurlow Engineering | TWR Engineers | MUEngineers
The Chappell Group | Tierra SF | SLS | Exacta Commercial Surveyors
Miami Lighting Design | Twin Star Technology


Bal Harbour Jetty: Project Overview
SCHEDULE
2019
2020
2021
2022
Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3
Design
Permitting
Construction
7/11/2019 Community Workshop
9/2019 Community Workshop
11/2019 Community Design Presentation and SLO Submission
Bal Harbour Jetty Project
Community Engagement / Client Meetings
BAL HARBOUR
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