



THE NEW ST. PETERSBURG PIER

BASIS OF DESIGN
BOOK 1
NOVEMBER 26, 2012

MICHAEL MALTZAN ARCHITECTURE, INC.

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BASIS OF DESIGN

THE NEW ST. PETERSBURG PIER
ST. PETERSBURG, FLORIDA

BOOK 1
NOVEMBER 26, 2012

Prepared for
The City of St. Petersburg

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INTRODUCTION

EXECUTIVE STATEMENT

The new St. Petersburg Pier is an extraordinary opportunity to create a new landmark that is representative of both the people and the City of St. Petersburg. As a team, we have come to know the City, its people and its landscape. We recognize the challenge of continuing the legacy first begun by William Straub, as well as the importance of this key public space for all of St. Petersburg. The City and the Pier have a shared identity, one that has become inextricably linked over time. Given this close relationship, it is especially important for this new icon to reflect and resonate with the City and its defining characteristic - its connection to the water.

From the onset, the design team has strived to provide the City with a Pier that is more than a simple, static object. Rather, our goal is to provide an accessible, flexible, and functional icon that is as much a public park as it is a breathtaking sculpture on the water. No longer a simple terminus, the Pier becomes an unparalleled place for new experiences from fishing to dining and falling in love.

Throughout the Basis of Design effort, we have worked closely with the City, its citizens and a multitude of experts to identify goals and desires for the new St. Petersburg Pier. This process has strengthened and enriched the design, making it truly adapted to the City as a whole and serving as a beacon of optimism for the future.

This Report has been prepared by Michael Maltzan Architecture, Inc. and the A/E team for the City of St. Petersburg. The contents of the Basis of Design have been developed according to the City's project requirements and form a living document that describes the technical approach and design parameters used for the project.

While a tremendous amount of thought, effort and collaborative evaluation is embedded in this Report, the Basis of Design marks only the beginning of the design process, and a rigorous dialogue will be sustained throughout the development of the project.

At this juncture, with the committed assistance of Skanska, the design team has been able to provide a project that is representative of the competition entry, and that meets the stipulated budget assigned to the cost of work. This achievement was no small feat and its significance should not be overlooked when evaluating this phase of the project. While a considerable amount of work, challenges, and tough decisions lie ahead, the team is prepared to undertake them with the City of St. Petersburg as a partner. Most importantly, the same skill and commitment will be applied to this project in the next phases in order to maintain the budget and the integrity of the design throughout the further development of the new Pier.

BACKGROUND

The St. Petersburg Pier is the central element connecting downtown St. Petersburg with its waterfront and has become one of the City's most iconic and visible structures. When William Straub became part owner and editor of the St. Petersburg Times in 1901, he led the effort to set aside downtown waterfront property for the public to enliven community and generate well-being. This notion endures today with the City's many initiatives for the preservation and enhancement of urban life and landscape.

A number of piers have been constructed on the project site dating back to 1896. Notable structures include the Brantley Pier between 1896 and 1906, the Electric Pier between 1906 and 1914, the Municipal Pier (constructed 10 feet north of the Electric Pier) between 1913 and 1921, the Million Dollar Pier between 1926 and 1967, and the Inverted Pyramid building, which replaced the Million Dollar Pier building in 1973.

Today, all superstructure components of the Pier approach and head, save for the 1973 Inverted Pyramid base, harken back to its original 1926 construction. Despite repairs, many of these superstructure elements suffer from concrete and structural deterioration due to corrosion, exposure and aging of the reinforcing steel causing spalls, cracks and delamination. Continued general repairs do not increase the load carrying capacity of the structure and are not a viable long-term solution. A structural assessment document prepared by Moffatt & Nichol appears as Appendix L of the BOD report.

April 2005 - March 2009

The City of St. Petersburg and Pinellas County approved amendments to the Intown Redevelopment Plan to provide \$50 million for a Pier project. On December 11, 2008, City Council met at a Pier Visioning Workshop and recommended the establishment of the Pier Advisory Task Force. On March 19, 2009 City Council formally approved the creation of the Task Force and assigned its membership, to provide multiple redevelopment alternatives, review the status of the Pier, consult with citizens, persons with experience in architectural development matters and other appropriate persons.

June 2010

The Pier Advisory Task Force Final Report was released. City Council authorized an international competition in July 2011 to enhance the creative process for the redevelopment of the St. Petersburg Pier, a process recommended by the Pier Advisory Task Force. The Task Force indicated that the conclusions in the report can be summed up by a quote from the Lambert Advisory: "the Pier would not be the Pier without a pier, and thereby the City would lose a major drawing card for Downtown St. Petersburg. What the configuration, size or length of the pier is [sic] less important from a marketing/positioning perspective than the fact that a pier in some form or fashion continues to exist" (Pier Advisory Task Force Report, p.40).

The full report can be downloaded as a pdf at the following web address: http://www.stpete.org/news/the_pier/docs/Pier_Advisory_Task_Force_Final_Report_6_3_10.pdf

June 2011

The City of St. Petersburg released a request for qualifications (RFQ) document for a design competition. Stage 1 of the competition called for multi-disciplinary teams interested in being considered for the services of redeveloping the St. Petersburg Pier to register and submit a design approach, relevant project examples and team background and experience. Concurrently a five (5) member jury reflecting a diverse range of expertise and perspective was assembled and approved by City Council to review the applicants and select the winning design. The jury was comprised of a City Council representative, a County commissioner - both City of St. Petersburg residents - and three experts in the respective fields of architecture, urban design and planning, and development/economics. Of the three experts, one was from Tampa while the other two were from outside the State of Florida.

August 2011

From a group of twenty-three (23) international applicants, nine (9) were shortlisted for further consideration by the Jury. The City then invited a shortlist of three (3) teams of Finalists (architectural firms with their respective team members) to submit a Design Concept in Stage 2 of the International Design Competition.

The finalists selected were Michael Maltzan Architecture, Inc., Bjarke Ingels Group (BIG) and West 8 Urban Design and Landscape Architecture. The design concept submission deadline occurred on November 29, 2011. The three groups were asked to consider the area over the water, the 21 acre Uplands directly west of the Pier and connections to the larger urban context. Stage 2 of the competition included a two (2) day briefing and ten (10) weeks to prepare a vision and concept for the project. http://www.stpete.org/pierdesign/stage_2.asp

January 20, 2012

The St. Petersburg Pier competition jury unanimously voted Michael Maltzan Architecture's Lens design as the top concept. The ranking served as recommendation that the Lens design concept go before the St. Petersburg City Council for approval and authorization to proceed with negotiations with Michael Maltzan Architecture, Inc. for final design.

February 2, 2012

The St. Petersburg City Council approved the Lens design concept and authorized city staff to initiate Architectural/Engineering Services contract negotiations with Michael Maltzan Architecture, Inc.

BACKGROUND (continued)

May 17, 2012

The St. Petersburg City Council approved the Architectural/Engineering Professional Services contract. The contract includes five (5) phases as follows:

- Phase I -- Basis of Design
- Phase II -- Schematic Design
- Phase III -- Design Development
- Phase IV -- Construction Documents
- Phase V -- Construction Administration

July 9 - 11, 2012

BOD kickoff meetings between the City of St. Petersburg staff and the A/E team were held at the office of Michael Maltzan Architecture, Inc. in Los Angeles.

September 13, 2012

The A/E team presented BOD midterm updates to City Council in St. Petersburg.

October 4, 2012

The City retained the services of Skanska with City Council's approval of the Construction Manager contract.

December 4, 2012

The A/E team will present the final BOD presentation to City Council in St. Petersburg.

PURPOSE OF REPORT

The purpose of this BOD Report is as follows:

- To provide a program narrative that identifies the concept's key components.
- To describe the design intent and establish design criteria. It is not intended to set definitive design decisions either architecturally or structurally.
- To provide drawings sufficient for description of the scope and concept.
- To provide documentation of the A/E team's public outreach with the local community and marine science community.
- To provide a cost model prepared by the Construction Manager with the A/E team.
- To establish the technical criteria and benchmarks for building code, occupancy, egress, fire and safety compliance.
- To provide estimated costs for the operation and maintenance of the project.
- To identify future programmatic and planning opportunities for the Uplands area that are suggestions for inclusion in the City's Downtown Waterfront Master Plan.

DESCRIPTION OF WORK PERFORMED

The goal of Phase I, BOD (BOD), is to develop a clearly defined, comprehensive set of basic design criteria that the A/E team will work from in the subsequent four (4) design phases. The A/E team has worked closely with the City appointed Construction Manager (CM) throughout BOD to ensure that the Lens concept complies with the City's \$40.5 million budget for the demolition of the existing Pier and construction of the new Pier.

Michael Maltzan Architecture, Inc. and the members of the A/E team commenced work on the BOD Report in July 2012. Since then the team has accomplished a number of goals, namely the development and submission of the Environmental Resource Permits for the demolition of the existing Pier and construction of the new Pier, as well as assisting with the preparation of demolition bid documents. Additionally, the A/E team has held 38 public outreach meetings to date, met with individuals from the marine science community and worked closely with City of St. Petersburg representatives to refine the design and identify project goals and technical criteria. Through collaboration with Skanska, a highly detailed cost model has been developed, allowing for accurate order of magnitude pricing and cost control from the outset of the project.

The overall process of developing this document was highly collaborative and participatory, involving the efforts of all members of the team and key staff from the City of St. Petersburg.

The BOD process provides for delivery of completed BOD documents by Monday, November 26, 2012, and the presentation of the BOD Report by Tuesday, December 4, 2012.

Once the City has received and approved all of the deliverables, with any revisions, the City will authorize the A/E team, in writing, to commence with the Schematic Design phase. Any comments as part of the written authorization to proceed to the Schematic Design phase will become a part of the required services and deliverables to be provided by the A/E team in the Schematic Design phase.

ORGANIZATION OF REPORT

The BOD Report is organized into seven (7) major sections followed by Appendices.

1 Introduction

Includes the background of the project, a definition of the purpose of the BOD Report, a description of the work performed and the organization of the report and project.

2 Executive Summary

Includes a comprehensive list of definitions of key words pertaining to the project and the BOD Report; the A/E team's organizational chart; a quantitative summary of component space requirements; a summary of project costing and the project schedule.

3 General Planning Criteria

Includes broad conceptual statements related to the Pier as a whole and will influence the planning and design processes in the upcoming phases of the project. It is not intended to set definitive design decisions, but to establish the relationships between major parts. This section also establishes the technical criteria and benchmarks for building code, permitting, occupancy/egress, fire and safety compliance, and summarizes relevant design information based on the input of the public, the marine science community and the Pier Advisory Task Force.

4 Component Planning Criteria

Includes a description of eight (8) individual program components comprising the project. This section defines the activities and functions of each program component in addition to its users, character, physical space estimates and technical requirements.

5 Basis of Design Concept Analysis

Includes BOD architectural drawings and diagrams.

6 Construction Manager at Risk: Project Implementation

Includes project implementation information and a preliminary schedule. The detailed cost model developed by Construction Manager at Risk is included as Appendix M.

7 Operating Expense and Maintenance Estimates

Includes estimated operation and maintenance costs for the project.

ORGANIZATION OF REPORT (continued)

Appendices

Provide supporting documentation to the sections described above, including:

- Appendix A: St. Petersburg Pier Site Observations Report, June 27-28, 2012 (Buro Happold)
- Appendix B: Conceptual Fire Safety Strategy Presentation, September 26, 2012 (Buro Happold)
- Appendix C: Conceptual Fire Safety Strategy Presentation, Meeting Minutes (Buro Happold)
- Appendix D: General Site Conditions Meeting Minutes, June 27, 2012 (McLaren Engineering Group)
- Appendix E: Environmental Resource Permit Application, August 2012
- Appendix F: Underwater Feature Outreach Project: Meeting Minutes from Technical Workshops and Interviews
- Appendix G: Hydrodynamics and Flushing of the Proposed Docking Facilities at St. Petersburg Pier
- Appendix H: Pier Advisory Task Force Report
- Appendix I: Vision/Guiding Principles and Context for the Preparation of a Downtown Waterfront Master Plan, December 2011
- Appendix J: Skanska - Key Personnel
- Appendix K: ASCE 24-05: Flood Resistant Design and Construction
- Appendix L: City Pier Building Foundation Evaluation, March 1, 2010 (Moffatt & Nichol)
- Appendix M: Cost Model (Skanska)
- Appendix N: Life Cycle Cost Analysis Report
- Appendix O: St. Petersburg Pier Request for Qualifications - International Design Competition

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EXECUTIVE SUMMARY

INTRODUCTION

This section includes a series of tables summarizing key project scope factors as well as general information concerning the new Pier, as follows:

- **Definitions**
Lexicon of key words used within the BOD Report.
- **Component Summary**
Space requirements for each program component.
- **Cost Summary**
Costs attributed to the new Pier in CSI format.
- **A/E Organizational Chart**
Organization of Architecture and Engineering team for the project.
- **Project Schedule**
Schedule and description of all phases and tasks of the project.

DEFINITIONS

Architectural Phases

Basis of Design (BOD): First phase of the design project. Living document developed by the Architecture and Engineering team that translates the City of St. Petersburg's needs into building components and describes the technical approach and design parameters used for the project.

Schematic Design (SD): Preparation of drawings and other documents illustrating the scale and relationship of project components.

Design Development (DD): Development of plans and elevations for the project. Drawings establishing all major elements and outline specifications are prepared and a revised statement of construction cost is produced.

Construction Documents (CD): Preparation of working drawings, specifications and bidding information.

Construction Administration (CA): Construction of project as specified in the CD phase by the Construction Manager with assistance from the Architect. Additional clarifications to the drawings issued in the CD phase are made through the issuance of architectural sketches.

A/E Team

Architecture and Engineering team designing the new Pier.

American Association of State Highway and Transportation Officials (AASHTO)

A standards setting body which publishes specifications, test protocols and guidelines which are used in highway design and construction throughout the United States. The association represents not only highways but air, rail, water, and public transportation as well.

American Society for Testing and Materials (ASTM)

International standards organization that develops and publishes voluntary consensus technical standards for a wide range of materials, products, systems and services.

Americans with Disabilities Act (ADA)

Legislation enacted by the U.S. federal government in 1991 with the goal of removing barriers that limit the engagement of an individual with a disability in normal daily activity in the physical, public environment.

Base Flood Elevation (BFE)

Water surface elevation corresponding to a flood having a one percent probability of being equaled or exceeded in a given year as defined in the FEMA Flood Map. The base flood elevation for the site of the new Pier is +8 ft. NAVD 88.

Bent

Part of a bridge substructure. A rigid frame commonly made of reinforced concrete or steel that supports a vertical load and is placed transverse to the length of a structure.

Biome

Large naturally occurring community of flora and fauna occupying a major habitat.

Bulkhead

Retaining wall along a waterfront. Synonymous with 'seawall'.

Canopy

Rooflike projection or shelter.

Capital Improvement Plan (CIP)

Short range plan which identifies capital projects and equipment purchases, provides a planning schedule and identifies options for financing the plan.

Coastal High Hazard Zone

Area particularly vulnerable to the effects of coastal flooding.

Community Redevelopment Area (CRA)

Area designated for redevelopment by a municipality or county after a determination that "slum and blight" criteria have been met, as established in Chapter 163 Part III of the Florida Statutes, traditionally funded by Tax Increment Financing (TIF).

Component

Discrete grouping of spaces and activities that are physically related, composing an area of the new Pier designed by Michael Maltzan Architecture, Inc.

Construction Manager (CM)

The construction team that will lead the construction efforts of the various subcontractors and hold the contract with the City of St. Petersburg to build the new Pier. The Construction Manager for the Pier is Skanska USA, Inc.

Construction Manager at Risk (CMR)

Deliver method that entails a commitment by the construction manager to deliver the project within a Guaranteed Maximum Price (GMP).

Construction Specifications Institute (CSI)

An organization that maintains and advances the standardization of construction language as pertains to building specifications. CSI authored MasterFormat, which is an indexing system for organizing construction data, particularly construction specifications.

DEFINITIONS (continued)

Design Flood Elevation (DFE)

Elevation of the 100-year storm as defined in FEMA Flood Insurance Studies or, in areas without FEMA floodplains, the elevation of the 25-year storm.

Estuary

Tidal mouth of a large river or body of water, where the tide meets the stream.

Federal Emergency Management Agency (FEMA)

Agency that coordinates the federal government's role in preparing for, preventing, mitigating the effects of, and recovering from all domestic disasters, whether natural or man-made.

Flood Hazard Area

Areas that are subject to flooding.

Florida Accessibility Code for Building Construction (FACBC)

State of Florida Legislation, adopted in 2012, that contains guidelines and provisions more stringent than the Federal Americans with Disabilities Act (ADA).

Geotechnical Investigation

Used to obtain information on the physical properties of soil and rock around a site to design earthworks and foundations for proposed structures and for repair of distress to earthworks and structures caused by subsurface conditions.

Hub

Program component of the new Pier located on the Uplands serving as the main retail and dining attraction for the project.

HVAC

Term used to refer to the mechanical systems which heat, cool, filter or dehumidify air in a room or building. Acronym for 'heating, ventilation and air conditioning'.

Iconic Architecture

Architecture that is beautiful in form, serves a useful purpose and creates a sense of place by contributing to the public realm while being unique, not ordinary and having never been done before.

Intertidal Zone

Area that is exposed to the air at low tide and underwater at high tide.

Intermodal

Accommodation of multiple means of transportation, including accessible, pedestrian, bicycle and vehicular.

Leadership in Energy and Environmental Design (LEED)

Suite of rating systems for the design, construction and operation of high performance green buildings, homes and neighborhoods. Developed by the U.S. Green Building Council, LEED is intended to provide building owners and operators a concise framework for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions.

Lens

Term referring to the iconic design of the new Pier by Michael Maltzan Architecture, Inc.

Mean Sea Level (MSL)

A tidal datum. The arithmetic mean of hourly heights observed over the National Tidal Datum Epoch. Shorter series are specified in the name; e.g., monthly mean sea level and yearly mean sea level.

Millage Rate

Amount per \$1,000 that is used to calculate taxes on property.

National Electrical Manufacturers Association (NEMA)

Association of electrical equipment manufacturers for the development of technical standards that are in the best interests of the industry and users.

National Geodetic Vertical Datum of 1929 (NGVD 29)

A fixed reference adopted as a standard geodetic datum for elevations determined by leveling. The geodetic datum is fixed and does not take into account the changing stands of sea level. Because many variables affect sea level and because the geodetic datum represents a best fit over a broad area, the relationship between the geodetic datum and local mean sea level (MSL) is not consistent from one location in either time or space. NGVD (1929) has been superseded for use by the North American Vertical Datum of 1988.

North American Vertical Datum (NAVD 88)

A fixed reference for elevations determined by geodetic leveling. Established in 1991 by the minimum-constraint adjustment of the Canadian-Mexican-U.S. leveling observations, which held the fixed height of the primary tidal bench mark, referenced to the new International Great Lakes Datum of 1985 local mean sea level height value, at Father Point/Rimouski, Quebec, Canada.

Piazza

Public square or gathering place.

Pier Approach

Area of the existing Pier that describes the approximately 1/4 mile long bridge portion of the Pier between the Uplands seawall and the Pier head.

DEFINITIONS (continued)

Pier Head

Portion of the existing Pier that describes the large rectangular area at the eastern end of the 1926 Pier approach.

Project

Term used in the Basis of Design document to describe the new Pier designed by Michael Maltzan Architecture, Inc. in all of its scope, inclusive of all design components and site improvements.

Promontory

High ridge of land that juts out into a large body of water.

Return Period

Estimate of the interval of time between flood of a certain intensity or size.

Reef

A ridge of rock, coral, or sand just above or below the surface of a body of water.

Risk Category

Categorization of buildings and other structures for the determination of flood, wind, snow, ice and earthquake loads based on the risk associated with unacceptable performance.

Scour

The removal by hydrodynamic forces of bed material in the vicinity of coastal structures.

Seagrass

Underwater flowering plants that live in protected bays, lagoons and other shallow coastal waters. This grass-like vegetation forms small patchy beds that can develop into expansive meadows. Seagrasses perform a number of ecological functions such as improving water quality, contributing to the marine food web and stabilizing loose sediment.

Seawall

See Bulkhead.

Shell Space

Enclosed space with floors, windows, walls and roof that may include electrical or plumbing improvements but requires tenant improvements before it is ready to be occupied.

Tax Increment Financing (TIF)

Mechanism that allows local governments to use future projected taxes generated within an approved Community Redevelopment Area to finance public improvement projects.

Underwater Feature

Future program component of the new Pier serving as an educational attraction that highlights the marine environment and marine restoration while contributing to the community.

Uplands

Landmass connecting the existing pier approach to the City and Bay Shore Drive NE. Extending 2nd Avenue NE into Tampa Bay, it is also the site of Spa Beach, the Pelican Parking Lot, the Dolphin Parking Lot and the St. Petersburg Museum of History.

Wave Attenuator

Man-made structure used to extract the energy from incoming waves.

COMPONENT SUMMARY

The basic elements of the project were generally depicted in the material submitted by the A/E team for the international design competition and shall be refined and further developed in accordance with the Agreement with the City of St. Petersburg. Program components for the new Pier include:

- **Welcome Mat - 47,400 SF**
Open civic space functioning as the site of public interface between the City and the Pier
- **Hub - 22,350 SF**
Planned retail and dining attractor for private sector development located on the Uplands near the Welcome Mat
- **Overwater Drive - 34,050 SF**
Looping bridge serving as a circuit from land to water and accommodating some vehicular traffic
- **Overwater Bridge - 20,100 SF**
Looping bridge serving as a circuit from land to water accommodating pedestrian traffic
- **Lens Canopy - 54,550 SF**
Visual focal point of the project that provides shade
- **Promontory - 18,000 SF**
Platform beneath Lens Canopy for public gathering and direct access to water
- **Marina - 9,150 SF**
Central space within the Lens that accommodates aquatic vehicles and other visitor attractions
- **Underwater Feature (*future component*) - 20,000 SF**
Public attraction that highlights the relationship of the people of St. Petersburg's to the Bay and its ecology

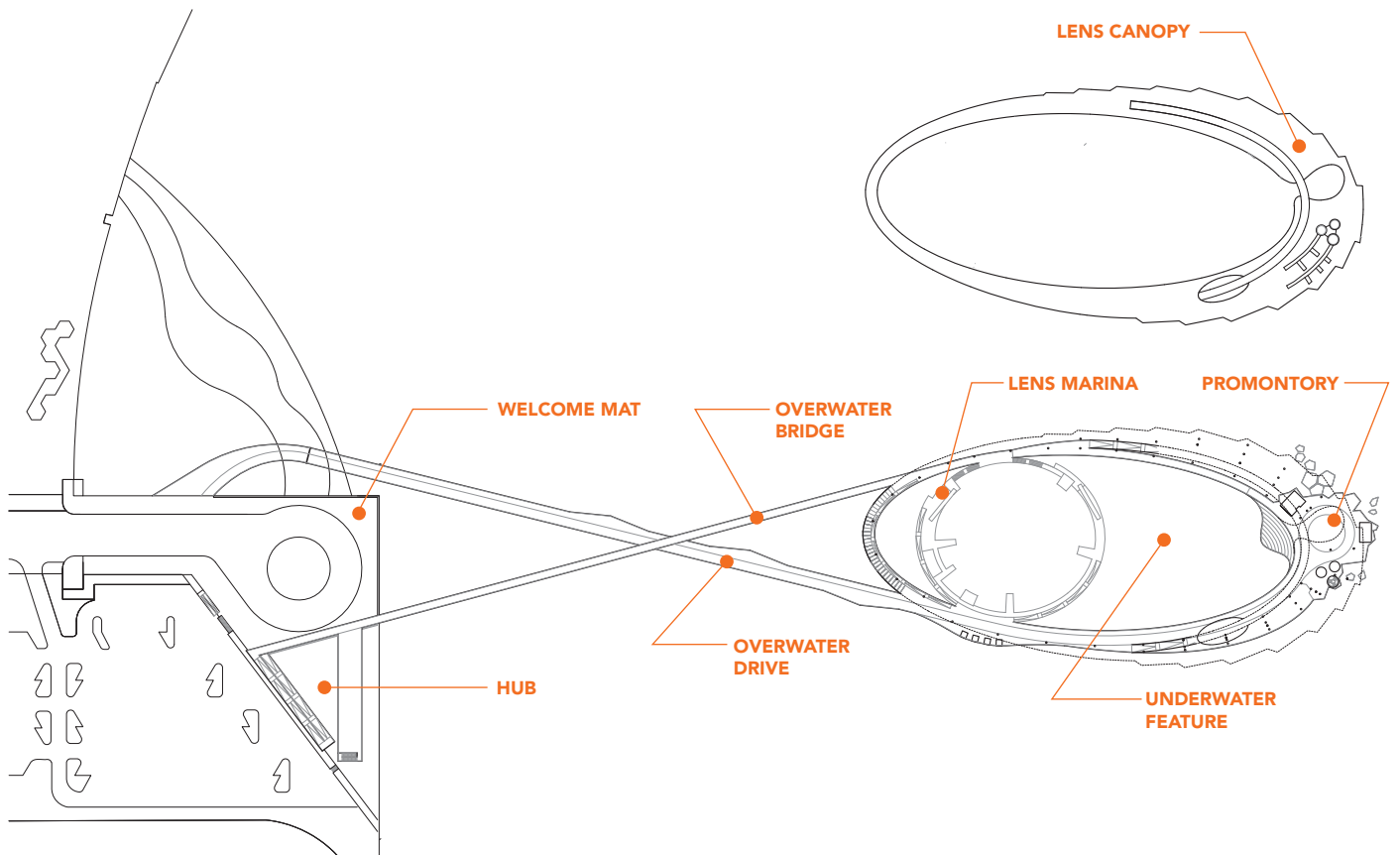


Figure 2.1 Program Components of the new Pier

COST SUMMARY

Project Budget

The total project budget for the new St. Petersburg Pier is fifty million dollars (\$50,000,000) as set forth in the City of St. Petersburg's Intown Redevelopment Plan and subsequent amendments. The project budget is comprised of several categories of expenditures required to design, administer and construct the new St. Petersburg Pier. The breakdown of the total project budget is as follows:

Project Hard Cost

Demolition Budget	\$ 3,075,000
Construction Cost Budget	\$ 36,950,000
Geotechnical Testing	\$ 500,000
<hr/>	
Project Hard Cost Subtotal	\$ 40,525,000

Project Soft Cost

Design and Predevelopment Budget	\$ 6,595,000
Administration, Inspection & Contingency	\$ 2,880,000
<hr/>	
Project Soft Cost Subtotal	\$ 9,475,000

Total Project Budget	\$ 50,000,000
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Construction Cost Budget

The construction cost budget is defined as the total budget available to the Construction Manager to construct the new St. Petersburg Pier pursuant to the Guaranteed Maximum Price Construction Manager at Risk Contract. The construction cost budget does not include the demolition cost, or any of the soft cost required to design and administer the project. The construction cost budget is \$36,950,000.

Project Cost Plan

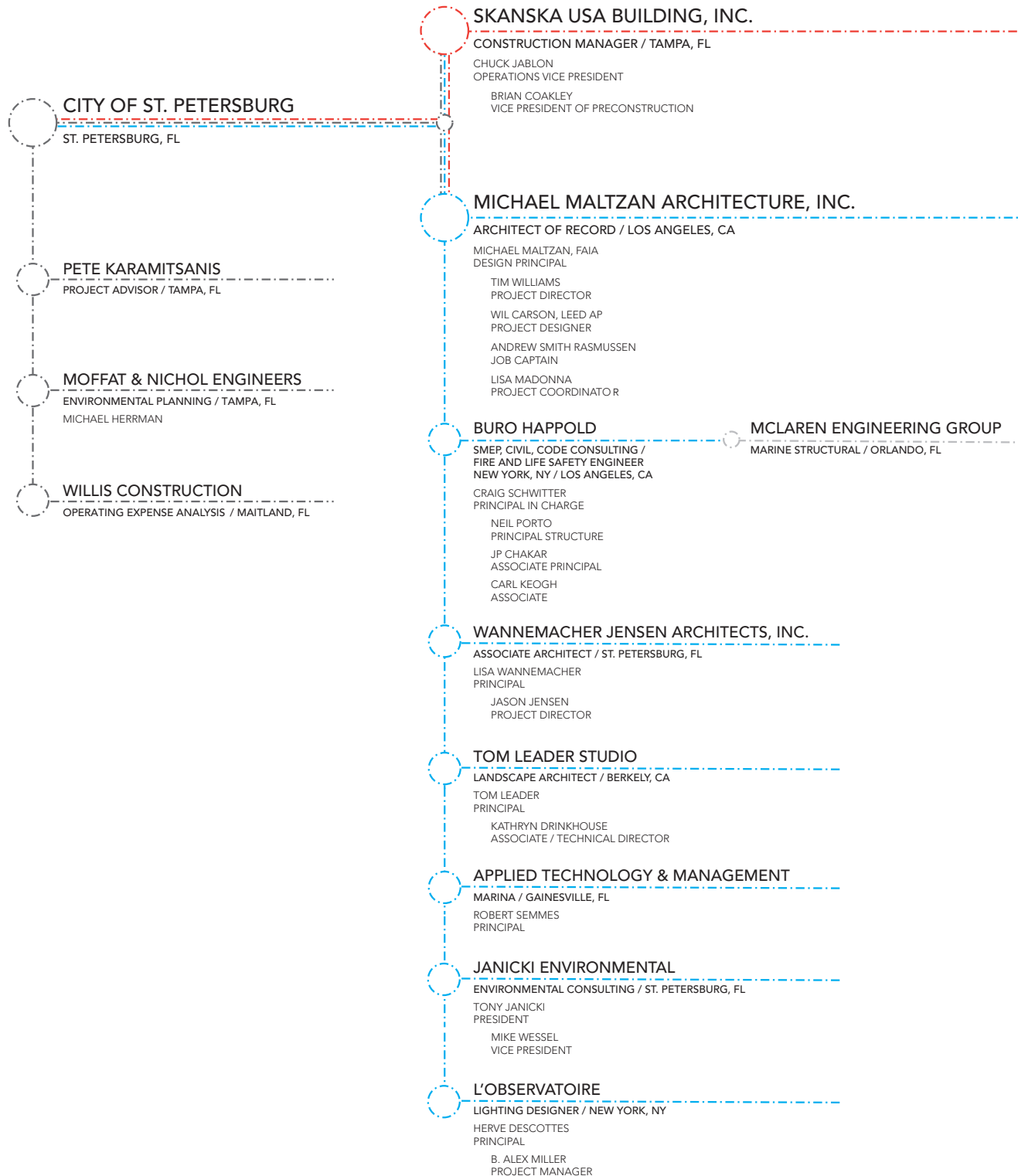
The development of a project cost plan was a key requirement of the BOD phase. The purpose of the cost plan is to ensure that the new Pier concept can be constructed by a Construction Manager within the construction cost budget. The project cost plan is determined by the cost of the work plus the general conditions, the CM fee, bonds, insurance, permitting cost and contingencies required to construct the new Pier.

Cost Summary (CSI Format)

The basic elements of the project that constitute the Cost of the Work are as follows:

1	General Requirements	\$ 315,000
2	Existing Conditions	\$ 263,052
3	Concrete	\$ 6,545,439
4	Masonry	\$ 77,599
5	Metals	\$ 6,377,977
6	Wood, Plastics and Composites	\$ 124,378
7	Thermal and Moisture Protection	\$ 5,063,791
8	Openings	\$ 86,652
9	Finishes	\$ 36,224
10	Specialties	\$ 55,309
11	Furnishings	\$ 170,152
12	Special Construction	\$ 1,395,775
13	Conveying Equipment	\$ 133,571
14	Fire Suppression	\$ 5,672
15	Plumbing	\$ 141,449
16	Heating, Ventilating and Air Conditioning	\$ 18,151
17	Electrical	\$ 2,357,373
18	Communications	\$ 269,207
19	Earthwork	\$ 79,000
20	Exterior Improvements	\$ 4,633,855
21	Utilities	\$ 751,695
Subtotal		\$ 30,820,502
22	General Conditions, CM Fee, Construction Bonds, Insurance, Permitting Cost, Contingencies	\$ 6,129,498
Construction Cost Budget		\$ 36,950,000

A/E TEAM ORGANIZATIONAL CHART



Activity ID	Activity Description	Dur	Start	Finish
Basis of Design Phase				
BD-0010	Public Outreach & Input	42	01JUN12*	31JUL12
BD-0020	Programming	34	02JUL12*	17AUG12
BD-1010	Presentations by Shortlisted CMs	1	17JUL12*	17JUL12
BD-1011	Award Project	1	18JUL12	18JUL12
BD-0060	Basis of Design Rpt - to Include Final Cost Plan	97	19JUL12	04DEC12
Schematic Design Phase				
SD-0020	Constructability & Cost Plan Review	55	05DEC12	21FEB13
SD-0010	50% Schematic Design Submission	55	05DEC12	21FEB13
SD-0030	Schematic Design Phase Estimate & Cost Review	20	22FEB13	21MAR13
SD-0040	100% Schematic Design	57	23JAN13	11APR13
SD-0050	SD Submittal Including Final SD Estimate	0		11APR13
Design Development Phase				
DD-0020	Constructability Review	21	12APR13	10MAY13
DD-0010	50% Design Development Submission	30	12APR13	23MAY13
DD-0030	Design Development Phase Estimate & Cost Update	20	03MAY13	31MAY13
DD-0040	100% Design Development Submission	28	24MAY13	03JUL13
DD-0050	DD Submittal Including Final DD Estimate	0		03JUL13
Geotechnical / Wind / Wave Studies				
SD-0015	Bid/Award Geotech Survey/Frndn Borings (Skanska)	22	05DEC12	07JAN13
SD-0065	Wind Studies (Arch/Engr)	132	05DEC12	11JUN13
SD-0070	Wave Studies (Arch/Engr)	132	05DEC12	11JUN13
SD-0025	Geotech Survey & Frndn Borings (Skanska)	88	08JAN13	09MAY13
SD-0035	Issue Geotech Survey/Frndn Borings Rpt (Skanska)	22	10MAY13	11JUN13
Construction Document Phase				
CD-0020	Constructability Review	21	05JUL13	02AUG13
CD-0010	50% Construction Document Submission	46	05JUL13	09SEP13
CD-0030	50% CD Phase - Initial GMP Submission	12	22AUG13	09SEP13
CD-0040	100% Construction Document Submission	53	10SEP13	21NOV13
CD-0050	Final GMP	32	01NOV13	17DEC13
CD-0051	Award Contracts / Buyout	22	18DEC13	20JAN14
Permitting				
SD-0055	SWFWMD Permitting	261*	01NOV12*	08NOV13
SD-0045	US Army Corps of Engineer Permitting	289	21JAN13*	07MAR14
SD-0060	Coast Guard Permitting	289	21JAN13*	07MAR14
Demolition Phase				
DE-0010	Close Existing Pier	22	01MAY13*	31MAY13
DE-0011	Demo Inverted Pyramid (Above Water)	27	03AUG13	30AUG13
DE-0012	Demo Existing Pier (Below Water)	63	03SEP13	29NOV13
Construction Phase				
CO-0010	Execute GMP	0	21JAN14	
CO-0022	Setup Survey Control Piers	10	21JAN14	03FEB14
CO-0021	Mobilize & Setup Environmental Controls	20	21JAN14	17FEB14
CO-0023	Test Piles / Load Test	10	04FEB14	17FEB14
CO-0024	Install Pier / Marina Fndns & Bridge Platform	132	18FEB14	22AUG14
CO-0026	Install Elevated Pathway / Crown / Pier Fndns	132	18FEB14	22AUG14
CO-0031	Offsite Prefab Crown Architectural Elements	120	09JUN14	25NOV14
CO-0025	Install Lower Pathways	110	23JUN14	25NOV14
CO-0027	Install Bridge/Elevated Pathway & Arch Elements	110	23JUN14	25NOV14
CO-0028	Construct Observation Areas	66	25SEP14	29DEC14
CO-0029	Construct Marina Sections	88	26NOV14	01APR15
CO-0030	Erect Crown	144	26NOV14	19JUN15
CO-0032	Substantial Completion	0		19JUN15
CO-0034	Final Completion	20	22JUN15	20JUL15
CO-0040	Close Out - Grand Opening	20	21JUL15	17AUG15

MICHAEL MALTZAN ARCHITECTURE, INC.

3

GENERAL PLANNING CRITERIA

INTRODUCTION

This section is intended to function as a guide for the design team to develop all subsequent stages of work. The criteria are not intended as specific solutions, but rather to establish the functional, operational and contextual principles that should influence the design process of the project. They are concerned with both general qualities and specific requirements:

- **Public Outreach Notes**
 - Summary
 - Frequently Asked Questions
- **Underwater Feature Outreach Summary**
- **Uplands Usage Suggestions**
- **Pier Advisory Task Force Report Summary**
- **Site and Urban Design Criteria**
 - Site Location and Orientation
 - Existing Site Use
 - Existing Pier Head and Pier Approach
 - Existing Uplands Area
 - Existing Building Use
 - Historic Buildings and Monuments
 - Adjacent Land Uses
 - Photographic Documentation of Site Context
 - Zoning Guidelines
 - Environmental Considerations
 - Existing Structures to be Retained or Demolished
 - Parking Requirements
 - Building Visibility
 - General Security Requirements
 - Site Access
 - Site Accessibility
 - Economic Development Opportunities
 - Water Levels
 - Sea Level Rise
 - Floodplain Management
 - Wind Data
 - Geography and Climate Data
- **Existing Infrastructure**
 - Existing Pier
 - Existing Bulkhead
 - Existing Water Service
 - Existing Drainage
 - Existing Natural Gas
 - Existing Lighting and Electrical Service
 - Existing Underwater Conditions

INTRODUCTION (continued)

- **Architectural Criteria**
 - Key Concepts
 - Sustainable Planning and Design
 - Building Massing
 - Albert Whitted Airport Flight Path Study
 - Shading Study
 - Materials and Finishes
 - Canopy Materials
 - Ipe Specification Data
 - Pier Access
 - Pier Trolley Implementation
 - Parking Facilities
 - Signage and Wayfinding
 - Public Amenities
 - Revenue Generating Amenities
 - Lighting Systems
 - Pier Activities
- **Engineering Criteria**
 - General Technical Requirements
 - Marine Engineering Criteria
 - Foundation Selection and Design
 - Wind and Wave Load Criteria
 - Storm Load Criteria
 - Structural Criteria
 - Dimension and Loadings
 - Clearances
 - Geotechnical Investigation
 - Site Work Criteria
 - Mechanical Criteria
 - Potable Water
 - Storm Drainage
 - Sanitary Sewer
 - Natural Gas
 - Electrical Criteria
- **Marina Criteria**
 - General Marina Criteria
 - Clearances
 - Phasing
 - Floating Dock System
- **Underwater Feature Criteria**
 - Introduction
 - Project Goals
 - Communities and Needs
 - Constraints
 - Approaches and Possible Components
 - Artificial Reefs
 - Programs
 - Appearance, Structure, Materials and Research

- **Fire and Life Safety Requirements**
 - Applicable Codes
 - Occupancy Classification
 - Occupant Load
 - Performance Based Egress Design approach
 - Fire Department Access and Facilities
 - Fire Protection Systems
- **Accessibility and Code Requirements**
 - Accessibility Requirements
 - Occupancy
 - Applicable Codes and Standards
 - Risk Category Descriptions
 - Risk Category Requirements
 - Risk Category Recommendation
 - Risk Category Design Implications
- **Permitting and Demolition**
 - New St. Petersburg Pier Permitting
 - Pier Demolition
 - Albert Whitted Shoreline Stabilization
 - Water Quality Monitoring
 - Pier Structure Environmental Considerations
 - Marina Environmental Considerations
 - Underwater Reef Environmental Considerations
 - Construction Methodologies

PUBLIC OUTREACH NOTES

Summary

Beginning in June 2012, the design team embarked on a substantial public outreach campaign to educate the community about the Lens. Led by Lisa Wannemacher of Wannemacher Jensen Architects, a total of 38 presentations were made to local Rotary Groups, Exchange Clubs, Neighborhood Associations, university students and public and private organizations between April and November of 2012. Several others will be held in the near future. Following the presentations, a question and answer period provided an opportunity for the public to obtain additional insight and offer their personal ideas and aspirations. The attendees left the presentations with a greater understanding of the project and the overwhelming majority became strong supporters of the process and the design. A few noteworthy comments follow:

"I had several members approach me afterwards to express how much more clearly they understood the project, and felt more comfortable with the plan and design. I believe that the evening was a success."

Andrew Lee – President, MLK Business District

"I know the vast majority of the audience was favorably impressed, if not inspired. You set the stage nicely, and then made a great case for the direction we are headed in on this long range project."

Peter Motzenbecker – Vinoy Business Alliance

"I believe I detected a growing enthusiasm for the project within our membership."

Jim Schattman – President, Crossroads Area Neighborhood Association

"Lisa, you changed a lot of people's minds."

David Hoover – President, Riviera Bay Civic Association

"I feel several 'undecideds' left with a much better understanding of what the Lens is about!"

Hal Freedman – Downtown Resident

Additionally, artists, commercial business owners and athletic event directors, among others, were contacted to solicit their input for the final BOD Report. Presentations and public outreach will continue throughout future phases of the project so that the new Pier design will ultimately become a true reflection of the communities' ambitions, goals and desires.

Several design refinements have already occurred as a result of comments from the community and individual citizens. Important changes include: elimination of motorboats from the Marina to provide a space that favors passive, people-powered watercraft; relocation of the Learning Steps Amphitheater to the Promontory; provision of designated fishing platforms; reduction in overall length of the Lens; incorporation of a civic water feature at the Uplands; increase in the widths of the Overwater

Bridge and Overwater Drive; relocation of Hub to South Uplands; introduction of a waterside restaurant at the Hub; and expansion of the concessions shop at the Promontory to also serve as an open-air "drinking and dining garden."

A complete list of presentations is included in the table Figure 3.1. A list of Frequently Asked Questions is also provided in this section of the BOD Report.

PUBLIC OUTREACH NOTES
(continued)

	Organization / Community Member	Date	Persons
1	Real Estate Investment Council of Tampa Bay	April 18	140
2	City Pier Forum	June 7	120
3	City Pier Forum	June 12	25
4	City Pier Forum	June 14	49
5	City Pier Forum	June 19	76
6	Chamber of Commerce	July 17	70
7	CONA - Council of Neighborhood Associations	July 18	35
8	Pinellas County Economic Development Council	July 19	35
9	City Council Meeting	July 19	40+
10	Tampa Bay Times Editorial Board	July 20	8
11	Ocean Team/Marine Science Community	July 26	20
12	City Planning and Development Services Department	July 27	9
13	St. Petersburg Sunrise Rotary	July 31	35
14	Leadership St. Pete Alumni Association	Aug 3	40
15	Old Northeast Exchange Club	Aug 7	40
16	MLK Business District Association	Aug 7	40
17	Chamber/Marine Science/Task Force	Aug 14	8
18	Crossroads Area Neighborhood Association	Aug 14	45
19	Vinoy Business Alliance	Aug 15	65
20	St. Pete Arts Executives	Aug 22	35
21	Broadwater Civic Association	Sept 6	35
22	Marina Advisory Group	Sept 11	11
23	St. Pete Committee to Advocate for Persons with Impairment (CAPI)	Sept 12	12
24	Chamber of Commerce	Sept 14	75
25	Exchange Club of St. Petersburg	Sept 20	12
26	St. Pete Parks and Recreation Department	Sept 21	7
27	Riviera Bay Civic Association	Sept 27	12
28	Urban Land Institute Tampa Bay	Sept 28	15
29	Agency on Bay Management	Oct 11	30
30	Downtown Neighborhood Association	Oct 11	60
31	St. Pete Management Team	Oct 17	95
32	University of South Florida Introduction to Architecture Class - all majors represented	Oct 18	191
33	St. Pete Mayor's Youth Congress & TASCO Staff	Oct 24	38
34	St. Pete College Building Construction Students & Architecture Students	Oct 30	45
35	WOW St. Petersburg	Nov 2	125
36	District 5 - Multiple Neighborhood Associations	Nov 7	25
37	District 4 - Multiple Neighborhood Associations	Nov 14	4
38	Boca Ciega High School - Students and Faculty	Nov 15	68

Figure 3.1 Public Presentations and Information Sessions

Frequently Asked Questions

1 *What is there to do at the New Pier? Why would I go out there?*

A/E Team Response

Eat, drink, walk, kayak, relax, create moments that will last forever while enjoying the views and the best St. Petersburg has to offer over the Bay. The opportunities for the new Pier are endless; it will be a unique destination to be active or relax, get married or fish with the kids. More specifically, you can:

- buy a coffee, a cold soda, a hamburger, french fries or a beer
- watch live entertainment and dance
- rent a kayak, canoe or pedal boat at the Marina
- ride an elevator to elevated viewing platforms and balconies and watch the sunrise over Tampa Bay or the sunset over downtown
- buy bait, fish at the Promontory or the north-east side of the Marina, and feed the pelicans
- dine at a water's edge restaurant
- rent a pedicycle or ride a bike
- experience a variety of educational opportunities at the Promontory and the Learning Steps
- watch an underwater light show in the center of the Lens
- use the 18,000 sq. ft. of shaded gathering space for a party or community event.
- surf the internet via WiFi
- purchase a souvenir
- rest in the shade on public benches, tables and chairs
- use a public toilet at the Hub, the Marina or the Promontory
- park your car at the Pelican or Dolphin Lot and catch a trolley out to the end of the Pier
- experience 360° views from all areas on the Pier
- enjoy extensive shaded walkways
- drink from public water fountains

2 *Will there be an admission charge?*

No.

3 *Where can I buy something to eat or drink?*

The Pier will provide leasing opportunities for concessions and restaurants at the Hub, Marina and Promontory.

PUBLIC OUTREACH NOTES
(continued)

- | | |
|---|---|
| 4 <i>Where will I park?</i> | You can park in one of the 157 spaces at the existing Pelican Lot or at one of the 312 spaces at the existing Dolphin Lot. Valet parking may also be provided by the operator of the Hub restaurant. |
| 5 <i>Is public transportation available from the parking areas to the Pier?</i> | Yes. A public trolley accommodating wheelchairs will take visitors from the Welcome Mat/Hub and Spa Beach near the Pelican Lot out to the Promontory. There will be stops at the Dolphin and Pelican Lots, the Welcome Mat, the Marina, the Promontory and connections to Beach Drive and The Shops at St. Pete. |
| 6 <i>How long will it take me to walk to the end of the new Pier?</i> | Walking at a comfortable pace of 2 mph or 30 minutes per mile, it will take approximately 7 minutes to walk from the landside Hub to the Promontory. |
| 7 <i>Will the new Pier be ADA accessible?</i> | Yes. The new Pier will provide universal access. Accessible ramps will be utilized in several areas and an elevator will take visitors up to elevated viewing platforms. |
| 8 <i>Can people use bicycles or skateboards on the Pier? Are there any types of transportation that the Pier will not accommodate?</i> | The new Pier will accommodate walkers and runners as well as bicyclists, rollerbladers, Segways, children's strollers, wheelchairs and low speed mobility scooters. The new Pier will not accommodate private vehicles, motorcycles or motorscooters (a Vespa for example). The accommodation of skateboards is still to be determined. |
| 9 <i>Will there be opportunities to rent kayaks, canoes, stand-up paddleboards, or pedal boats?</i> | Yes. The City will provide a venue for watercraft rental companies to locate their businesses at the Pier's Marina. |
| 10 <i>Will there be a fueling pump for boats at the Marina?</i> | No. Motorized vessels will not be allowed in the Marina. |
| 11 <i>Will WiFi be provided at the Pier?</i> | Yes. |
| 12 <i>Can I take my dog to the new Pier?</i> | Yes. |
| 13 <i>Will my taxes be raised to pay for the Pier project?</i> | No. Neither the taxes of downtown property owners, nor the taxes of other property owners in St. Petersburg will be raised. |

14 *What is the total cost of the project and what does it include?*

The total cost of the project is \$50 million. This includes the demolition of the existing Pier, the construction of the new Pier and all “soft” costs like professional services fees, geotechnical testing and contingencies. Approximately \$36.9 million of the \$50 million is set aside for the construction contract with the Construction Manager. The \$36.9 million will pay for all of the overwater elements, including the Overwater Bridge, the Overwater Drive, the Marina, the Canopy, the Promontory, and the Hub and the Welcome Mat on the Uplands.

15 *Who is paying for the new St. Pete Pier?*

See pages 3-45 and 3-46 of this report for a detailed explanation of the Tax Increment Financing Plan and the Intown Redevelopment District.

16 *Is the \$50 million just a downpayment on a \$150 million project?*

No. Program elements that cost more than the current total cost of \$50 million are not part of the project and are not required to make the project successful. The results of the City’s Downtown Waterfront Master Plan, scheduled to be adopted in 2015, will guide all downtown waterfront development beyond the \$50 million allocated to the Pier project.

17 *Will the new Pier be complete and ready for full use by the public with the \$50 million budget?*

Yes. The new Pier will be complete, fully functional and integrated into the Uplands via the Overwater Drive. The restaurant at the Hub will require private sector investment and the City will solicit proposals through an RFP process in the first quarter of 2013. It is intended that a full service restaurant at the Hub will be completed concurrent with the opening of the new Pier.

18 *How much money is currently in the Intown TIF District pot?*

As of September 30, 2012 (the end of the City’s Fiscal Year) there was approximately \$1.4 million in the Intown District’s fund balance. These monies, along with future years earnings, will be used to pay for the approved Intown District projects.

19 *Why not wait until all of the \$50 million is in the TIF pot before we move forward with the project?*

After taking care of the existing debt obligations that are being paid for using TIF revenues, it would take approximately 10 years to accumulate sufficient TIF funds to pay for the Pier project. The existing Pier will close on May 31, 2013. During the ten (10) additional years, while the City waits for the funds to accumulate, the Pier will remain closed and construction costs will escalate.

PUBLIC OUTREACH NOTES (continued)

20 *Why should we spend \$50 million in these tough budget times?*

The Pier in its many incarnations has been a landmark for the City of St. Petersburg. While the Pier building has been replaced every 40 years, the original structure dates back to 1926. The City and County jointly established a funding source specifically for its replacement, and the construction of the new Pier at the present moment is necessary to continue this legacy. Through the lengthy public visioning process and the many meetings of the Pier Advisory Task Force, it became abundantly clear that the citizens of St. Petersburg want a pier.

21 *If the City doesn't expend the entire \$50 million on the Pier renovation project, what will happen to the remaining funds?*

Under the current Redevelopment Plan, any unspent monies would remain in the Intown District Trust Fund until the expiration of the District (currently planned for 2035). Thereafter, these funds would be returned to each government in the same percentage as the original contributions (roughly 55% City and 45% County). The City and County have jointly agreed to fund up to \$50 million of project costs for the Pier renovation. If all of these funds are not needed to support this project, the unspent revenues would be treated as described above; or, the City and County could add projects to the approved list; or, they can agree to rebate a portion of the unspent funds back to the respective contributing government prior to the planned expiration of the District. Any of these actions would require formally amending the Intown Redevelopment Plan and the related City/County Interlocal Agreement.

22 *Why doesn't the City build a new police station with the money instead?*

The police station does not fall within the Intown Tax District so the money generated by downtown property owners cannot be used to build a new police station. Businesses and residents of the Downtown Tax Increment Financing District have had a portion of their taxes applied to the Pier project and are entitled to have those funds committed back into their district, as agreed between the City and County per the Intown Redevelopment Agreement.

23 *What happens if the design exceeds the budget?*

The agreement with the design team and the Construction Manager includes several provisions that deal with cost protection. The design team is tasked with developing a design that must be built within a fixed construction budget. The Construction Manager is currently working with the A/E team to help ensure that the project stays within the budget throughout the design and into the construction phase and will continue to do so in the future. If at any time the design exceeds the construction cost budget, the design must be revised to bring the project back within budget at no cost to the City.

- 24** *What is the actual operating cost/subsidy of the existing Pier?*
- The total annual cost to maintain and operate the existing Pier was \$2.4 million in 2011, with a subsidy of \$1.35 million, paid for by the taxpayers in St. Petersburg. The ten year average expenses were \$2.8 million, with a ten year average subsidy of \$1.4 million.
- 25** *What is the anticipated operating cost/subsidy of the Lens?*
- Less than the current Pier. The City has prepared a cost plan that outlines a proforma for operation. Please see Section 7 of this BOD Report for additional information.
- 26** *Will the project create new jobs for St. Pete and Pinellas County residents?*
- The Lens will create local construction jobs. Additional jobs will be created for people at the waterside restaurant and other concession, rental and retail spaces.
- 27** *We already have lots of walkways and pedestrian trails - why do we need another?*
- The Pier's pathways are an extension of the downtown waterfront and allow the community and tourists to experience the water without needing to be in a boat, an amenity that not all people have access to. The location over the water also provides spectacular views back to the City.
- 28** *Will there be benches to sit on and shaded areas for resting?*
- Yes. Multiple spaces will be provided at the Hub, the Marina and at the Promontory. In addition to the shade provided by the Canopy, the design includes additional shade structures along the length of the Overwater Drive.
- 29** *What is planned for the Uplands?*
- The Welcome Mat and the Hub provide infrastructure for retail shell space to be leased by restaurateurs or retailers. Hardscape and landscape improvements will be provided.
- 30** *Are there future plans for more development on the Uplands?*
- The City is currently working on a Downtown Waterfront Master Plan that will include additional program elements on the Uplands. The community and City Council will decide what program elements shall be included, how they will be paid for, and when they will be implemented. Suggested Uplands enhancements requested by the community are found on pages 3-17 thru 3-19 of this Report.
- 31** *Will the new Pier incorporate public art?*
- The design team envisions numerous opportunities to work with the local art community. As the design progresses in future phases, further discussion regarding the incorporation of public art will occur.

PUBLIC OUTREACH NOTES (continued)

32 *How wide are the bridges?*

The Overwater Drive, beginning near Spa Beach and ending at the Promontory, is 20-ft clear between the railings and will accommodate emergency vehicles, service vehicles and a public trolley. A vehicular turnaround large enough for fire trucks and the trolley is provided at the Promontory. The Overwater Bridge, which spans from the Hub and to the Promontory and accommodates pedestrians and bicycles, is 10-ft clear between the railings. Motor vehicles will not be accommodated on this portion of the new Pier.

33 *What are the sustainable design elements being considered?*

A conscious effort will be maintained throughout design and construction to prioritize durable and environmentally friendly products. An opportunity exists for the installation of sustainable technologies in the future.

34 *What are the project's environmental impacts?*

The area of the Bay bottom that is shaded by the Pier will be reduced by approximately 90,000 sq ft due to a reduction in footprint, which will benefit sea life; the parking surface will be reduced by approximately 30,000 sq ft on the Uplands; and the number of pilings penetrating the Bay bottom will be diminished. The Tampa Bay Regional Planning Council's Agency on Bay Management has stated in a report that "*removal of the existing structure, and the replacement with a new structure that has no parking and limited driveway, will improve water quality in the area.*"

35 *What is the schedule for the project and when will the existing Pier close and be demolished?*

The existing Pier will close on May 31, 2013. Demolition is scheduled to begin in August 2013. Construction on the new Pier will begin in January 2014 and last approximately 18 months. The new Pier will open during Fall 2015.

36 *What is the Canopy made of and how will the City keep it clean?*

The construction materials considered were analyzed to select the lowest maintenance finishes for St. Petersburg's severe climate. The Canopy is made of matte finish aluminum panels supported on a metal structure. Exposed horizontal beams were eliminated from the design wherever possible to discourage roosts for birds. The A/E team is also considering the installation of a manually operated water wash system that would be integrally located at the top of the Canopy.

37 *What is the height at the top of the Canopy? How high are the elevated viewing platforms?*

The height at the top of the Canopy is 86 ft. The height to the highest elevated viewing platform is 52 ft. For reference, the height to the top of the existing Pier is 78 ft and the height at the roof terrace is 52 ft.

38 *What will happen to the material from the demolished Pier?*

The suitable concrete material from the demolition will be used to stabilize the shoreline at Albert Whitted Airport. Any material not used will be recycled or legally disposed of.

39 *What precautions will be taken during construction to protect the environment, including the fish, the manatee and the water?*

The A/E team takes the environment seriously. Skanska's environmental management system is certified against the international standard ISO 14001. In addition to managing conservation, environmental and natural resource concerns, Skanska will implement site-specific environmental protection measures. These include siltation barriers made of a material that is proven safe for manatees and other local sea life. These barriers are properly secured and prevent wildlife entanglement. Skanska's onsite staff will regularly monitor all environmental protection measures including the posting of temporary signs prior to and during all construction activities.

Most importantly, all construction personnel involved in the operation will be trained and made aware of the civil and criminal implications of environmental breaches. The process will also include an evaluation of all potential impacts during the proposed construction activities. Reasonable alternative locations and methods will be coordinated for all proposed uses and activities during the construction of the project. The potential effects on public uses, scenic and recreational values, and the needs and welfare of the people will be communicated. Skanska's onsite team is committed to an incident free environment during the execution and delivery of the Lens.

40 *How will the new Pier resist a hurricane? Has the design considered projected rises in sea level?*

The project is being designed to comply with recently adopted Building Codes and the stringent Federal Emergency Management Act (FEMA) Guidelines. Those codes require the structure to withstand 145 mph wind speeds with 3 second gusts. To respond to wave action and sea level rise, the bottom of the lowest structural members are designed to be 1 ft higher than the base flood elevation. This will place the top surfaces of the new Overwater Drive and Overwater Bridge at a level 12'-0" above mean sea level and more than 3 ft above the deck of the existing Pier.

41 *Does the new Pier conflict with the Albert Whitted Airport flight paths?*

No. The height of the new Pier is well below the minimum levels established by the FAA. The Canopy material will be non-reflective in consideration of pilots on approach and takeoff. Night time navigation lights will be placed on top of the Canopy and will comply with all FAA rules.

PUBLIC OUTREACH NOTES (continued)

42 *At the Marina, will the noise from motorboats be loud? Can they get stuck circulating below the bridge? How will the boats be protected from the rough waters in the Bay?*

The A/E team and City Staff were attentive to the concerns of the Marine Community and environmental organizations. The Marina at the center of the Lens will allow courtesy boat dockage for human powered watercraft (kayaks, canoes, stand-up paddleboards, pedal boats, etc.) or silent electric vessels only. The Pier Advisory Task Force recommended the provision of courtesy slips south of the Pelican Parking Lot, where motorized vessels would be able to dock. As part of the upcoming Downtown Waterfront Master Plan, this planning effort would give transient boaters easier access to the Hub's restaurant and retail amenities without height restrictions.

43 *What will happen to the Museum of History?*

The existing Museum of History will remain open at its current location during construction and it is anticipated that there will be minimal impacts to access during construction. The new Pier will bring additional people past the Museum, thereby encouraging more patrons to visit.

44 *Will my family and I be safe on the new Pier?*

Yes. There will be 24 hour security, and ambulances and fire trucks will be able to drive out to the end of the Pier in emergency situations. Railings will be provided on both sides of all bridges and walkways. The Pier will also be evacuated prior to a major storm event and will remain closed to the public until the threat subsides. An emergency voice evacuation system will be provided.

45 *What is the status of the Underwater Feature?*

On several occasions during the BOD, the design team reached out to numerous members of the marine science community both at larger workshops and within individual meetings. While some members did express criticism of the process, a majority of the marine science community believes very strongly in the limitless possibilities for educating the public, and especially children, about the Tampa Bay estuary. The Pier's existing piles will be reused and braced to create a framework for the scientific community's use in establishing a viable Underwater Feature, at which point the design team will be ready to assist with great enthusiasm.

46 *How can I share my ideas and suggestions?*

The City has set up a dedicated website www.thenewstpetepier.com that includes opportunities for the public to obtain information on the project and provide constructive comments. Additional public presentations of the design will be held in the future.

47 *Why isn't the design more of the Mediterranean Revival style?*

Aesthetic opinions vary from one person to the next. The design of the new Pier is meant to reflect a contemporary view of a 21st century St. Petersburg and its waterfront. For architecture to be iconic, it must not have been created before. Examples such as the Sydney Opera House, the Eiffel Tower, and the St. Louis Arch are all iconic for that same reason. These buildings were subject to aesthetic criticism prior to their construction but, over time, became beloved icons.

48 *If there was more money available for the project, would the design look different?*

No. The design of the overwater Pier, its iconic Canopy, the Marina and the Overwater Bridge and Overwater Drive would not change. The additional money would be spent on the Uplands and go towards improvements that have been suggested by the community such as courtesy boat slips in the Central Basin, an enhanced Spa Beach, a multi-purpose exercise area, an event lawn with a sloped grass amphitheater and stage, a children's waterpark and/or playground, and improved greenway connections to Beach Drive. Note that any additional monies will require approval from the City Council.

49 *Does the Lens have a Facebook page?*

WOW Our Waterfront St. Pete has a Facebook page that can be accessed via www.wowstpete.com. This page, created by a dedicated grassroots supporter of the City and the Lens, is an open forum for the promotion, completion, and enjoyment of the visionary, award-winning Lens project.

UNDERWATER FEATURE OUTREACH SUMMARY

The design team held several outreach meetings with Bay experts and the marine science community to hear concerns, gather information, discuss possible opportunities and identify the audience and desires for a potential Underwater Feature. These meetings and workshops focused on organizing the needs that will assist the A/E team in designing an attractive and educational Underwater Feature that is capable of engaging the public, highlighting the marine environment and marine restoration, and contributing to the community. This outreach also helped identify the constraints and criteria for creating a successful feature.

The execution of an Underwater Feature, unique to St. Petersburg and the world, is crucial. The intention of the project is to engage visitors with estuarine environments on a number of levels: observation, awareness and interaction.

The Underwater Feature criteria described in this section of the BOD Report was developed as a result of these outreach efforts and will guide the development of the project from conceptual design onward.

Summaries of the meetings and workshops described above are included in *Appendix F: Underwater Feature Outreach Project: Meeting Minutes from Technical Workshops and Interviews*.

UPLANDS USAGE SUGGESTIONS

The existing Uplands area is approximately 21 acres and consists predominantly of asphalt parking, roadway and unprogrammed, underutilized green space. It represents a “great divide” that separates the water and the Pier from the more active downtown. In great need of development, the Uplands should be further discussed as the Downtown Waterfront Master Plan is developed. Multiple program elements may enhance the experience of visitors and residents and become both visual and dynamic links to the new Pier. While many of the following ideas are suggestions from the community, none of the considerations below are within the \$50 million approved budget.

Transient Boat Docks

As recommended on page 15 of the Pier Advisory Task Force Report, new courtesy boat docks located at the eastern entrance of the Central Basin, south of the Hub, would meet the sizable need for courtesy boat slips. Its location adjacent to the Hub would make it an optimal spot for water taxis, the Dolphin Cruise and other commercial boating enterprises.

Expanded Greenway Trail System

To better connect the new Pier to Bay Shore Drive NE, Beach Drive and The Shops at St. Pete, a looping walkway system should be created around the northern Uplands area connecting Spa Beach and the Welcome Mat to the Museum of History.

Enhanced Civic Water Feature

Located at the edge of Spa Beach, adjacent to the Welcome Mat or designed integrally with the playground, the water feature would provide another family friendly program element. The feature could be equipped with bubblers, vertical sprays and fountains programmed to allow for passive play on a hot day, yet without standing water and requiring no lifeguards. The fountains may be timed to music and have a lighting element. Public restrooms will be provided at a distance complying with code regulations. The budget for the new Pier currently includes funds for a minor civic water feature; the enhancement of this feature was highly encouraged by the community.

Amphitheater and Event Lawn

Providing 1,000 to 1,400 places for blanket or lawn chair seating, a gently sloping, grass bowled amphitheater could provide a permanent location for American Stage’s performances in the park. When not used by American Stage, it can be an event lawn for larger community gatherings, public speaking events and spontaneous unscripted play.

Playground

Currently, playgrounds at Vinoy Park and Albert Whitted Park do not sufficiently serve the downtown area. A new playground at the Uplands would satisfy the requests heard during the public outreach presentations from numerous mothers and fathers. A playground with a historical theme could possibly honor the

UPLANDS USAGE SUGGESTIONS (continued)

legacy of Tony Jannus, William Straub and others who put St. Pete on the map.

Multi-Purpose Exercise Area

An exercise area should be covered with artificial turf or a synthetic surface and equipped with step-up benches, good lighting, drinking fountains, pull-up bars and other amenities. In addition to the thousands of individual residents and visitors using the waterfront sidewalks and parks for their own training and exercise, the following organized exercise groups are currently using Vinoy Park, Flora Willie Park, North Straub Park or the beach area near North Shore Pool for their training sessions: St. Pete Boot Camp, Baby Boot Camp, Bay View Boot Camp, I Train You Personal Training & Fitness and St. Pete Yoga.

Enhanced Spa Beach

Spa Beach is an underutilized downtown asset; it is difficult to access and has inadequate public amenities. Limited shade is provided by sparse vegetation and the site is not equipped with water fountains. Only one picnic table and an aging, inaccessible toilet building 300 ft west of the beach are located on site. The existing concrete retaining wall along the beach head (averaging about 3 ft tall above the sand) functions as a barrier to the beach. Ramp access for small parks maintenance service vehicles must be worked into the new design. Better public access should be created along with enhanced amenities.

Boardwalk

Located south of the Hub and at the eastern entrance to the Central Basin, the existing rock jetty could be enhanced and fortified in conjunction with the transient boat slips for food vendor carts, benches, fishing and enjoying views at the water's edge.

Pier History Trail

Created in partnership with St. Pete Preservation Inc. and the City's Community Preservation Staff, a pathway of markers or storyboards in an audio and/or visual format could tell the story of the Pier from its early beginnings in 1896 to the present day. Recommendations include establishing minor monuments of the Million Dollar Pier and Inverted Pyramid; adding new plaques commemorating the history of Spa Beach, including its reference to the segregated African American beach at Demens Landing; and incorporating historic motifs or reliefs to reflect the City's history and Native American past.

Parking

Parking, in some form, should remain in at least three (3) locations at the Uplands: along the north side of the Central Basin, adjacent to the Museum of History (used by both the Museum of History and the Museum of Fine Arts), and adjacent to the Hub.

Bridge to the Vinoy

The bridge connecting Vinoy Park to the northern Uplands is conceived to be “operable” to allow boat access to the North Basin.

Marine Science Discovery Station

Located at the Hub, this educational outpost would be linked to the Underwater Feature to provide an indication of what can be seen out at the Pier, and an opportunity to highlight partnerships with the City’s marine science community, Marine Science programs at the local universities, Tampa Bay Watch and other Marine Science businesses and organizations. While clearly an important opportunity for the Pier project, this feature requires a sponsor and/or source of funding.

HMS Bounty Memorial

The tragic sinking of the HMS Bounty off the North Carolina coast during Hurricane Sandy will not soon be forgotten. Since the 1970s, the HMS Bounty docked for stretches at the Pier as a tourist attraction. The Bounty’s Captain, Robin Walbridge, who went down with the ship, called St. Petersburg home. A respectful monument or memorial located at the new Pier, would honor its impact and legacy.

Arts & Entertainment Kiosk

An interactive kiosk located at the Uplands could provide information about local happenings or opportunities to purchase tickets to the City’s arts and entertainment venues.

PIER ADVISORY TASK FORCE REPORT SUMMARY

Formed on March 19, 2009, the 20-member Pier Advisory Task Force was charged with providing multiple re-development alternatives, reviewing the status of the Pier, and initiating discussions with citizens and experienced architectural and development consultants, among others. The Task Force's ultimate goal was to submit recommendations to the City Council. Released in June 2010, the Pier Advisory Task Force Report (appearing in full as Appendix H) provided multiple recommendations, including that the City of St. Petersburg hold an international design competition to select a team for the design of the new Pier while including recommendations and conclusions based on the Task Force's findings. The following is a list of the recommendations for the design of the new Pier from the Report; indicated by a check mark are the achievements of the Lens design.

** denotes a recommendation that will be addressed as part of the City's Downtown Waterfront Master Plan*

*** denotes a recommendation that will be addressed by the City's Transportation and Parking Management Department*

Pier & Program

- ☒ Pier needs to be a destination, not only for the region, but internationally as well
- ☒ Pier should be integrated into waterfront as its anchor and centerpiece
- ☒ Views to and from City as well as outward into the Bay should be preserved
- ☒ Design should be efficient, flexible - allowing for phasing of future development
- ☒ Program for Pier should begin as close to Uplands as possible if not on Uplands to reduce walking distances between points of interest
- ☒ Differentiation as an attraction is critical to Pier success
- ☒ Program must attract both visitors and locals
- ☒ Further exploration of a Marine Discovery Center

Building

- ☒ Building should be an iconic structure, a worthy symbol of our great City
- ☒ Pier vista should remain unobstructed to allow for maximum views
- ☒ Once an alternative is selected, an international design competition is recommended to encourage creativity
- ☒ Potential for 26,000 sq. ft. restaurant and 5,000 sq. ft. retail for revenue production, with additional 5,000 sq. ft. potential for non-revenue producing community flexible space
Note: recommendation is partially met
- ☒ Green/LEED certified structure, energy efficient design and equipment

Uplands

- ☒ Water park and/or family oriented entertainment for children should be considered
- ☒ Restaurant/cafes should be adjacent to docks, providing excitement upon arrival
- ☐ Pedestrian bridge connecting Spa Park to Vinoy Park would provide a vital link*
- ☒ Transient docks should be provided for access by boaters
- ☐ Installation of a breakwater system in the North Basin would allow access for all boat sizes*
- ☒ Incorporate pedestrian/bike trails into the design of the Uplands and link to downtown

Accessibility & Transportation

- ☒ Transient docks immediately south of Pelican Lot would provide better access for boaters*
- ☐ Enhanced trolley service is needed to create or supplement linkage to Pier**
- ☐ Enhanced tram/trolley or sky ride type of system connecting to Downtown, BayWalk and Mid-Core Garage could help Pier's success**
- ☒ Accessible and convenient for disabled persons
- ☐ Potential for Port of Call*
- ☐ Further study required for North Basin mega-yacht concept*

Financial Information

- ☒ Plan to utilize existing \$50M TIF funding available, but consider phasing of additional development in plan if supplemental funding becomes accessible at later time
- ☒ Focus on restaurant-based program to provide maximum contribution to Pier overhead
- ☒ Continue to pursue all state and federal grants
- ☒ Strong consideration required regarding long-term maintenance costs of both Pier and building alternatives ultimately selected
- ☒ Retail should be considered only to support the family entertainment objective

Summary

The success of the Lens in achieving the various recommendations of the Pier Advisory Task Force is a reflection of the A/E team's commitment to the needs of the City of St. Petersburg and its citizens. Because the new Pier fits into a more extensive re-shaping of the City's downtown waterfront, the Lens should be considered a catalyst for new development that will grow organically over time.

SITE AND URBAN DESIGN CRITERIA

Site Location and Orientation

St. Petersburg Pier
800 2nd Avenue NE
St. Petersburg, Florida 33701
T: 727 821 6443
www.stpetepier.com

Latitude 28° N, Longitude 83° W

The site is located in downtown St. Petersburg, Florida. Oriented along an east-west axis, the Pier functions as an extension of 2nd Avenue NE into Tampa Bay. Whereas the Pier encompasses the area east of the sea wall, the portion of the site located between Bay Shore Drive NE and the seawall is referred to as the Uplands. The Pier approach, a roadway accommodating vehicles, bicycles and pedestrians, bridges the Uplands and the Pier head. The five-story Inverted Pyramid, constructed in 1973, presently occupies the Pier.

Existing Site Use

Figure 3.3 illustrates the current uses of the site. The Pier is owned by the City of St. Petersburg and is administered by the Downtown Enterprise Facilities Department of the City. Urban Retail Properties, LLC has been managing and marketing the Pier since 2001.

Existing Pier Head and Pier Approach

The first Pier Pavilion opened in 1895. The 1926 million Dollar Pier building was torn down in 1967 and replaced in 1973 by the Inverted Pyramid structure that currently occupying the site. The Pier's 1988 renovation incorporated new programmatic elements such as shops, galleries and restaurants. Activities on the Pier encompass fishing, festivals and the Pier Aquarium. Fishing takes place on the Pier approach and around the exterior of the building along the sea walls. Daily sightseeing boat tours are also launched from the Pier and educational programs have been held at the Education Station on Pier approach. Metered and valet parking is available on the Pier approach.

Existing Uplands Area

The Uplands area, approximately 21 acres, is divided into three parcels: the West, South, and North Parcels. The area east of Bay Shore Drive consists of landscaped parkland, civic structures, and beaches. Two parking lots accommodating cars and tour buses are located in the Uplands area – the Dolphin Lot and the Pelican Lot. The City's Capital Improvement Plan calls for the replacement of a small building with restrooms, and park maintenance storage space in the near future. The Uplands area is also the site of the St. Petersburg Museum of History, Spa Beach, and Fresco's Waterfront Bistro, located on the corner of 2nd Avenue NE and Bay Shore Drive. At the southern edge are the existing Marina and Central Basin; the northern edge abuts the North Basin.



Figure 3.2 Site Context



Figure 3.3 Current Uses of Site

SITE AND URBAN DESIGN CRITERIA (continued)

Existing Building Use

The existing five-story Inverted Pyramid building, located at the eastern edge of the Pier, overlooks Tampa Bay. The total square footage of the existing Pier building is approximately 78,900 sq. ft., with approximately 49,800 sq. ft. of leasable space.

The first level of the structure is occupied by fourteen specialty stores, galleries, and boutiques as well as a concierge center, the Dockside Eatery food court, and Jonny Reno's Waterfront Grill & Watering Hole. A community meeting room is located near the food court. On the second floor is the Pier Aquarium, a private, non-profit community marine education center, which encompasses several sea life tanks, exhibits and a museum store. The third level is available for events and houses offices for the Pier Aquarium and Urban Retail Properties. The fourth level is home to the Columbia restaurant, while the fifth floor is occupied by Cha Cha Coconuts Tropical Bar and Grill, as well as the Observation Deck. The Pier's courtyard, located on the east side of the Pier, hosts special events and live music.

The Pier Bait House at the south-west corner of the Pier rents out fishing poles and sells bait. Bicycles may be rented at Wheel Fun Rentals opposite the Pier Bait House.

Historic Buildings and Monuments

The 1927 Comfort Station designed by Henry Taylor is an unaltered example of the Romanesque Revival style. Located on the Uplands at the northeast corner of Bay Shore Drive and 2nd Avenue NE, the octagonal design is on the Local Historic Register.

The Tony Jannus Memorial, commemorating the site of the world's first commercial airline flight on January 1, 1914, is located on the Uplands, just west of the Pelican Lot. In the parking circle just east of the Museum of History, a monument commemorates the American Institute of Aeronautics and Astronautics (AIAA) designation of the Central Basin as a "Historic Aerospace Site" - the place of the first commercial airline flight.

The Bait House and Wheel Fun Rentals, architectural examples of the Mediterranean Revival style, date back to the original Million Dollar Pier. Saving and relocating these small functional structures would respect the heritage of the Pier.

A number of commemorative plaques remain at the Pier, including a plaque for St. Petersburg's own Wimbledon champion Shirley Fry Irvin, an "honorary owner" of the Municipal Pier.



Figure 3.4 Existing Pier Head



Figure 3.5 Historic Buildings

**SITE AND URBAN
DESIGN CRITERIA
(continued)**

Adjacent Land Uses

The St. Petersburg Pier is located in the City's downtown waterfront area, a dense urban location on Tampa Bay adjacent to several cultural, commercial and recreational amenities.

Immediately west of the Uplands, between Bay Shore Drive NE and Beach Drive NE, is Straub Park, which is the site of the Museum of Fine Arts and a short walk from the Uplands' St. Petersburg Museum of History. Straub Park hosts a variety of community events throughout the year including Movies in the Park, the Holiday Tree Lighting Festival, Santa's Wonderland and numerous running and walking events.

Just north of the Uplands are Vinoy Park and the North Basin. Vinoy Park hosts a large variety of community events throughout the year including the Rock 'n' Roll Half Marathon, food festivals, concerts, art festivals and the internationally acclaimed St. Anthony's Triathlon.

To the south of the Pier are Demens Landing Park and the St. Petersburg Municipal Marina, one of the largest marinas in the Southeast with more than 600 rental boat slips. The St. Petersburg Sailing Center is located at the south-west corner of Demens Landing. Events such as American Stage in the Park are also held at Demens Landing Park.

Adjacent to the Marina and west of Bay Shore Drive Southeast are the Salvador Dalí Museum, the Mahaffey Theatre, Al Lang Field and a lot that currently hosts the Saturday Morning Market. Albert Whitted Airport is located across from the Dalí Museum at the end of Bay Shore Drive S.E. Albert Whitted Airport Park anchors the waterfront park system to the south.

Appendix I: Vision/Guiding Principles and Context for the Preparation of a Downtown Waterfront Master Plan, December 2011 of this Report lists the guiding principles for the development of the downtown and waterfront areas of St. Petersburg and its connections to the greater urban context.

Figure 3.6 locates the aforementioned areas of interest in proximity to the St. Petersburg Pier.



Figure 3.6 Points of Interest Adjacent to the Pier

**SITE AND URBAN
DESIGN CRITERIA
(continued)**

Photographic Documentation of Site Context

The following are images documenting the site and the surrounding context.

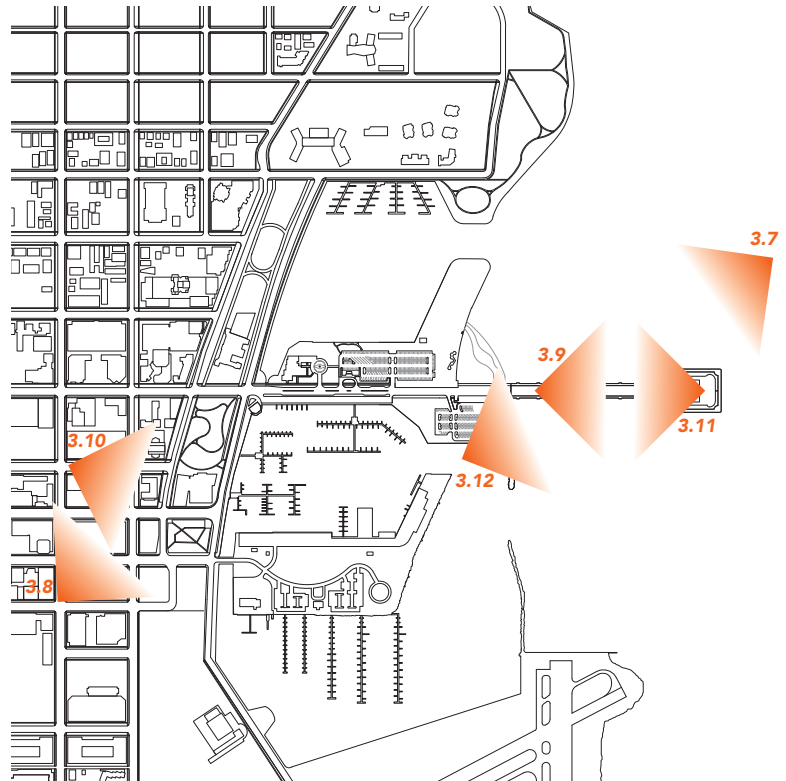


Figure 3.7 Aerial View of Existing Pier



Figure 3.8 View of Uplands, 2nd Avenue NE and North Basin



Figure 3.9 West Elevation of Inverted Pyramid Building



Figure 3.10 View of Demens Landing Park and Municipal Marina



Figure 3.11 View of Skyline from Observation Deck



Figure 3.12 View of Pier from South-West

**SITE AND URBAN
DESIGN CRITERIA**
(continued)

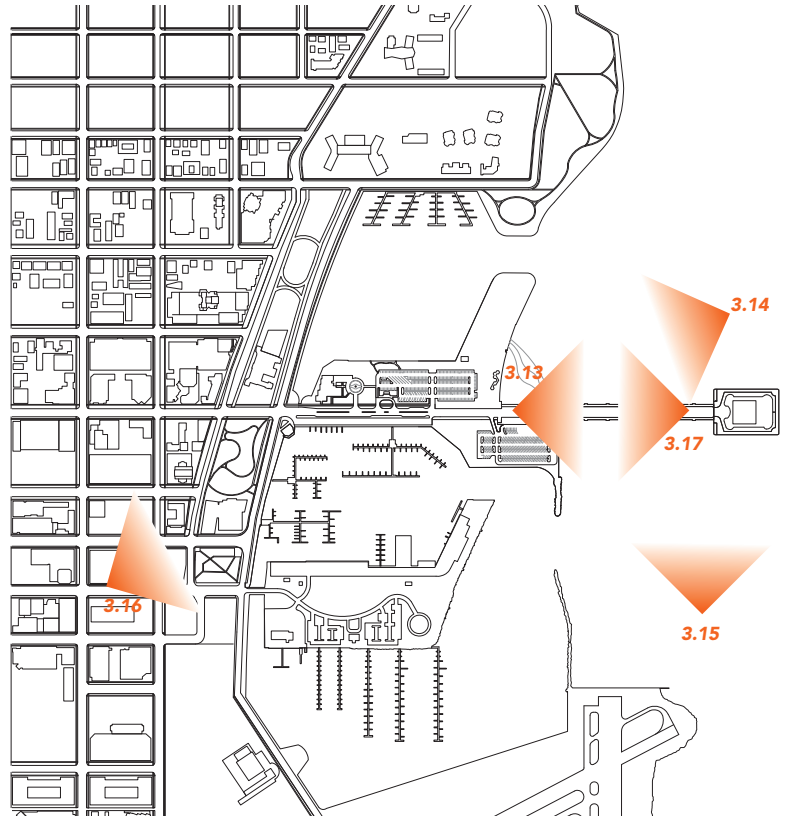


Figure 3.17 View of Skyline from Pier Approach



Figure 3.13 View of Inverted Pyramid from Pier Approach



Figure 3.14 View of Pier Approach



Figure 3.15 View of Inverted Pyramid from South



Figure 3.16 Bird's Eye View of Pier, Pier Approach and Uplands



**SITE AND URBAN
DESIGN CRITERIA
(continued)**

Zoning Guidelines

The City's Development Review Services Division served as a resource for the following information.

The downtown area is the traditional gathering center of the City. Since its inception, it has been the regional center, attracting residents and visitors for recreation, socializing, shopping and business. It is also a vibrant residential neighborhood offering a variety of housing typologies. The City is fortunate to have created and maintained a strong pedestrian-oriented streetscape, with its grid street pattern and buildings at a typical 2 to 4- story scale along its wide sidewalks. Although high rise buildings, including those that occupy a full city block, have been added to the downtown area, they are the exception, retaining a pedestrian character at the sidewalk. The 100 ft. wide right-of-way allows ample room for vehicles in the street travel lanes, on-street parking, and pedestrian sidewalks. Future development should recognize and reinforce the pedestrian scale as a key asset by protecting the right-of-way through both the selection and location of pedestrian-oriented businesses.

Development regulations for the downtown area require that the base of all buildings create and maintain a strongly defined street edge, while allowing and encouraging larger and taller buildings to be constructed above and stepped back into the property. By reinforcing the street edges, providing active uses, concealing parking areas and requiring streetscape improvements, vibrant activity will continue at the street level.

Figure 3.18 describes zoning guidelines for the downtown waterfront area of St. Petersburg. The blue color that covers the Pier and other areas represents the DC-3 zoning district. The green color on the abutting land represents the DC-P district. Noted are the City's allowable lease terms for buildings leased by private entities. The southern portion of the Uplands (the area of the Hub) allows a 10-year lease, while the northern portion allows a 5-year lease.

The DC-3 zoning district encourages development of residential, offices, hotels, specialty retail and other permitted mixed uses compatible with the waterfront area with emphasis on pedestrian-oriented development at the street level. There is no required waterfront setback in the DC-3 zone, but projects must adhere to a building-to-building setback along interior property lines; for portions of a building located above 50 ft. in height, a building setback along streets and an additional setback along Beach Drive are applicable.

The DC-P district denotes lands that are public parks or developments within public parks, east of Beach Drive. In these areas, heights and development intensities are limited and setbacks are generous to maintain a sense of open space adjacent to the public spaces.

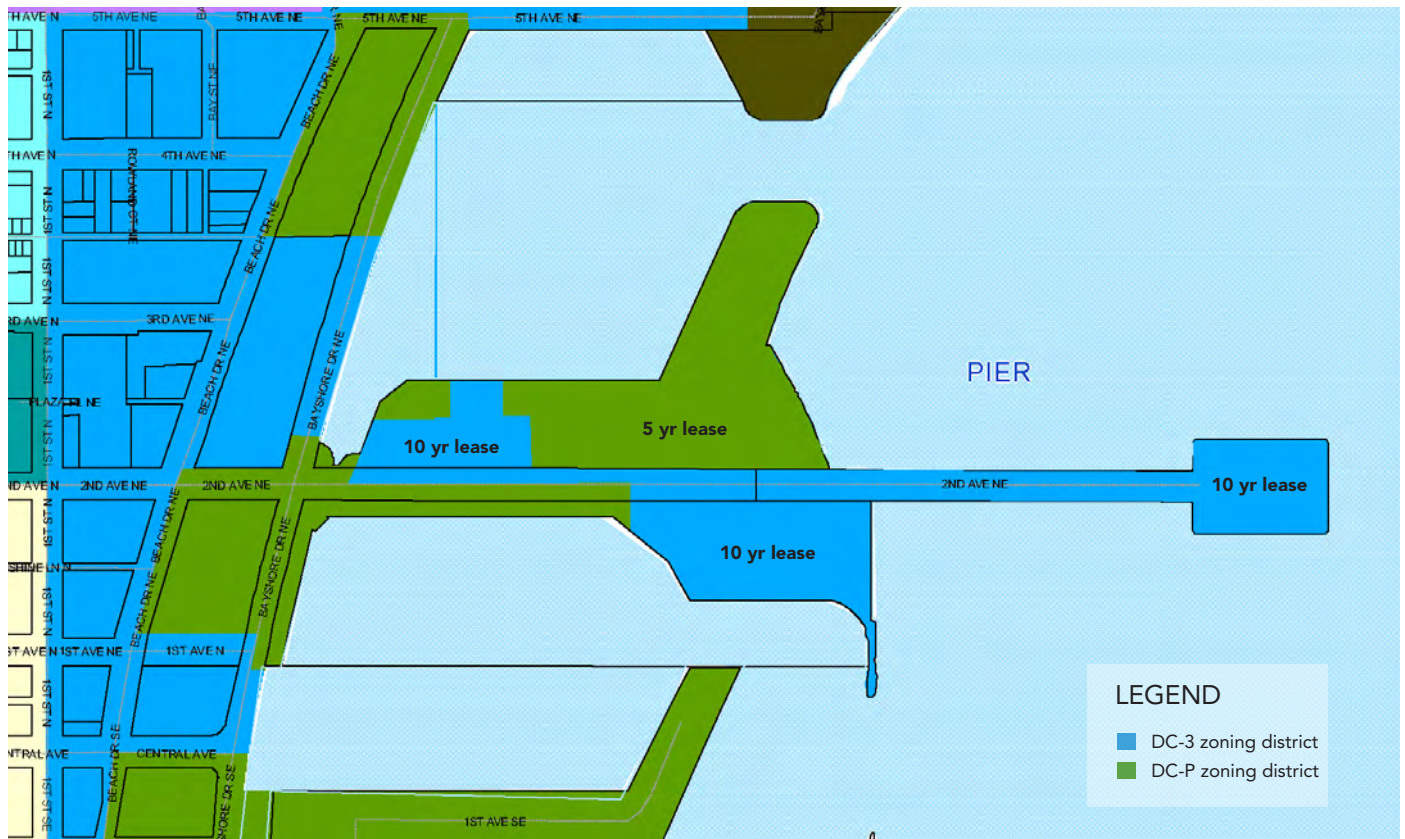


Figure 3.18 Zoning Plan



Figure 3.19 Height Limitations in Vicinity of Albert Whitted Airport

**SITE AND URBAN
DESIGN CRITERIA
(continued)**

2nd Avenue NE is a Pedestrian Level "A" Street. The abutting public sidewalk shall be improved in compliance with the streetscape treatment plan identified in the Plaza Parkway Design Guidelines.

Maximum building height on the north and south Uplands, without a variance, is 50 ft. Maximum building height in the area of the current Pier head is 125 ft. Staff approval through the Streamline process is allowed if a structure is between 125 and 150 ft. Above 150 ft., a public hearing is required.

Additional height limitations result from the proximity of Albert Whitted Airport directly south of the Pier and are directly related to the distance one moves away from the shoreline, as described in Figure 3.19. The north-south runway for the airport is perpendicularly aligned with the Pier approach. Although not a technical regulation, the Airport has determined that no significant vertical structures are permitted on the Pier in the 70 ft. wide area directly in line with the runway. While Figure 3.19 denotes the current alignment of the runway, it is scheduled to be realigned 33 ft to the east in the future. All other height limitations on the site are dictated by the FAA regulations controlling heights within the proximity of a runway. Figure 3.20 describes height limitations for the areas in vicinity of the Airport corresponding to Federal Aviation Administration Regulations, Part 77.

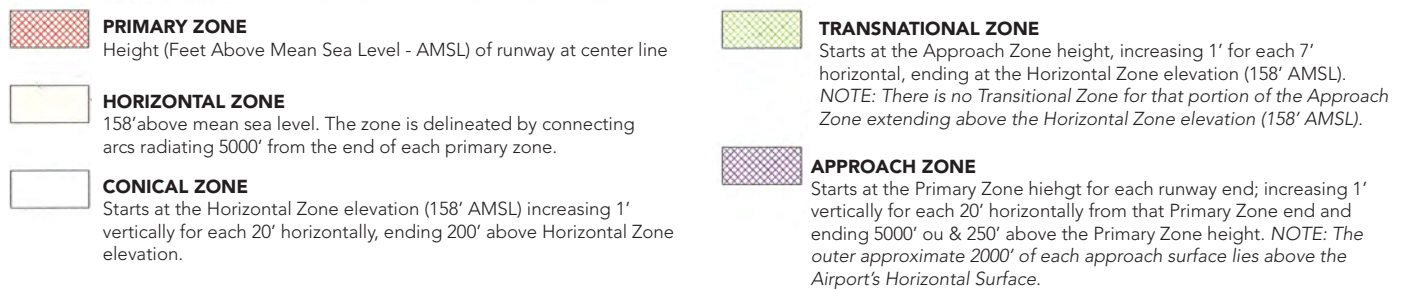
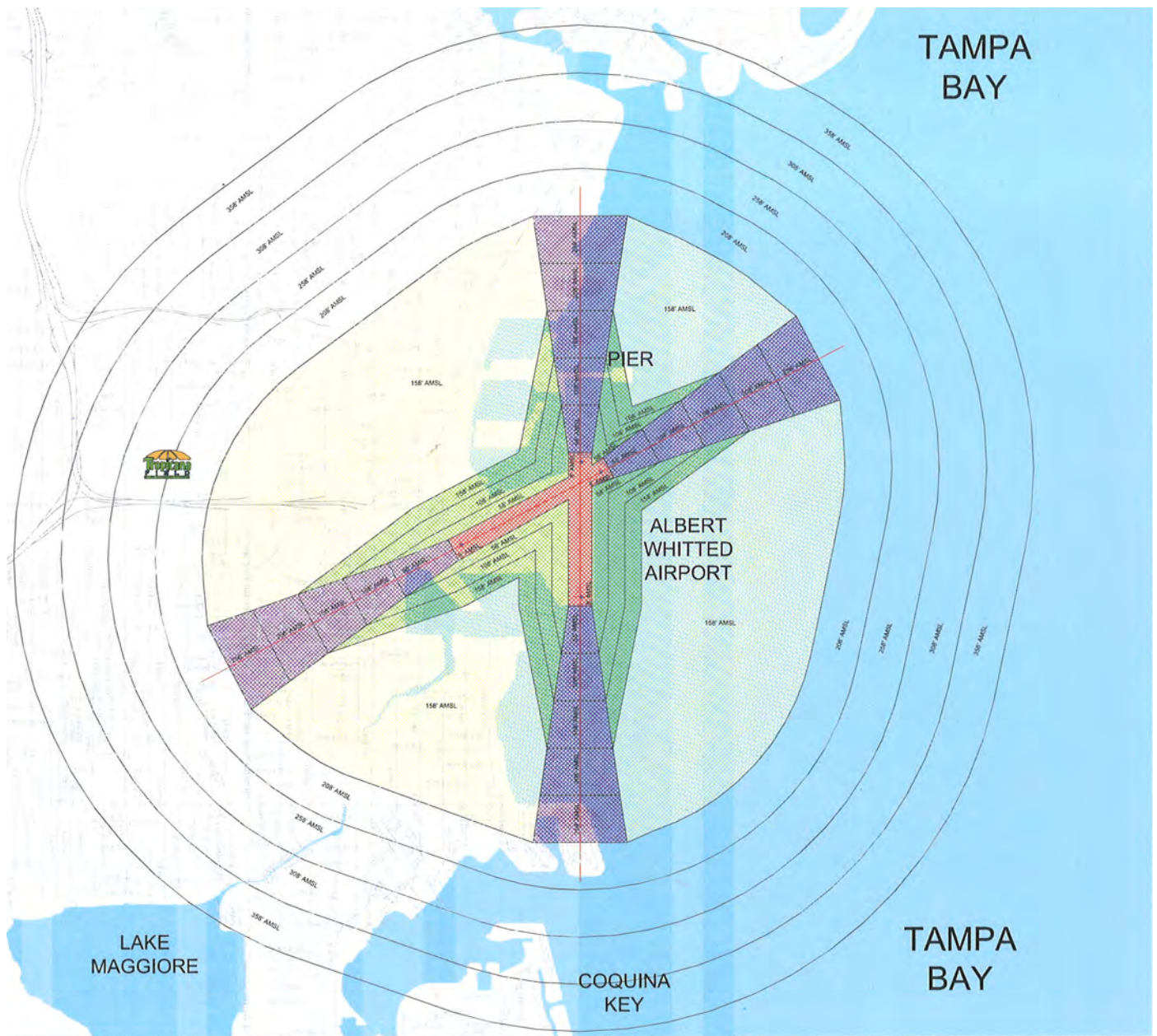


Figure 3.20 Height Limitations

**SITE AND URBAN
DESIGN CRITERIA
(continued)**

Environmental Considerations

The State of Florida regulates coastal construction, including all gulf and ocean fishing piers. In 1995, the Florida Department of Environmental Protection (FDEP) initiated the concurrent processing of applications for coastal construction permits, environmental resource permits, wetland resource permits and sovereign submerged lands authorizations, eliminating the potential for conflict between permitting agencies.

The state environmental regulatory program ensures that any fishing pier construction does not degrade water quality through the loss of wetlands, through improper in-water construction techniques, or through the creation of excessive turbidity. This regulatory program also ensures that pier construction and operation causes no harm or damage to protected wildlife species or important marine resources, including corals, seagrasses, mangroves, or manatee or marine turtle habitats.

Existing seagrass beds are located near the shoreline in water depths ranging from 4 to 9 ft. No seagrass was identified in the 100-ft. wide area where the existing Pier crosses these depths. Construction barges will be prohibited from approaching within 20-ft. of the existing seagrass beds.

Essential fish habitat in the Pier area is generally comprised of construction debris that has fallen from the Pier over time. This material will be left in place, where possible.

Manatees and sawtooth fish are found in the project area. No endangered bird species habitat has been observed in the project area. Construction is expected to conform to standard manatee construction guidelines, including slow speed waterborne equipment, observing for the presence of manatees and ceasing work when a manatee is present. Figure 3.21 describes the existing seagrass beds and essential fish habitats in the project area.

Existing water depths in the vicinity of the marina range from 10 to 12 ft. NAVD (8.9 to 10.9 ft. MLW).



Figure 3.21 2012 Seagrass and Essential Fish Habitat Survey Results

SITE AND URBAN DESIGN CRITERIA (continued)

Existing Structures to be Retained or Demolished

Due to concrete and structural deterioration at the Pier approach and head, continued general repairs are not seen as a viable long-term solution for the existing Pier. It has been determined that replacement of these areas is necessary, particularly because many components of the structure date back to its original 1926 construction (*Appendix H: Pier Advisory Task Force Report*, p.8).

Additional information specifically concerning the Pier's existing conditions at the Pier approach, building foundation and Inverted Pyramid may be found in *Appendix L: City Pier Building Foundation Evaluation, March 1, 2010 (Moffatt & Nichol)* as well as in *Appendix H: Pier Advisory Task Force Report (pp.8-9)*.

Figure 3.22 highlights the area of the site that is subject to demolition. Though the limits of the Pier demolition extend past the seawall and run along Spa Beach, the great majority of the Uplands area does not entail any demolition.

Parking Requirements

There are over 1,000 events in downtown St. Petersburg each year. The City's Transportation and Parking Management Department staff maintains and improves the transportation system for the safe and efficient movement of people, goods and services. On-street management of spaces is conducted primarily through time limits and parking meters to encourage vehicle turnover. The current Pelican Lot on the south side of the Uplands accommodates 157 cars, while the Dolphin Lot on the north side accommodates 312 cars.

Parking requirements for restaurants and retail will generally fall into the one (1) space per 500 sq. ft. of conditioned building area. Parking will be required for table and chair seating at the Promontory and at any large open terraces associated with concession spaces and restaurants. Disabled parking will be provided as required by code and valet parking may be provided by the operator of the Hub restaurant. In general it is anticipated that the parking that will remain at the Pelican Lot will be more than sufficient for the proposed Pier development.

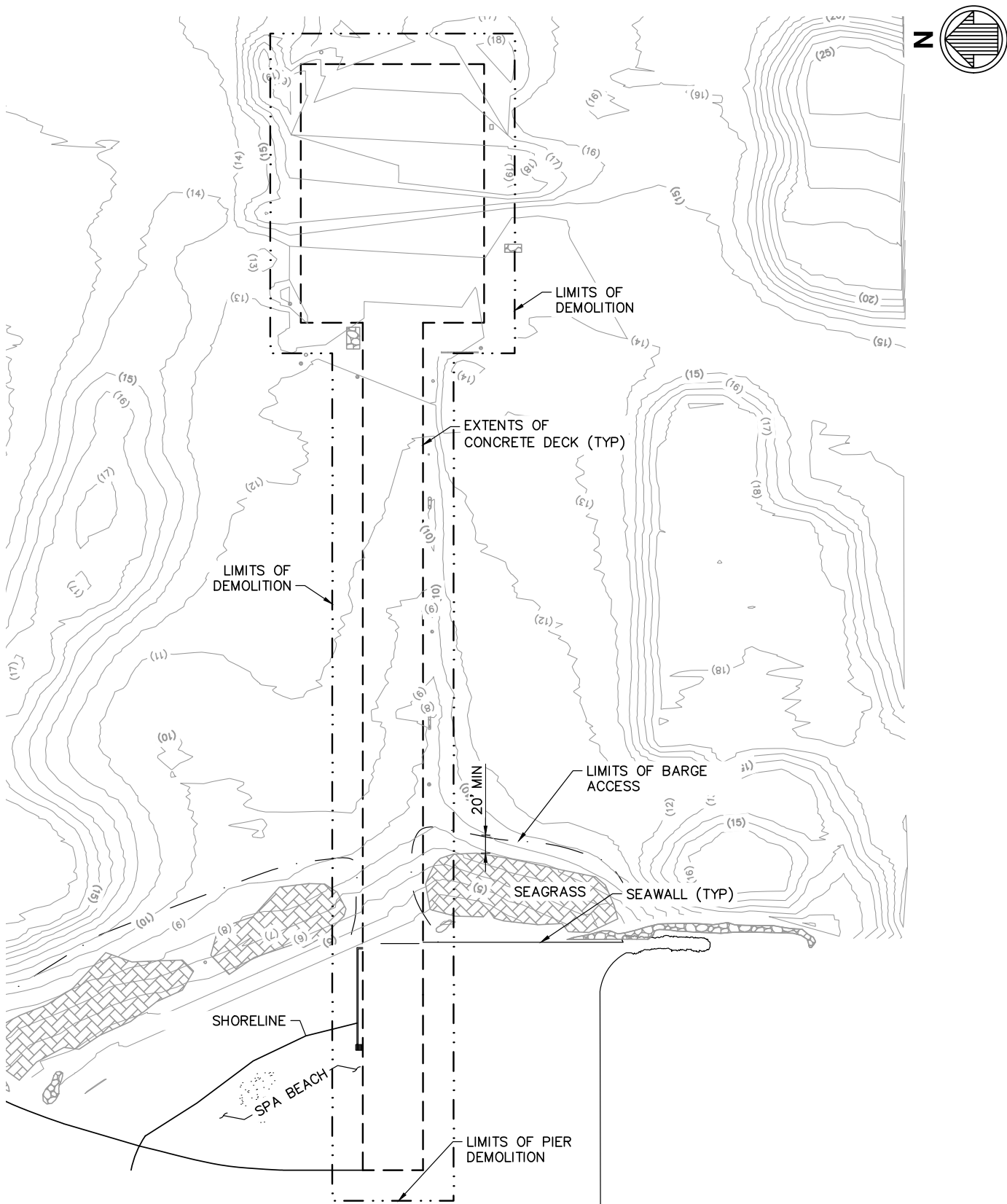


Figure 3.22 Pier Deck Demolition Plan

SITE AND URBAN DESIGN CRITERIA (continued)

Building Visibility

The new Pier's exceptional location within the City and its role as the primary attraction of the City's waterfront means that it will be seen and experienced in a variety of ways. Because of its centrality in the downtown waterfront area, the 2nd Avenue North view corridor looking east from Bay Shore Drive should remain open and free of major obstructions as much as possible, following the recommendation of the Pier Advisory Task Force and the Downtown Neighborhood Association (*Appendix H: Pier Advisory Task Force Report*, p.38). Figure 3.23 shows the view looking east along 2nd Avenue NE toward the existing Inverted Pyramid.

General Security Requirements

The new Pier is an extension of the City's Waterfront Park system. The Downtown Enterprise Facilities Department currently manages the Pier, and the City's Parks and Recreation Department maintains the Uplands. It is still to be determined the best methods, departments and/or subcontracted firms to manage the New St. Petersburg Pier, but it is anticipated that the Downtown Enterprise Facilities Department will manage the Hub restaurant at this time.

City Parks are open sunrise to sunset. It is expected that the future dining amenities on the overwater portion of the new Pier will be open until 11 pm on weekdays and 1 am or later on weekends. The elevator to the Balconies on the Canopy will only be operable during typical food service times at the Promontory.

Nighttime lighting will provide adequate footcandle levels to allow safety patrols. The overwater portion of the Pier will be evacuated in periods of severe weather alerts and closed until the City determines that the danger has safely passed. A removable swing gate or retractable bollard system will be installed at the entrances to the Overwater Drive to prevent access. Changeable lighted signage, mounted in a conspicuous place at the Pier entrance, will be used for public communication purposes. The Pier will have security staff, who will patrol the Marina at night. If security perceives an unsafe situation after dark, they can notify the police or marine patrol. Security staff at the City's marina are also available to assist.



Figure 3.23 View Looking East Along 2nd Avenue NE

SITE AND URBAN DESIGN CRITERIA (continued)

Site Access

Figure 3.24 illustrates the existing routes of access to the St. Petersburg Pier. The major street arterials for the site are Second Avenue NE and Bay Shore Drive NE. The primary freeways in proximity of the site are I-175, I-275 and I-375.

Public Transit Lines

Central Avenue Trolley: operating 7 days per week, free fare between the Pier and The Shops at St. Pete (formerly BayWalk), \$0.50 reduced fare from Grand Central Station at Central Avenue and 31st Street.

Downtown Looper: operating 7 days per week, 50 cent fare with service every 15 minutes.

During operating hours (Sun-Thu 10 am-5 pm, Fri/Sat 10 am-midnight), the Looper stops at each Pier lot on its way to and from the Pier. Service to and from the Pier head is provided approximately every 15 minutes. Additionally, the Central Avenue Trolley (CAT) operates an overlapping route to and from the Pier that also serves the lots, at the same frequency as the Looper. However, the CAT's last stop at the Pier is at 11:10 pm on Friday and Saturday, as opposed to midnight for the Looper. This combined service provides an average 7.5 minute headway from 10 am to 5 pm, Monday through Friday. On nights and weekends the average headway is approximately 10-15 minutes.

In addition to the above-described service, the Pier utilizes city-owned trolleys to provide service for employees before the Pier opens in the morning and after it closes at night, with city-owned vehicles augmenting Looper and CAT service during nights and weekends to reduce the headways and accommodate larger capacity crowds. This allows night/weekend headways to be in the 5 to 7 minute range.

City-owned trolleys have a capacity of 26, while the two models of the Looper trolleys have respective capacities of 15 (open air) and 28 (enclosed). CAT vehicles are 35 passenger trolleys. 28 and 35 passenger trolleys use diesel; the 15 and 26 passenger trolleys use gas. A portion of the CAT vehicles are hybrid diesel/electric.

All vehicles have wheelchair lifts.

Trails

St. Petersburg's CityTrails are facilities for non-motorized traffic, primarily bicyclists and pedestrians. The North Bay Trail provides access from the starting point of the Pinellas Trail at 1st Avenue South and Bay Shore Drive north to Vinoy Park, North Shore Pool and Park, the Gisella Kopsick Arboretum, Flora Wylie Park, Elva Rouse Park and to the Centennial Human Sundial at Vista Point. The existing downtown North Bay Trail system will be enhanced with 1 mile of out and back trail at the new Pier.

www.stpetecitytrails.org

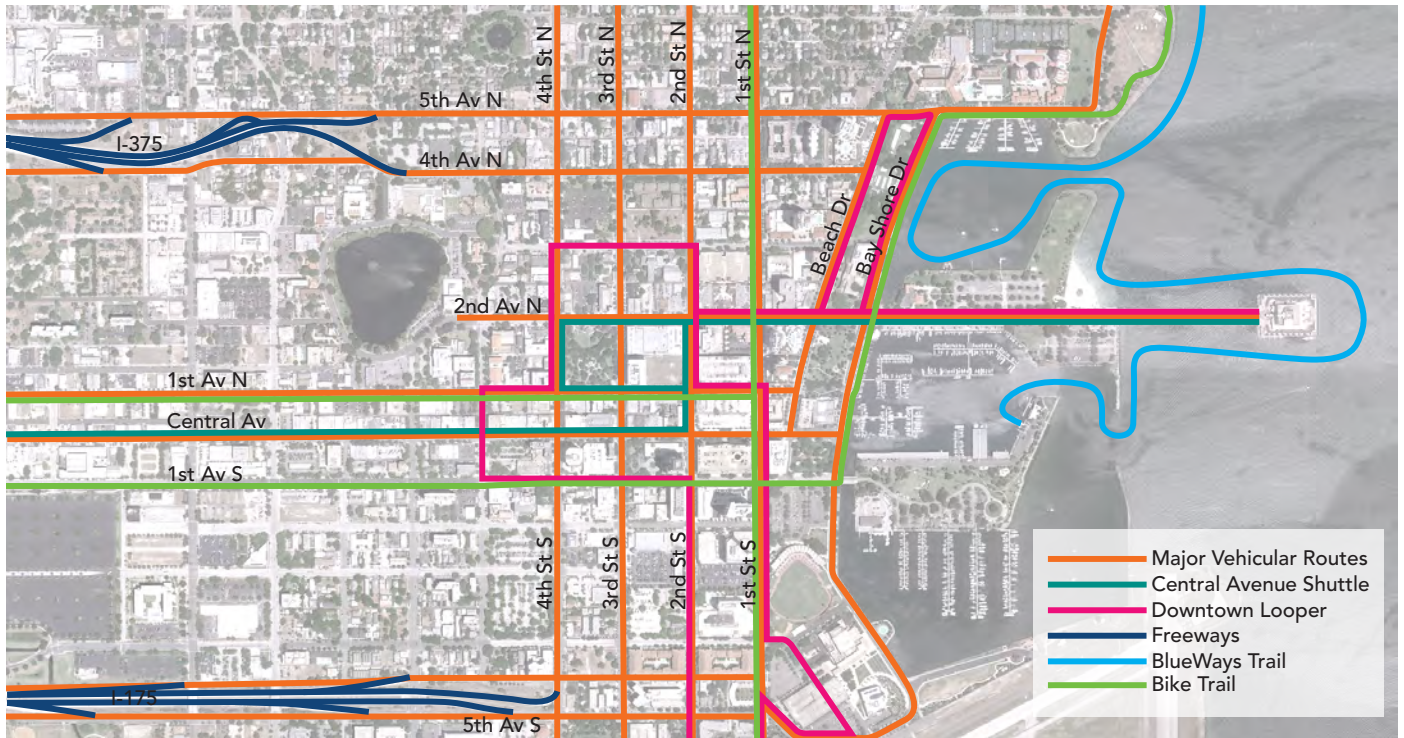


Figure 3.24 Existing Site Access Routes

SITE AND URBAN DESIGN CRITERIA (continued)

BlueWays Kayak Trails run all along St. Petersburg's scenic coast line from Fort Desoto Park, north past the Pier and up to Weedon Island Preserve where paddlers can experience a diverse thriving ecosystem. Each CityTrails BlueWay presents a unique environmental, historic and/or scenic vista opportunity. The Downtown Waterfront BlueWay begins at Coffee Pot Park and follows the waterfront south to Demens Landing at the Central Basin. The new Pier will provide another designated landing opportunity where paddlers can enjoy all that downtown has to offer. The kayak dock at the new Pier will be equipped with a floating dock, wash station and a method to secure watercraft. www.stpete.org/outside/blueways.asp



Site Accessibility

It is essential that the site be accessible to each of the following:

- Pedestrians
- Patrons and staff picked up or dropped off by car or bus
- Patrons and staff on bicycles
- Patrons and staff with disabilities
- Service and emergency vehicles

Pedestrians

The site should relate strongly to the adjacent streetscape. Pedestrian traffic must flow easily to the new Pier via existing sidewalks. Reflecting the general guiding principles of the "Vision/Guiding Principles and Context for the Preparation of a Downtown Waterfront Master Plan, December 2011", public access will be prioritized in the following hierarchy when feasible: pedestrians, bicyclists, public transit and motorized vehicles (*Appendix H, p. 5*).

Patron/Staff Drop-Off Points

The new Pier will act as a major focus of downtown and waterfront activity. The site development should be mindful of existing bus stops and access to public transportation routes. In addition, the site development should include a zone for taxi, bus and private vehicle drop-off.

Service Vehicles

The City's Parks and Recreation Department will operate and maintain the grounds and buildings on the Upland park lands, including Spa Beach, the public restrooms and other public facilities. Because seagrasses frequently wash ashore along Spa Beach, access to this part of the site via a service vehicle ramp will be required for cleanup. The Parks and Recreation Department is not currently responsible for maintaining the Pier.

Economic Development Opportunities

Community Redevelopment Areas

The Florida Legislature passed the Community Redevelopment Act in 1969, allowing for the establishment of Community Redevelopment Agencies throughout Florida. These Agencies have the authority to create Community Redevelopment Areas (CRAs) with the purpose of encouraging economic development and redevelopment.

In St. Petersburg, the Community Redevelopment Agency (the City Council) created (7) CRA's beginning in 1981 with the Intown (Downtown) Redevelopment Area, shown in red in Figure 3.25: Community Redevelopment Areas Map. The City then prepared a Community Redevelopment Plan to guide the projects to be carried out within the Intown Redevelopment Area.

Tax Increment Financing (TIF) Revenue

Community Redevelopment Areas have a unique financing method available to fund city projects called Tax Increment Financing. When the City established the Intown Redevelopment Plan in 1981, the assessed value of the properties in the area in red was frozen. The value of this frozen base was roughly \$108 million.

City and County property taxes generated from the growth in the assessed value over the frozen base are placed in a special Trust Fund to be used to fund approved projects within the redevelopment area. The taxes generated on the frozen base continue to be available to all local taxing agencies for operating purposes (City, County, and School Board).

In 2012, the assessed value of the area in red was almost \$820 million. This \$712 million increment over the frozen base value of 1981 generated \$7.3 million of TIF revenues during fiscal year 2012 that was used to pay for approved projects. It is estimated that \$162 million of TIF funds will be generated between 2013 and 2032 (the current end date for City/County funding of the Intown TIF). All TIF revenues generated by the redevelopment area must be spent on approved projects within that redevelopment area (the area in red in Figure 3.25).

Intown (Downtown) Redevelopment Projects

The City's Intown Redevelopment Plan and its TIF funding have been used to complete many public improvement

**SITE AND URBAN
DESIGN CRITERIA
(continued)**

projects throughout the downtown area including: Tropicana Field, BayWalk, MidCore & SouthCore Parking Garages, Streetscape Programs, Waterfront Parks Improvements, Museum Development and others.

In 2005, the Intown Redevelopment Plan was amended to add projects including the renovations to the Mahaffey Theater, the Dali Museum and the proposed Pier project. Other downtown projects to be funded from future TIF Funds include a new mixed use transportation facility and pedestrian streetscape and downtown park improvements.

As was the case with the Mahaffey Theater renovation project, the majority of the Pier project will be accomplished using debt financing. The City will borrow funds in the municipal bond market and the debt service (principal and interest) will be paid using the TIF revenues discussed above.

Based upon historic and current City/County millage rates, the City TIF revenues will fund approximately 55% of the Intown Projects with the County share being approximately 45%.

Example

The following is an example of the application of the funding concept described above. This example explains where TIF money comes from and thus how the municipal bonds serving the Pier project will be paid back.

John Doe owns a commercial office building downtown. In 1981 the property was valued at \$100,000. In 2012, that same property was valued at \$650,000. John's 2012 City taxes on the \$550,000 increment (the \$650,000 current value minus the \$100,000 value in 1981) are \$3,252 (based on a City millage rate of 5.9125). His 2012 Pinellas County taxes on the \$550,000 increment are \$2,680 (based upon a County millage rate of 4.873). The \$3,252 plus the \$2,680 are placed in the TIF Trust Fund pot along with the incremental tax money from other downtown property owners.

Based on this model, the City will borrow the funds to pay for the new Pier project using 20-year municipal bonds (currently at historically low interest rates) and will repay these borrowed funds using the TIF Trust Fund pot of money.

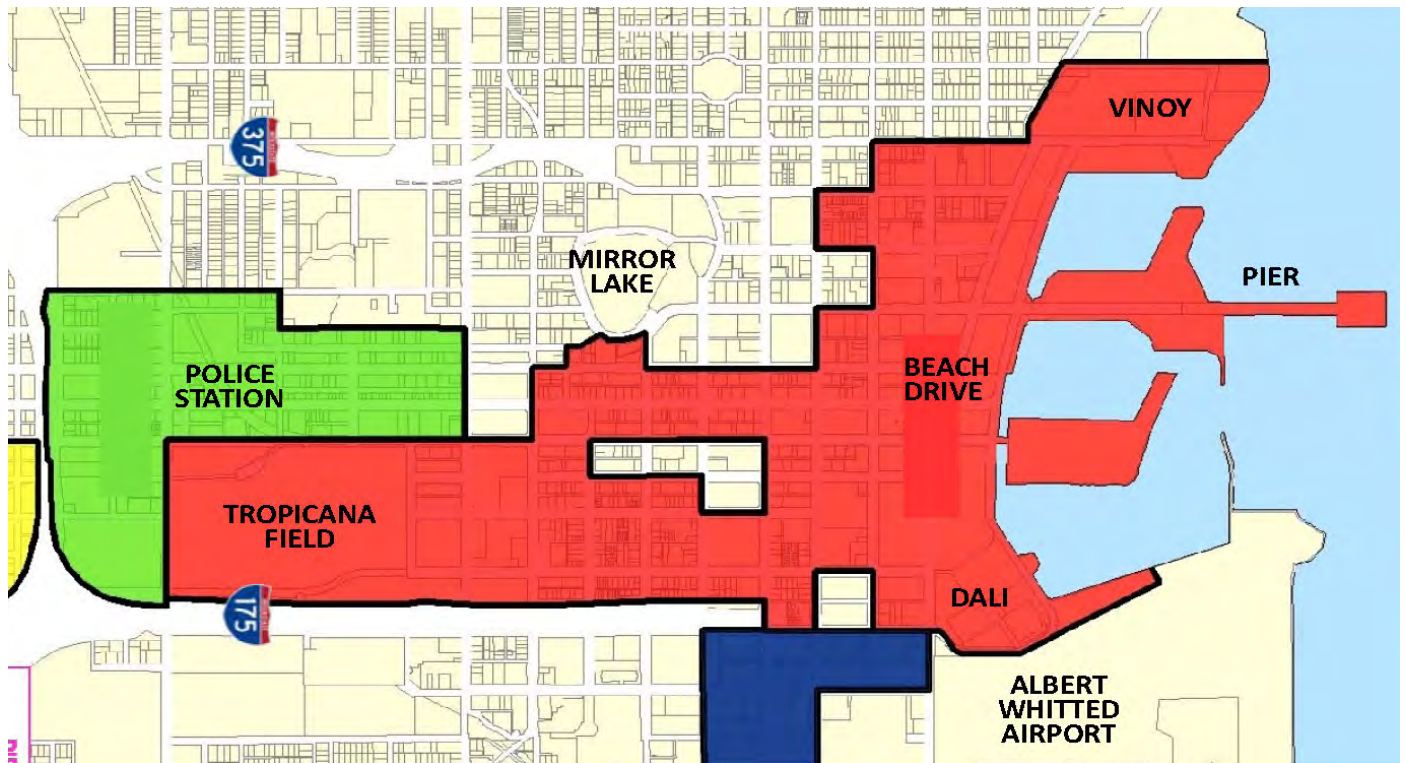


Figure 3.25 Community Redevelopment Areas

SITE AND URBAN DESIGN CRITERIA (continued)

Water Levels

Tides in the Tampa Bay region are mixed semi-diurnal tides, meaning water levels may exhibit one high and low tide (diurnal) or two high and two low tides (semi-diurnal) in any given day or cycle.

Figure 3.26 describes the relationship between the three different water level datum systems relevant to the new Pier (NAVD 88, NGVD 29 and the St. Petersburg Datum) and lists key water level data for the St. Petersburg Pier. Tidal information was obtained from NOAA Station 8726520 located near the St. Petersburg Coast Guard station. This data was accumulated over 19 years of measurements, from 1983 to 2001.

Sea Level Rise

With sea levels around the world rising, human populations living in coastal regions and ecosystems in the natural environment may potentially be impacted. Global average sea level rose at an average of around 1.7 +/- 0.3 mm per year from 1950 to 2009 and at a satellite-measured average rate of about 3.3 +/- 0.4 mm per year from 1993 to 2009, an increase on earlier estimates. Though it is unclear whether the rate reflects an increase in the underlying long term trend, observed sea level rise has been taken into consideration in the design of the new Pier, in particular because the project has a 75-year life span.

In response to wave action and sea level rise, the bottom of the lowest structural members are designed to be 1 ft higher than the base flood elevation. This will place the top surfaces of the new Overwater Drive and Bridge at a level 12 ft above mean sea level and more than 3 ft above the deck of the existing Pier.

Floodplain Management

Preliminary code analysis and floodplain management considerations are as follows.

Scour at the structure foundation varies depending on the structure type and dimensions. The depth and design impact of scour on the proposed structure should be evaluated for a 100-year return period event.

Storm surge data from the most recent FEMA Flood Insurance Study (FIS) for Pinellas County (2003) lists the water level at 5.7 ft for a return period of 25 years, 7.0 ft for a return period of 50 years and 8.3 ft for a return period of 100 years.

Figure 3.27 is used to administer the National Flood Insurance Program for Pinellas County, Florida. An explanation of the design implications for the new Pier, which is subject to extreme environmental conditions, can be found in the 'Accessibility and Code Requirements' section of this Report.

For additional information pertaining to floodplain management refer to *Appendix K: Flood Resistant Design and Construction*, which contains highlights of ASCE 24-05, a referenced standard

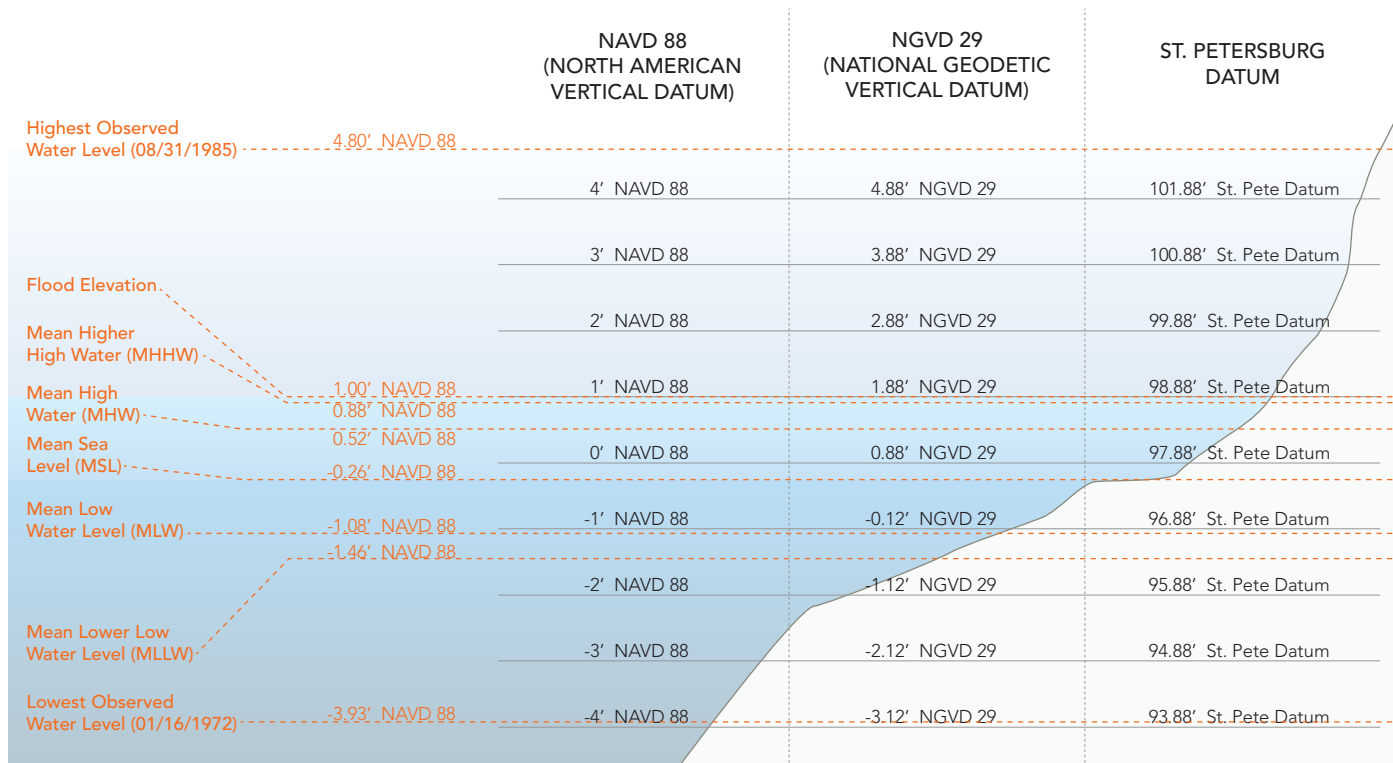


Figure 3.26 Datum Conversion Diagram

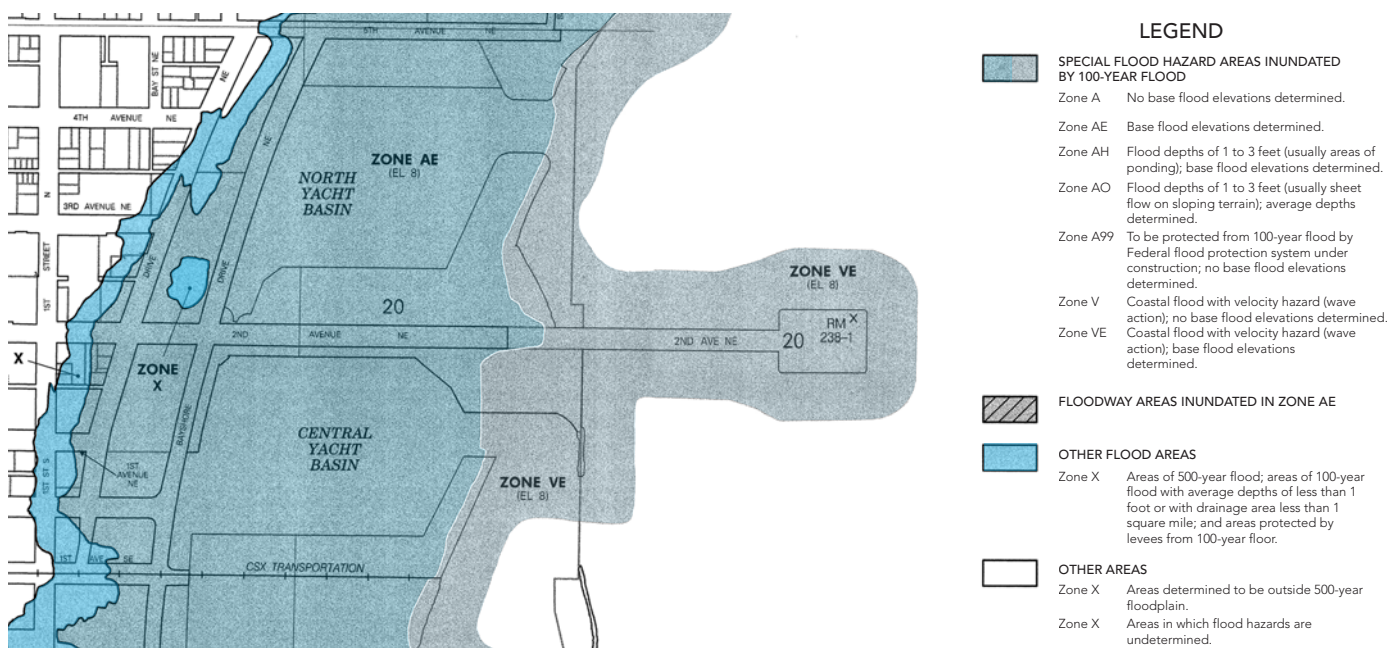


Figure 3.27 Flood Insurance Rate Map for Pinellas County, Florida and Incorporated Areas

**SITE AND URBAN
DESIGN CRITERIA
(continued)**

in the International Building Code and the Florida Building Code for buildings and structures proposed in flood hazard areas.

Applicable Code

- St. Petersburg, Florida, Code of Ordinances, Chapter 16 – Land Development Regulations, Section 16.40.050 – Floodplain Management.
- Florida Building Code 2010 with Amendments
- South Florida Water Management District
- Pinellas County Water and Navigation Code
- Florida Fish and Wildlife Conservation Commission

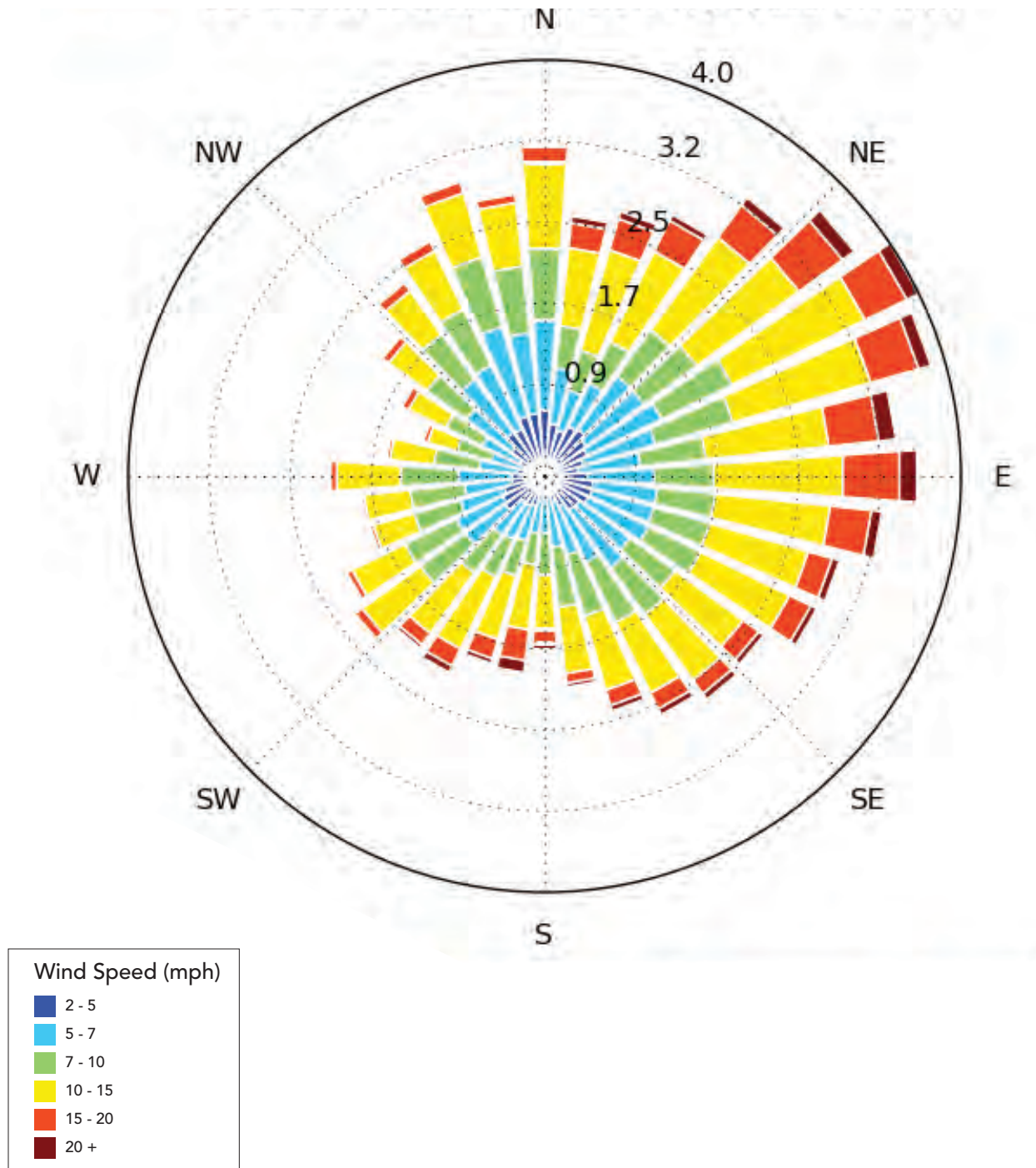
Wind Data

Extreme value analysis of historical wind speeds recorded at MacDill Air Force Base from 1941 to 2011 indicate the following wind speed return periods:

- 25-year return period: 74 mph
- 50-year return period: 83 mph
- 100-year return period: 92 mph

Wind data is sourced from the document *Metoccean and Structural Concept Level Design Basis* prepared by Moffatt & Nichol for the St. Petersburg Design Competition.

Figure 3.28 depicts winds recorded at Albert Whitted Airport in St. Petersburg between the years of 1995 and 2012. The recurrence of directional extreme winds should be further evaluated for final design.



Windrose Period of Record: 01 Nov 1995 - 01 Nov 2012
 Observation Count: 138685
 Average Speed: 8.7 mph

Figure 3.28 Wind Rose for Albert Whitted Airport. Source: National Climatic Data Center

**SITE AND URBAN
DESIGN CRITERIA
(continued)**

Geography and Climate Data

Extending along the western shoreline of Tampa Bay in the area commonly referred to as Middle Tampa Bay, the St. Petersburg Pier is located in Pinellas County, Florida. With a population of 244,769 (as of the 2010 census), St. Petersburg is the second largest city in the Tampa Bay Area. The City has a total area of 137.6 square miles: 61.7 are land and 75.9 are water.

St. Petersburg is located on a peninsula between Tampa Bay and the Gulf of Mexico. It is connected to mainland Florida to the north and to the city of Tampa to the east by causeways and bridges. The Sunshine Skyway Bridge, which traverses the mouth of the Bay toward the south, connects St. Petersburg to Bradenton while the Gandy Bridge, opened in 1924, connects St. Petersburg to Tampa.

Pinellas County has a population of 916,542 and together with Hillsborough, Hernando and Pasco counties forms the Tampa-St. Petersburg-Clearwater Metropolitan Statistical Area. The county has 587 miles of coastline and its elevation ranges from mean sea level to a high natural point of 110 ft.

St. Petersburg has a humid subtropical climate, closely bordering a tropical savanna climate, with a rainy season from June through September. Pinellas County's position on a peninsula between Tampa Bay and the Gulf of Mexico introduces a large amount of humidity into the atmosphere, which serves to moderate temperatures.

Freezing temperatures and precipitation are very rare. Springs are short, mild and dry, and summertime weather is consistent with highs in the low 90s and lows in the mid 70s, accompanied by high humidity levels and regular afternoon thundershowers. Fall and winter are drier periods.

Like the rest of the Tampa Bay area, St. Petersburg is occasionally affected by tropical storms and hurricanes, with the hurricane season extending from June through November. Many portions of St. Petersburg, especially along the Bay, have tropical microclimates, which allow for Royal Palms and coconut palms to grow.

Figure 3.29 lists average climate data for St. Petersburg, FL for the years 1981-2010.

Heating degree day (HDD) is a measurement designed to reflect the demand for energy needed to heat a building, derived from measurements of outside air temperature. Cooling degree day (CDD) is a similar measurement, reflecting the amount of energy needed to cool a home or business. Heating and cooling degree days are defined relative to a base outside temperature that demands no heating or cooling within a building.

CLIMATE DATA FOR ST. PETERSBURG, FL

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Max Temp (F)	69.2	71.6	75.4	80.2	86.1	89.3	90.4	90.2	88.5	83.5	76.8	71.3	81.0
Min Temp (F)	53.8	56.3	60.2	65.2	71.4	75.6	76.8	77.0	75.6	70.3	62.9	56.6	66.8
Avg Temp (F)	61.5	64.0	67.8	72.7	78.7	82.5	83.6	83.6	82.1	76.9	69.8	64.0	73.9
Precipitation (in)	2.57	2.72	3.74	2.27	2.21	6.53	7.33	8.38	7.76	2.77	1.90	2.75	50.93
Snowfall (in)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Snow Depth (in)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Degree Days	0	0	0	2	25	105	143	84	40	5	0	0	406
Cooling Degree Days	48	63	136	244	434	531	584	584	518	380	177	82	3781

Figure 3.29 Weather Data Gathered Between the Years 1981-2010 for St. Petersburg, FL.

Source: NOWData - NOAA Online Weather Data

EXISTING INFRASTRUCTURE

The following is an inventory and discussion of existing infrastructure at the Pier and its environs. Figure 3.32 locates existing site services. Further detail and photos can be found in *Appendix A: St. Petersburg Pier Site Observations Report, June 27-28, 2012 (Buro Happold)*.

Existing Pier

The existing St. Petersburg Pier is scheduled for demolition due to well-documented structural and code compliance problems; however, it is necessary to document some basic features of the Pier since they may inform future design decisions.

The existing St. Petersburg Pier can be broken down into two sections: the Pier approach and the Pier head where the Inverted Pyramid building is located. The Pier approach is 100 ft wide and extends 1380 ft to the Pier head, supporting the 2nd Avenue roadway to the Inverted Pyramid building. Parking is located on the north and south extents of the roadway with sidewalks located along the approach.

The Pier approach is supported by 781 16"x16" square concrete piles. The western end of the Pier, at bents 1-21, is underpinned with sand and grout, and is retained by a bulkhead. The concrete bulkhead spans north-south between piles at bent 21. The bulkhead turns west toward the shore on the north side of the Pier and continues south its south side. Grout has been placed in various locations behind the bulkhead in conjunction with the bulkhead maintenance and repair program to prevent soil from washing out.

The Pier head is 300 ft wide and 422 ft long. Parking extends around the building where a sidewalk marks the outer extent of this Pier section. A 245-ft wooden fishing Pier is located just off the eastern side of the Pier head. Approximately 24 boat slips are located along the western and southwestern edges of this section. The 1969 Ardaman & Associates report was conducted to make recommendations for the existing Inverted Pyramid building's large caisson foundations, supporting a load of 3,550,000 lbs.

The Inverted Pyramid's foundation system consists of four main caisson support structures. A fifth caisson was installed to support the entry elevator located on the west side of the building. As-built drawings show that each foundation structure has load bearing steel piles encased in a mass concrete filled steel sheet pile caisson. Each caisson is approximately 20-ft by 20-ft square in plan, and the sheet piles are embedded approximately 8 ft into the soil acting as a sacrificial stay-in-place form.

The load bearing piles serve as the primary foundation system for the Inverted Pyramid. Construction of the building involved cutting holes in the Pier deck, installing the caissons, and tying the caissons to the Pier structure. The first floor of the building utilizes the deck of the concrete Pier constructed in the 1920s. It

is important to note that the Pier is approximately 50 years older than the Inverted Pyramid and associated building foundations (Moffatt & Nichol, 2010). Inspection of the caisson structures supporting the Inverted Pyramid building will be conducted to determine if the caissons are structurally suitable for use in the proposed work. Additional information is provided in *Appendix L: City Pier Building Foundation Evaluation, March 1, 2010* (Moffatt & Nichol).

The landward connection of the existing Pier, from bents 1-21, is composed of an underpinning of sand and grout that is retained by a bulkhead. The grout has been placed into this area in conjunction with the bulkhead maintenance and repair program. This section of the existing Pier is scoped for selective demolition and its southern section will become a connection location for a walkway in the proposed Pier design. A thorough investigation of this area is recommended in order to accurately assess its condition and ability to meet the needs of the proposed design.

Existing Bulkhead

The bulkhead, or seawall, is in fair to good condition in the project area due to an ongoing inspection and repair program undertaken by the City on an annual basis. The bulkhead in the vicinity of the Pier is reportedly of "double wall" construction and is not supported on piles. Various grouting and bulkhead face repairs have taken place over the years under the north side of the Pier; the bulkhead runs parallel to the Pier, separating it from a public beach. In this area, the bulkhead is offset several feet from the Pier, creating a walkway (off-limits to the public) along the side of the Pier.

The bulkhead makes a 90 degree turn to run under the Pier along bent 21, spanning the Pier pile caps--an important factor when devising demolition strategies for the existing Pier.

EXISTING INFRASTRUCTURE (continued)

Existing Water Service

A 6" potable water main feeds the existing Pier. The water meter for the municipal Pier is located in the Uplands area, along with a series of valves, most likely backflow preventers. A 6" fire service main feeds the existing St. Petersburg Pier. A 4" PVC fire service main to the St. Petersburg Municipal Marina is located to the south of the existing Pier.

Existing Drainage

Pier

There are 10 stormwater grates on the Pier head and 18 grates on the approach. All drainage grates drop into the Bay.

Bay Shore Drive

Along Bay Shore Drive NE, there are 36", 30" and 12" diameter pipes that collect stormwater and convey it eastwards to 4 outfalls that discharge into the Bay. Three of the outfalls discharge to the south of the Pier, and one discharges to the north. A box culvert flows north, crossing 2nd Avenue NE, and discharges into the Bay to the east of the intersection of Bay Shore Drive NE.

Pier Access Road

The access roadway has curb inlets approximately 60 ft. immediately to the east of Bay Shore Drive on 2nd Avenue NE that drop into 36" diameter pipe of the municipal stormwater collection network. Further east, along the overwater section of 2nd Avenue NE, drainage inlets discharge directly into the Bay.

St. Petersburg Museum of History Area

The southern Museum lawn drains into swales that convey stormwater north into a retention basin area. Areas north of the Museum capture water in grates and convey water north in 6" and 8" PVC pipes. These pipes discharge into MES culverts that then discharge into a retention basin area. The northern edge of the retention basin area contains a 6" underdrain, which along with the retention basin area overflow, feeds into a control structure that discharges north into a 15" RCP pipe through the seawall and into the Bay. A silt barrier is located on the northern edge of the seawall protecting the Bay. The museum area system drains 2.62 acres.

Dolphin Lot North of Pier Access Road

The northern parking system drains 4.15 acres. Stormwater is captured in a grate system that conveys stormwater north through a gravel encased 12" perforated RCP for stormwater storage and retention. These pipes have an overflow discharge into a FDOT Type "F" control structure, and then into a 15" RCP discharging into the Bay. A water quality swale exists at the northern edge of the site, and is fed by on-site runoff from the parking lot, but is not fed by discharging drainage pipes.

The City reports that once per year, prior to wet season, the inlets and control structure are cleared of all silt and debris. The 12" perforated pipes and the 15" RCP are flushed with high pressure water prior to cleaning the inlets. Before these operations, procedures are put in place to prevent silt from being flushed into the North Basin, with flushing of the pipe conducted back from the outfall to the control structure.

Pelican Municipal Parking Lot No. 7 South of Pier Access Road

In the Pelican Municipal Parking Lot (Lot #7) south of the access road, the existing drainage system drains 2.82 acres and consists of four inlets with grates. Record drawings show the westernmost of these inlets connected to a 24" reinforced concrete pipe which drains south to the Bay, but no connections between the other three basins and the 24" RCP.

Sanitary Sewer

There is a current sewer lift station at the end of the existing Pier. A 6" force main runs along the Pier and continues on to 2nd Avenue NE westwards travelling a distance of 1400' where it then discharges into a 6" gravity-fed steel cement lined pipe on 2nd Avenue. The sewer line continues westward, becoming a 10" vitrified clay pipe lined with UPVC (VCP) that connects with the sewer pipe on Bay Shore Drive NE at an invert level of 94.71".

An existing reused treated sewage effluent (TSE) line exists on the Uplands area. However, it is assumed that new uses for the proposed Pier would be minimal, making continuation of this service unwarranted.

Existing Natural Gas

The Teco Utility Company provides a 2" natural gas line to the Pier's Inverted Pyramid building. A gas service valve assembly exists in the vicinity of the electrical panel box.

Existing Lighting and Electrical Service

The existing Pier is fed by a 1MVA transformer that also serves the existing Inverted Pyramid building. It is assumed that Progress Energy owns this transformer and the secondary voltage to be 480V.

The lighting in the Dolphin Lot, located on the north side of 2nd Avenue NE, belongs to Progress Energy (PEF). The light fixture is Washington, manufactured by Holophane Lighting. Wattage of the light is 175 watt MH. If the City of St. Petersburg purchases these lights, they will be converted to 85 watt induction luminaires. The pole manufacturer is Ameron Pole Products and the pole style is the 22' Victorian II. Along 2nd Avenue NE there is a mixture of PEF Washington lights and City "shepherd hook" style lights.

In the Pelican Lot, located on the south side of 2nd Avenue NE, the Mongoose style light and pole fixtures are made by Holophane and are owned by the City.

EXISTING INFRASTRUCTURE (continued)

Existing Underwater Conditions

Ardaman & Associates prepared a report, "Pier Development St. Petersburg, FL", which assessed the geotechnical conditions and Pier substructure in 1969. From conducting standard penetration borings, a general soil profile was interpreted and found to be uniform in texture and stratification. The results of this investigation are discussed below in Figure 3.30 and serve as a general basis for infrastructure design and should be followed up with new investigations to provide current data required for final design.

A full geotechnical exploration program will be carried out in the next stage of the project. The diagram Figure 3.31 shows data from a hydrographic survey conducted by George F. Young, Inc. for Moffatt & Nichol Engineers.

Depth from Water Surface (ft)		Description
From	To	
0	11	Depth of water
11	12	Dark gray silty sand - very loose
12	26	Gray to light gray silty sand with brown shell - very loose
26	42	Gray to brown, slightly silty very fine sand with shell and phosphates - very loose to medium compact
42	61	Gray silty clay with some hard consolidation - soft to hard
61	83+	Light brown decomposed consolidated limerock - dense to very dense

Figure 3.30 Soil Profile Data

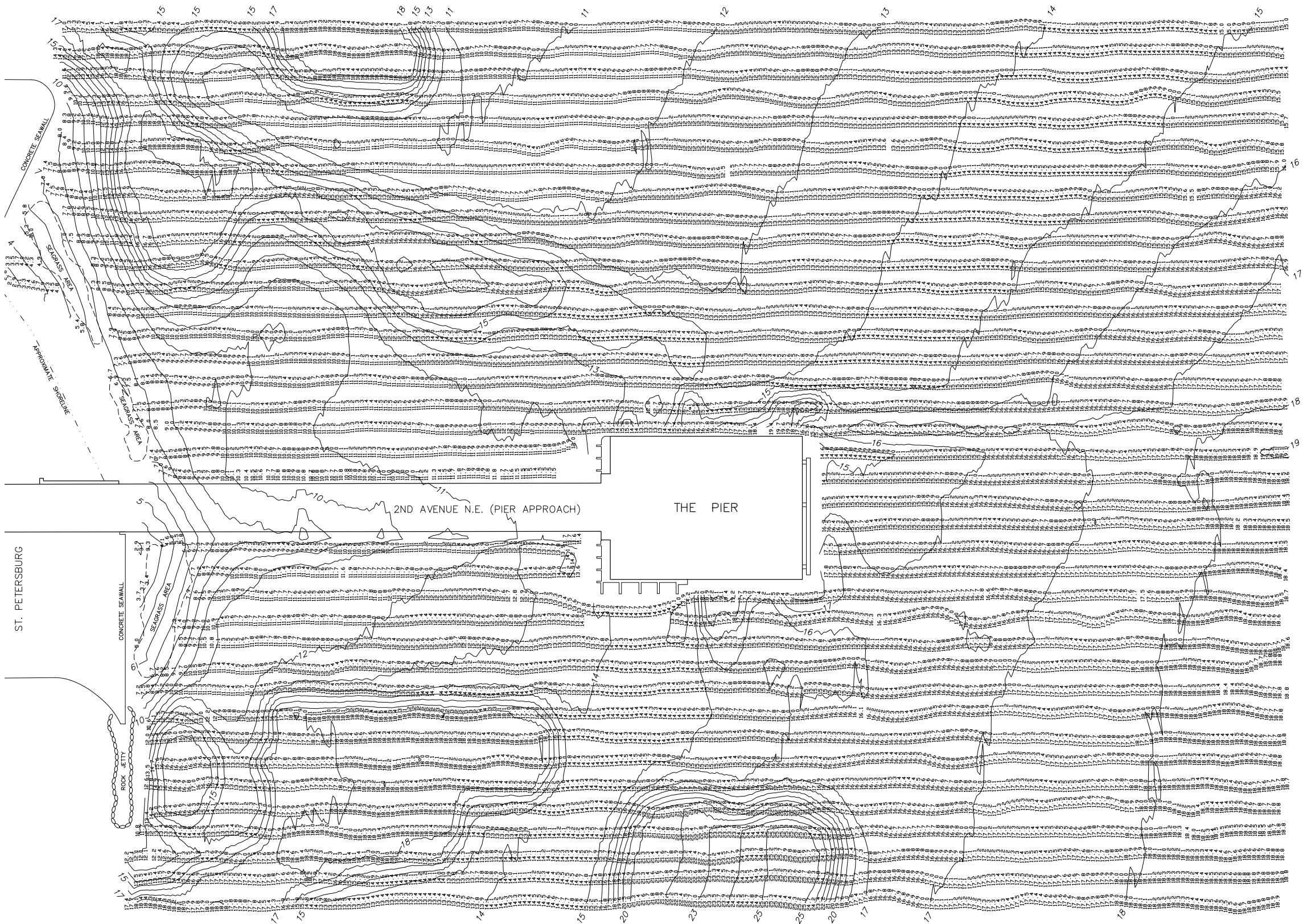


Figure 3.31 Hydrographic Survey

NOTES

1. All elevations are (-) negative unless otherwise noted.
2. Elevations are in U.S. Survey Feet and are referenced to NAVD 88.
3. Horizontal coordinates are Florida State Plane, West Zone, NAD 83 (2007 adjustment), U.S. Survey Feet.
4. Horizontal and Vertical Control is based on NOS monument 872 6520 A. Monument is a dist set in a seawall stamped "6520 A 1978". Elevation = +4.13 NAVD 88.
5. Vessel positioning was maintained using a Trimble 5700 Dual Frequency Receiver, receiving corrections from Trimble's GNSS RTN as co-operatively tied to the FDOT FPRN.
6. An Odom Hydrotrac echo sounder with a 200 kHz transducer was used to obtain the elevations shown hereon.
7. The information shown represents a survey performed on 6/21/12 and can only indicate the general conditions existing on said date.
8. Location of structures and shoreline is approximate and based on FDOT aerial photography.

EXISTING INFRASTRUCTURE (continued)

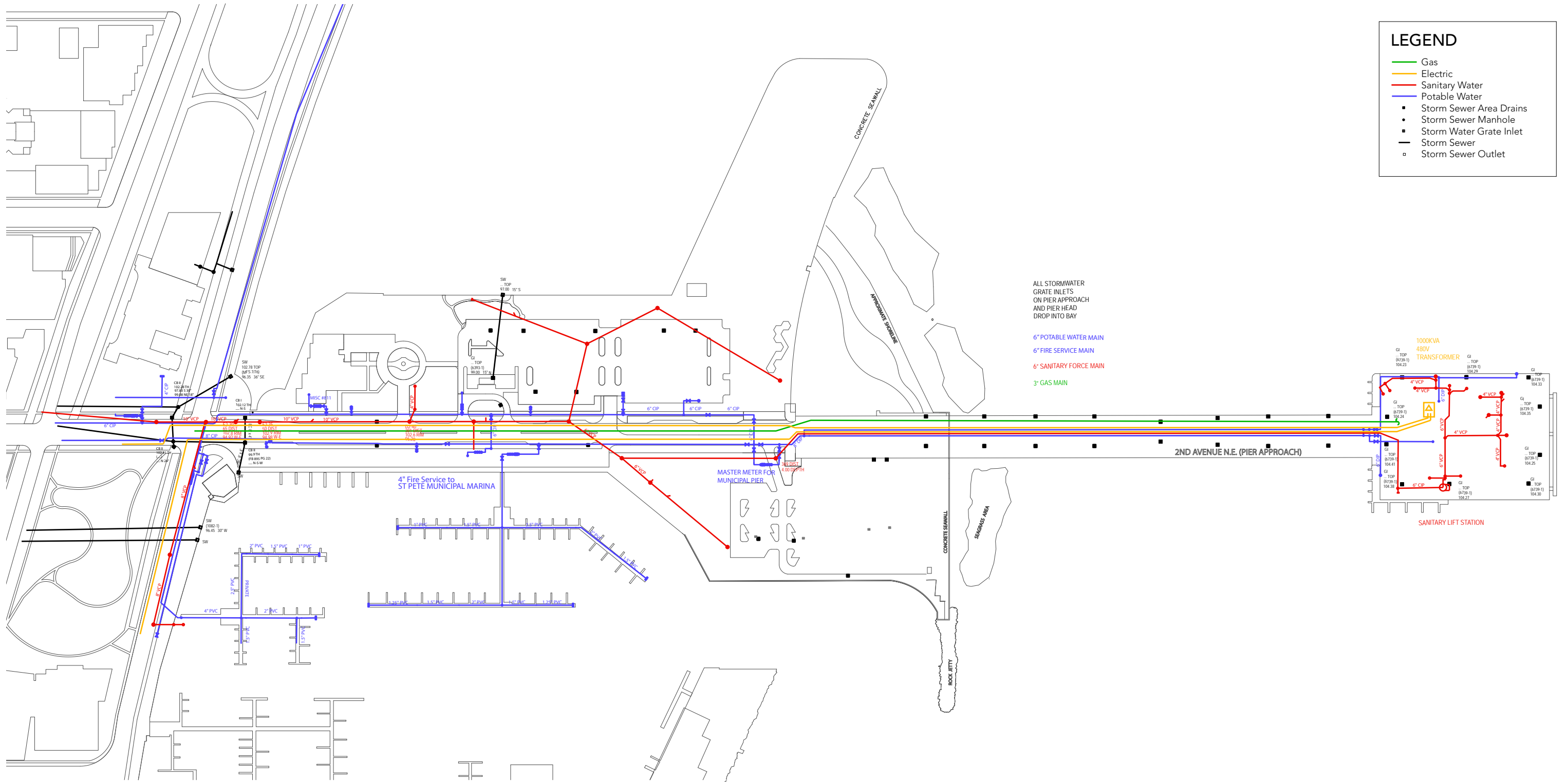


Figure 3.32 Existing Site Services Plan

ARCHITECTURAL CRITERIA

The new Pier is expected to be a new landmark for the City of St. Petersburg, the region of Tampa Bay and Florida. It is intended as an icon, a representation of the City, the ambitions of its people, and its relationship to the Bay. It is also intended to be an observatory, a Lens both back to the City and onto the Bay itself that frames the City's inextricable link to the water, enhancing the residents' view of their present and future.

As it is intended to be a flexible and functional resource for the community for the next 75 years, it should be planned and designed with the principles of quality, durability, flexibility and operational sustainability. The Pier shall be designed to meet the criteria for a 100-year return period design storm event.

Key Concepts

The following are key concepts to be implemented in the design of the new Pier, as presented in the *Pier Advisory Task Force Report*, which appears as Appendix H of this document:

- Proximity to and integration into the existing urban fabric and waterfront
- The creation of comfortable and attractive pedestrian walkways and pathways
- Optimizing accessibility by way of trolleys and public transportation
- Program should begin directly at the main entry of the Pier
- The new Pier should function as a "destination"
- The new Pier should be "one of a kind and unique" relative to its adjacent surroundings
- Short walking distances between attractions
- The new Pier should be attractive to both locals and visitors in order for revenue generating activity to flourish
- Preservation of views to and from the City and Bay
- Energy efficiency
- Enhanced accessibility for persons with disabilities

ARCHITECTURAL CRITERIA (continued)

Sustainable Planning and Design

The principal goal of sustainable design is that new developments only use the amount of energy absolutely necessary in an effort to reduce the depletion of natural resources. Sustainable design, performed correctly, should pay equal weight to the people, the environment, and cost, in order to create the optimum building for the present and the future.

The basic goals of sustainable design are:

- To design energy efficient buildings and systems to reduce energy use
- To use recycled materials and reduce energy consumption to minimize one's impact on the environment
- To improve the indoor quality of life for the better health and well-being of occupants

Achieving these goals can provide the following benefits:

- Reduce energy and operating costs
- Reduce the impact on the environment
- Promote good health and increase productivity
- Create a positive public image

A sustainable ethos permeates the new Pier. While the project is not currently seeking LEED Certification, its goals are based on LEED Silver standards, and are encompassed by five major categories: Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality.

Beyond the simple use of sustainable materials, the project seeks to minimize environmental impact throughout the building process from initial project mobilization to the reuse and recycling of demolished components. Sourcing as much material locally as possible will be an elemental part of the building process. In order to create a successful project for the City of St. Petersburg, these strategies will not be considered as "add-ons" or "special features," but rather as integrated components of the overall design process. Durable, environmentally preferable products will be specified including certified wood, post industrial and post consumer recycled materials, concrete with fly ash and low-VOC (volatile organic compounds) materials.

In addition, the Lens Canopy is designed to potentially accommodate an array of photovoltaic panels on its north side and wind turbines on its south side, as described in Figure 3.33. These renewable technologies would be capable of generating energy for the project from the wind and sun. The tilt of the Canopy can improve the efficiency of the solar panels while the turbines can benefit from the windy environment of the Bay.

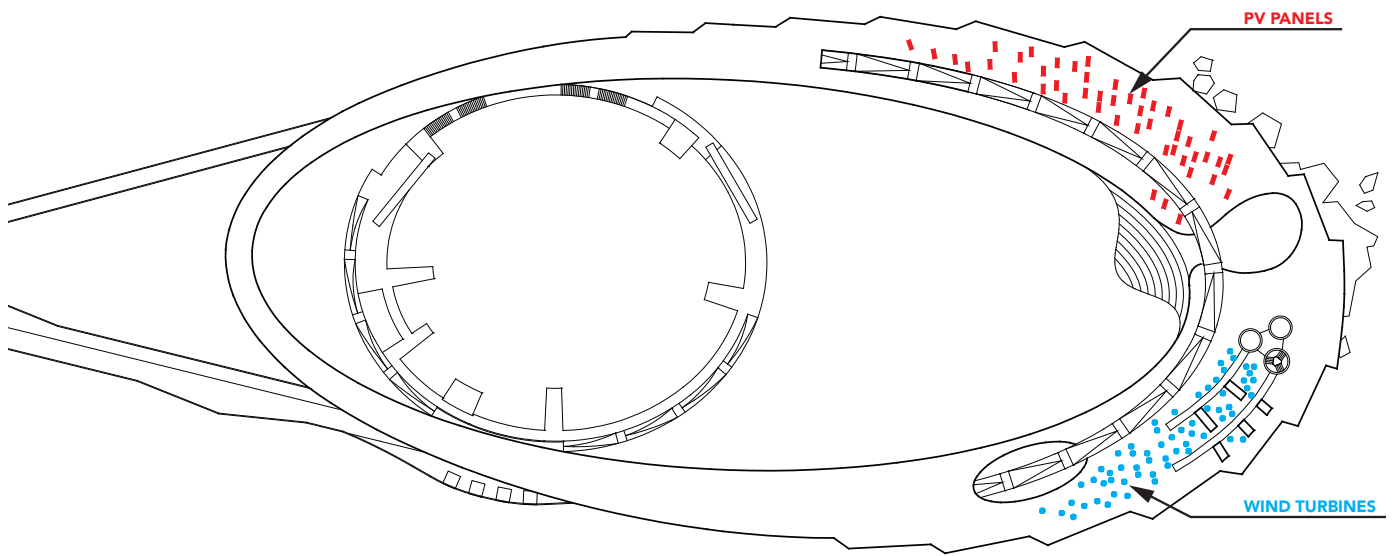


Figure 3.33 Potential Photovoltaic Panel and Wind Turbine Array

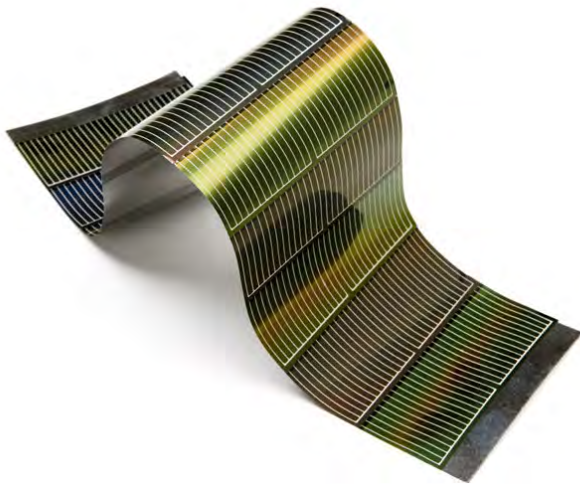
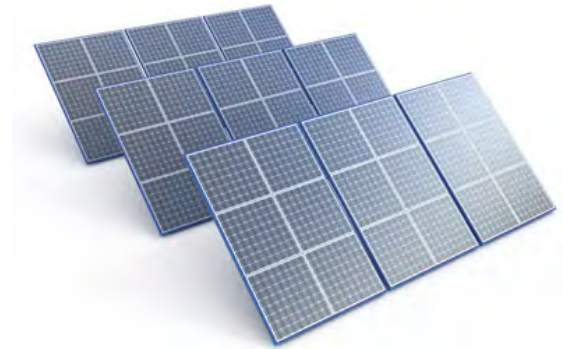


Figure 3.34 Potential Sustainable Lens Features: Examples of Photovoltaic Panels

Through the integration of a bicycle and recreation path, the design of the new Pier emphasizes active lifestyles by engaging with the existing community of physically active city dwellers and the growing community of cyclists.

The multiple approaches taken by the A/E team with respect to sustainable principles can provide a permanent, adaptive platform that supports the site and the City's health and longevity, not only in terms of energy, water and ecology, but for the life and culture that emerges as a result of this resilient system.

Building Massing

The new Pier's massing will be conditioned by a complex range of factors, including, but not limited to:

- Programmatic functions
- Integration within existing context
- Site orientation
- Outdoor space
- Relationship to the Uplands
- Boating
- Urban fabric
- Views
- Relationship to water
- Shading
- Accessibility
- Circulation
- FAA height limitations



Figure 3.35 Potential Sustainable Lens Features: Examples of Small Scale Wind Turbines

ARCHITECTURAL CRITERIA (continued)

Albert Whitted Airport Flight Path Study

The proximity of Albert Whitted Airport to the south of the St. Petersburg Pier defines a number of height restrictions for the project. These are described on pages 3-32 thru 35 of this document. Figure 3.36 illustrates the relationship between the Pier and the airport's two runways. While the southwest-northeast flight path does not interfere with the Pier, the north-south flight path overlaps with the east-west axis of the Pier. Though the heights of all structures to be erected in this zone of interference are below the limits established by the Federal Aviation Administration Regulations, the A/E team has studied the reflection of the sun on the Canopy in order to understand the effects of glare on planes descending towards the runway from the north.

Figure 3.37 delineates the effects of the sun at midday, the only time at which the sun's position relative to the Canopy aligns with the north-south flight path. During both summer and winter, it has been determined that the angle of the sun's reflection will not interfere with the pilot's viewing range upon landing. However, as the design develops, the A/E will conduct ongoing studies in order to minimize any possibility of visual interference. Additionally, portions of the Canopy will be treated with an anti-glare protector.



Figure 3.36 Albert Whitted Airport Flight Paths

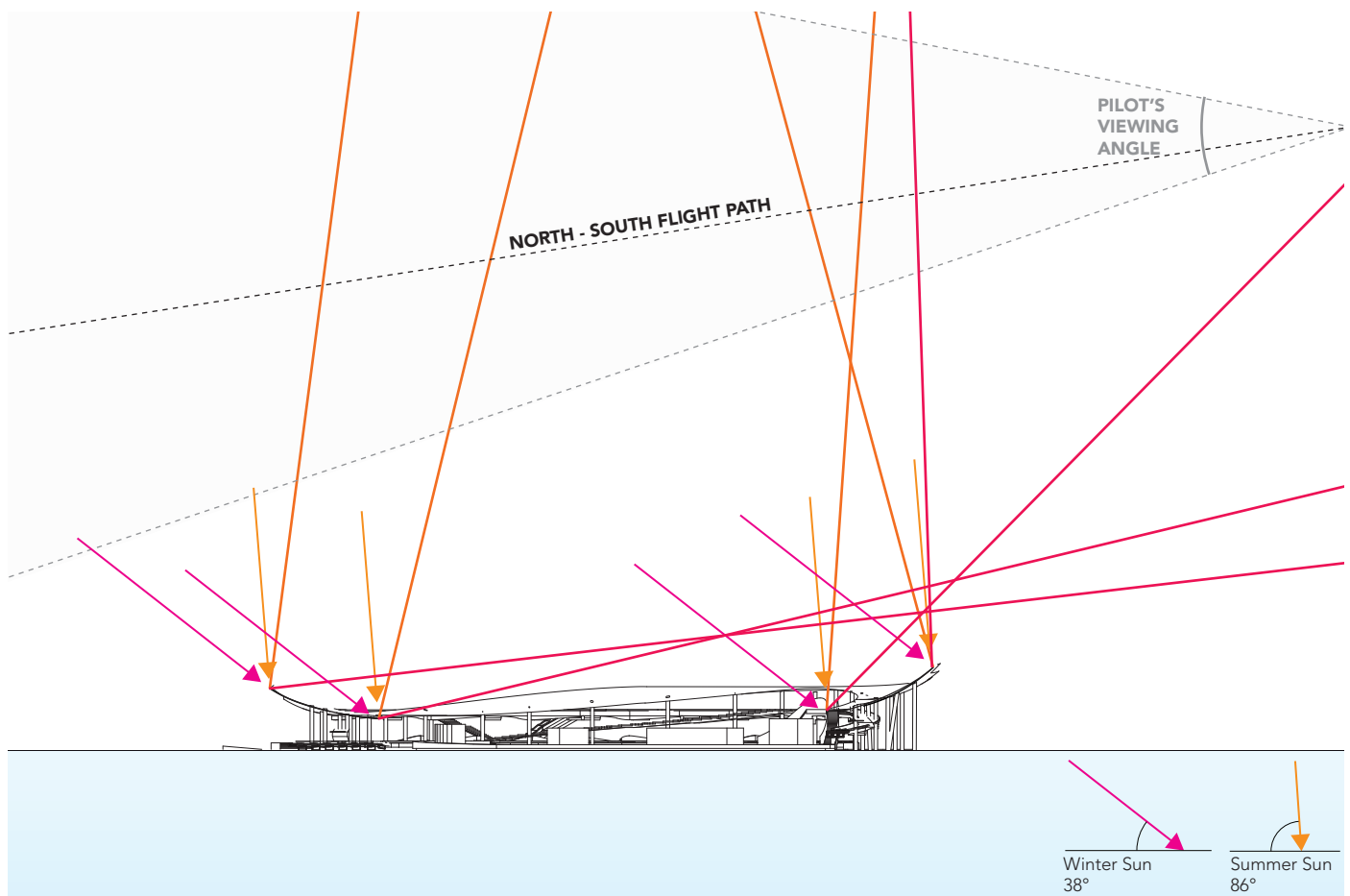


Figure 3.37 Midday Sun Reflection Study Along North-South Flight Path

ARCHITECTURAL CRITERIA (continued)

Shading Study

Figures 3.38 and 3.39 illustrate shadow studies completed for the new Pier during summer and winter solstices. The Canopy has been designed to maximize shade in the summer to protect visitors from the harsh sunlight and to create a pleasant environment for waterfront activities. In the summertime, the Promontory and areas covered by the Canopy are sheltered from the sun for a majority of the daytime.

Materials and Finishes

Materials for the project shall be chosen to provide a long service life and performance consistent with the design requirements and to provide adequate structural capacity to support the anticipated loads for this type of facility. In general, concrete is highly durable in a marine environment. Where steel is used, consideration shall be taken as to whether to use stainless steel, hot-dipped galvanizing, epoxy coatings and/or some type of cathodic protection system.

Material used in the Pier structure shall meet the following criteria:

- Steel pipe shall be to ASTM A 501 and A 53
- Structural steel shall be as follows:
 1. Rolled sections, plates and angles: ASTM A 36, ASTM A 572 and or ASTM A 992
 2. Hollow structural sections: ASTM A 500, Grade B
- Coating system for structural steel: zinc-coated or galvanized by the hot-dipped process in accordance with the requirements of ASTM A 123 and/or A 153 as applicable, after fabrication
- Structural bolts, nuts and washers: ASME/ANSI B 18.2.2 and ASTM A 325
- Anchor bolts: ASTM A 307, A 449, or ASTM F 1554
- Marine concrete: 5,500 psi minimum at 28 days FDOT Class IV Portland cement concrete with calcium nitrate for superstructure and silica fume for substructure for an extremely aggressive environment with a maximum water cement ratio of 0.40
- Reinforcing steel: ASTM A 615, A 616, A 617 and A 706 as applicable
- Stainless steel: ASTM Type 316L stainless
- Electrical and lighting equipment shall be NEMA rated

A number of materials were considered for the Canopy: precast concrete panels, lightweight concrete panels and aluminum panels. The table Figure 3.40 summarizes these materials' attributes. Due to their optimum balance of cost, performance and architectural qualities, aluminum panels were concluded to be the most appropriate at this stage in the design process.

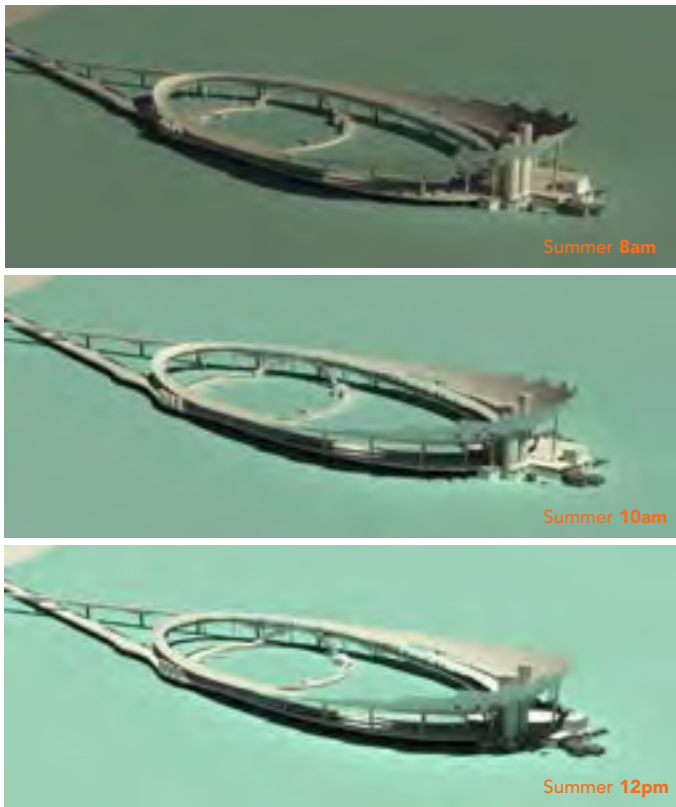


Figure 3.38 Summer Shading Study

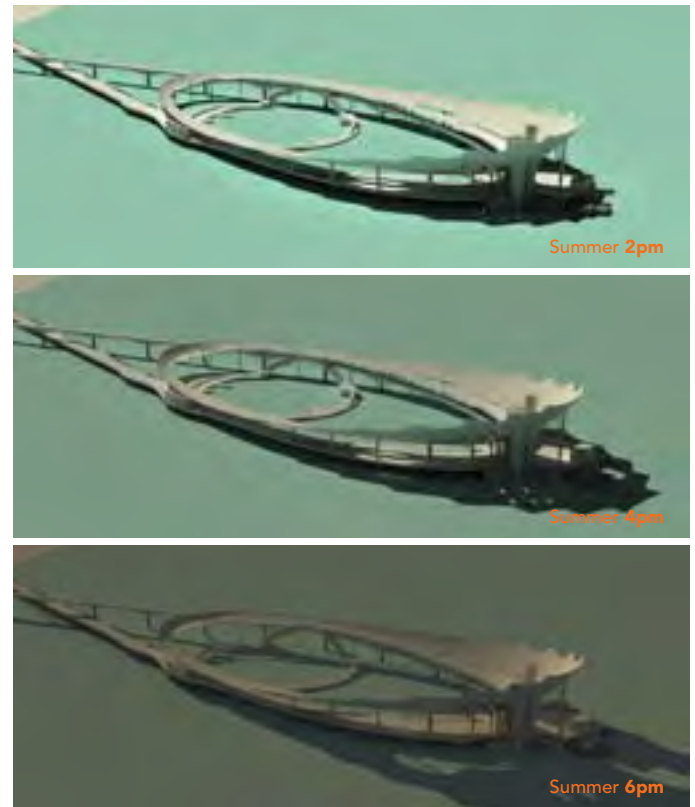
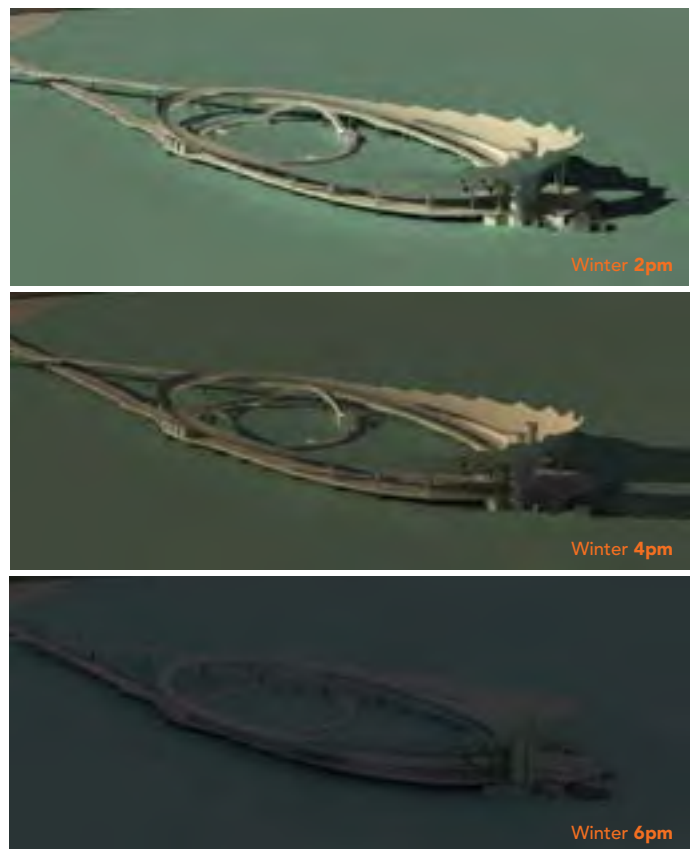


Figure 3.39 Winter Shading Study



ARCHITECTURAL CRITERIA (continued)

Canopy Materials

Over the course of the BOD phase, the design team looked at several options for the material of the Canopy, taking into consideration life cycle and maintenance cost, initial material cost, constructability, and visual impact upon completion and long term. The material understood by the team to best meet these criteria is 5086 Aluminum Alloy with a high grade coating. This alloy has very good corrosive resistance in harsh seawater environments and is typically used in boat building and other constructions near or on water. A Kynar 500 base coating with a minimum 20 year, as much as 30 year warranty allows for a long serviceability life span. The following attributes render this material appropriate for the construction of the Canopy:

- Fits the current budget goals while maximizing the Canopy's iconic look
- Good strength to weight ratio, minimizing the impact of foundations
- Panels are easily erected, replaced, or modified
- Self-cleaning and not susceptible to algae, mold, or staining
- Long-term color consistency, regardless of exposure to the sun and elements

As the team moves into the next phases of the project, large scale performance mock-ups are being planned in order to continue to explore the constructability, life cycle and maintenance, and aesthetic criteria that must be met. At this juncture the aluminum panels are anticipated to be approximately 30 sq. ft. in size and attached to a galvanized sub structure, which is in turn attached to a galvanized super structure producing a compatible assembly system.



Figure 3.40 Example of Metal Panels on a Metal Frame Sub Structure

ARCHITECTURAL CRITERIA (continued)

Ipe Specification Data

Ipe (also known as Ironwood) is often referred to as one of the hardest woods known to man and will outlast most all other decking products on the market. Its resilient properties are complemented by a rich and warm appearance.

Family Name

Tabebuia avellanedae, Tabebuia ipe and Tabebuia serratifolia of the Family Bignoniaceae.

Common Names

Ipe, pau d'arco, ipe tabaco, bethabara, lapacho, ebene vert, amata prieto, ironwood, greenheart, amapa, cortez, guayacan, guayacan polvillo, flor amarillo, madera negra, tahuari, lapacho negro, Brazilian Walnut.

Height/Weight

Trees routinely grow to 150 ft., and can reach 200 ft., with trunk diameters of 6 ft. and boles clear to 60 ft. or more. Weight varies between 60 and 75 lbs/cu. ft. with a specific gravity of 1.08.

Properties

Air dries rapidly with very slight checking or warping. Highly resistant to insect and fungal attacks. Exceeds ADA requirements for Static Coefficient of friction in a wet environment.

Dimensional Stability

Stable, minimal checking and warping

Maintenance

Low

Fire Rating (NFPA)

Class A

Service Life

Over 40 years

Movement In Service

Low

Bending Strength (PSI)

26,000

Modulus Of Elasticity (PSI)

3,308,000

Hardness (PSI)

3,650



Figure 3.41 Example of Ipe Boardwalk

ARCHITECTURAL CRITERIA (continued)

Pier Access

The St. Petersburg Pier presents a range of entry conditions accommodating staff and visitors, including:

- Welcome Mat
- Hub
- Overwater Bridge
- Overwater Drive
- Promontory

The Pier will include access points for support functions such as shipping and receiving of supplies and materials:

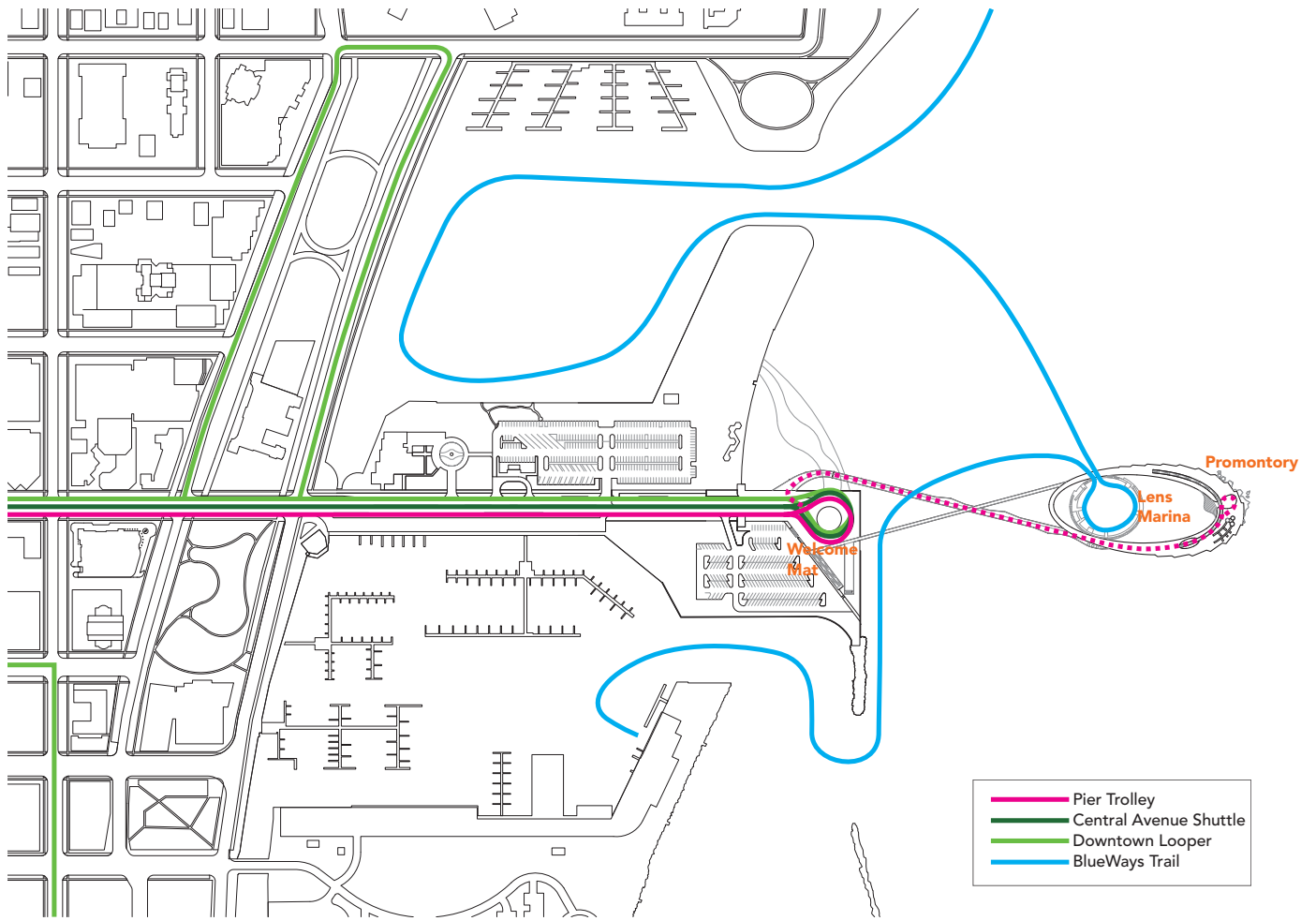
- Hub
- Marina
- Promontory

There will be adequate vehicular access from an improved street, the design of which will be approved by the City's Engineering and Transportation and Parking Management Departments. All areas of the building and site must conform to codes and regulations with respect to accessibility, specifically the Americans with Disabilities Act (ADA) and the Florida Building Code, which impact the design of building elements such as:

- Circulation routes, both interior and exterior
- Parking
- Entrances and doors
- Ramps and stairs
- Restroom facilities
- Drinking fountains
- Emergency alarm systems
- Signage

The new Pier will expand existing site access routes, with the BlueWays Trail running through the Lens Marina (providing kayakers and canoers many amenities), and the Downtown Looper Central Avenue Trolley stopping at the Welcome Mat. An open-air electric tram is being considered as the means of transportation to the end of the new Pier. Figure 3.42 describes these improved access routes.

As a general guideline highlighted in the *Vision/Guiding Principles and Context for the Preparation of a Downtown Waterfront Master Plan* (Appendix I), public access to the downtown waterfront will be prioritized in the following hierarchy: pedestrians, bicyclists, public transit and motorized vehicles. Garbage pickup will occur at the location of the existing dumpster west of the Pelican Lot; garbage truck access for the Overwater Bridge will not be needed. Small service vehicles will bring trash from the new Pier to the dumpsters.



ARCHITECTURAL CRITERIA (continued)

Pier Trolley Implementation

The Pier Trolley provides free transportation between the Dolphin and Pelican Lots and the St. Petersburg Pier. This program is administered by the St. Petersburg Downtown Partnership in cooperation with the City of St. Petersburg and the Pinellas Suncoast Transit Authority.

Figure 3.43 describes the Pier Trolley circuit for the new Pier. The trolley is expected to complete a circuit from the Pelican and Dolphin Parking Lots to the Promontory and back in approximately 15 minutes.

The development of the new Pier provides the opportunity to introduce more ecologically sensitive transportation, such as electric or solar trolley, with possibly more seating and ease of accessibility.

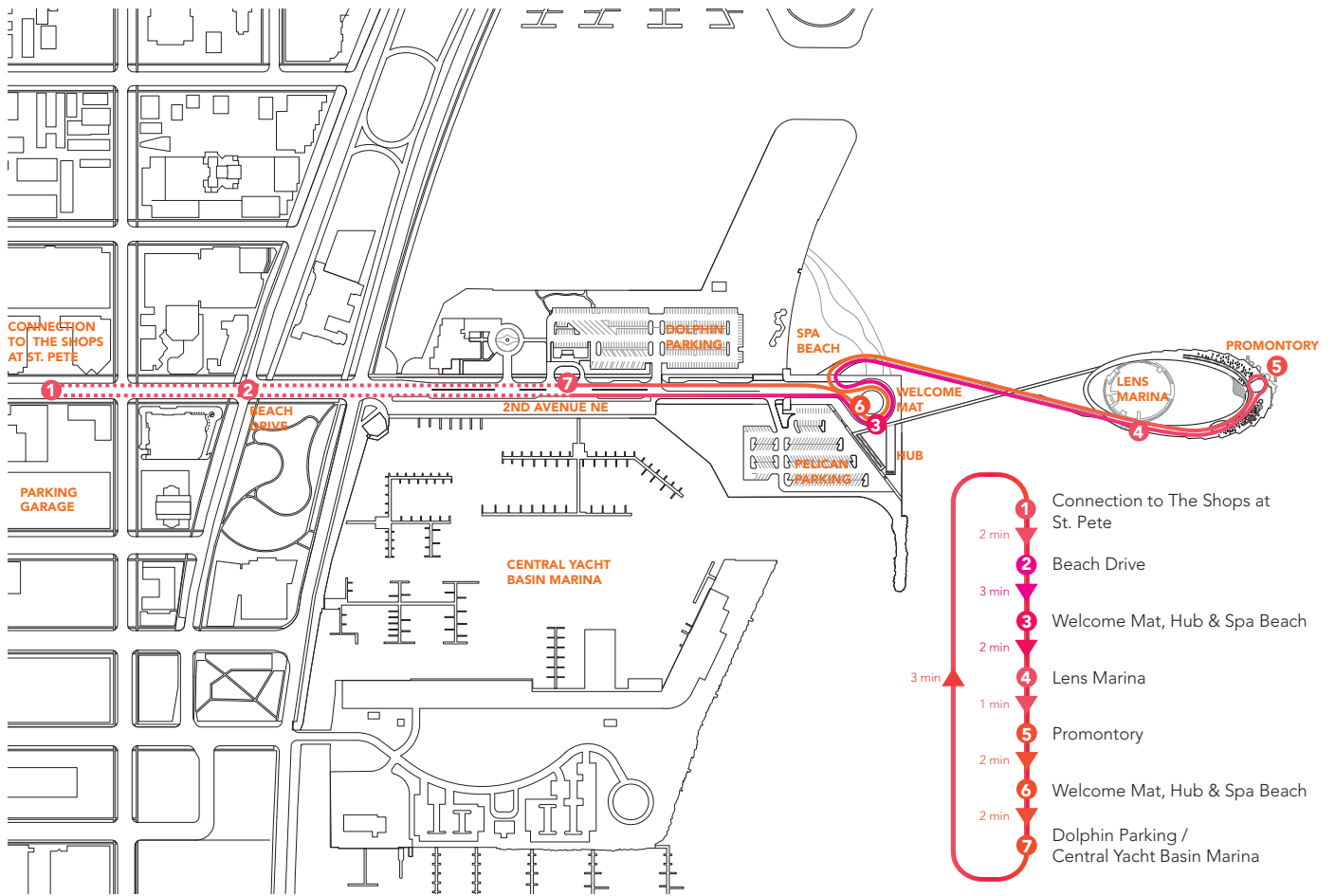


Figure 3.43 Pier Trolley Circuit

ARCHITECTURAL CRITERIA (continued)

Parking Facilities

The existing Pier head lot holds 22 car parking spaces and the Pier approach is the site of 4 loading spaces, 25 reserved valet car parking spaces and 44 metered car parking spaces. These existing spaces will be eliminated. Onsite parking will be provided via existing parking lots located on the Uplands. To the north of 2nd Avenue NE, the Dolphin Lot, which is currently the site of 312 car parking spaces and 6 bus spaces. There is a possibility of increasing the number of parking spaces to 360 through a reconfiguration and restriping of existing spaces. While it is currently the site of 250 car parking spaces, the modified Pelican Lot, south of 2nd Avenue NE on the Uplands will accommodate up to 157 vehicles directly adjacent to the new Hub program component.

The following parking spaces may be required on site:

- Persons with disabilities
- Ambulance/police/emergency vehicles
- Delivery vehicles
- Trash collection vehicles
- Administration visitors
- Bicycles
- Tours and school buses
- Periodic requirement: contractors, food trucks, etc.

Accommodations will be made at the Welcome Mat for accessible parking as required by code. Observations have concluded that all parking spaces are filled during peak event activity, but do not fill during normal weekly peak Pier activities. The new Pier will reduce the demand for parking spaces associated with commercial and retail uses. Figure 3.44 describes the modified parking configuration for the new Pier.

Signage and Wayfinding

The new Pier will be equipped with extensive signage and wayfinding amenities. Site and building directories, signage, and informational devices shall be designed for easy access by persons with disabilities. All signage must comply with current regulations and guidelines published by recognized accessibility advocate groups.

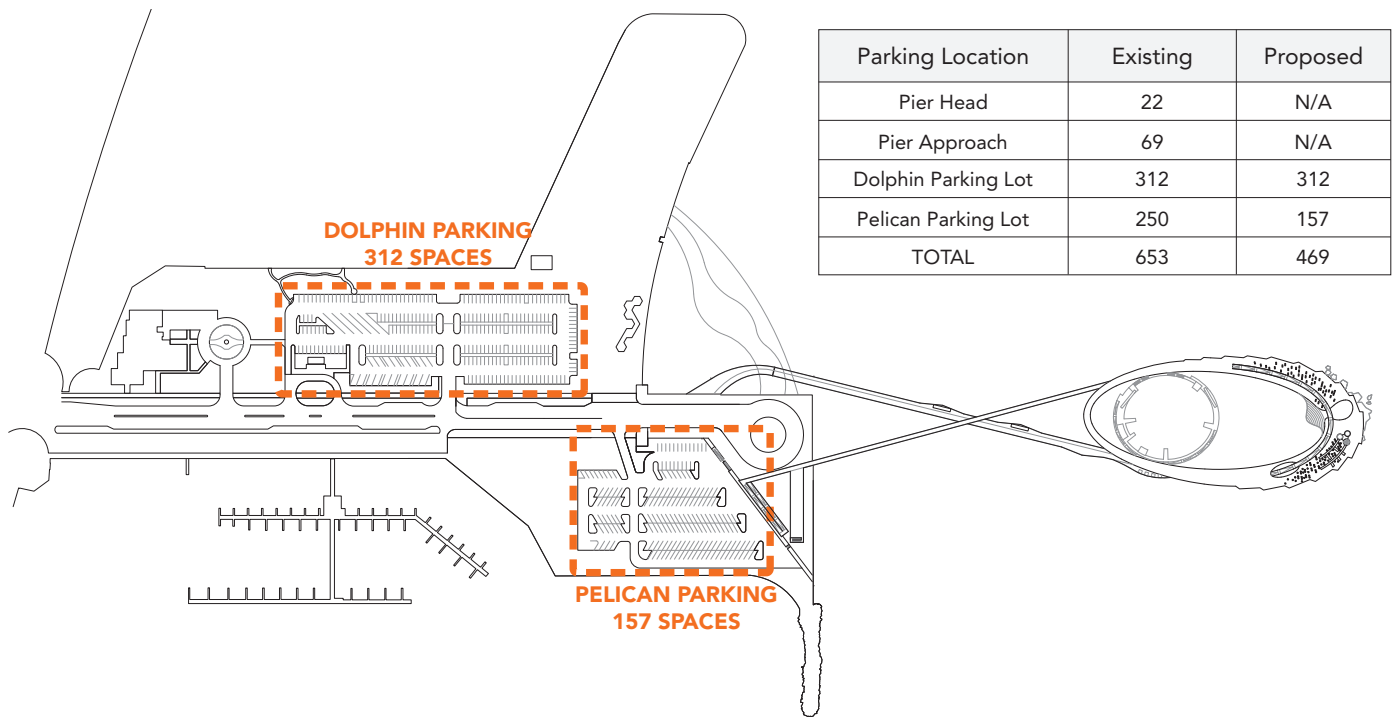


Figure 3.44 Modified Parking for the New Pier

ARCHITECTURAL CRITERIA (continued)

Public Amenities

The following are public amenities anticipated to be included in the project.

The Hub / Welcome Mat

- Restrooms & changing stations
- Drinking fountains
- Infrastructure for special events
- Beach access

Overwater Drive

- Shade canopies
- Drinking fountains
- Seating

Marina

- Restrooms & changing stations
- Drinking fountains
- Seating

Promontory

- Restrooms & changing stations
- Drinking fountains
- Concessions shop
- Seating

Overwater Bridge

- Drinking fountains

Revenue Generating Amenities

The following are opportunities for private sector, revenue-generating amenities that are not built-out within the \$50 million project. All utility and stub-outs are however included in the project:

The Hub / Welcome Mat

- Bayside dining
- Retail/concessions

Marina

- Concessions stand
- Bait shop
- Kayak & passive watercraft rental

Promontory

- Bayside grill

Lighting Systems

The lighting design will support the diverse nature of the Pier's functions while seamlessly integrating with the architecture. The lighting design, encompassing both natural daylight and electric light sources, will place its primary focus on the recreational aspect of the site. The lighting will serve as a motif to guide the visitor, reinforcing movement and wayfinding.

Energy-efficient LED lighting will be prioritized in the majority of the project's lighting systems.

The new Pier shall feature fully code compliant lighting, including emergency and FCAA lighting. In addition to code lighting, architectural lighting shall be provided in the following locations:

Hub and Welcome Mat

High level pole lighting and low level bollard lighting will provide inviting retail lighting at the Hub while encouraging nighttime activity and events at the Welcome Mat, with a sensitivity to overspill into the water, which can affect sea life.

Overwater Bridge

Low level bollard type fixtures rendering the Overwater Bridge as a strip of light without overspill into the surrounding water.

Overwater Drive

High level lighting will be focused primarily on the Overwater Drive's area of activity, echoing the bridge, as bright single strip of light.

Marina

Low level fixtures will enhance and emphasize the shape of the Underwater Feature, while providing the necessary light for Marina activities.

Promontory

General lighting will prioritize way-finding, while architectural lighting will create zones of more intense light to attract visitors to areas of interest and activity.

Lens Canopy

Nighttime lighting will transform a visitor's experience of the space, allowing the underside of the canopy to function as the backdrop for events and activities. Lighting will allow the top of the Canopy to be visible from the Uplands while offering opportunities for light shows, movies, or a softly lit space.

Underwater Feature

Lighting emphasizing the existing piles, from the mud line upwards, will create both an attraction for sea life and a spectacle for visitors.

ARCHITECTURAL CRITERIA (continued)

Pier Activities

In addition to functioning as a new icon for the City of St. Petersburg, the Lens is intended to function as a new space for collective experiences. The new Pier expands on the existing Pier's activities with programming activities are targeted towards persons of all age groups and interests. Though by no means exhaustive, the following is a list of possible activities at the new Pier:

- buy a coffee, a cold soda, a hamburger, french fries or a beer
- watch live entertainment and dance
- rent a kayak, canoe or pedal boat at the Marina
- ride an elevator to elevated viewing platforms and balconies and watch the sunrise over Tampa Bay or the sunset over downtown
- buy bait, fish at the Promontory or the north-east side of the Marina, and feed the pelicans
- dine at a water's edge restaurant
- rent a pedicycle or ride a bike
- experience a variety of educational opportunities at the Promontory and the Learning Steps
- watch an underwater light show in the center of the Lens
- use the 18,000 sq. ft. of shaded gathering space for a party or community event.
- surf the internet via WiFi
- purchase a souvenir
- rest in the shade on public benches, tables and chairs
- use a public toilet at the Hub, the Marina or the Promontory
- park your car at the Pelican or Dolphin Lot and catch a trolley out to the end of the Pier
- experience 360° views from all areas on the Pier
- enjoy extensive shaded walkways
- drink from public water fountains



Figure 3.45 Pier Activities

ENGINEERING CRITERIA

General Technical Specifications

The project will be governed by many codes and standards as outlined below. The project shall have a design life of 75 years. The new Pier shall be categorized as a Risk Category II structure.

Marine Engineering Criteria

The proposed Pier will be a pile supported structure designed to support loads similar to those of the existing Pier. In the proposed design the Overwater Bridge, an elevated walkway loop that travels from the south at the landward side to the north end of the Lens, will be supported by 4'-0" diameter concrete caissons at 100 ft. o.c. The Overwater Drive, an elevated roadway loop that travels from the north at the landward side to the south at the south end of the Lens will be supported by (3) 18"x18" precast concrete piles at each pile bent, with pile bents at 60 ft. o.c. The outside piles at each bent will have an opposing 15° batter to resist lateral forces. Although loading for the new Pier is similar to the existing Pier, investigations must be conducted to ensure that final pile selection and layout will be capable of supporting the structure. After analyzing the soil, final pile embedment can be determined for the required vertical and lateral loading that each pile will be required to resist.

Marine engineering codes governing the project include:

- Florida Building Code (2010) – Chapter 18 (soils and foundations) and 31 (marine structures)
- FDOT Standard Specifications for Road and Bridge Construction
- AASHTO LRFD Bridge Design Specifications, 6th Edition (2012)
- City of Saint Petersburg Engineering Design Standards
- City of Saint Petersburg Codes and Ordinances
- OSHA Regulations
- Unified Facilities Criteria (UFC) – Design of Pier and Wharf Structures
- Design of Pier and Wharf Structures – Unified Facilities Criteria (UFC)
- Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves – NFPA 307

The Florida Building Code stipulates that structures seaward of a coastal construction control line (CCCL) need to respond to requirements for erosion, scour and loads of a 100-year storm event including wind, wave, hydrostatic and hydrodynamic forces acting simultaneously with dead and live loads. These requirements also indicate that all habitable major structures be elevated and anchored to an adequate pile foundation.

Although fishing piers are not considered to be a habitable major structure, their function is for human use. Chapter 62B-33, Florida Administrative Code (Rules and Procedures for Coastal Construction and Excavation) has specifically identified the minimum design storm event for pier construction. Rule 62B-33.007 (4) (k), Florida Administrative Code, states "Fishing or ocean piers or the extension of existing fishing or ocean piers shall be designed to withstand at a minimum the erosion, scour and loads accompanying a twenty (20)-year storm event. Pier decking and rails may be designed to be an expendable structure. Major structures constructed on the Pier shall be designed for the wind loads as set forth in the Florida Building Code. Pile foundations shall not obstruct the longshore sediment transport and shall be designed to minimize any impact to the shoreline or coastal processes."

The Florida Department of Environmental Protection (FDEP) requires permits for construction seaward of the coastal construction control line and 50 ft. setback. The General Criteria for a coastal construction control line is described in the Florida State DEP 2012 Rules and Procedures for Coastal Construction and Excavation. "The beach and dune system is an integral part of the coastal system and represents one of the most valuable natural resources in Florida, providing protection to adjacent Uplands properties, recreational areas and habitat for wildlife. A coastal construction control line is intended to define that portion of the beach and dune system which is subject to severe fluctuations caused by a 100-year storm surge, storm waves, or other forces such as wind, wave, or water level changes. These fluctuations are a necessary part of the natural functioning of the coastal system and are essential to post-storm recovery, long term stability and the preservation of the beach and dune system. However, imprudent human activities can adversely interfere with these natural processes and alter the integrity and functioning of the beach and dune system. The control line and 50 ft. setback call attention to the special hazards and impacts associated with the use of such property, but do not preclude all development or alteration of coastal property seaward of such lines."

ENGINEERING CRITERIA (continued)

Foundation Selection and Design

The piles that will support the new Pier must be engineered to withstand not only the dead and live loads of the Pier, but also the loads from hurricane winds, breaking waves, and lateral currents. There are several pile type options that can be used to form the foundation of the Pier. Although not recommended, reuse of existing piles is a possibility after a thorough inspection of their current condition is completed. Driving new piles is another option as well. Additional information related to the existing piles and other engineering concerns that was discussed in a meeting concerning general site conditions can be found in *Appendix D: General Site Conditions Meeting Minutes, June 27, 2012 (McLaren Engineering Group)*.

New piles can be made of steel, timber, or prestressed concrete. Each material option has its advantages and an analysis weighing function with cost is necessary to determine the optimal material for final design. A preliminary analysis of foundation types follows:

Existing Piles

Reusing the existing piles is not recommended. The existing piles are approximately 90 years old and, in many cases, have been condemned, driving the decision to demolish the existing Pier. The location and orientation of the existing piles in relation to the intersecting new Pier would also be a limitation. However, the existing caissons under the Inverted Pyramid building have potential for reuse to support the offshore components of the new Pier.

New Steel Piles

Steel piles are generally either pipe piles or rolled steel H-section piles. Using steel as a pile material has the advantage of being easy to handle with respect to cutoff and extension to the desired length during installation. They have a high load-carrying capacity and can penetrate hard layers such as dense gravel and soft rock. However, they are relatively costly and are subject to corrosion. Due to the corrosive nature of a coastal environment, epoxy coatings must be applied to resist the effects of salt water.

Prestressed Concrete Piles

Concrete piles are reinforced to resist the bending moment developed during pickup and transportation, the vertical load and the bending moment caused by a lateral load. They can be subject to hard driving, can be easily combined with a concrete superstructure and are corrosion resistant. However, they can be difficult to transport in some locations and achieving proper cutoff during installation may be difficult. Despite this, concrete piles may be the best option as concrete is resilient in coastal environments and is not affected by marine borers.

Concrete Caissons

Concrete caissons are reinforced to resist the required vertical load and the bending moment caused by a lateral load. In this application, the caisson would act like a large concrete pile. A hole would be bored to the desired depth and a sacrificial spiral weld pipe form would be sunk into the hole. The caisson would be open to the bottom. A reinforcement cage would be lowered into the pipe form and the form would be filled with concrete. The spiral weld pipe form would remain in place. The caisson can be easily combined with a concrete superstructure and the concrete portion of the caisson is corrosion resistant. An epoxy coating can be applied to the sacrificial pipe form if desired for cosmetic reasons. Using pipe as a form has the advantage of being easy to handle with respect to cutoff and extension to the desired length during installation. A concrete caisson may be the best option for the walkway support as concrete is resilient in coastal environments and is not affected by marine borers.

Pile Caps

Pile caps evenly distribute the concentrated loads from the superstructure of the Pier to the supporting pile group. Orienting the caps transverse to the length of the Pier provides improved lateral stiffness for environmental forces experienced during hurricane and tropical storm events. A precast concrete pile cap at the walkway caissons would expedite construction. An oversized recess in the pile cap would slip over the top of the caisson and be grouted in place. A formed and pored pile cap at the roadway piles would be desired over a precast pile cap. The batter piles at the roadway bents would complicate alignment of the pile tops with a recess.

ENGINEERING CRITERIA (continued)

Wind and Wave Load Criteria

Wind loads for the new Pier shall be calculated based on ASCE 7-10 standard utilizing Risk Category II and Exposure D. This results in a maximum wind load of 141 psf at the top of the Canopy and 127 psf at the lower, more horizontal sections. Due to the unique shape and response characteristics of the structure, wind tunnel analysis will be required to determine the wind pressure more accurately. Analysis of wind direction and speed is necessary to determine dominant wind-generated wave heights and direction. Moffatt & Nichol provided an Extreme Value Analysis of historical wind speeds at MacDill Air Force Base from 1941 through 2011 in their report entitled 'St. Petersburg Pier Design Competition Metocean and Structural Concept Level Design Basis'. It was reported that the majority of wind comes from the east-north east with winds in excess of 30 mph occurring in some instance in all directions. This is attributable to the passing of hurricane or tropical storm events. Return periods for the 25, 50 and 100-year events found 10 minute wind speeds of 74, 83 and 92 mph, respectively. However, these values did not take into account wind direction and therefore the recurrence of directional extreme winds should be analyzed for final design.

Waves found in Tampa Bay are either locally generated wind waves or offshore swells that enter the Bay from the inlets between Mullet, Egmont, Passage, and School Keys. Locally generated wind waves are the dominant waves that are expected to be found at the proposed Pier location. Design wave heights shall be calculated to include storm surge as this will occur during significant storm events.

Storm Load Criteria

The Pier approach and Pier head are located in a Coastal High Hazard Area and designated a Velocity Zone (VE). The BFE is at 8 ft. The Pier is located in a VE-8 flood zone.

June through November is hurricane season in the Atlantic Ocean and Caribbean Sea with the majority of hurricane activity occurring between August and October. Tampa Bay experiences effects of passing storms, although it is uncommon for the area to receive a direct hit. The effect of these passing storms typically result with high winds, increased wave heights, flooding due to storm surge and increased cross-shore sediment transportation rates. The 25 October 1921 "Tarpon Springs" storm was the last major hurricane to directly hit the St. Petersburg area with wind speeds of approximately 115 mph at landfall.

Hurricanes and tropical storms consist of large wind fields driven by pressure gradients from a central low pressure and temperature gradients in the atmosphere. The winds from these events create storm surges by blowing the ocean water up against the coastline. Flooding results from a combination of a storm or tidal surge and high river stages from heavy rain. The severity of flooding is dependent upon the intensity of the storm event and its duration.

Forces due to wind, waves and storm surge will directly impact the proposed Pier as it is located within the near-shore and surf zone areas. Longshore and cross-shore sediment transports are natural processes that occur at the project location. During storm events, cross-shore sediment transport rates are dominant, resulting in erosion as sand is deposited to offshore sandbars. The effects of this on the Pier takes the form of scouring around the piles, with piles within the surf and swash zones being the most affected.

The Federal Emergency Management Administration (FEMA) P-55, Coastal Construction Manual, gives guidance on the construction of residences in coastal areas. Though information pertaining directly to the design requirements of fishing piers is not provided, the content of the Manual focusing on pile foundation design and the effects of erosion and debris impact during storm events may be used in the design of the pile substructure. In general, the methods used to determine base flood elevations, wave heights and wave crest elevation, wave run-up, localized storm erosion and impact loads can be used to determine conservative values for schematic design. These are found in Chapter 3 "Identifying Hazards" and Chapter 8 "Determining Site-Specific Loads". Determination of site-specific wave loads will be determined during the next stage of project development.

Structural Criteria

Structural engineering codes governing the project include:

- Florida Building Code (2010) – Chapter 16 – Structural Design
- FDOT Standard Specifications for Road and Bridge Construction
- City of St. Petersburg Engineering Design Standards
- City of St. Petersburg Codes and Ordinances
- AASHTO LRFD Bridge Design Specifications, 6th Edition (2012)
- AASHTO LRFD Guide Specifications for Design Of Pedestrian Bridges, 2nd Edition (2009)
- FAA Height Restrictions for Albert Whitted Municipal Airport
- OSHA Regulations
- AISC – Design of Steel Structures
- ACI – Design of Concrete Structures
- Precast Concrete Institute Bridge Design Manual

ENGINEERING CRITERIA (continued)

Dimension and Loadings

Referred to as the Overwater Drive, the lower loop of the new Pier, traveling from the north at the landward side to the south side of the Lens is a wider roadway intended for mixed vehicular traffic and pedestrian use. The 12 ft. lane is to be used for emergency vehicle and fire truck access only. The 8 ft. lane is intended to be used by pedestrians. A turn-around area at the end of the Pier with a 35 ft. radius allows vehicles to return to shore. All turning radii and other key dimensions will follow AASHTO standards, but will use low travel speeds that are associated with this facility. Key dimensions are as follows:

Canopy

The Canopy will be subject principally to the wind loads as identified above. A 20 psf live load will be used, though this may be reduced by refinements based on ASCE7 Section 4.9.1.

Overwater Drive

- 20 ft. clear width between railings
- The overall Drive shall be designed to HS-20 loading to accommodate 3 axle/49,000 lb vehicles
- Vehicle access on the Overwater Drive shall be restricted to the public trolley and service and emergency vehicles.
- Vehicle access and pedestrian walkways shall be separated by a change in material, surface markings, or a physical barrier (permanent and/or removable)
- Curbs shall not be used as a form of separation between vehicle and pedestrian walkways
- During special events, the vehicle lane shall be kept clear to allow trolley and emergency vehicle access
- A superimposed deadload (SDL) of 2 to 5 psf will be used
- Bridge expansion joints will be placed to account for AASHTO-proscribed temperature fluctuations

Overwater Bridge

- 10 ft. clear width between railings
- Designed for 100 lbs/sq. ft.
- Pedestrian access only
- A superimposed deadload (SDL) of 2 to 5 psf will be used
- Bridge expansion joints will be placed to account for AASHTO-proscribed temperature fluctuations

Clear Heights

- The clear height between the Overwater Bridge and the Overwater Drive will be 13'-6"
- The clear height between the Overwater Drive and Canopy will be 13'-6"

Railings

- All railings will be a minimum of 42" in height
- Railings along the Overwater Bridge and Drive will be considered pedestrian and will be designed to code standard
- Railings at the Overwater Bridge and Bike Path will be 52" in height

Ramps

- All pedestrian ramps will be ADA compliant

ENGINEERING CRITERIA (continued)

Clearances

The minimum vertical, horizontal and regulatory clearance requirements for bridges shall conform to the requirements shown in the FDOT (Florida Department of Transportation) Plans Preparation, Manual Volume 1, Section 2.10.

Vertical Clearances

1. The vertical clearance of bridges over water is the minimum distance between the underside of the superstructure and the normal high water (NHW) for navigable water crossings or the mean high water (MHW) for coastal crossings. See PPM, Volume 1, Section 2.10 and the FDOT Drainage Manual Section 4.6 for vertical clearance requirements over water. When applicable, vertical clearance is measured at the inside face of the fender system.
2. In a VE zone the minimum elevation of the structure is measured to the bottom of the lowest supporting horizontal structural member. For height of structural members, ASCE 24-05 may be referenced. The FBC 2010 refers to ASCE-24-05 and table 4-1 for minimum elevation of structures (other than parking or storage) located in the VE and AE flood zones.
3. A Category II structure requires the lowest horizontal structural member to be constructed at BFE for parallel members and BFE plus 1 ft. for perpendicular members.
4. The vertical clearance for grade separations over roads or railroads is the minimum distance between the underside of the superstructure and road or railroad. See PPM, Volume 1, Section 2.10.
5. For concrete superstructures classified as moderately aggressive or extremely aggressive due to chloride content, the minimum vertical clearance is 12 ft. above MHW. For steel superstructures, the minimum vertical clearance shall be obtained from the District Maintenance Engineer, but shall not be less than those specified above for the concrete superstructures.
6. The minimum vertical clearance between the design flood stage and the low member of bridges shall be a minimum of 2 ft. This clearance is necessary to allow the majority of debris to pass without causing damage to the structure. This standard does not apply to culverts and bridge-culverts.
7. The minimum vertical clearance for navigational purposes shall be:
 - 6 ft. above the MHW for tidewater bays and streams
 - 6 ft. above the NHW for freshwater rivers, streams, non-regulated/controlled canals and lakes
 - 6 ft. above the control elevation for regulated/controlled lakes and canals

8. For coastal bridges, the vertical clearance of the superstructure shall be a minimum of 1 ft. above the 100-year design wave crest elevation including the storm surge elevation and wind setup. For bridge designs where this criterion cannot practically be met, refer to the FDOT Drainage Manual, Section 4.9.5.

Horizontal Waterway Clearances

Horizontal clearance is defined as the unobstructed clear distance between piers, fender systems, culvert walls, etc. projected by the bridge normal to the flow. The following minimum horizontal clearances shall be provided:

1. For crossings subject to boat traffic, a minimum horizontal clearance of 10 ft. shall be provided.
2. Where no boat traffic is anticipated, horizontal clearance shall be provided consistent with debris conveyance needs and structure economy.

Regulatory Agency Requirements

Vertical and horizontal clearances will also be subject to the requirements of the Coast Guard, Corps of Engineers, Water Management District and any other regulatory agency having appropriate statutory jurisdiction or authority. Such regulatory agency requirements may exceed Department requirements.

Geotechnical Investigation

A geotechnical investigation is necessary for the design of the new Pier. The geotechnical report should describe properties of the soils in the vicinity of the proposed Pier along with its Uplands connection and include all of the data collected, along with engineering analysis and recommendations. In general, the report should cover site terrain and geology including presence or depth of water, a boring plan and logs of exploratory borings, soil classifications and properties, recommendations for the foundation design including vertical and lateral load supporting capacities and design recommendations and values for piles. Information required from the geotechnical report includes:

1. Description of site terrain and geology, including presence or depth of water.
2. Description of exploration and sampling methods.
3. A plan indicating the location of borings and the elevations related to the nearest benchmark. Borings and test pits shall be numbered and located dimensionally in plan.
4. An evaluation of the subsurface stratigraphy and indication of the results in a cross section profile.
5. Logs of exploratory borings, including:
 - Surface elevation
 - Elevation, thickness, description and classification of each soil stratum

ENGINEERING CRITERIA (continued)

- Location and type of soil samples
 - Laboratory and field results at appropriate depth
 - Location of water table
 - Location of obstructions
6. Soil classification and identification shall be in accordance with the Unified Soil Classification System (ASTM D2487) and governing Building Code.
 7. Results of any laboratory tests and procedures, appropriate to the site conditions, including but not limited to:
 - Classification of potential volumetric swell and shrinkage characteristic of cohesive soils by means of Atterberg Limit Test (ASTM D4318)
 - Undrained shear strength of cohesive-friction soils by means of strain controlled triaxial compression tests (ASTM D2850)
 - Soil compressibility by means of one-dimensional consolidation tests (ASTM D2435)
 - Water content (ASTM D2216).
 - Dry density of soil (ASTM D2937).
 - Particle size analysis of soils (ASTM D422)
 - Standard penetration test (ASTM D1586)
 - Samples shall be retained by the MEG and shall remain open to inspection until the foundation work is complete.
 8. Presence of any deleterious substances present in the soil.
 9. Information on settlements to be expected, both short and long term and any expected differential settlement.
 10. Recommendations for the foundation design including vertical and lateral load supporting capacities.
 11. Site coefficient and/or other seismic design criteria as required per pertinent building code(s).
 12. Liquefaction potential analysis and recommendations.
 13. Difficulties that may be encountered during excavation or pile driving.
 14. Existence, influence and treatment of expansive soils.
 15. Lateral design pressures for retaining walls and bulkheads, including:
 - Active and at-rest pressures including the amount of rotation of the wall necessary for active pressures to be valid
 - Passive pressures and coefficients of sliding friction
 - Appropriate passive pressures and coefficients of friction
 - Methods by which surcharges can be included

- Seismic lateral soil force
16. Suitability of site excavated material for use as fill or backfill and general availability of suitable off-site fill if necessary.
 17. Compaction density of fill and backfill throughout the project
 18. Groundwater elevations and anticipated construction problems due to ground water.
 19. Provide recommendations regarding temporary and permanent ground water control, if applicable. Specification of substructure waterproofing, including waterproofing materials and specifications, shall be provided by others.
 20. Presence of alkali or other deleterious material in sufficient quantities to affect the construction materials during construction or during the life of the structure. In addition, the likelihood of corrosion as a problem will be indicated.
 21. Design recommendations and values for piles, including:
 - Skin friction values for uplift
 - End bearing values
 - Lateral bearing values including whether an increase for short duration of loading is permissible. Values to be expressed in terms of nominal pier/pile diameters
 - Minimum spacing requirements between deep foundation elements and/or existing foundations and group reduction factors (if appropriate).
 22. Provide estimated pile driving resistance for recommended pile capacities for bidding purposes, based on recommended minimum delivered hammer energy and estimated pile length.
 23. Provide recommendations for pile load testing, including:
 - Protocol for testing of the deep foundations
 - Number and type of tests to be conducted
 - Criteria for determination of a successful test

ENGINEERING CRITERIA (continued)

Site Work Criteria

Applicable Codes

- AASHTO Policy on Geometric Design of Highways and Streets, 6th Edition (2011)
- AASHTO Guide for the Development of Bicycle Facilities, 4th Edition (2002)
- AASHTO Guide for Design of Pavement Structures, 4th Edition, with 1998 Supplement
- AASHTO Guide For The Planning, Design And Operations Of Pedestrian Facilities, 1st Edition (2004)
- EPA Stormwater Pollution Prevention Plans for Construction Activities
- FLDOT Drainage Handbook (2012)
- FLDOT and FLDEP
- Erosion and Sediment Control: Designer and Reviewer Manual (June 2007)
- Stormwater Loading Rate Parameters for Central and South Florida, Harvey H. Harper (1994)
- Florida's Nonpoint Source Management Program (January 2000)
- Florida's Plan for Implementation of Nonpoint Source Components of Total Maximum Daily Loads (1998)
- FLDOT Drainage Handbook (2012)
- Pollutant Removal with Peak and Volume Reduction in Florida (May 2007)
- Florida Development Manual: A Guide to Sound Land and Water Management (1988)

Mechanical Criteria

Applicable Codes

- Florida Fire Prevention Code (NFPA 101, NFPA 1, FL 44 Rules, FSS 633)
- National Electric Code - NFPA 70
- Florida Plumbing Code (with St. Petersburg amendments for commercial kitchens)
- NFPA 13 – Standard for the Installation of Sprinkler System
- NFPA 14 – Standard for the Installation of Standpipe System
- NFPA 24 - Standard for the Installation of Private Fire Service Mains and Their Appurtenances
- NFPA 307 - Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves
- Fire Alarm Code - NFPA 72
- ASHRAE Standard 90.1-1999
- ASME A 17.1-00 Safety Code for Elevators and Escalators
- ASHRAE – Design Recommendations for HVAC systems
- All lighting based standards will be listed in Lighting Consultant Report
- All security and IT standards will be listed in IT/Security Consultant Report

Mechanical Systems

Elevators and their associated systems will have ventilation requirements as per the International Building Code (IBC) and Florida Building Code. These requirements include venting of the machine room and hoistway shaft. Mechanical cooling may be required and will be evaluated with the elevator consultant.

ENGINEERING CRITERIA (continued)

Potable Water

Applicable Codes

- Florida Fire Prevention Code (NFPA 101, NFPA 1, FL 44 Rules, FSS 633)
- National Electric Code - NFPA 70
- Florida Plumbing Code (with St. Petersburg amendments for commercial kitchens)
- NFPA 13 – Standard for the Installation of Sprinkler System
- NFPA 14 – Standard for the Installation of Standpipe System
- NFPA 24 - Standard for the Installation of Private Fire Service Mains and Their Appurtenances
- NFPA 307 - Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves
- Fire Alarm Code - NFPA 72
- ASHRAE Standard 90.1-1999
- ASME A 17.1-00 Safety Code for Elevators and Escalators
- ASHRAE – Design Recommendations for HVAC systems
- All lighting based standards will be listed in Lighting Consultant Report
- All security and IT standards will be listed in IT/Security Consultant Report

Domestic Water Systems

Water shall be provided from new connections, one for the Welcome Mat and Hub program components and one for the Pier. New meters and backflow prevention devices shall be provided to comply with the St. Petersburg Water Resources Department water and sewer regulations.

The domestic water system may need to be pressurized by a constant pressure electric booster system comprised of three pumps, VFD, control panel, sensors, piping connections and hydro-pneumatic tank located in a water service/meter room. The site water distribution system will be designed in such manner as to:

- Provide potable water in the amount and at the pressure required by the building occupancy and type of plumbing fixtures utilized in the building.
- Prevent contamination from non-potable liquids, solids or gases.
- Maintain a maximum velocity in the water supply piping of 4 fps to prevent noise and decrease the danger of surge pressure shock.
- Prevent water hammer conditions by providing air chambers.

Domestic Hot Water

For bathrooms on the site, hot water will be generated by a local point of use storage-type electric water heater. The tank will be located near the fixtures served to eliminate the requirements for temperature maintenance.

140° F water will be provided to scullery and rinsing sinks. A thermostatic mixing valve will reduce the temperature to 120° F to feed the hand sinks. Floor drains will be provided for general cleaning purposes.

- Size each heater based on a modified Hunters Curve and anticipated fixture unit count. Special equipment demands such as dishwashers shall be added to the water heater load.
- Size the hot water supply and return lines not to exceed 10°F heat loss. Dead ends shall be limited to 20-ft.
- Provide combination shut-off and balancing valves in the hot water return circulating lines.
- Provide insulation on all domestic hot water supply, horizontal cold water piping and return circulation piping.

All piping shall be insulated per the most stringent requirements found in the codes and standards referenced in the general section.

Plumbing Fixtures

All fixtures shall be provided with individual stop valves. Water closets shall be furnished with flush valves and lavatories will be provided with electronic faucets.

- Plumbing fixture accessibility clearances, installation and accessories shall be ADA compliant.
- Plumbing fixtures shall be ultra-low flow water conserving/saving type fixtures, faucets and valves.
- Plumbing fixtures in public areas shall have motion/user sensing devices (with manual by-pass) for fixture operation.
- Drinking fountains shall be provided as indicated on the architectural plans and as required by Code.
- Scald control systems shall be provided in all showers.

ENGINEERING CRITERIA (continued)

Storm Drainage

Applicable Codes

- Florida Fire Prevention Code (NFPA 101, NFPA 1, FL 44 Rules, FSS 633)
- National Electric Code - NFPA 70
- Florida Plumbing Code (with St. Petersburg amendments for commercial kitchens)
- NFPA 13 – Standard for the Installation of Sprinkler System
- NFPA 14 – Standard for the Installation of Standpipe System
- NFPA 24 - Standard for the Installation of Private Fire Service Mains and Their Appurtenances
- NFPA 307 - Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves
- Fire Alarm Code - NFPA 72
- ASHRAE Standard 90.1-1999
- ASME A 17.1-00 Safety Code for Elevators and Escalators
- ASHRAE – Design Recommendations for HVAC systems
- All lighting based standards will be listed in Lighting Consultant Report
- All Security and IT standards will be listed in IT/Security Consultant Report

Stormwater Systems

Stormwater from the roofs will be collected via a system of conventional roof scuppers, exterior and interior leaders and will be discharged by gravity at grade in coordination with the landscape and civil engineer design. The facility will be designed in compliance with the city's redevelopment ordinance for Upland stormwater treatment.

Sanitary Sewer

Applicable Codes

- Florida Fire Prevention Code (NFPA 101, NFPA 1, FL 44 Rules, FSS 633)
- National Electric Code - NFPA 70
- Florida Plumbing Code (with St. Petersburg amendments for commercial kitchens)
- NFPA 13 – Standard for the Installation of Sprinkler System
- NFPA 14 – Standard for the Installation of Standpipe System
- NFPA 24 - Standard for the Installation of Private Fire Service Mains and Their Appurtenances
- NFPA 307 - Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves
- Fire Alarm Code - NFPA 72
- ASHRAE Standard 90.1-1999
- ASME A 17.1-00 Safety Code for Elevators and Escalators
- ASHRAE – Design Recommendations for HVAC systems
- All lighting based standards will be listed in Lighting Consultant Report
- All security and IT standards will be listed in IT/Security Consultant Report

Sanitary Sewage Systems

Sanitary sewage from bathrooms and other plumbing fixtures will discharge by gravity to the building sewer system. Floor drains will be provided in all mechanical rooms with sustainable means of trap priming.

All fixtures will be vented to protect trap seals in accordance with the plumbing code. The main vent stacks will be run through the roof.

For the Pier, a series of lift stations will allow sanitary affluent to discharge to the street sewer main.

ENGINEERING CRITERIA (continued)

Natural Gas

Applicable Codes

- Florida Fire Prevention Code (NFPA 101, NFPA 1, FL 44 Rules, FSS 633)
- National Electric Code - NFPA 70
- Florida Plumbing Code (with St. Petersburg amendments for commercial kitchens)
- NFPA 13 – Standard for the Installation of Sprinkler System
- NFPA 14 – Standard for the Installation of Standpipe System
- NFPA 24 - Standard for the Installation of Private Fire Service Mains and Their Appurtenances
- NFPA 307 - Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves
- Fire Alarm Code - NFPA 72
- ASHRAE Standard 90.1-1999
- ASME A 17.1-00 Safety Code for Elevators and Escalators
- ASHRAE – Design Recommendations for HVAC systems
- All lighting based standards will be listed in Lighting Consultant Report
- All security and IT standards will be listed in IT/Security Consultant Report

Natural Gas Systems

Natural gas service will be provided to fuel domestic water heaters and kitchen equipment. Separate meters will be provided as required.

Gas fired equipment will be piped in accordance with the plumbing code and NFPA 54. An isolation gas cock valve will be provided at each piece of equipment.

Electrical Criteria

Applicable Codes

- Florida Fire Prevention Code (NFPA 101, NFPA 1, FL 44 Rules, FSS 633)
- National Electric Code - NFPA 70
- Fire Alarm Code - NFPA 72
- ASHRAE Standard 90.1-1999
- ASME A 17.1-00 Safety Code for Elevators and Escalators
- ASHRAE – Design Recommendations for HVAC systems
- All lighting based standards will be listed in Lighting Consultant Report
- All security and IT standards will be listed in IT/Security Consultant Report

Electrical Systems

Incoming Electrical Service Requirements & Metering

The existing Pier is fed by a 1000KVA 480V transformer, assumed to be owned by Progress Energy, that also serves the Inverted Pyramid. The new Pier and Hub will each have a new electrical power service to feed associated loads. A dedicated pad mounted transformer by Progress Energy will be required.

Emergency and Standby Power System

There are no planned emergency or standby power systems or fuel storage at present.

Electrical Lighting and Controls

The lighting design for the complex will be a collaboration between Buro Happold and L'Observatoire International, who will develop the lighting concepts and specifications for the lighting fixtures and controls for all spaces. Buro Happold will work closely with the lighting consultant to coordinate the electrical requirements of the selected fixtures.

Fire Detection and Alarm System

A fire alarm system for the assembly areas will be provided. The Hub area shall have a main FACP serving the new Pier.

Lightning Protection

The installation of a lightning protection system is being considered.

Security

Security system requirements will be provided by the specialist security consultant.

Telecom

Telecom system requirements will be provided by the specialist telecom consultant; Verizon is the service provider and Brighthouse is the cable service provider.

MARINA CRITERIA

General Marina Criteria

Primary walkways shall be at least 10 ft. wide. No walkways shall be less than 8 ft. in overall width.

Finger piers shall be full length for the largest design vessel accommodated and should have a width of at least 10% of their length.

Floating dock freeboard under dead load conditions shall be at least 20 to 24 inches from the water line to the deck surface.

Floating launch and retrieval assistance systems shall be installed on the shoreward side of the Marina for kayak and small sailboat launching and retrieval.

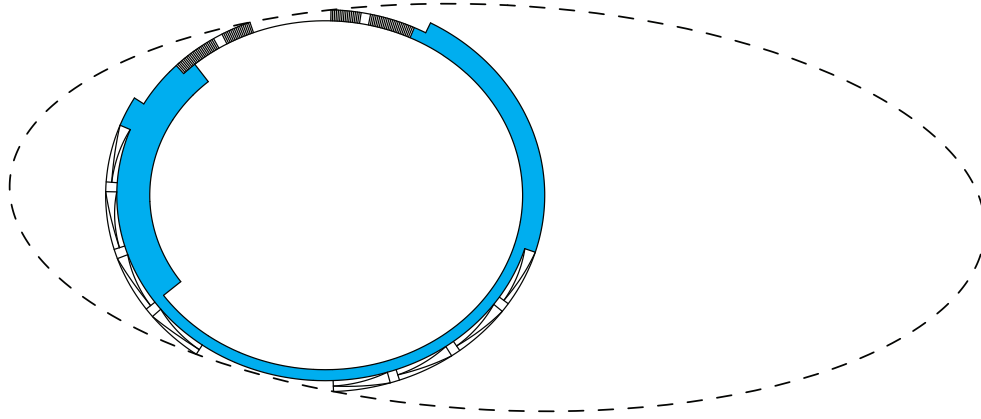
Clearances

Fairways and turning circles shall be at least 1.75 times the longest design vessel accommodated in that portion of the Marina. Fairways and turning circles shall account for the beam and fender clearances of berthed vessels in the Marina.

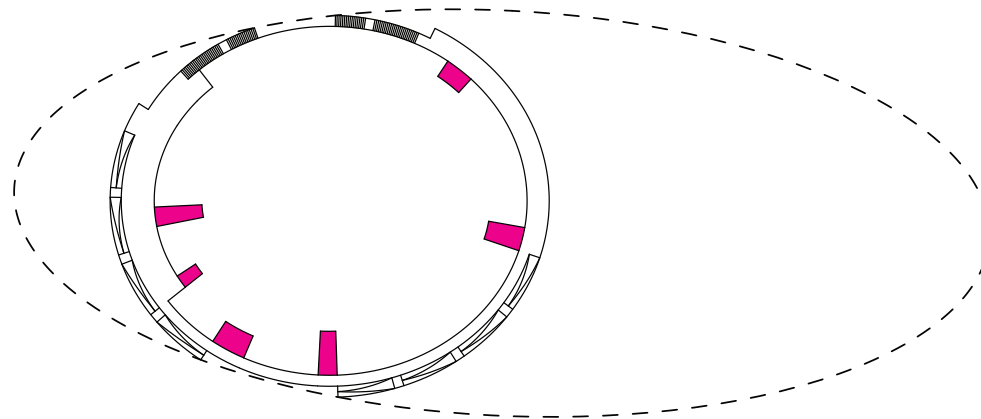
The entrance channel shall be at least 50 ft. clear and air draft at clear width shall be designed to accommodate two-way traffic. If possible, a minimum of 15 ft. air draft at MHHW and 50 ft. clear width shall be provided to accommodate most recreational vessels.

Phasing

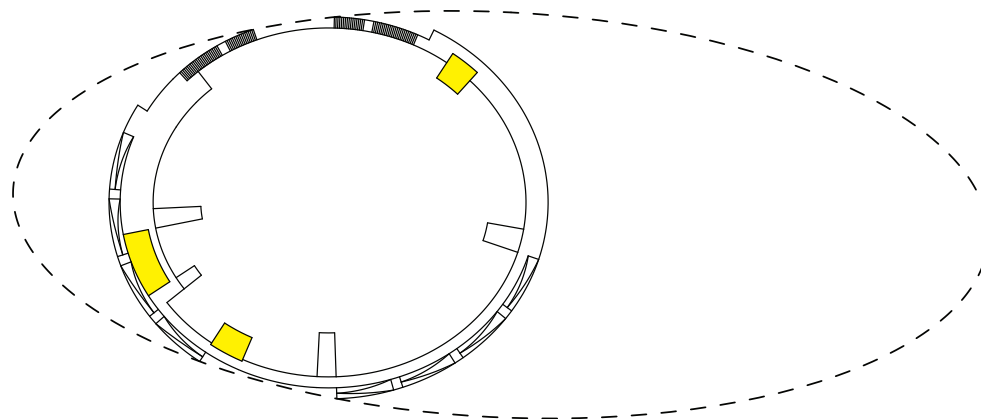
The Marina will be constructed in three phases, as described in Figure 3.46.



Phase 1 Marina Constructed from Modular Dock Units with Integrated Wave Attenuators



Phase 2 Modular Finger Piers Added to Marina Interior



Phase 3 Planned Prefabricated Kayak Rental, Concessions and Bait Shop Installed on Floating Dock

Figure 3.46 Marina Phasing Diagram

MARINA CRITERIA (continued)

Floating Dock System

A floating dock system that reduces the number of new piles needed while providing the break water necessary to support a marine environment within the Lens is planned to be implemented. Figure 3.47 illustrates one such structure, which will include strict wave attenuation and performance specifications for the new floating docks and floating breakwaters. The floating dock system being considered will surpass strict specifications, withstanding the forces of a Category-3 hurricane (sustained winds at 110 mph) with associated storm surge, wind and waves while fully loaded, and surviving the forces of a Category-4 hurricane (sustained winds at 155 mph) while unoccupied. The system includes concrete modules connected with a simple flexible bolt/rubber block design.



Figure 3.47 Example of Floating Dock System



Figure 3.48 Serviceability of Floating Dock System

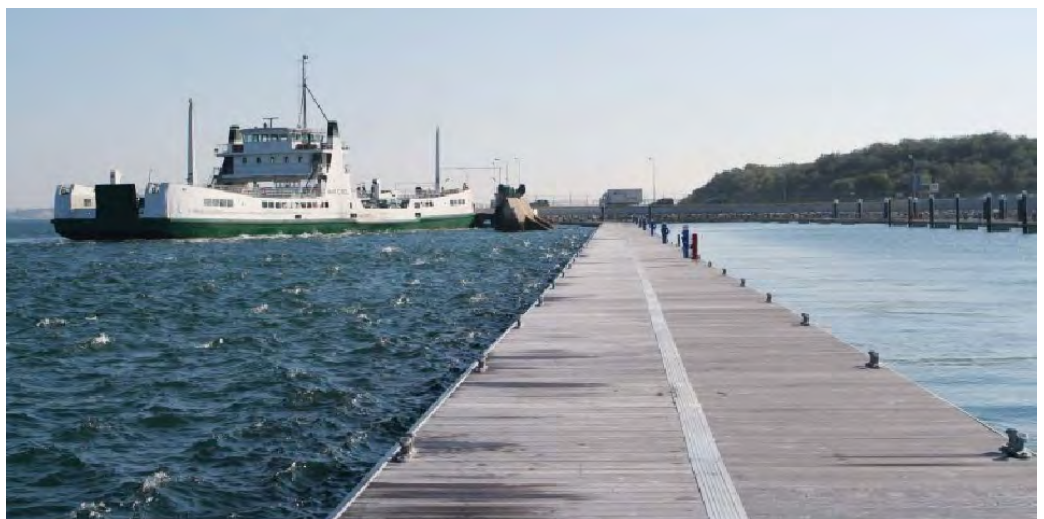


Figure 3.49 Breakwater Capacity of Floating Dock System

UNDERWATER FEATURE CRITERIA

Introduction

An Underwater Feature at the center of the Lens, focused on life beneath the bay surface, has been an important concept since the initial design ideas. During the 10-week competition phase, the idea relied on cultivating oysters as a key habitat species that could provide a foundation for a diverse food web and an improvement in water clarity. Additionally, there was interest in re-using the piles of the existing pier as a structural framework for layers of habitat “trays” or nets to create a home for these species. During the competition, the team was advised by Jim Culter, a respected benthic scientist at Mote Marine Lab in Sarasota, and Robert Semmes of ATM, Coastal Engineers.

Following the competition, the team began an outreach effort, organized by Janicki Environmental, to the local marine science community, as well as habitat restoration advocates and other stakeholders. A roundtable with members of the marine science and ocean communities generated some important comments, ideas, and suggestions for what the feature could entail, provided the availability of future funding.

- Tampa Bay water is turbid by nature, leading to skepticism that oysters could significantly alter the water clarity given the exchange rates likely between waters inside and outside the Lens.
- Due to its depth and location, the feature would need to resist strong waves.
- Habitat creation should focus on creating a variety of sheltered spaces and surfaces adaptable to all species typical for this location.
- Use of equipment, such as cameras and audio phones, should be considered to facilitate monitoring and underwater imagery, both of which, when combined with nighttime lighting, could greatly improve public appeal.
- The feature has great potential to enhance educational and research activities and the visibility of local marine science institutions, while simultaneously creating a framework for interested members of the St. Petersburg community.

Following the roundtable, the design team examined a variety of options for artificial reef construction and imaging / monitoring technology. Reef options included both building up from the bay bottom with structures minimizing the “footprint”, and techniques for suspending reef modules from a structural framework anchored by the existing piles. After individual review with some members of the scientific community, several of these options have good possibilities for habitat generation, while appearing to be realizable at reasonable cost.

Next steps for the Underwater Feature should include individually discussing and reviewing further with local scientists and habitat restoration experts to identify and develop options in more detail; creating mock-ups and monitoring their results before resolving a final design; working with the marine science and ocean communities to establish community ownership of the feature, and, due to its significant potential for attracting grants, to identify funding opportunities for further research, design and development from a variety of public and private sources.

Project Goals

- To highlight the Tampa Bay Estuary and engage the public, now and in the future
- To create a memorable, exciting and original experience for the public
- To include the public, the marine scientific community, various schools and neighborhoods, Tampa Bay advocacy groups, and the business and educational communities so that the feature may be community-supported now and in the future
- To develop a platform / interface with Tampa Bay for learning, research, and education that can evolve over time

Communities and Needs

The following are the communities, or “clients,” for the project, and their respective needs:

- **Public and Visitors** - A unique and exciting experience of the marine environment in Tampa Bay that helps create a visible identity, attracts kids and families, and provides and opportunity for involvement.
- **Education and Research Community** - An interactive platform for engaging the public within the larger context of Tampa Bay marine science, instilling a lifelong interest that leads to the growth and visibility of the field of marine science. Involvement from different neighborhoods and schools will be an asset.
- **Business Community** - An attraction that generates local and international interest in the St. Petersburg waterfront while stimulating re-visitation.
- **Restoration Community** - A means of showcasing the Tampa Bay habitat and the on-going work to improve and protect it.
- **The City of St. Petersburg** - Achieving the goals of the community with assistance from municipal leaders charged with leveraging public and private resources in a collaborative fashion.

UNDERWATER FEATURE CRITERIA

Constraints

The following constraints have been identified:

- **Limited Funding**
Although identifying both funding and potential sponsorships is a constraint, it also offers the opportunity for involvement in what could be one of the greatest assets to the new Pier as well as the City.
- **Water Turbidity**
Rapid exchange rates and currents make the process of clarifying the water within the Lens a challenge, if not impossible. Though visibility varies by season and rainfall, it is often not possible to see more than three feet into the water in the daytime.
- **Waves and Currents**
Stability during major storms is crucial given the location of the Underwater Feature. Habitat goals for the project must be consistent with these stresses and conditions of water movement.
- **Safety**
Hazards to people, boats, manatees, other marine species must be avoided.
- **Permitting**
The project timeframe must be considered when determining what can be reasonably processed and permitted.
- **Maintenance**
The Feature must be largely maintained by non-specialized individuals. The staff and income stream need to be identified in order to operate and update the feature from year to year. The amount of maintenance required must be minimized.

Approaches and Possible Components

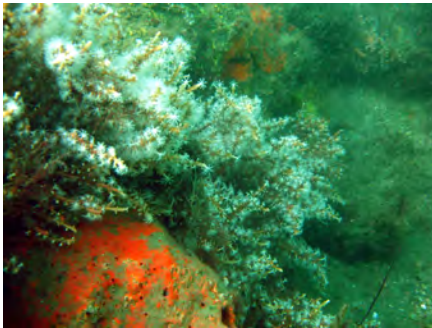
Technology

The Underwater Feature has the potential to function as a portal or interface where the public and students can view and hear what is happening underwater, or have it interpreted for them. This interface could be on land, on the Pier, over the internet or through docent-led tours. The following are key technological components that may be incorporated into the project:

- **Imaging**
The use of technology to communicate life under the water can overcome the problem of water clarity. Video-enhanced microscopy and high definition sonar imaging can circumvent water turbidity and be used as a fixed display.



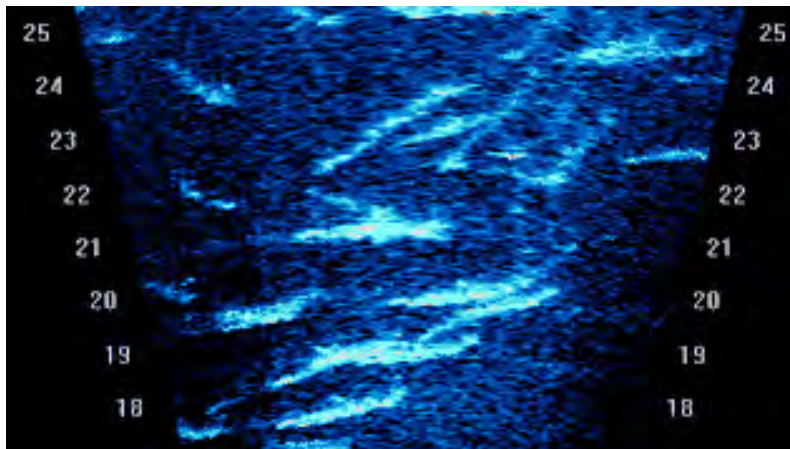
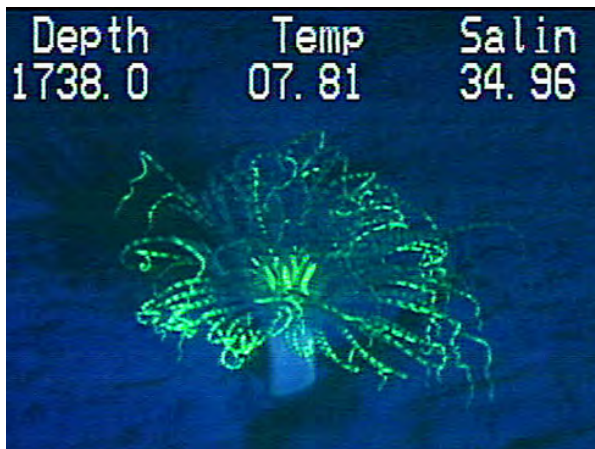
Figure 3.50 Marine Science in Classrooms



Figures 3.51 Habitat Enhancement by Local Scientific Community

UNDERWATER FEATURE CRITERIA (continued)

- **Acoustical**
Audio technologies can make it possible to “listen to the Bay.”
- **Real-Time Monitoring**
Currents, tides, dissolved oxygen, salinity, 3D seismic and species variability can be monitored in situ, in real time. Though sample collection can be automated to some extent, chemical constituents such as environmental contaminants, nutrients and pollution may require laboratory analysis.
- **Linkage to Internet**
A website and apps can be created for the project, making the underwater habitat accessible from anywhere. The scope of information provided should range from microscopic life to the estuary watershed and beyond.
- **System Flexibility**
A basic hardware and software armature that can adapt to new developments should be developed.
- **Telepresence**
Telepresence is the set of technologies that give the experience of being fully present at a location remote from one’s own physical location; a video conference is one such example of telepresence. This experience of the Underwater Feature may be enabled by technologies that implement human sensory elements like vision and sound, and can also involve robotic technologies such as autonomous underwater vehicles (AUVs) and remotely-operated underwater vehicles (ROVs).
- **Underwater Lighting (LED)**
Because fish are attracted to light, underwater lighting will allow visitors to see much deeper into the water, while increasing excitement and providing aesthetic appeal. Lighting can be located within a potential reef structure to reveal its structure and to make it glow. The lighting design needs to be sensitive to marine life’s response to natural diurnal cycles, while not visually overwhelming or creating unnatural predation.
- **On-Site Energy Generation**
Energy can be generated on location to power the technologies discussed in this section.



Figures 3.52 Real-Time Monitoring and Imaging Technologies



Figures 3.53 Linkage to the Underwater Feature via the Internet



UNDERWATER FEATURE CRITERIA (continued)

Artificial Reefs

Artificial reefs create spatial complex shelters and habitats within the water as a means of attracting diverse marine life. Establishing keystone species will allow for a food web, subsequently allowing diversity to flourish. Fish and other species can be found at reef structures for feeding, shelter, cover from predators, spawning, and reproduction. Artificial reefs need to be located at an appropriate water depth. There are two subcategories in this regard:

- Intertidal Reefs occur within the zone of tidal fluctuation. At this water depth, habitat structures need to be elevated from the seabed. Reef structures are revealed at low tide and remain at least partially visible at high tide. Zones or islands for bird habitat on structures above high tide may also be created.
- Sub-tidal Reefs occur below the zone of tidal fluctuation. Small patches of hard bottom reef habitat occur naturally in several areas of Tampa Bay and these rocky live bottom areas attract a wide variety of fish and other marine life. These areas are not typically visible from the surface without imaging technology or underwater lighting.

As oysters and other bivalves settle and grow in the intertidal zone, reefs become highly complex. Many structural irregularities provide an array of microhabitats for many different species of animals. One study listed 303 different species utilizing intertidal reefs as habitat. Some typical species include:

- various sponge species
- Leptogorgia coral
- mud crabs
- flatworms
- polychaete worms
- amphipods
- isopods
- shrimp
- squid
- larval fishes and bottom dwelling fishes
- foraging fishes
- hard clams
- scorched mussels
- ribbed mussels
- jingle shells
- barnacles of the Balanus genus
- gastropods (snails)
- conchs

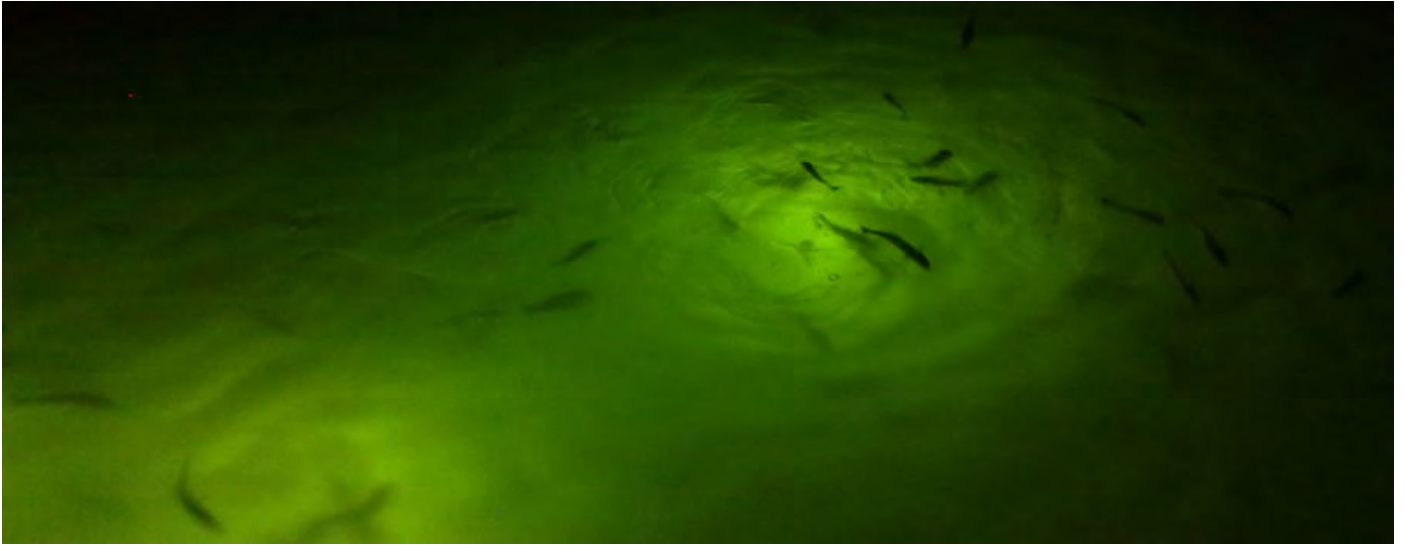


Figure 3.54 *Habitat-Sensitive Underwater Lighting*

UNDERWATER FEATURE CRITERIA (continued)

- rocksnails
- Atlantic oyster drills
- Tampa drills
- whelks
- Sheepshead
- Mangrove Snapper Bay
- Pompano
- Gag Grouper
- Redfish
- Black Drum
- Common Snook
- Ladyfish

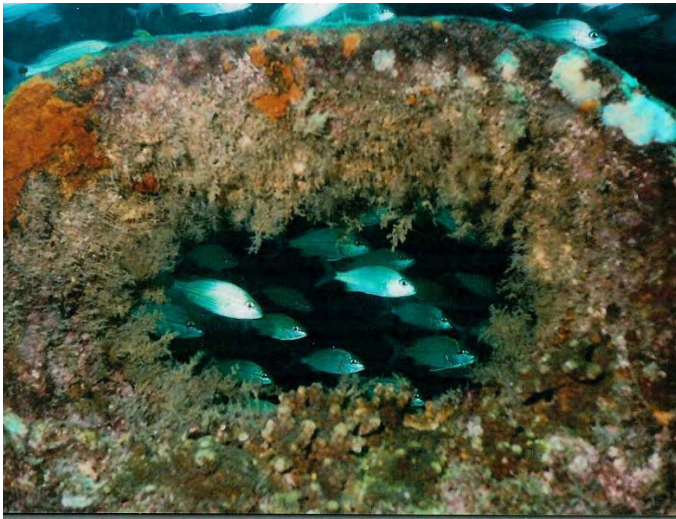
Programs

A number of programs can be developed and implemented to guide and ensure the continued viability and success of the Underwater Feature. These programs can be adapted to the different interested communities and adjusted as necessary over time.

- **Network**
A facilitated permanent communications network may be developed among the stakeholders, extending beyond the construction phase for on-going initiatives, monitoring and maintenance. A website will be a likely basis for this network.
- **Bi-directional Platform**
Two-way communication between the Education and Research community and the public needs to be enabled via a website and, possibly, an on-site portal.
- **Custodial Organization**
The establishment of a non-profit "Friends of the Reef" or similar organization could raise money and even manage an endowment to operate and maintain the feature with a yearly budget in agreement with the City. A long-term marketing strategy may be developed for the Lens and the Underwater Feature.
- **Participation**
The public can be actively involved with the feature. For example, University of South Florida graduate student docents can engage through habitat boat tours from the Lens, maintenance, and monitoring.
- **Grants**
The resources, knowledge and experience of the local Education and Research community can be tapped in order to identify possible projects for grant funding.



Figures 3.55 *Docent-Led Tours*



Figures 3.56 *Enhanced Local Environment: Habitat Population and Protection*

UNDERWATER FEATURE CRITERIA (continued)

Appearance, Structure, Materials and Research

Because the structural and substrate appearance of a naturally occurring reef cannot be recreated, the design of the Underwater Feature must be developed to achieve a level of marine beauty as an artificial habitat construction under 12 ft. of water. Aesthetically pleasing and interesting reef forms must be created through an appropriate layout, a sectional understanding of the project, and a dimensional study.

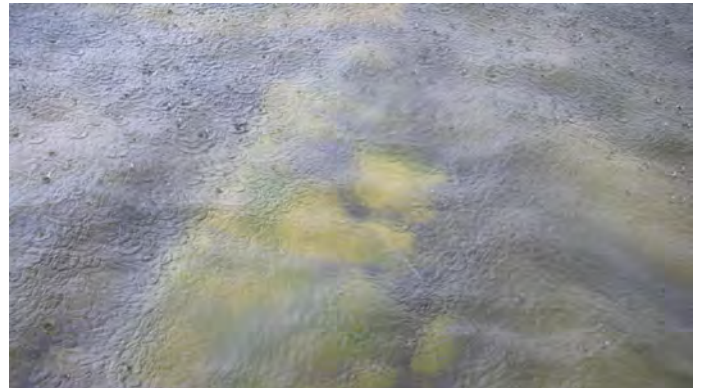
Several conceptual methods for artificial reef designs were considered. These are described in Figure 3.56:

- building up by placing objects directly on the Bay bottom
- building up by minimizing contact with the Bay bottom
- installing new piles and suspending material from these piles
- reusing existing piles and suspending material from them

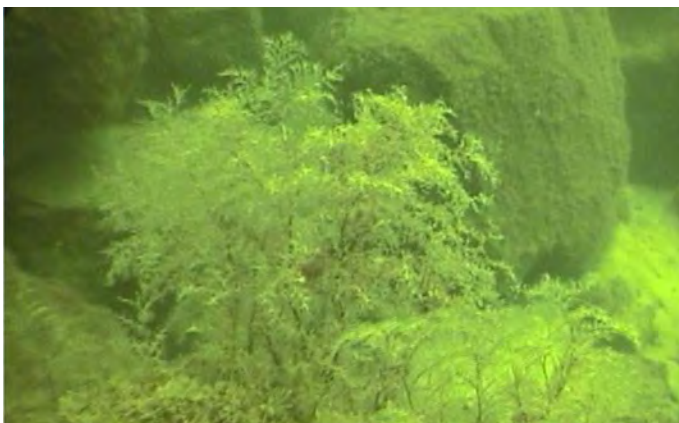
The majority of existing piles are planned to be demolished. The design team is willing to investigate the structural capacity of a small (approximately 20,000 sq. ft.) area of piles to determine if they can be kept in place and incorporated into an artificial reef. By keeping the existing piles in place and reinforcing them with new horizontal bracing, artificial reef balls can be suspended far enough from the bottom to allow for shadow movement. As with all conceptual artificial methods, careful research and consideration will determine appropriateness for this habitat and environment. The conceptual plans Figures 3.59 and 3.60 describe the possible reuse of existing piles as a framework supporting the future Underwater Feature.

A variety of materials will be studied for best suitability within existing conditions and for maximum enhancement of the habitat (Figure 3.57). Materials include limestone boulders, concrete pipe, reclaimed concrete piling and manufactured artificial reef modules among others. Limestone is preferred over concrete or other materials due to its surface, porosity, composition and pH value. Native Florida limestone boulders of varying sizes are available from Crystal River, Brooksville and other active quarries in the area. A mix of different materials such as limestone boulders, reclaimed pilings and concrete support slabs can be used in combination.

With any of these conceptual methods, a natural "reference" habitat must be identified to determine the ecological goals for the Underwater Feature. Scientific studies comparing natural and manmade material for artificial reefs are available, as are studies of artificial reef habitats incorporating both.

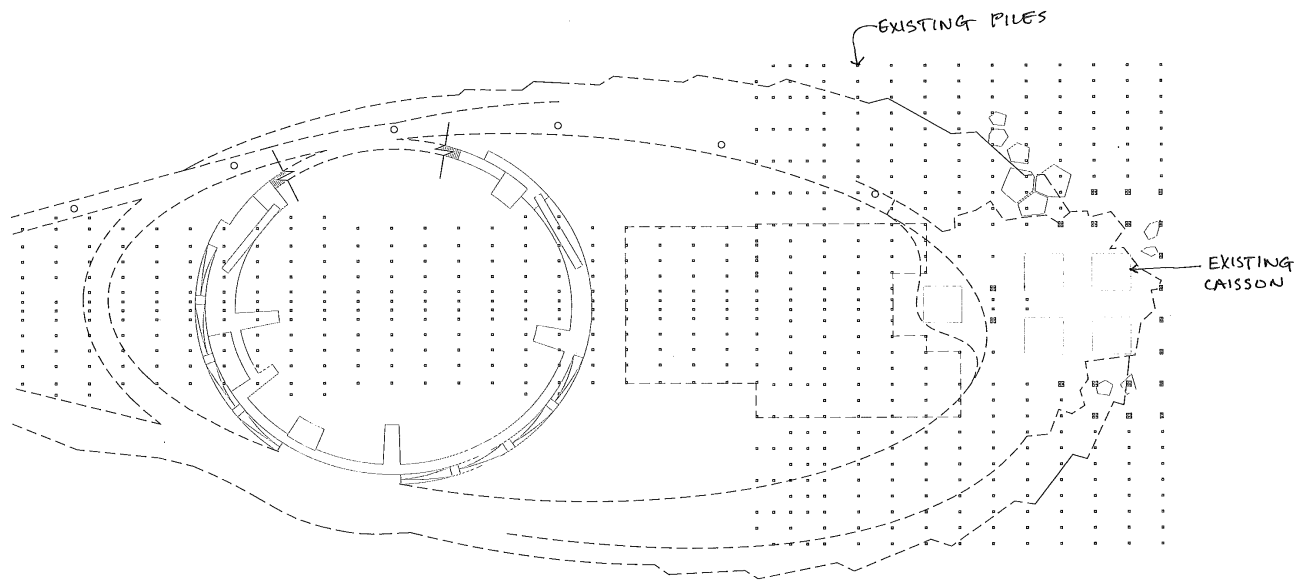


Figures 3.57 Artificial Reef Construction Options and Built Precedents

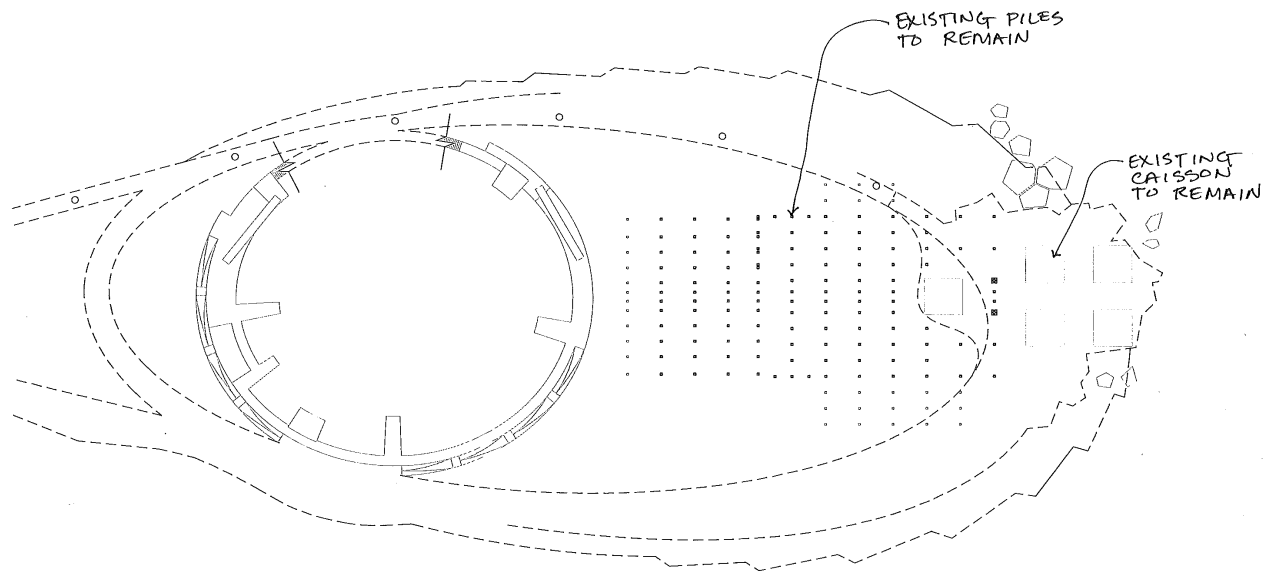


Figures 3.58 Tampa Bay Artificial Reefs

UNDERWATER FEATURE CRITERIA (continued)

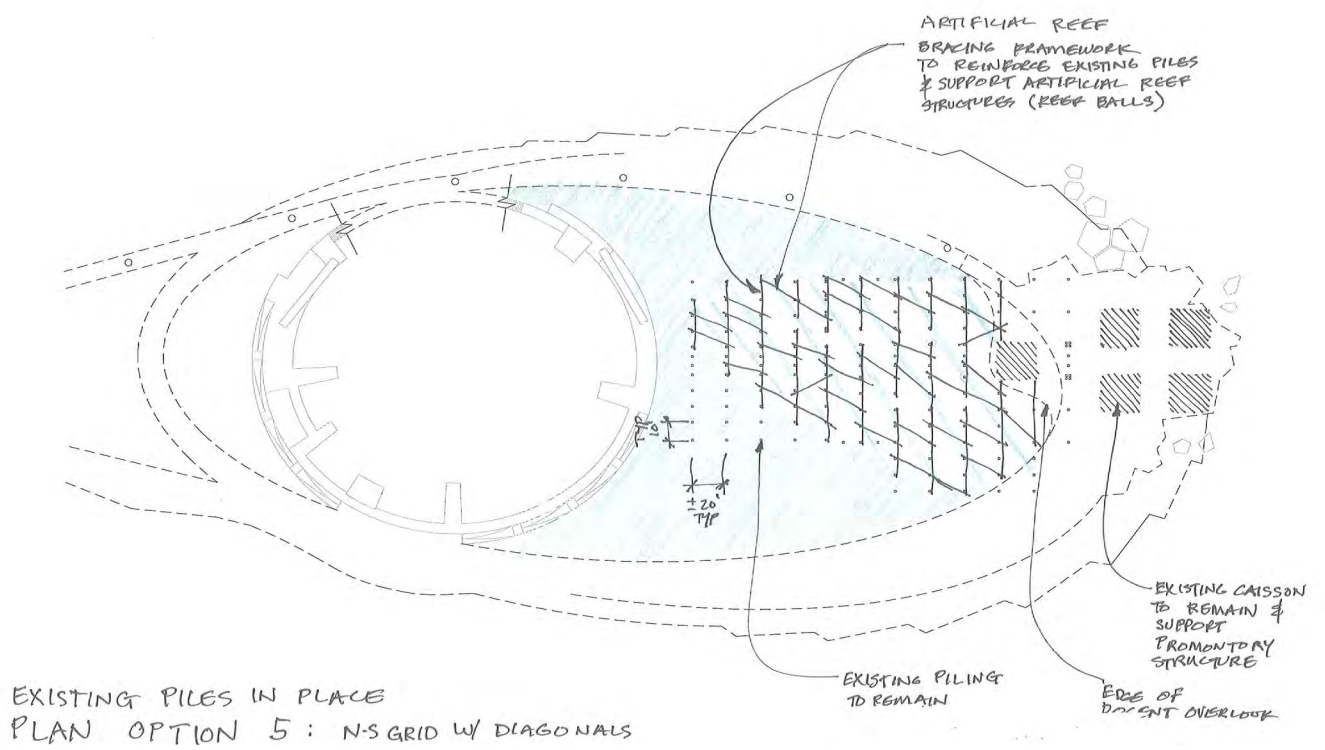
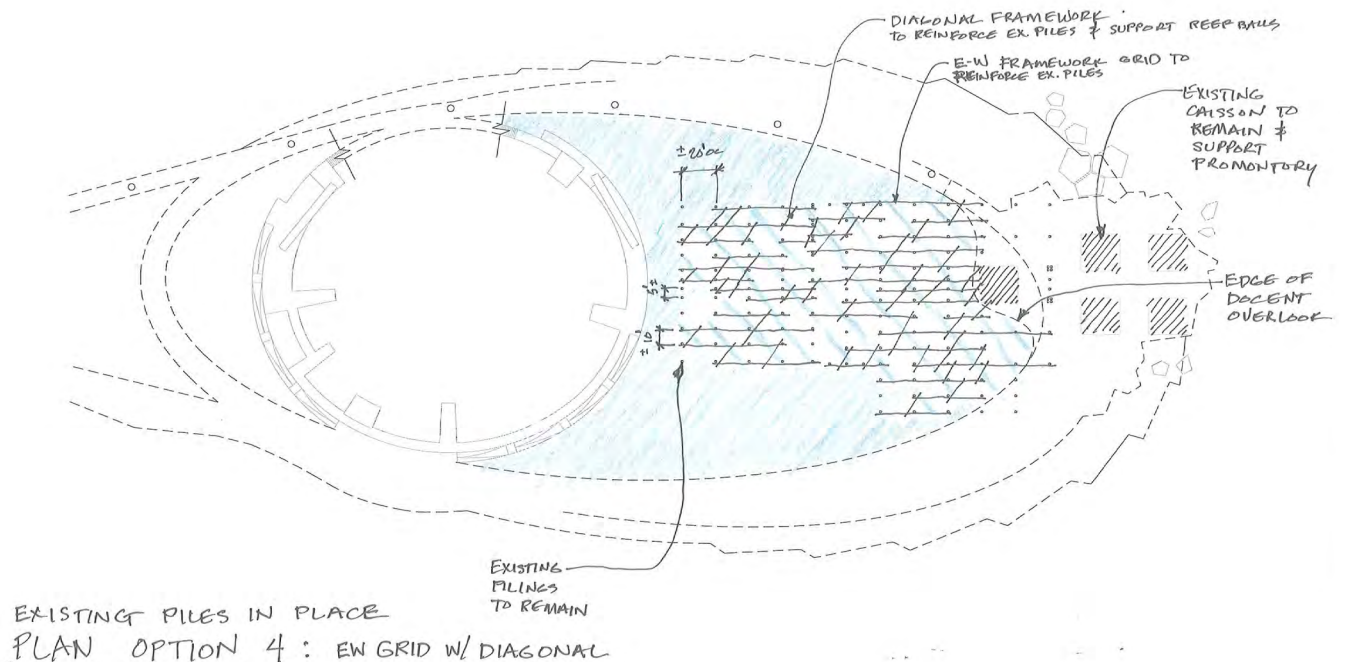


EXISTING PILES WITH THE LENS SUPERIMPOSED



EXISTING PILES TO REMAIN WITH THE LENS
AS POSSIBLE UNDERWATER FEATURE FRAMEWORK

Figures 3.59 Plan Showing Existing Piles to Remain



Figures 3.60 Plans Showing Reuse of Existing Piles

FIRE AND LIFE SAFETY REQUIREMENTS

The following section provides a brief overview of the project's fire & life safety design approach. A detailed presentation of this strategy was given to the St. Petersburg Building & Fire Departments on 26 September 2012. A copy of this presentation, along with the resulting meeting minutes, are provided in Appendices B and C of this Report for reference.

Applicable Codes

The fire safety strategy for the Pier will be designed in accordance with the applicable codes and regulations for St. Petersburg – namely the:

- Florida Building Code 2010
- Florida Fire Prevention Code 2010

In addition to these base codes, additional guidance has been sought from the following reference documents:

- International Fire Code, 2009 Edition [Chapter 45 – Marinas]
- NFPA 302 - *Fire Protection Standard for Pleasure and Commercial Motor Craft*
- NFPA 303 - *Fire Protection Standard for Marinas and Boatyards*
- NFPA 307 - *Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves*
- NFPA 1405 - *Guide for Land-Based Fire Fighters Who Respond to Marine Vessel Fires*
- NFPA 1925 - *Standard on Marine Fire-Fighting Vessels*
- NFPA 13 – *Standard for the Installation of Sprinkler Systems*
- NFPA 14 – *Standard for the Installation of Standpipe and Hose Systems*
- NFPA 24 - *Standard for the Installation of Private Fire Service Mains and Their Appurtenances*
- NFPA 72 - *National Fire Alarm and Signaling Code*

Occupancy Classification

Under the Building Code, the Pier will be classified as an 'assembly structure' (A5) which is predominately intended for the viewing of, or participation in, outdoor activities. Other uses on the Pier (retail, storage, dining, etc.) are all sufficiently small enough to be considered 'ancillary' uses to the Pier's main assembly designation.

Occupant Load

A variety of occupant load factors will be adopted for the various use areas comprising the Pier (detailed in Appendix B: Conceptual Fire Safety Strategy Presentation, September 26, 2012). When adopting these factors, a maximum occupant load

for the Pier (during special events such as New Years Eve or 4th of July) has been calculated in the region of 9,000 people. It is to be noted however, that while this maximum occupant load will be used for the Pier's egress calculations, it is expected that 'normal-day' occupancy would be significantly lower than this number.

Performance Based Egress Design Approach

While the Building Code places no limitation on distances of travel in open-air assembly structures, the St. Petersburg Building & Fire Departments have requested that the egress time of the Pier be assessed in order to establish an overall 'safe' evacuation time for the structure at times of maximum occupation. As part of this evacuation time calculation, a performance-based design approach will be adopted in order to assess the following:

1. The DISTANCE required for an occupant to move away from a fire location such that the occupant is considered 'safe'
2. The TIME taken for occupants to move away from a fire incident to a 'safe' location
3. The TIME taken to COMPLETELY evacuate the Pier

This is seen as an appropriate approach on the basis that;

- As an outdoor space, there will be no smoke accumulation on the Pier (smoke will dissipate into the atmosphere)
- Occupants will have sufficient distance/space to relocate to an area of relative safety, remote from a fire incident, while still remaining on the Pier

A fire analysis/radiation study will be performed to determine the effects on occupants from a single design fire scenario on the Pier. Occupant safety, and hence the determination of a 'safe distance', will be measured against the radiation (heat transfer) that the fire emits to a defined zone on the Pier. A maximum radiative heat flux and temperature, based on research, will be selected for the acceptance criteria. Due to smoke's ability to dissipate into the atmosphere, visibility through smoke, and other effects related to smoke will not be accounted for as part of the pass/fail criteria.

In addition to this radiation study, an egress analysis will be completed to evaluate the time taken for occupants to reach a safe distance from a fire incident as well as to evacuate the Pier in its entirety. The software used for this study assigns a series of characteristics to the occupants based on available research and data. Among others, these characteristics include travel/movement speeds, available paths based on the Pier's geometry, and the ability for people to utilize egress elements due to their widths.

FIRE AND LIFE SAFETY REQUIREMENTS (continued)

Fire Department Access and Facilities

To enable effective fire-fighting operations on the Pier, access for fire appliances will be made along the length of the 20-ft section of the Overwater Drive all the way to the end of the Promontory where a vehicle 'turning circle' will be provided. Because the Pier is part of a fire apparatus access road, it will be constructed and maintained in accordance with AASHTO regulations and designed for the imposed loads created by a fire appliance of up to 50,000 lbs.

While there will be no defined Fire Department access path on the Pier, the entire 20-ft wide portion of the Overwater Drive will be designed for fire vehicle access. When responding to a fire incident on the Pier, a management vehicle (a small car or golf buggy type vehicle) will take the lead to 'part the crowd' and make way for the fire vehicle. Given the close interaction of vehicles and occupants in this scenario, an emergency management procedure designed to cater for such situations will be developed. It is to be noted that a large portion of the Pier's evacuation is expected to be completed *before* the arrival of the Fire Department. As a consequence, the need for fire vehicle access would occur only towards the end of the occupant evacuation phase and the extent of fire vehicle/occupant interaction would be greatly reduced. Water supplies for fire-fighting will be provided by the use of a standpipe system with outlets provided every 300 ft along the Pier. A wet system will be provided at the Marina.

Fire Protection Systems

Source of Water

Water will be provided by an estimated 6" fire service (one for the Welcome Mat and Hub and one for the Pier) supplied from the city water main. Backflow prevention devices will be installed in accordance with the St. Petersburg water and sewer rules and regulations.

An electric fire pump may be provided to supply the required 100 psi at the highest and most remote standpipe hose connection. The fire pump system will be designed in accordance with NFPA 20 and include a pressure maintenance pump, control panels and test connection. The fire pump will be located in a dedicated room outside the flood line.

The site will be provided with Siamese (fire department) connections. The Siamese connection will serve both the automatic sprinkler system and the fire standpipe system.

Sprinkler System

All enclosed buildings will be sprinklered with the exception of the main electrical room. Sprinklers will be designed based on the occupancy hazard of the design areas.

All pipe sizes will be based on hydraulic calculations.

Standpipe System

The Pier will be provided with a Class I standpipe system with anti-corrosion fittings and 2.5" fire main outlets every 300 ft along the Pier. Two fill locations for the Fire Department, used to pressurize the fire main, will be provided at Pier entry points.

Portable Fire Extinguishers

Portable fire extinguishers, in accordance with NFPA 10, will be provided next to each standpipe outlet at 300-ft intervals along the Pier. Hoserack, hosereels or standpipe cabinets will not be provided.

ACCESSIBILITY AND CODE REQUIREMENTS

Accessibility Requirements

This section contains a summary of scoping and technical requirements for accessibility to the new Pier by individuals with disabilities under the Americans with Disabilities Act (ADA) of 1990. A document listing the full ADA Accessibility Guidelines for Buildings and Facilities (ADAAG) is provided at the following web address:

<http://www.access-board.gov/adaag/html/adaag.htm>

Accessible Sites and Exterior Facilities

At least one accessible route shall be provided within the boundary of the site from public transportation stops, accessible parking spaces, passenger loading zones, and public streets or sidewalks to an accessible building entrance.

Parking Spaces

In each parking area providing self-parking by employees or visitors, or both, accessible spaces shall be provided. The Dolphin Lot, which in its proposed configuration will be the site of 312 parking spaces, will have a minimum of 8 accessible spaces. The Pelican Lot, which is expected to have 157 parking spaces, will have a minimum of 5 accessible parking spaces. In both lots, one accessible space will be served by an access aisle with a minimum width of 96" and shall be designated "van accessible." Accessible parking spaces shall have a minimum width of 96".

Space Allowance

The minimum clear width for single wheelchair passage shall be 32" at a point and 36" continuously, except at doors. The minimum width for two wheelchairs to pass is 60". The space required for a wheelchair to make a 180-degree turn is a clear space of 60" diameter or a T-shaped space.

Accessible Route

At least one accessible route within the boundary of the site shall be provided from public transportation stops, accessible parking and accessible passenger loading zone. The accessible route shall, to the maximum extent feasible, coincide with the route for the general public. At least one accessible route shall connect accessible buildings, facilities, elements and spaces that are on the same site. An accessible route with a running slope greater than 1:20 is a ramp and the cross slope of an accessible route shall not exceed 1:50.

Ramps

The least possible slope shall be used for any ramp; the maximum slope of a ramp in new construction shall be 1:12. The maximum rise for any run shall be 30". The minimum clear width of a ramp shall be 36". Ramps shall have level landings at bottom and top of each ramp and each ramp run. The landing shall be at least as wide as the ramp run leading to it and its length shall be a minimum of 60".

Stairs

On any given flight of stairs all steps shall have uniform riser heights and uniform tread widths. Stair treads shall be no less than 11" wide, measured from riser to riser. Open risers are not permitted. Handrails shall be continuous along both sides of stairs.

Doors

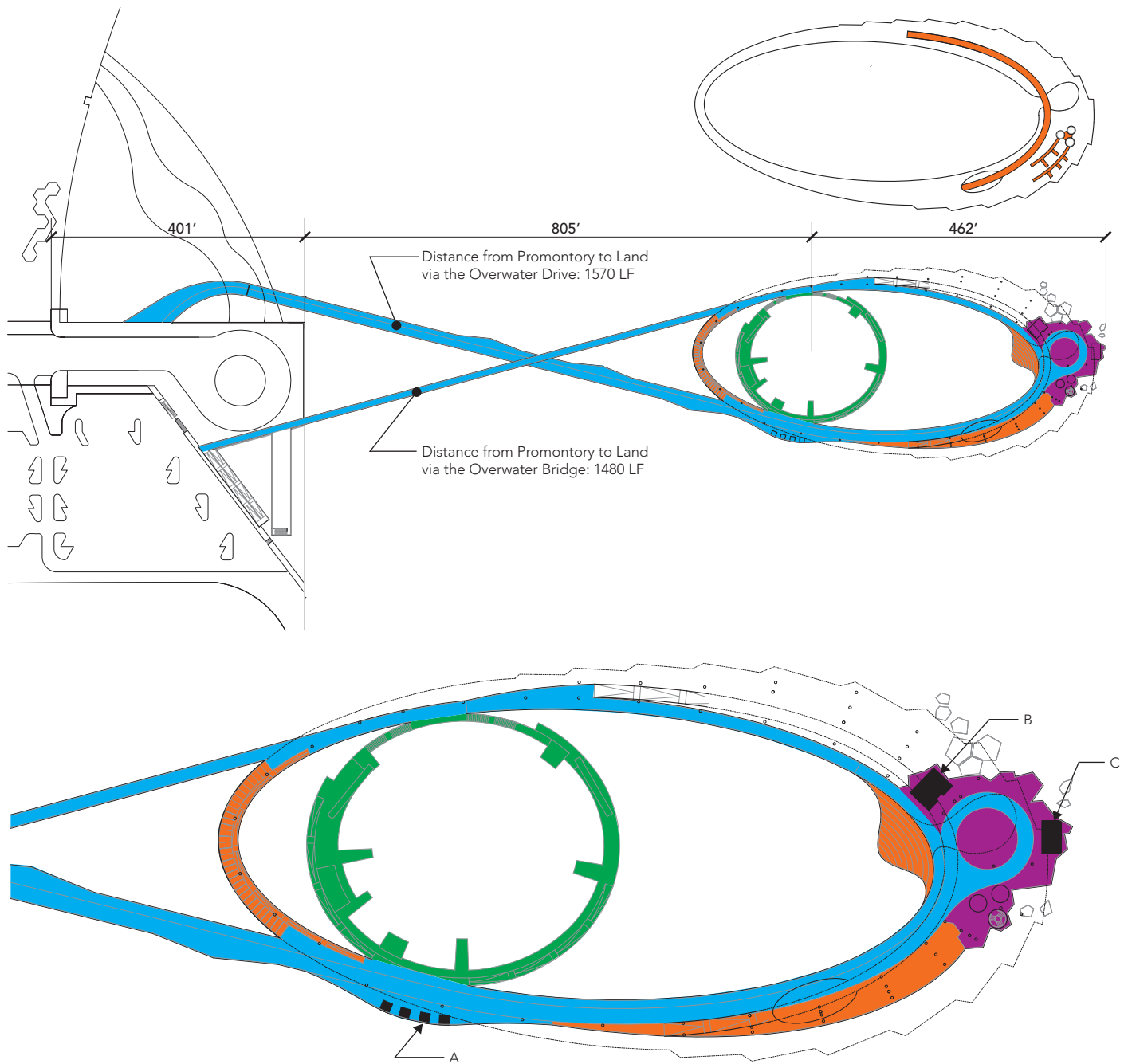
Doorways shall have a minimum clear opening of 32" with the door open 90 degrees, measured between the face of the door and the opposite stop. The minimum space between two hinged or pivoted doors in series shall be 48" plus the width of any door swinging into the space.

ACCESSIBILITY AND CODE REQUIREMENTS (continued)

Occupancy

Multiple meetings were held with the City's Building Official to determine the criteria for evaluating occupant loads on the new Pier. The new Pier offers multiple assembly areas with accessory use mercantile businesses. Maximum occupant loads will be calculated during peak use times such as the 4th of July. A decrease of 5% in the total net square footage number has been allowed to account for fixed benches, structural columns, trash cans and other site furnishings. This net usable area is used to calculate occupant loads.

Outdoor areas such as "yards, patios, courts and similar outdoor areas accessible to and usable by building occupants shall be provided with means of egress as required. The occupant load of such outdoor areas shall be assigned by the building official in accordance with the anticipated use" (*2010 Florida Building Code 1004.8*).



	NET USABLE AREA (S.F.)	OCCUPANT LOAD	OCCUPANCY
■ AREA 1: Overwater Drive and Bridge	49,223	1 per 15 sf net	3,282
■ AREA 2: Gathering Area	15,865	1 per 7 sf net	2,266
■ AREA 3: Promontory	6,823	1 per 7 sf net	975
■ AREA 4: Floating Dock	8,705	1 per 15 sf net	580
■ A: Restrooms	236		
■ B: Restrooms	508		
■ C: Concession	375		
TOTAL	81,735		7,103

Figure 3.61 Maximum Occupant Loads

ACCESSIBILITY AND CODE REQUIREMENTS (continued)

Applicable Codes and Standards

Components of the new Pier shall conform at a minimum to the latest editions of the following codes and standards:

- Building Codes - IBC (International Building Code)
- Florida Building Code 2010
- FDOT Standard Specifications for Road and Bridge Construction
- City of St. Petersburg Engineering Design Standards
- City of St. Petersburg Codes and Ordinances
- FAA Height Restrictions Associated with Albert Whitted Municipal Airport
- Occupational Health and Safety Regulation
- Design of Steel Structures - AISC
- Design of Concrete Structures - ACI
- Design of Pier and Wharf Structures - Unified Facilities Criteria (UFC)
 - UFC 2-220-01N, Geotechnical Engineering Procedures for Foundation Design of Buildings and Structures
 - UFC 3-300-10N, Design: General Structural Requirements
 - UFC 3-310-01, Design, Structural Load Data
 - UFC 4-151-10, General Criteria for Waterfront Construction
 - UFC 4-152-01, Design: Piers and Wharves
 - UFC 4-152-07, Design: Small Craft Berthing Facilities
- Design of Coastal Structures - USACE CEM
- Standard Specification for Highway Bridges - AASHTO
- Wind Design - ASCE 7
- Florida Fire Prevention Code (NFPA 101, NFPA 1, FL 44 Rules, FSS 633)
- National Electric Code - NFPA 70
- LP Gas Code - NFPA 58
- Americans with Disabilities Act
- Florida Accessibility Code for Building Construction 2012
- Federal Highway Administration - Guidelines for Designing Shared Use Paths, Sidewalks and Trails

Risk Category Descriptions

The following is a description of risk categories summarized from ASCE/SEI 24-05.

Risk Category I

Buildings and other structures that represent a low hazard to human life in the event of failure including, but not limited to:

- Agricultural facilities
- Certain temporary facilities
- Minor storage facilities

Risk Category II

All buildings and other structures except those listed in Categories I, III and IV.

Risk Category III

Buildings and other structures that represent a substantial hazard to human life in the event of failure including, but not limited to:

- Buildings and other structures where more than 300 people congregate in one area
- Buildings and other structures with day-care facilities with capacity greater than 150
- Buildings and other structures with elementary school or secondary school facilities with capacity greater than 250
- Buildings and other structures with a capacity greater than 500 for colleges or adult education facilities
- Healthcare facilities with a capacity of 50 or more resident patients, but not having surgery or emergency treatment facilities
- Jails and detention facilities
- Power generating stations and other public utility facilities not included in Category IV

Risk Category IV

Buildings and other structures designated as essential facilities including, but not limited to:

- Hospitals and other healthcare facilities having surgery or emergency treatment facilities
- Fire, rescue, ambulance and police stations and emergency treatment facilities
- Designated earthquake, hurricane, or other emergency shelters
- Designated emergency preparedness, communication and operation centers and other facilities required for emergency response
- Power generating stations and other public utility facilities required during an emergency
- Ancillary structures required for operation of Category IV structures during an emergency
- Aviation control towers, air traffic control centers and emergency aircraft hangars

ACCESSIBILITY AND CODE REQUIREMENTS (continued)

- Water storage facilities and pump structures required to maintain water pressure for fire suppression
- Buildings and other structures having critical national defense functions
- Buildings and other structures containing sufficient quantities of hazardous materials considered to be dangerous to the public if released

Risk Category Requirements

The following are structural requirements for each of the four Risk Categories, summarized from ASCE/SEI 24-05.

Risk Category I

Risk Category I structures require the lowest horizontal structural member to be constructed at design flood elevation (DFE), regardless of orientation.

Risk Category II

Risk Category II structures require the lowest horizontal structural member to be constructed at DFE for members parallel to wave action and base flood elevation (BFE) + 1'-0" or DFE, whichever is higher, for members perpendicular to wave action.

Risk Category III

Risk Category III structures require the lowest horizontal structural member to be constructed at BFE + 1'-0" or DFE, whichever is higher for members parallel to wave action and BFE + 2'-0" or DFE, for members perpendicular to wave action.

Risk Category IV

Risk Category IV structures require the lowest horizontal structural member to be constructed at BFE + 1'-0" or DFE, whichever is higher for members parallel to wave action and BFE + 2'-0" or DFE, whichever is higher for members perpendicular to wave action.

Risk Category Recommendation

The new Pier is a pleasure pier accommodating a variety of programs, from a marina for transient boats to fishing and concessions, as well as a more focused retail and dining area on the Uplands called the Hub. The project is located in a VE-8, Coastal High Hazard Flood Zone with a BFE of +8'-0" MSL (NAVD88) and will be designed to meet lateral wind loads described by ASCE 7-10, adopted by the State in March of 2012. Because of its variable programming, there will be special events at which more than 300 congregate in a single area, however, the Pier and the Hub are intended to be closed when wind speeds reach Hurricane Force Category 1 levels (76 mph) thus posing no substantial hazard to human life in the event of failure. Finally, the new Pier is not an essential facility and has no emergency, defense or strategic function. For these reasons, the new Pier will be classified as a Category II structure.



Figure 3.62 Example of Risk Category I Structure



Figure 3.63 Example of Risk Category II Structure



Figure 3.64 Example of Risk Category III Structure



Figure 3.65 Example of Risk Category IV Structure

ACCESSIBILITY AND CODE REQUIREMENTS (continued)

Risk Category Design Implications

The following are design implications for each zone of the new Pier, as required for Risk Category II structures. Figure 3.66 describes the different zones of the project that are subject to the design criteria for Risk Category II structures. Figure 3.27, the *Flood Insurance Rate Map for Pinellas County, Florida and Incorporated Areas*, describes existing flood conditions and zones for the site. Additional information pertaining to flood design and construction is presented in *Appendix K: Flood Resistant Design and Construction*.

Zone A

The bottom of all structural slabs for programmed spaces is to be at or above +9'-0" MSL.

Zone B

The distance from MSL to the bottom of the lowest horizontal structural members supporting the Overwater Drive are to be +9'-0" (BFE + 1'-0") as described in Figure 3.62.

Zone C

The distance from MSL to the lowest horizontal structural members supporting the Promontory is to be +9'-0" (BFE + 1'-0").

Zone D

The floating dock is not considered a building or structure and floats +2'-0" MSL.

Zone E

Wind loads will correspond to a wind speed of 145 mph (3 second peak gust). Wind tunnel testing based on actual wind data and topography will ultimately be utilized to accurately calculate the wind pressures applied on the canopy. Wind pressures will be calculated using Exposure D.

Zone F

Occasional flooding will be experienced as it is located below BFE. Zone F will be infrequently occupied.

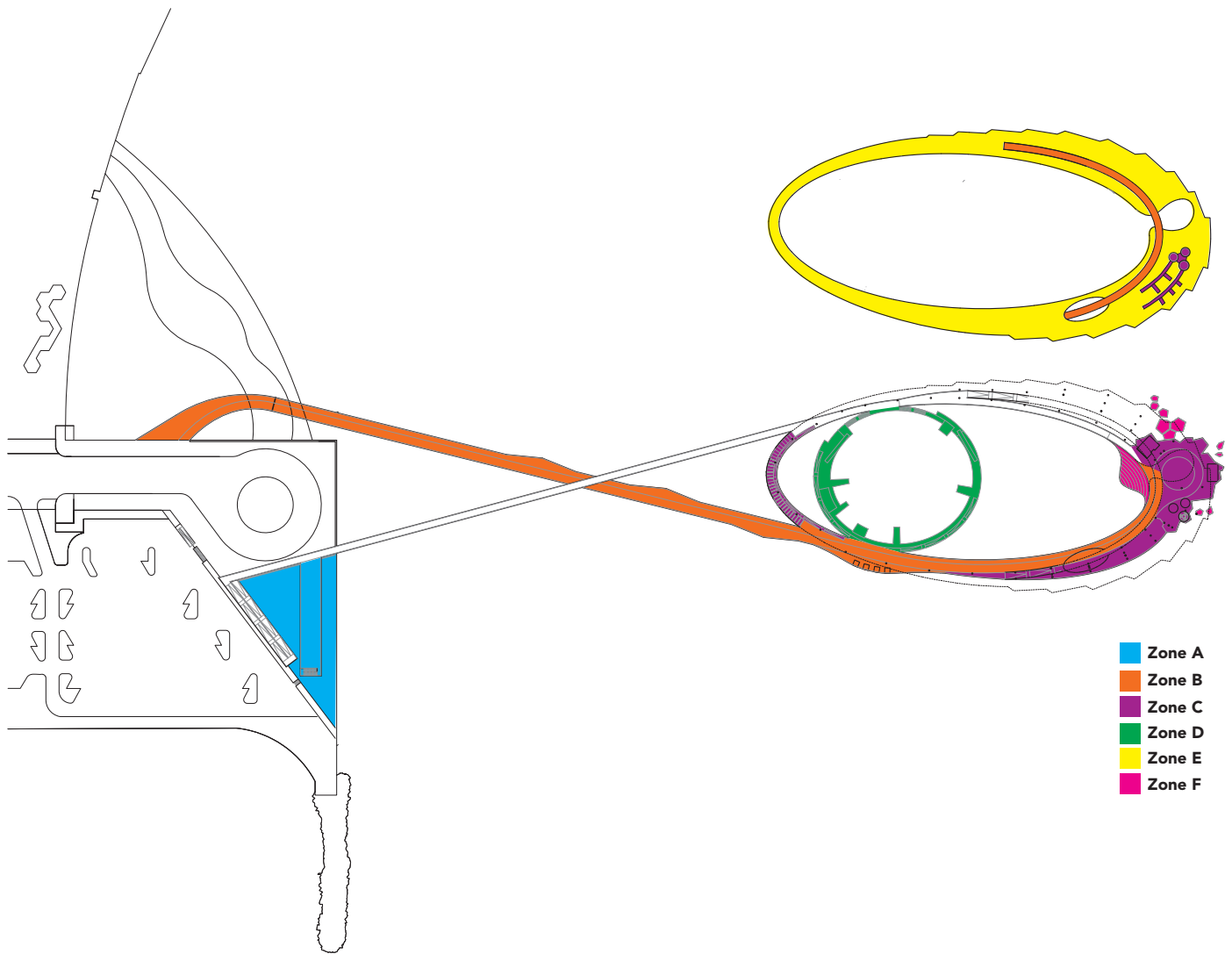


Figure 3.66 Project Zones

PERMITTING AND DEMOLITION

New St. Petersburg Pier Permitting

The City of St. Petersburg submitted an environmental resource permit (ERP) on August 31, 2012 to the Southwest Florida Water Management District (SWFWMD) and the U.S. Army Corps of Engineers to demolish the existing Pier and construct the new Pier.

The construction of the new Pier will result in a net environmental benefit compared to the existing Pier. The new Pier shades 60% less bay bottom and the plan eliminates overwater parking, while only emergency vehicles and public "trams" for transporting visitors and provisions to and from the Promontory will be permitted on the Pier. In addition, the number of support piles impacting the bay bottom will be reduced.

The following is a list of agencies that will serve as resources in the permitting process:

- **St. Petersburg Construction Services and Permitting Department**
<http://www.stpete.org/development>
- **St. Petersburg Development Review Services - Planning & Zoning**
http://www.stpete.org/development/Land_Development_Regs.asp
- **St. Petersburg Engineering Department**
<http://www.stpete.org/engineering>
- **Southwest Florida Water Management Department (SWFWMD) - Tampa Service Office**
<http://www.swfwmd.state.fl.us>
- **US Army Corps of Engineers - Tampa**
<http://saj.usace.army.mil>
- **Federal Aviation Administration (FAA)**
<http://www.faa.gov>
- **Pinellas County Water & Navigation Authority**
http://www.pinellascounty.org/environment/watershed/water_navigation.htm

Required approvals for the project include:

- Permit for Demolition
- Permit for Building Construction
- Right-of-Way Permit
- SWFWMD Permit
- US Army Corp of Engineers Permit
- FAA Notice of No Hazard to Air Navigation

Pier Demolition

The existing structure will be demolished using land and water-based construction equipment. The surface structures, including the Inverted Pyramid, retail area, landscaping, pavers, and asphalt paving, will be removed and taken to approved landfills or recyclers. The remaining steel reinforced concrete substructure, comprised of the pier deck, pile caps, and piles, will be taken to approved landfills or recyclers or will be used to construct a shoreline stabilization revetment at Albert Whitted Airport.

Following deployment of turbidity barriers around the active construction area, the pier deck will be demolished or cut into smaller segments to be lifted using cranes located on the adjacent deck area or on barges. The connections between the pile caps and piles will be demolished or cut, and the reinforcing bars cut to release the pile caps from the piles. The majority of the piles supporting the existing pier will be cut off at an elevation 1 ft. below the mudline. Both the deck and the pile caps will be transported to the Uplands for processing and disposal.

Piles in the vicinity of the proposed marina will be extracted in their entirety and piles in the proposed reef area will be cut off approximately at mean lower low water elevation for reuse in supporting the proposed reef, or if determined to be unsuitable for re-use, will be cut off at an elevation 1 ft. below the mudline. Cut-off piles will require localized disturbance of the bay bottom to provide access to the cut-off elevation. Piles to be fully extracted will utilize water and air jetting along the pile to release it from the bay bottom.

Existing 20-ft. by 20-ft. concrete foundation caissons, supporting the Inverted Pyramid and glass elevator structure, will remain undisturbed. The new design intends to reuse the caissons.

Albert Whitted Airport Shoreline Stabilization

The eastern shoreline of the Albert Whitted Airport is comprised of approximately 2,500 linear-ft. of bulkhead, which is degraded with areas of wall collapse and significant loss of soil in several locations.

Clean cementitious material from the demolition of the existing pier will be transported by truck or barge from the pier to the airport shoreline and used to construct a shoreline stabilization revetment. The concrete will be clean of asphalt and other materials found on the existing pier and will be processed into pieces ranging from 2 ft. to 6 ft. in the longest dimension. Reinforcing steel will be cut off flush to the face of the concrete.

With turbidity barriers in place, material will be dumped from the shoreline by trucks or will be removed by crane from barges. Barges will be prohibited from entering the existing seagrass beds along the shoreline.

PERMITTING AND DEMOLITION (continued)

The shoreline stabilization revetment extends approximately 32 ft. from the existing shoreline and will impact approximately 1.8 acres of bay bottom. The revetment toe will be located a minimum of 24 ft. landward of existing seagrass beds.

Water Quality Monitoring

The active work areas will be encompassed by turbidity curtains to contain any turbidity generated during demolition or construction. Turbidity will be monitored daily by an independent 3rd party during construction activities at a "downstream" location 500 ft. outside of the turbidity barrier and at a baseline location away from the construction area. Construction will be suspended when turbidity readings exceed 29 NTU's above the background reading until readings are within the 29 NTU limit and the source of the elevated turbidity is rectified.

Pier Structure Environmental Considerations

The St. Petersburg Pier is located in the Pinellas Aquatic Preserve in Tampa Bay. This area is designated as an Outstanding Florida Water (OFW). The City of St. Petersburg owns the submerged lands around and under the existing and proposed Pier.

Shading

Currently, the Pier shades approximately 230,000 sq. ft. of bay bottom. The existing structure is a minimum of 100 ft. wide up to 300 ft. wide with a structure bottom elevation of approximately 5 ft. above MSL. The proposed Pier reduces overwater shading by 60%, shading approximately 93,000 sq. ft. of bay bottom, with width ranging from 10 to 20-ft. The 10-ft. wide Overwater Bridge portion of the Pier has a bottom structure elevation of approximately +25 ft. above MSL and is not expected to permanently shade bay bottom.

Number of Piles

The existing Pier has approximately 1,500 piles supporting the pier approach, pier head, and boat docks. The Inverted Pyramid and glass elevator are supported by five (5) 20-ft. square concrete caissons. The proposed Pier has approximately 430 piles associated with the Overwater Drive, Overwater Bridge, and Canopy. The proposed Underwater Feature includes the potential reuse of an additional 130 existing piles or the install of new piles to support the reef infrastructure.

Seagrass

Existing seagrass beds are located near the shoreline in water depths ranging from 4 to 9 ft. No seagrass was identified in the 100-ft. wide area where the existing Pier crosses these depths. Construction barges will be prohibited from approaching within 20-ft. of the existing seagrass beds.

The new Pier includes two structures crossing the seagrass habitat area including the 20 ft. wide Overwater Drive with deck at elevation +12 ft. above MSL and one 10 ft. wide "walking

pier” with deck elevation at +29 ft. above MSL. The walking piers, with their narrow width and high elevation above the water surface, will result in no permanent shading impact on seagrass. The Overwater Drive will also allow some sunlight penetration. The new Pier results in a net benefit to seagrass by reducing shading by more than 75% in these areas.

Essential Fish Habitat

Essential fish habitat in the pier area is generally comprised of construction debris that has fallen off the Pier over time. This material will be left in place where possible, while new fish habitat will be created along the Albert Whitted Airport shoreline.

Endangered Species

Manatee and sawtooth fish are found in the project area. No endangered bird species habitat has been observed in the project area. Construction is expected to conform to standard manatee construction guidelines, including slow speed waterborne equipment, observing for the presence of manatees, and ceasing work when a manatee is present.

The existing Pier offers recreational fishing and provides 24 transient boat slips. The new Pier will also include fishing, but motorized boating will be eliminated from the new design thereby reducing impacts to endangered species due to the proposed construction activities.

Stormwater

On the existing Pier and its approach, approximately 100,000 sq. ft. of roadway is graded to funnel stormwater into grates along the Pier roadway gutter where the stormwater discharges directly into the Bay without retention or treatment. There are 10 stormwater grates on the pier head, and 18 grates on the pier approach.

On the new Pier, the overwater area is expected to generate less stormwater pollutant loading compared to the existing Pier due to the elimination of passenger vehicle traffic and parking areas and overall reduced pier size. The proposed stormwater drainage for the overwater elements, including walkways, Canopy, and Promontory, continues the existing practice of draining directly into the Bay via sheet flow or gratings inset into the pier deck.

On the adjacent Upland areas, the existing stormwater collection and discharge system will be maintained where possible. In areas where new construction changes curb lines or grades, or interferes with existing drainage structures, modifications will be made to the existing system to accommodate the new site features. The Hub area will be constructed over existing parking spaces, reducing parking capacity by 120 vehicles and reducing the associated pollutant loading to the stormwater. Compliance with the City of St. Petersburg’s Drainage and Surface Water Management Ordinance will be required.

PERMITTING AND DEMOLITION (continued)

During construction, a detailed stormwater management plan will be implemented incorporating best practices including silt fencing and filter media for storm drains for maintaining quality of the storm water effluent reaching the bay.

Water Dependent Use

The existing Pier includes retail spaces for souvenir shops, bait and tackle, clothing, and restaurants. Most of the existing retail will be relocated from the Pier to the landside. Enclosed spaces remaining on the Pier are water dependent uses including food service areas for visitors, restrooms, elevators and utility rooms, and management service offices for the marina.

Mitigation

The new Pier footprint and design features result in a net environmental benefit. Environmental benefits include reduced pollutant loading from vehicles by eliminating passenger vehicle access on the new Pier, reduced overwater footprint to reduce bay bottom shading including 75% reducing in shading in seagrass habitat areas, and a reduced number of piles impacting the bay bottom. The new Pier has approximately 1/3 the number of support piles compared to the existing Pier. The shoreline revetment at the Albert Whitted Airport stabilizes the existing shoreline/seawall, does not impact existing seagrass areas, and will reduce sediment runoff from the upland during storm events.

Marina Environmental Considerations

The existing Pier boat slips support docking of up to 24 transient boats. The ERP application included a 24 slip transient Marina. The proposed Pier now includes a non-motorized Blue Ways marina, further reducing the potential pollutant loading and improving the net benefit to the environment. If the final design maintains the non-motorized marina, the reduction in the environmental impact will not require a modification to the permit. The marina floating docks will be designed with wave attenuation to provide protection from the north, west, and south directions.

Analysis of marina flushing shows that tidal circulation in the proposed transient marina reduces a conservative tracer to less than 10% residual concentration in 0.17 to 0.45 days, meeting the state guideline of 10% residual concentration after 96 hours.

Underwater Feature Environmental Considerations

The planned Underwater Feature, located in 12 to 14-ft. water depths, consists of concrete reef structures mounted to the top of piles. The reef structures are located in the intertidal zone and are intended to provide habitat for fish and other sea life. The Underwater Feature offers potential educational opportunities including educational signs and a small amphitheater for docent or teacher presentations.

The Underwater Feature will be constructed of concrete designed to accommodate underwater habitat development. The piles supporting the reef structure will be spaced 10 to 20-ft. apart and will not measurably inhibit flow through the reef area. As such, the reef is not expected to result in adverse impacts to the environment and may provide a net benefit to the environment by creating fish habitat and promoting reef development.

Construction Methodologies

Demolition shall be performed by sawcutting, shearing, and jack-hammering existing concrete using land and water-based equipment. Turbidity barriers will surround the active demolition areas and water quality will be sampled for turbidity. Markers will be placed at the perimeter of the existing seagrass beds to prevent construction equipment from entering the seagrass area.

Concrete piles identified to be fully removed may require water and air jetting to remove the piles from the bay bottom sediments. Turbidity within the curtailed area due to jetting will be measured and the barriers will be left in place until turbidity returns to background levels.

Concrete will be processed for size and to remove exposed reinforcing steel bars. Concrete will be hauled to the disposal location using barges or trucks. Following demolition the bay bottom will be surveyed and divers will recover any demolition debris that has fallen to the bay bottom.

The shoreline revetment at Albert Whitted Airport will be constructed by directly placing concrete material taken from the existing Pier substructure into place by dumping from a truck or pushing into place via dozer and/or excavator bucket. Dust and small debris will not be permitted at the revetment and will be taken to an approved landfill or recycler.

The new Pier will be constructed using land based equipment staged from the existing Pier (prior to Pier demolition) or using water based equipment. Turbidity barriers will surround the active demolition areas and water quality will be sampled for turbidity. Pre-cast concrete and/or steel pipe piles will be driven using impact or vibratory hammers or by water and air jetting into place. Pier decks, the Promontory, the concrete Canopy, and reef structure will be constructed using pre-cast and/or cast in place concrete.

Upland construction will begin following installation of silt fencing around the construction area and filter media installed at storm drain inlets. Exposed soil will be landscaped or planted with grass prior to removal of silt fencing.

4

COMPONENT PLANNING CRITERIA

INTRODUCTION

The basic “building block” for describing the organization of project information in this document is the program component. A program component can be defined as a discrete grouping of assigned spaces and activities that are physically related by their common mission to satisfy a specific group of functions or operations.

Each component is herein described as a set of specifications. For each component, an architectural description is followed by a more comprehensive description, definition and characterization of subcomponents. The final portion of each component description is technical in nature and includes mechanical, electrical, plumbing and technology requirements.

PROGRAM COMPONENTS

Components

Program components for the new St. Petersburg Pier include:

- **Welcome Mat** - 47,400 sq. ft.
- **Hub** - 22,350 sq. ft.
- **Overwater Drive** - 34,050 sq. ft.
- **Overwater Bridge** - 20,100 sq. ft.
- **Lens Canopy** - 54,500 sq. ft.
- **Promontory** - 18,050 sq. ft.
- **Lens Marina** - 9,150 sq. ft.
- **Underwater Feature** - 20,000 sq. ft.

General Organization

Uplands

The overland components of the project – the Welcome Mat and the Hub – are constructed on the existing Uplands area. This portion of the project requires no specialized marine construction and selective demolition.

Overwater

The Overwater components of the project – the Overwater Drive, Overwater Bridge, Promontory, Lens Canopy and Marina – comprise the Pier elements of the project. These components will require specialized marine construction and demolition of the existing Pier.

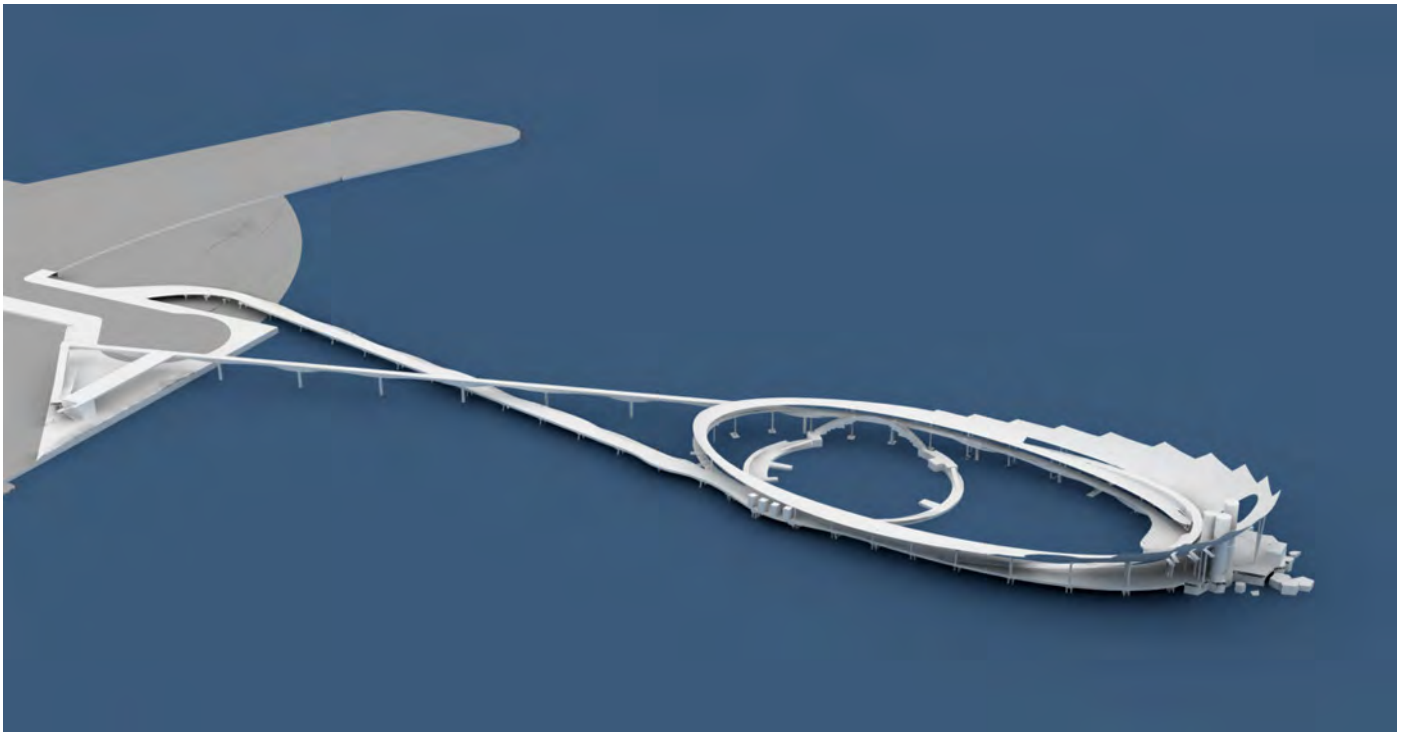
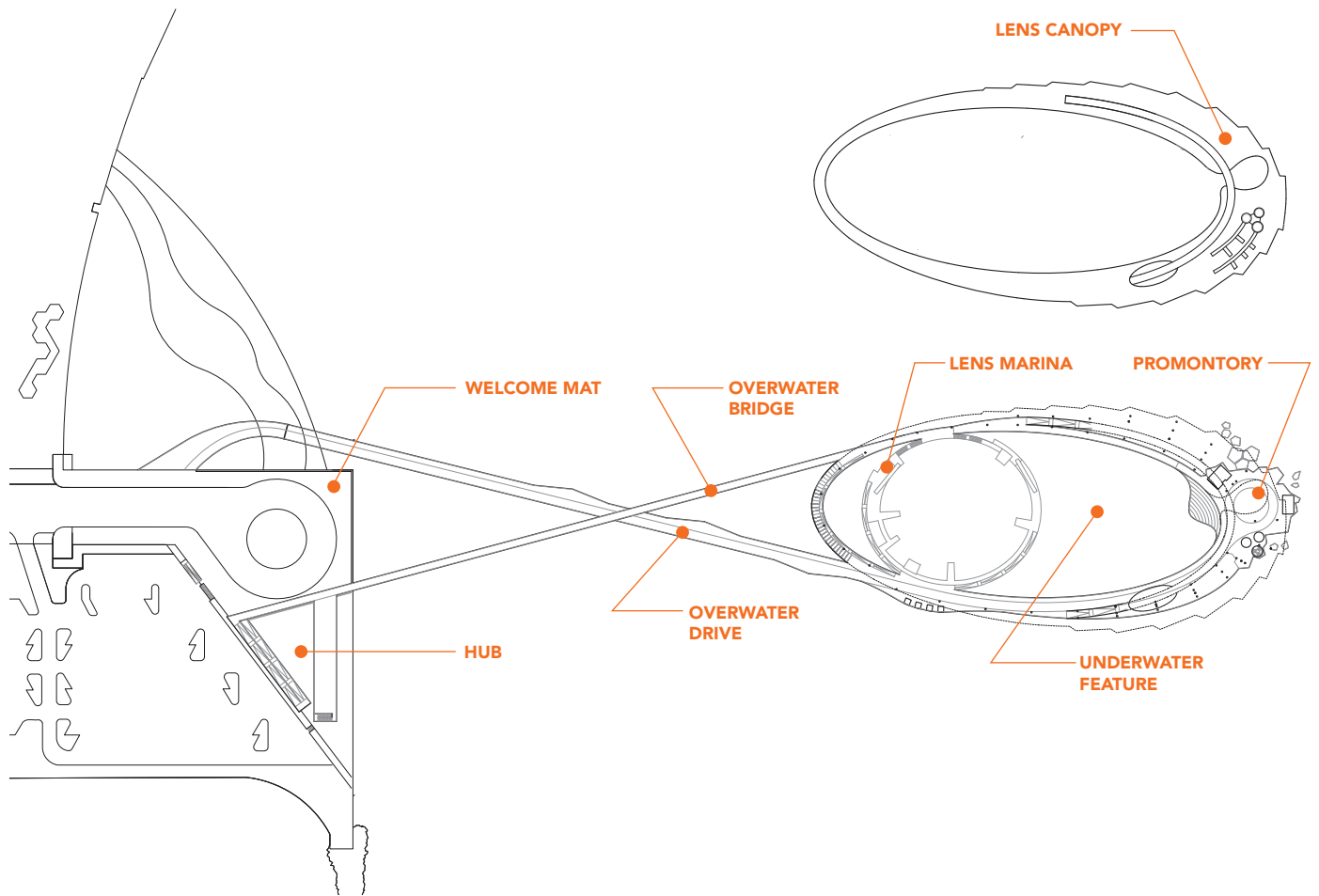


Figure 4.1 Program Components of the new Pier

EXISTING CONDITIONS

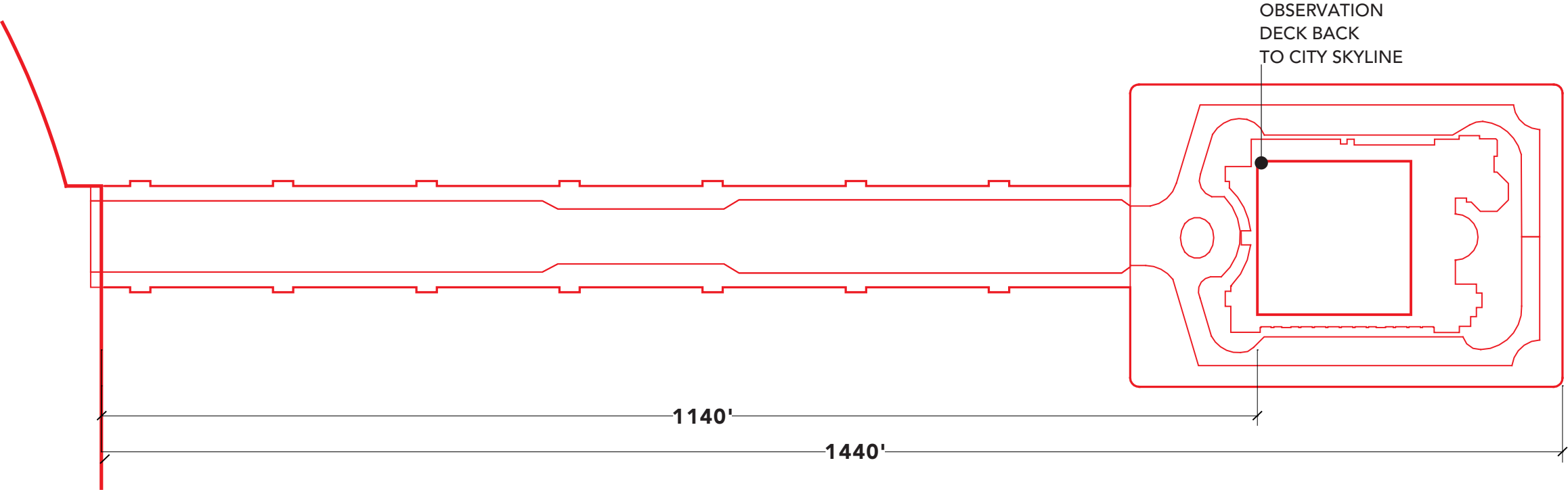
The existing Pier extends 1440'-0" into Tampa Bay with an observation deck located 1140'-0" from shore. As a means of maintaining and enhancing the experience of the existing Pier, the new Pier extends 1247'-0 into Tampa Bay and has observation platforms located 1181'-0" from shore, enhancing the viewing experience of the City's skyline.

Figures 4.2 and 4.3 describe and compare the general attributes of the existing and proposed Piers in plan and elevation. Figure 4.4 provides a three-dimensional comparison between the existing Inverted Pyramid building and the new Pier.

**EXISTING
PIER**

OVERALL LENGTH
FROM UPLAND TO
EASTERN
TERMINUS /
1440'

DISTANCE FROM
OBSERVATION
DECK TO UPLAND /
1140'



**PROPOSED
PIER**

OVERALL LENGTH
FROM UPLAND TO
EASTERN
TERMINUS /
1247'

DISTANCE FROM
OBSERVATION
DECK TO UPLAND /
1181'

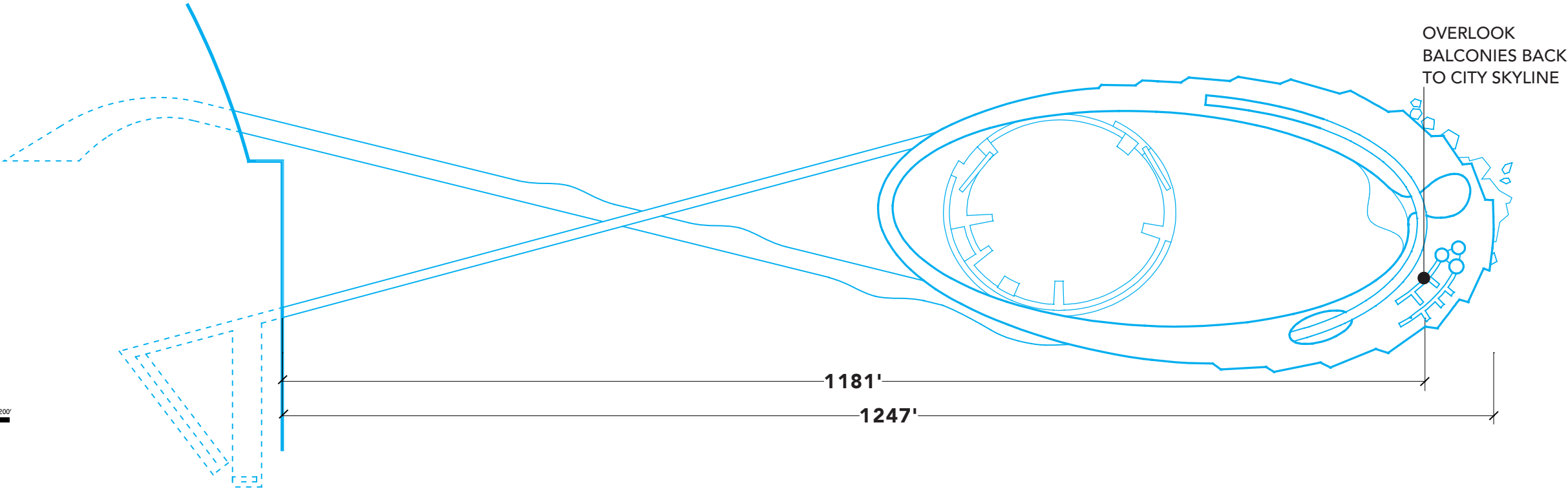


Figure 4.2 Comparison of Existing and New Piers in Plan

EXISTING CONDITIONS
(continued)

EXISTING
PIER

OVERALL LENGTH
FROM UPLAND TO
EASTERN
TERMINUS /
1440'

HEIGHT FROM WATER
TO THE TOP OF THE
STRUCTURE /
76'-8"

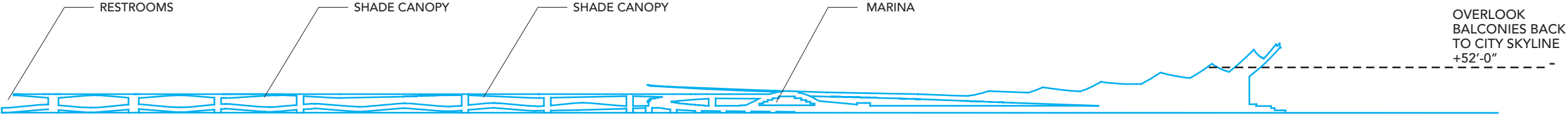


OVERLOOK
BALCONIES BACK
TO CITY SKYLINE
+52'-0"

PROPOSED
PIER

OVERALL LENGTH
FROM UPLAND TO
EASTERN
TERMINUS /
1247'

HEIGHT FROM WATER
TO THE TOP OF THE
STRUCTURE /
86'-0"



OVERLOOK
BALCONIES BACK
TO CITY SKYLINE
+52'-0"

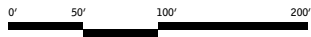


Figure 4.3 Comparison of Existing and New Piers in Elevation

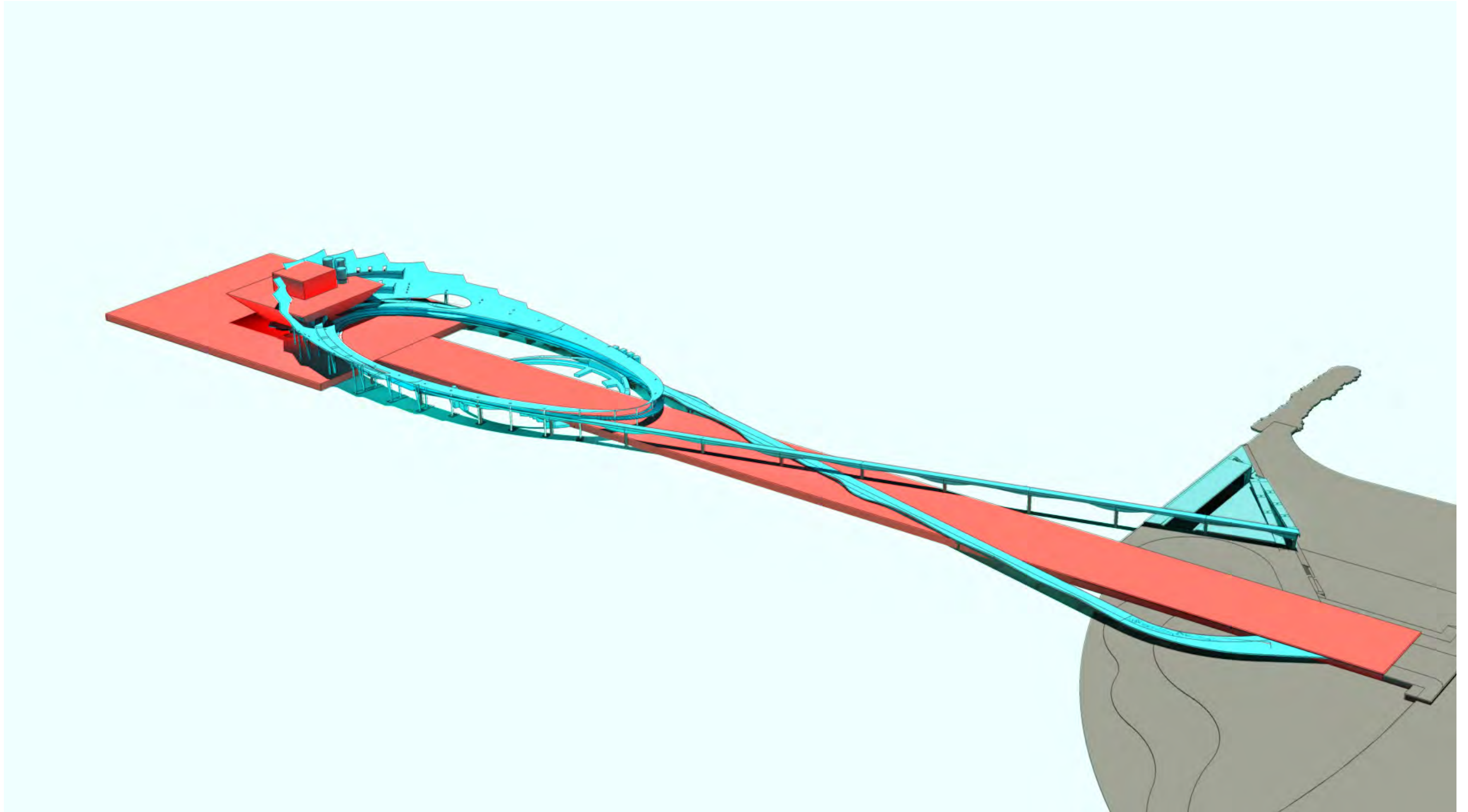


Figure 4.4 Comparison of Existing Inverted Pyramid Building and New St. Petersburg Pier

COMPONENT DESCRIPTIONS

Welcome Mat
Hub
Overwater Drive
Overwater Bridge
Lens Canopy
Promontory
Lens Marina
Underwater Feature

Welcome Mat

1.0 Architectural Description

- 1.1 Located at the eastern terminus of the Uplands, the Welcome Mat is the place of public interface with the new Pier. The Welcome Mat consists of a traffic roundabout and a public piazza, the latter of which can accommodate a range of functions, from temporary farmer's markets and street festivals to seasonal performances and civic celebrations.

The Welcome Mat is also the location of intermodal exchange - the nexus point for pedestrians, cyclists, users of public transportation and private vehicles. The traffic roundabout at the end of 2nd Avenue NE facilitates the flow of traffic while also providing pick-up and drop-off opportunities for the St. Petersburg Pier Trolley, Downtown Looper and other forms of ground transportation. The traffic roundabout connects the Welcome Mat with the Overwater Drive, allowing pedestrians, the Pier trolley and emergency vehicles onto to the Pier. The Welcome Mat is also directly connected to the Hub to the south, allowing unobstructed pedestrian flow to the Overwater Bridge, restrooms and planned retail and dining amenities.

The Welcome Mat is accessible from 2nd Avenue NE, Spa Beach, the Hub, the Overwater Drive and the Overwater Bridge. The Welcome Mat responds to the Pier Advisory Task Force Report's recommendation that "a drop-off/front door style experience for optimizing accessibility by way of cars, trolleys and/or other public transportation is important." (*Appendix H: Pier Advisory Task Force Report*, p.12)

1.2 Code References

- 1.2.1 Risk Category: ASCE/SEI 24-05
- 1.2.2 Wind Loads: ASCE 7-10
- 1.2.3 Vehicular Design: AASHTO

1.3 Dimensional Drivers

- 1.4.1 Vertical Datum: NAVD88
- 1.4.2 Total Area: 47,400 sq. ft.

2.0 Welcome Mat Subcomponents

2.1 Public Piazza

- 2.1.1 The public piazza is a 25,600 sq. ft. paved area constructed on fill with porous paving elevated +8'-0" above MSL.
- 2.1.2 The public piazza is designed to accommodate a range of temporary outdoor events from farmer's markets to civic celebrations.

COMPONENT DESCRIPTIONS

Welcome Mat (continued)
Hub
Overwater Drive
Overwater Bridge
Lens Canopy
Promontory
Lens Marina
Underwater Feature

- 2.1.3 The public piazza is fully compliant with Americans with Disabilities Act (ADA) guidelines.
- 2.2 Traffic Roundabout
 - 2.2.1 The traffic roundabout consists of a AASHTO compliant circular traffic feature paved with porous or sustainable paving.
 - 2.2.2 The traffic roundabout is designed to have a maximum turning radius of 80'-0" to accommodate emergency vehicles.

3.0 Systems

- 3.1 Mechanical – None
- 3.2 Plumbing – None
- 3.3 Electrical
 - 3.3.1 Code lighting will be provided throughout.
 - 3.3.2 High level pole lighting and low level bollard lighting will be provided with a sensitivity to overspill into the water.
 - 3.3.3 Electrical outlets will be embedded in the public piazza to supply power for temporary events.
 - 3.3.4 Electrical ground boxes will be coordinated with plug-in devices owned by the City's Parks Department.
- 3.4 Technology
 - 3.4.1 Wi-Fi will be provided at the Welcome Mat, as well as at all other project components.

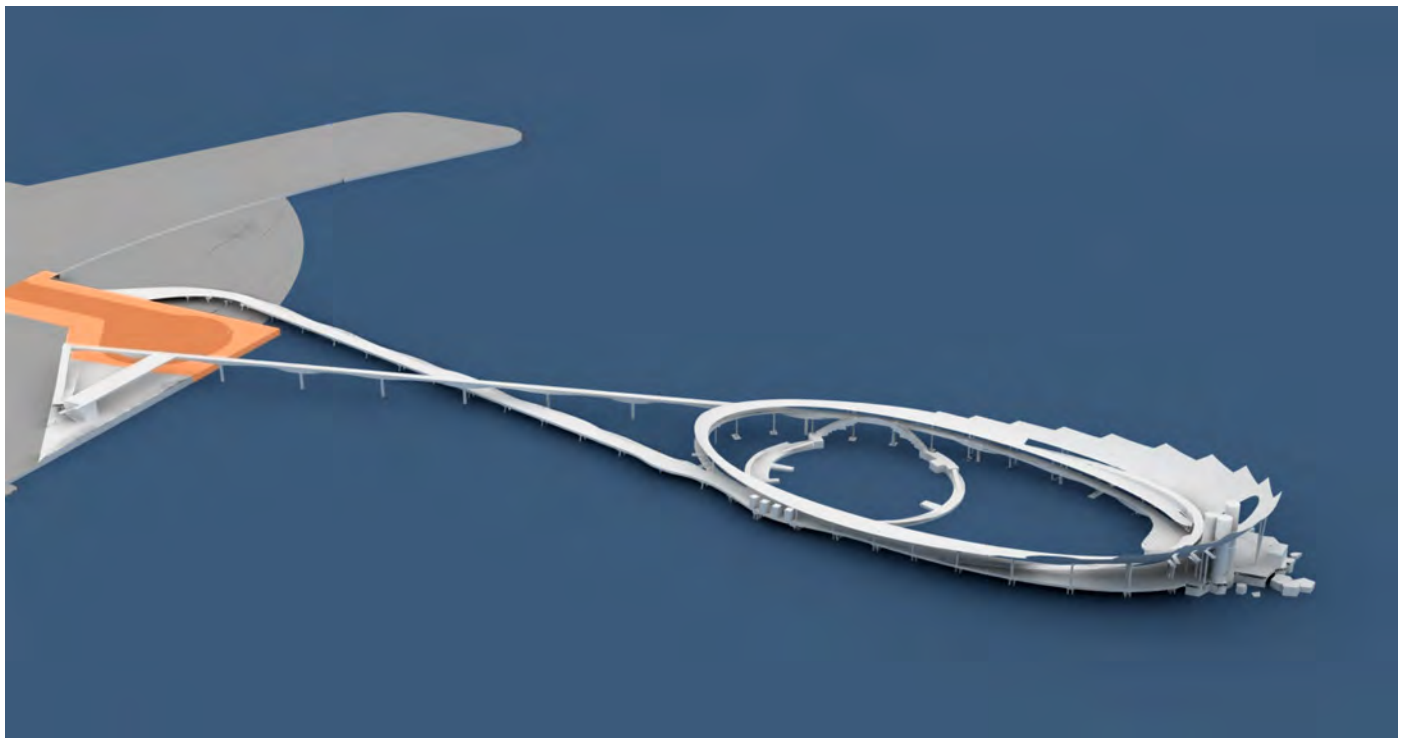
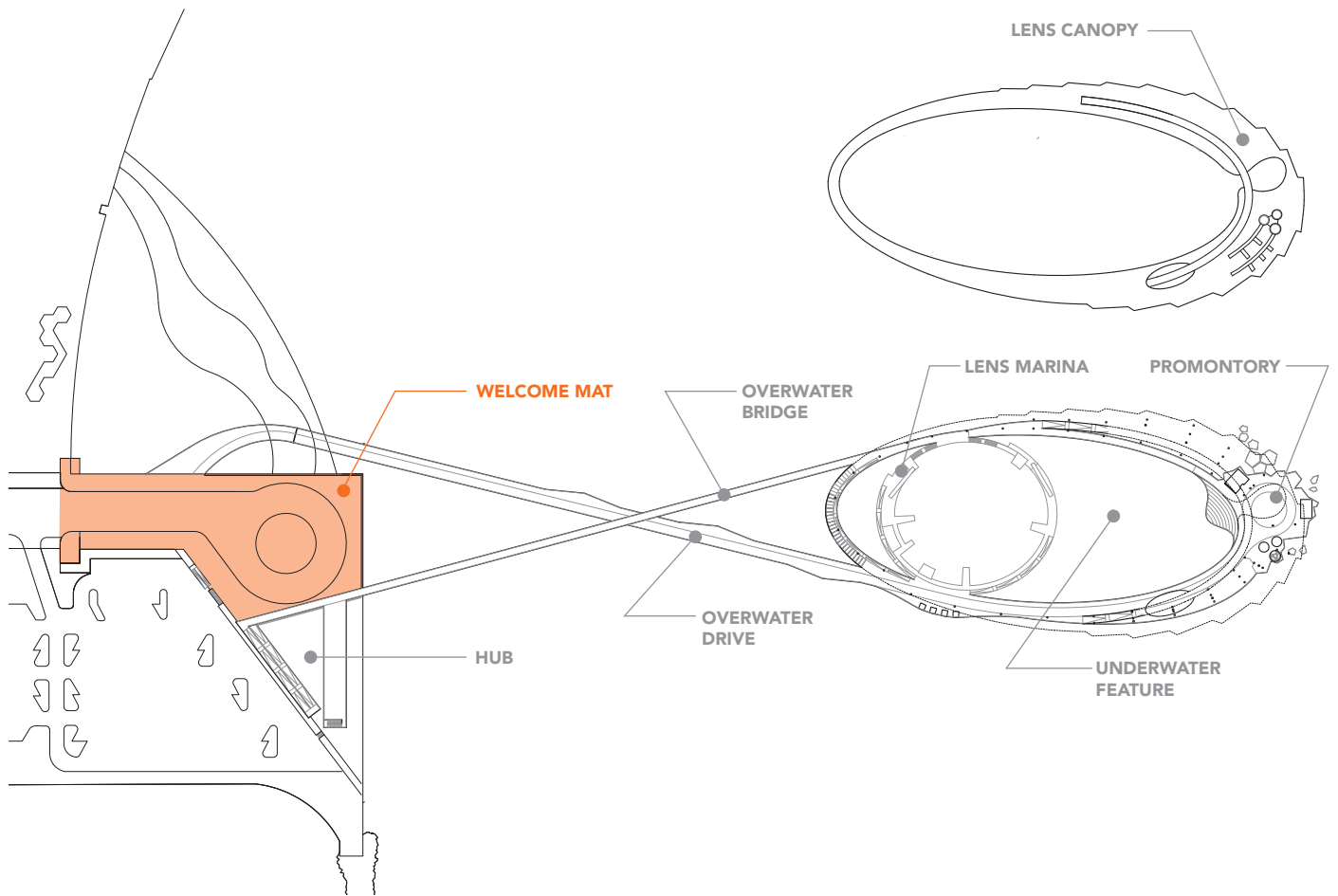


Figure 4.5 Welcome Mat Program Component and Related Subcomponents

COMPONENT DESCRIPTIONS

Welcome Mat
Hub
Overwater Drive
Overwater Bridge
Lens Canopy
Promontory
Lens Marina
Underwater Feature

Hub

1.0 Architectural Description

- 1.1 Located immediately south of the Welcome Mat is the Hub. The Hub is intended as the main retail and dining attraction for the project, an Uplands destination that allows visitors to take in views of the new Pier and enjoy planned enhancements such as dining along the bay, a gift shop or other retail amenity. The Hub's subcomponents consist of a program platform, restrooms and an elevated observation platform. Stub-outs will be provided for a restaurant or similar amenity for future private development. This area is elevated out of the Coastal High Hazard Zone by the program platform, which can be expanded to accommodate the addition of new program elements.

The Hub is accessible from the Welcome Mat and Second Avenue as well as from the Overwater Bridge via a large, accessible ramp to the west and a stair that extends from the observation platform to the south. Parking is provided by the existing Pelican Parking Lot. The Hub fulfills the recommendation of the Pier Advisory Task Force Report that programming of the new Pier should begin "as close to the Uplands as possible to provide a seamless connection to the City with comfortable walking distances," as well as the recommendation that the program of the Pier be focused on restaurants and other food services (*Appendix H: Pier Advisory Task Force Report*, p. 1).

1.2 Code References

- 1.2.1 Risk Category: ASCE/SEI 24-05
- 1.2.2 Wind Loads: ASCE 7-10

1.3 Dimensional Drivers

- 1.4.1 Vertical Datum: NAVD88
- 1.4.2 Total Area: 22,350 sq. ft.

2.0 Hub Subcomponents

2.1 Program Platform

- 2.1.1 The program platform is a 22,350 sq. ft. stepped concrete slab constructed on fill with precast concrete pavers elevated +9'-0" above MSL.
- 2.1.2 The western edge of the program platform berms down into the Pelican Parking Lot.
- 2.1.3 The program platform is the foundation for the observation platform and restrooms as well as a planned restaurant, retail space, storage area, and trash enclosure.
- 2.1.4 The program platform is fully compliant with Americans with Disabilities Act (ADA) guidelines.

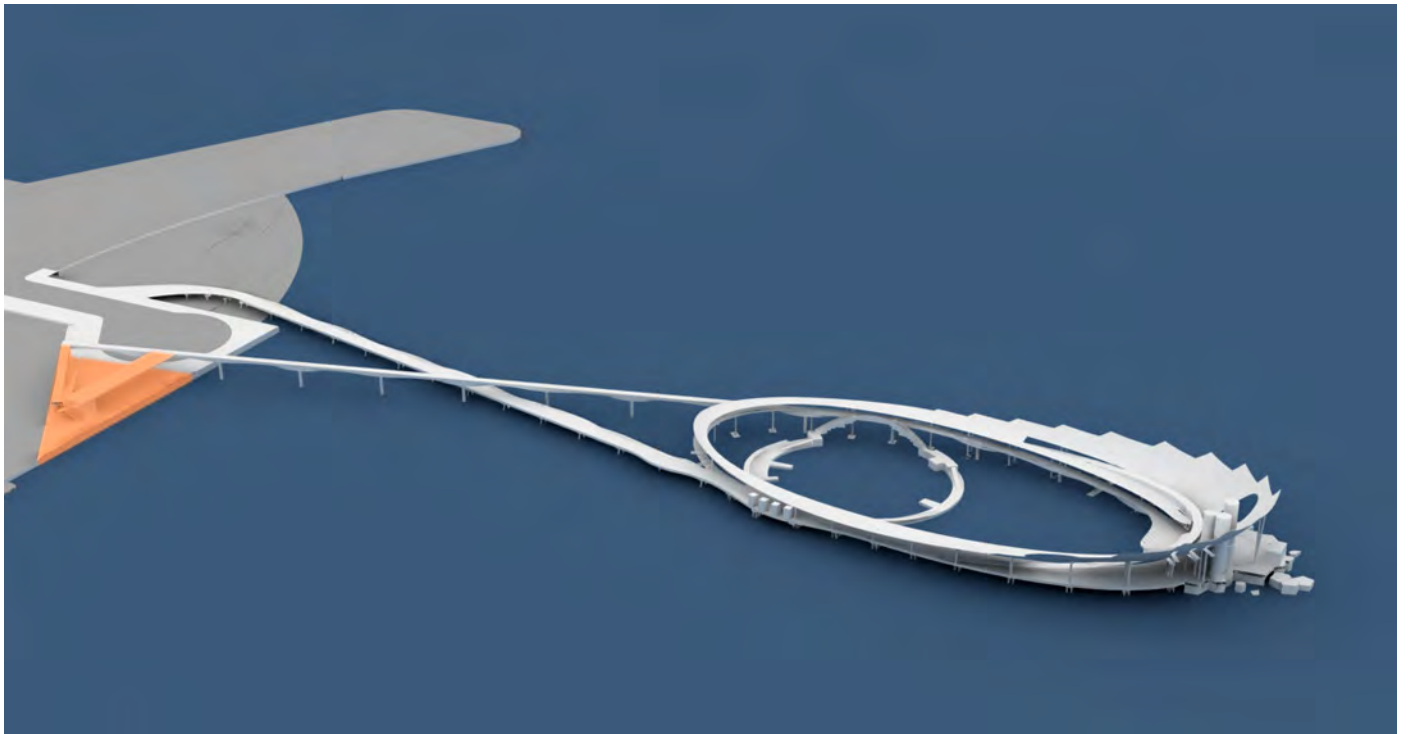
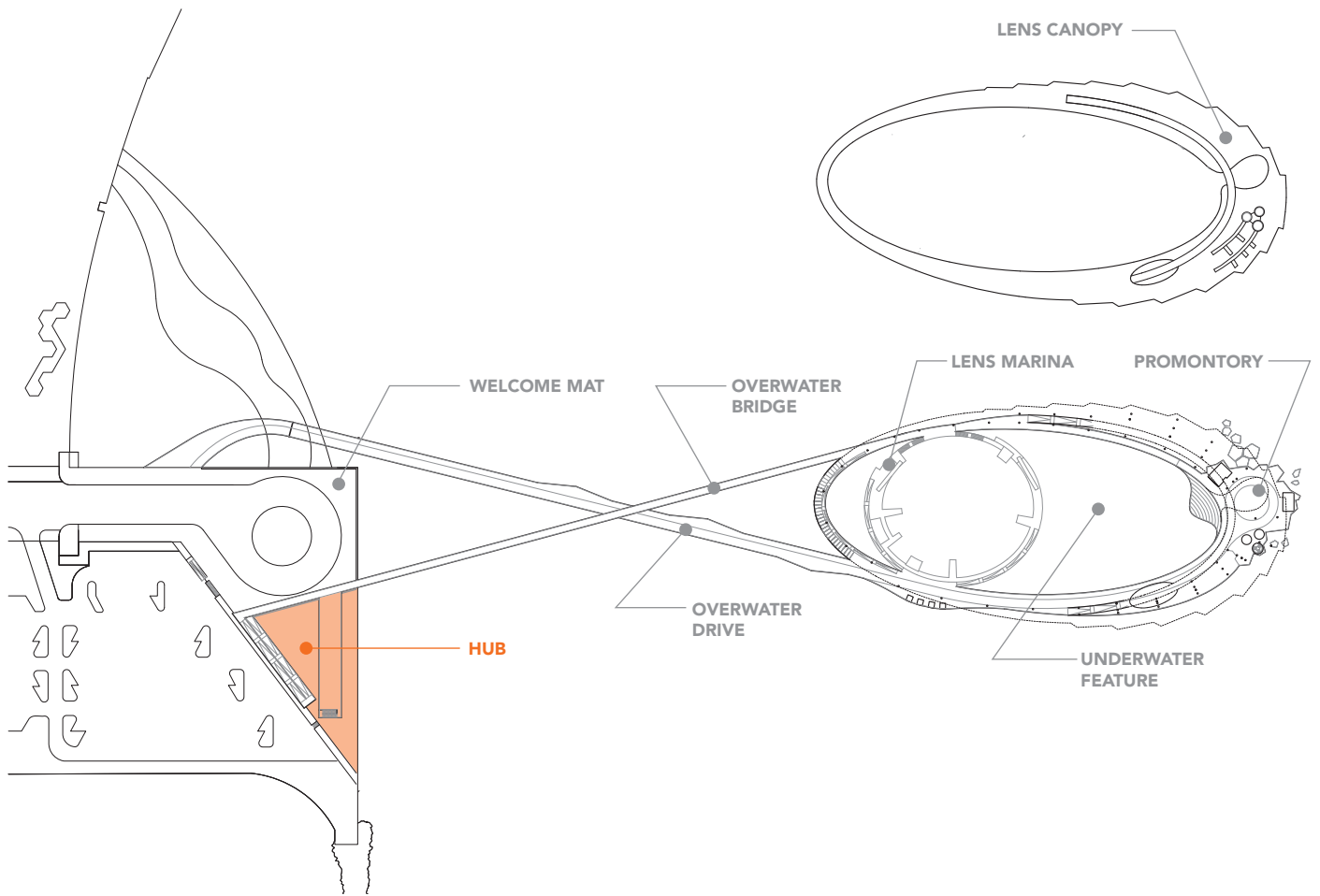


Figure 4.6 Hub Program Component and Related Subcomponents

COMPONENT DESCRIPTIONS

Welcome Mat
Hub (continued)
Overwater Drive
Overwater Bridge
Lens Canopy
Promontory
Lens Marina
Underwater Feature

2.1.5 42" high aluminum guardrails will be provided where necessary.

2.1.6 The program platform is designed to accommodate trash and delivery services.

2.2 Observation Platform

2.2.1 The observation platform consists of a 4,650 sq. ft. occupiable platform above the restrooms

2.2.2 The observation platform provides the opportunity for views of the Lens, Tampa Bay and back to the St. Petersburg skyline.

2.2.3 The observation platform is directly accessible from the Overwater Bridge and via a stair to the south of the platform.

2.2.4 52" high aluminum guardrails will be provided where necessary.

2.3 Restrooms

2.3.1 (2) Restrooms will be provided beneath the northern end of the observation platform; one for men and one for women.

2.3.2 The men's restroom will be outfitted with 2 toilets and 2 urinals. The women's restroom will be outfitted with 4 toilets.

2.3.3 Hand washing stations will be located adjacent to the restrooms.

2.3.4 Each restroom will be outfitted with an independent baby changing station.

2.3.5 The restrooms shall also serve the Spa Beach.

2.3.6 A beach shower will be provided adjacent to the restrooms.

2.3.7 (2) Drinking fountains will be provided adjacent to the restrooms.

3.0 Systems

3.1 Mechanical – None

3.2 Plumbing

3.2.1 Potable water will be supplied for use at the restrooms.

3.2.2 Wastewater removal will be required from the restrooms.

3.2.3 Stub-outs for plumbing will be sized and provided for a planned restaurant and trash enclosure.

3.3 Electrical

3.3.1 Code lighting will be provided throughout.

3.3.2 Step lighting will be provided at the program platform.

- 3.3.3 General lighting and electrical hookups will be provided at the restrooms.
- 3.3.4 High level pole lighting and low level bollard lighting will be provided with a sensitivity to overspill into the water.
- 3.3.5 Stub-outs for electrical services will be provided for planned restaurant, retail, storage space and trash enclosure.
- 3.3.6 A public address system for occupant notification and emergency warning will be provided.

3.4 Technology

- 3.4.1 Wi-Fi will be provided at the Hub, as well as at all other project components.

COMPONENT DESCRIPTIONS

Welcome Mat
Hub
Overwater Drive
Overwater Bridge
Lens Canopy
Promontory
Lens Marina
Underwater Feature

Overwater Drive

1.0 Architectural Description

1.1 The Overwater Drive is the first of two central Pier structures that make up the new Pier. The Overwater Drive allows pedestrian, service vehicle and emergency vehicle access to the Marina and Promontory, extending from the northern end of the Welcome Mat east over the water to the Promontory. Along its length, two pathway balconies are provided for shade and relaxation. A tram stop that also serves as a turnout for emergency vehicles is provided adjacent to the Marina. The shading amenities on the Overwater Drive respond to the Pier Advisory Task Force's recommendation of creating "comfortable and attractive pedestrian walkways and pathways" to ensure that "the Pier will remain a fully integrated experience into the existing fabric of the downtown urban core, park and waterfront" (*Appendix H: Pier Advisory Task Force Report*, p. 12).

1.2 Code References

- 1.2.1 Risk Category: ASCE/SEI 24-05
- 1.2.2 Wind Loads: ASCE 7-10
- 1.2.3 Vehicular Loading & Design: AASHTO HS-25

1.3 Dimensional Drivers

- 1.4.1 Vertical Datum: NAVD88
- 1.4.2 Typical Width: 20'-0"
- 1.4.3 Total Length: 1,455 ft.
- 1.4.4 Total Area: 34,050 sq. ft.

2.0 Overwater Drive Subcomponents

2.1 Overwater Drive

- 2.1.1 The Overwater Drive is a 20'-0" wide concrete deck structure elevated on piles and extending over the water.
- 2.1.2 The top of the deck is 12'-0" above MSL.
- 2.1.3 The top surface of the Overwater Drive is divided along its length into two coplanar surfaces - one 8'-0" wide wood-finish pedestrian surface and one 12'-0" wide concrete driving surface.
- 2.1.4 The Overwater Drive is the central route for pedestrians and vehicles to the Promontory.
- 2.1.5 The Overwater Drive can accommodate emergency vehicles weighing up to 50,000 lbs.
- 2.1.6 The northern edge of the Overwater Drive features an undulating concrete curb with integrated aluminum guardrails.

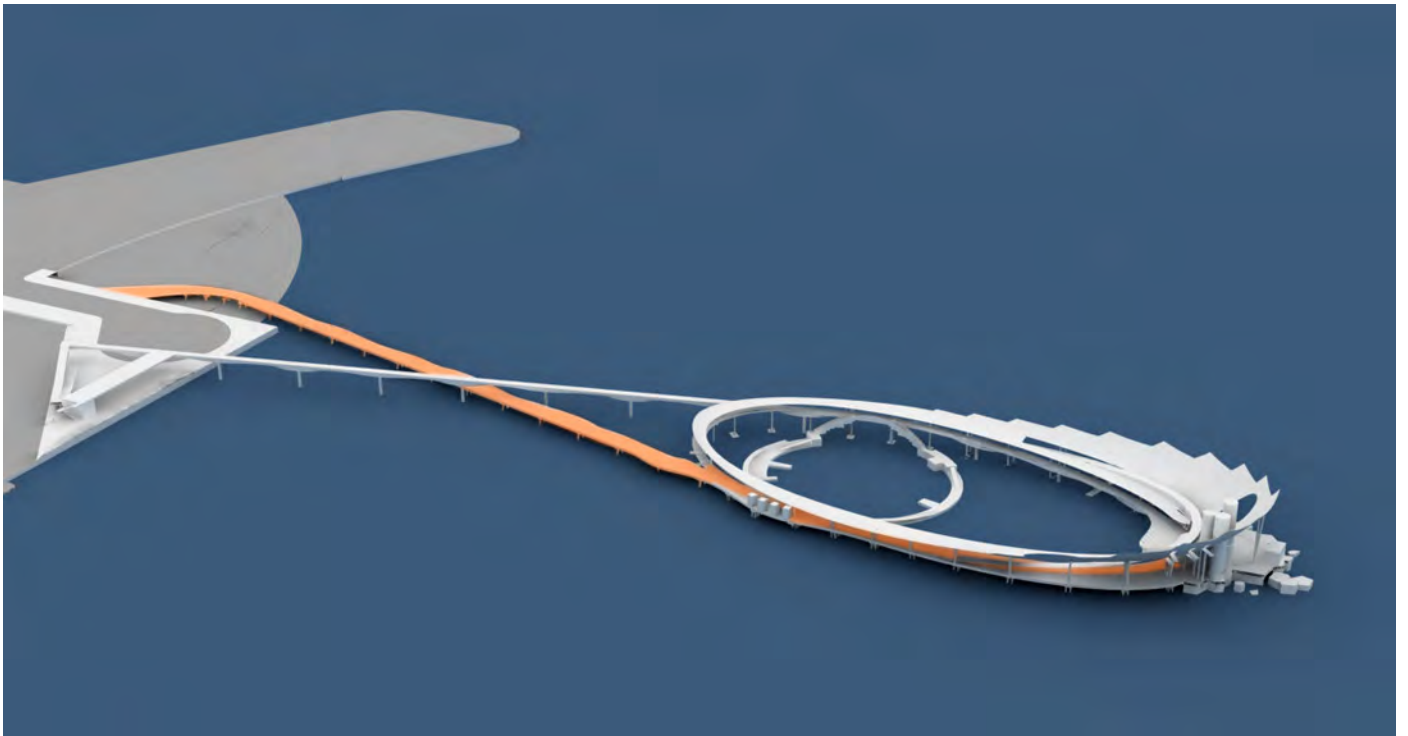
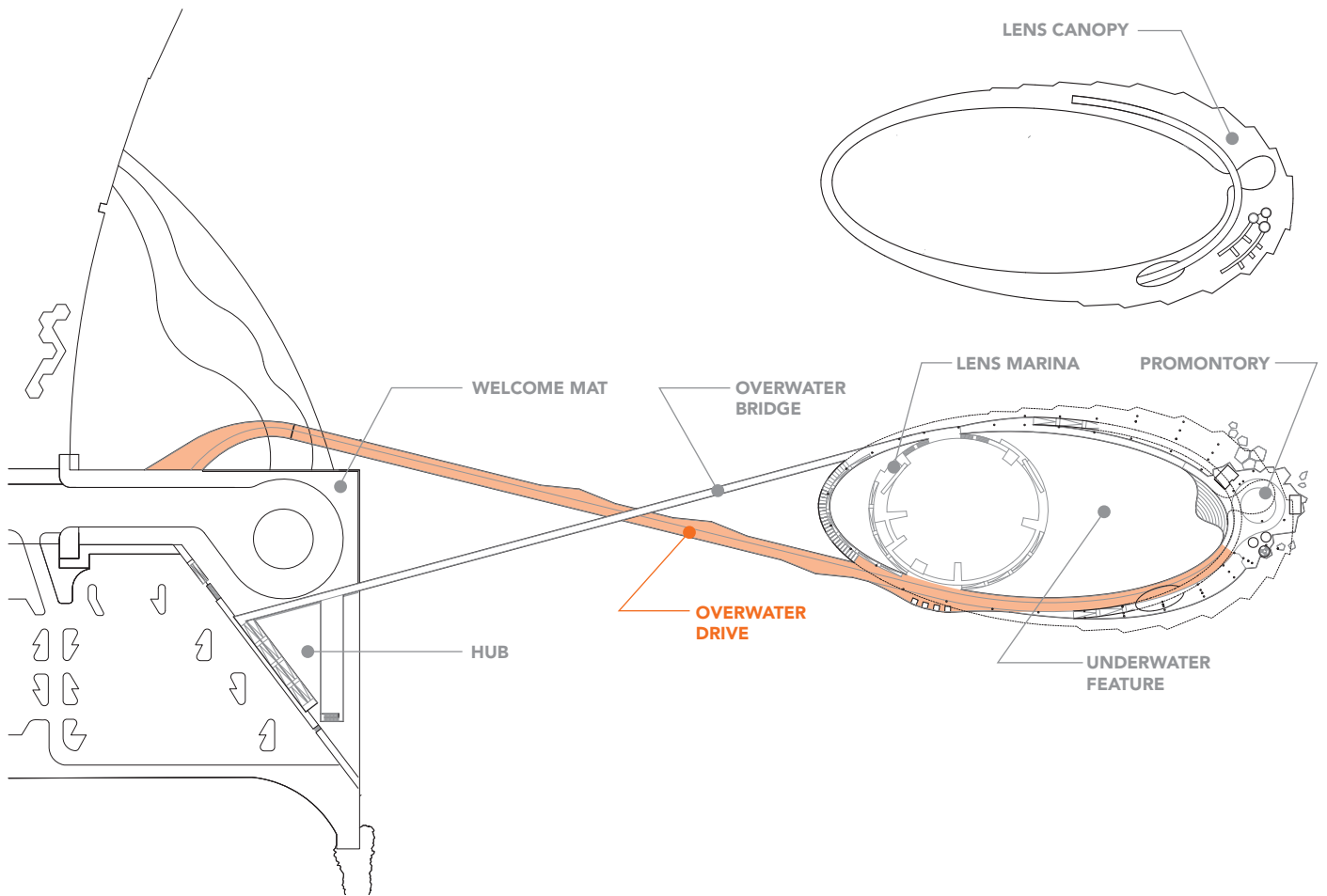


Figure 4.7 Overwater Drive Program Component and Related Subcomponents

COMPONENT DESCRIPTIONS

Welcome Mat
Hub
Overwater Drive (continued)
Overwater Bridge
Lens Canopy
Promontory
Lens Marina
Underwater Feature

2.1.7 42" high aluminum guardrails will be provided throughout.

2.2 Pathway Balconies

2.2.1 The pathway balconies are 8' deep, 120' long, 341 sq. ft. protrusions along the length of the Overwater Drive deck and Pier structure and will be finished with wood decking.

2.2.2 The pathway balconies will serve as areas where individuals and groups can gather beneath the pathway balcony shade canopies, relax and enjoy the shade.

2.2.3 (2) pathway balconies will be provided.

2.2.4 Wood benches will be provided at the pathway balconies.

2.2.5 42" aluminum handrails will be provided at the pathway balconies.

2.3 Pathway Balcony Shade Canopies

2.3.1 (2) pathway balcony shade canopies will be provided.

2.3.2 The pathway balcony shade canopies are 280 sq. ft. perforated metal shade structures over a tube-steel sub-structure.

2.4 Emergency Turn-Out

2.4.1 The emergency turnout is a 8' deep, 120' long, 341 sq. ft. extension of the Overwater Drive deck and Pier structure finished with a concrete driving surface.

2.4.2 The emergency turnout allows for vehicles on the Overwater Drive to pull out of the way of oncoming emergency vehicles.

2.4.3 The emergency turnout is intended to serve as a stop for the Pier Tram.

2.4.3 42" high aluminum guardrails will be provided at the emergency turnout.

3.0 Systems

3.1 Mechanical – None

3.2 Plumbing

3.2.1 The Overwater Drive is the main conduit for all plumbing services to the Marina and Promontory.

3.2.2 The Overwater Drive will house a 4" diameter sewage main and a 6" diameter domestic water main in a trench sized to accommodate an additional 4" diameter dry fire line in the future.

3.3 Electrical

- 3.3.1 Code lighting will be provided throughout.
- 3.3.2 High level lighting will be provided.
- 3.3.3 Step lighting will be provided where necessary.
- 3.3.4 The Overwater Drive is the main conduit of all electrical services to the Marina, Promontory and Canopy.

3.4 Technology

- 3.4.1 Wi-Fi will be provided at the Overwater Drive, as well as at all other project components.

COMPONENT DESCRIPTIONS

Welcome Mat
Hub
Overwater Drive
Overwater Bridge
Lens Canopy
Promontory
Lens Marina
Underwater Feature

Overwater Bridge

1.0 Architectural Description

1.1 The Overwater Bridge is located opposite the Overwater Drive and is the project's second central Pier element. Reserved for bikes and pedestrians, the Overwater Bridge is the main thoroughfare for individuals coming from the Marina and Promontory back towards the Hub and Welcome Mat on the Uplands. The Overwater Bridge consists of an elevated pathway supported by caissons extending over the water. The Overwater Bridge spans between the Promontory and the southern edge of the Hub, ramping up and over the Overwater Drive. The marina outlook (a shaded promenade with benches for sitting and boat watching) is located at the location where the Overwater Bridge curves around the Marina. The marina outlook also provides an ADA accessible route from the Overwater Bridge to the Overwater Drive and responds to the Pier Advisory Task Force's recommendation of creating "comfortable and attractive pedestrian walkways and pathways" to ensure that "the Pier will remain a fully integrated experience into the existing fabric of the downtown urban core, park and waterfront" (*Appendix H: Pier Advisory Task Force Report*, p. 12). As the Overwater Bridge moves landward, it connects with the Hub's observation platform and ramps down to the western portion of the Hub, providing an ADA thoroughfare and means of egress. Additional access is provided via a stair on the south of the observation platform.

1.2 Code References

- 1.2.1 Risk Category: ASCE/SEI 24-05
- 1.2.2 Wind Loads: ASCE 7-10
- 1.2.3 Pedestrian Pathway Design: AASHTO

1.3 Dimensional Drivers

- 1.4.1 Vertical Datum: NAVD88
- 1.4.2 Typical Width: 10'-0"
- 1.4.3 Total Length: 1,787 ft.
- 1.4.4 Total Area: 20,100 sq. ft.

2.0 Overwater Bridge Subcomponents

2.1 Overwater Bridge

- 2.1.1 The Overwater Bridge is a 10'-0" wide concrete deck structure elevated on caissons and extending over the water
- 2.1.2 The top of the deck is 29'-0" above MSL
- 2.1.3 The walking surface of the Overwater Bridge is concrete.

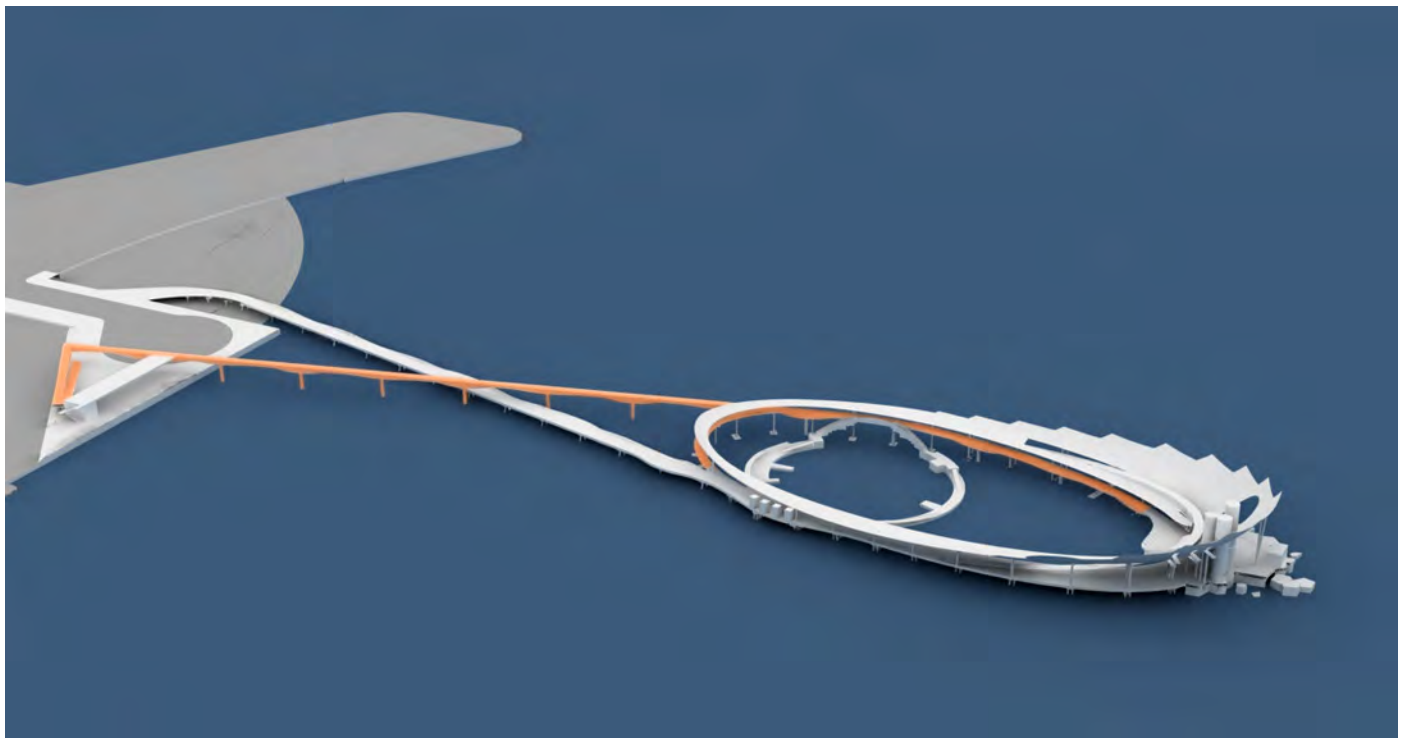
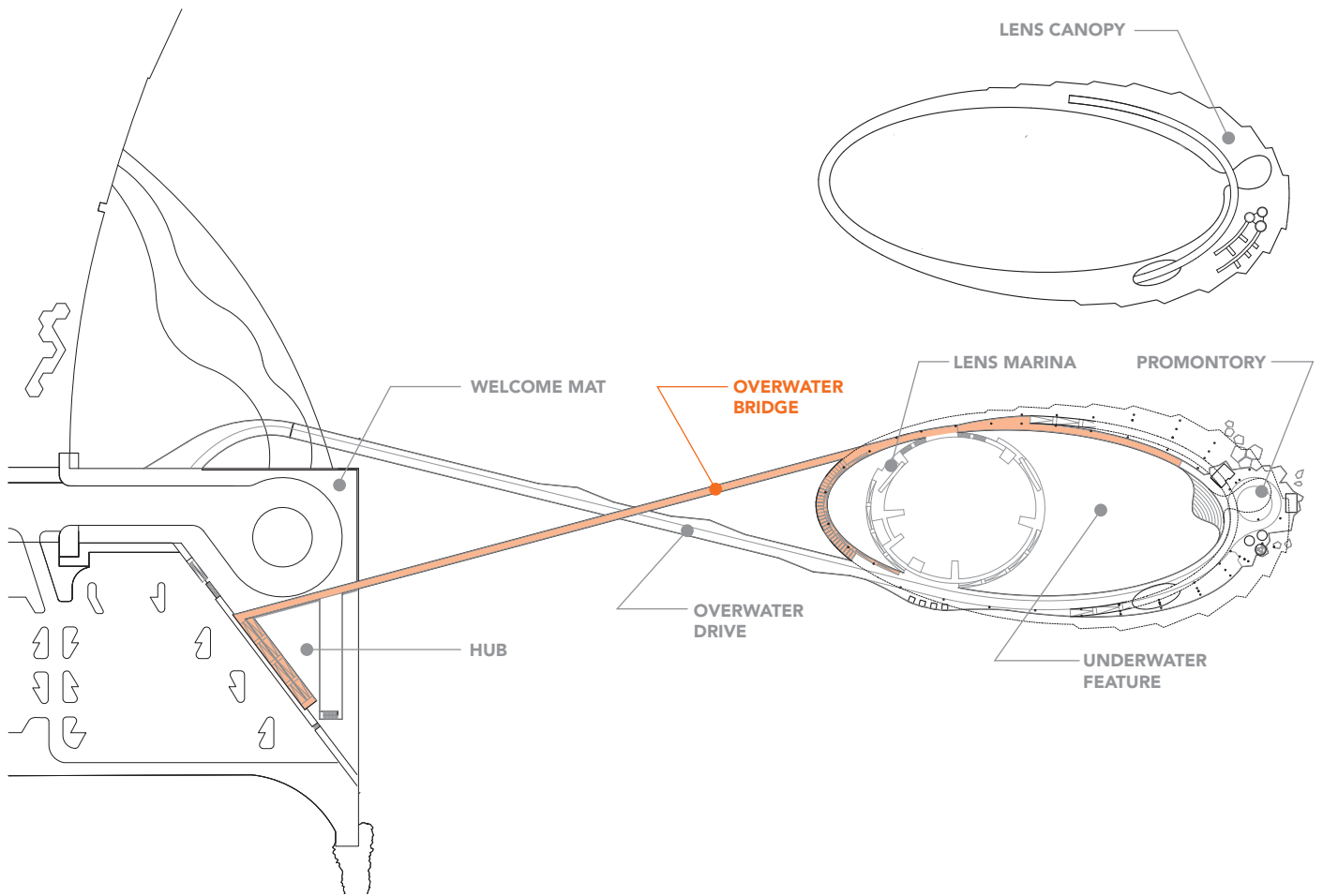


Figure 4.8 Overwater Bridge Program Component and Related Subcomponents

COMPONENT DESCRIPTIONS

Welcome Mat
Hub
Overwater Drive
Overwater Bridge (continued)
Lens Canopy
Promontory
Lens Marina
Underwater Feature

2.1.4 The Overwater Bridge is the main route for pedestrians from the Promontory to the Uplands.

2.1.5 52" Aluminum guardrails will be provided on both sides of the Overwater Bridge.

2.2 Marina Outlook

2.2.1 The marina outlook is a sloping, 15'-0" to 18'-0 wide concrete deck structure elevated on caissons and extending over the water, around the marina and connecting to the Overwater Drive.

2.2.2 The walking surface of the marina outlook is concrete.

2.2.3 The marina outlook has integrated wood benches.

2.2.4 The marina outlook features an ADA accessible route along its eastern edge.

2.2.4 52" high aluminum guardrails will be provided on both sides of the marina outlook.

2.3 Accessible Ramp

2.3.1 The accessible ramp is a sloping, 10'-0" wide concrete deck structure at the terminus of the Overwater Bridge elevated on columns.

2.3.2 The accessible ramp connects the Overwater Bridge to the Hub and Welcome Mat.

2.3.3 52" high aluminum guardrails will be provided on both sides of the accessible ramp.

2.3.4 The accessible ramp is fully compliant with Americans with Disabilities Act (ADA) guidelines.

3.0 Systems

3.1 Mechanical – None

3.2 Plumbing – None

3.3 Electrical

3.3.1 Code lighting will be provided throughout.

3.3.2 Low level bollard type fixtures will be provided with a sensitivity to overspill into the surrounding water.

3.3.3 Step lighting will be provided at the marina outlook.

3.4 Technology

3.4.1 Wi-Fi will be provided at the Overwater Bridge, as well as at all other project components.

COMPONENT DESCRIPTIONS

Welcome Mat
Hub
Overwater Drive
Overwater Bridge
Lens Canopy
Promontory
Lens Marina
Underwater Feature

Lens Canopy

1.0 Architectural Description

- 1.1 Rising above the looped portions of the Overwater Bridge and Overwater Drive is the Lens Canopy. The Lens Canopy is the iconic element of the project, intended as the defining feature of the St. Petersburg waterfront. The soaring structure provides shade and creates a pleasant environment for pedestrians. In addition, the Lens Canopy functions as the armature for the bike path and overlook balconies. During special events the Lens Canopy can be dramatically illuminated or can function as a large projection surface for light shows, videos and other media.

The bike path is a long, arcing ramp that connects the Overwater Drive to the Overwater Bridge by moving up through and onto the Lens Canopy. Embedded in the Lens Canopy's surface are the overlook balconies. Accessed by an elevator and stair from the Promontory, these balconies are opportunities for incredible views of the skyline and the Bay. Both the bike path and overlook balconies are fully compliant with Americans with Disabilities (ADA) guidelines. The Lens Canopy satisfies the Pier Advisory Task Force's recommendation that the new Pier function as an iconic structure. The Lens Canopy also fulfills the Task Force's recommendation to incorporate pedestrian and bike trails into the design and to provide dramatic views back to the City (*Appendix H: Pier Advisory Task Force Report, p.38*).

1.2 Code References

- 1.2.1 Risk Category: ASCE/SEI 24-05
- 1.2.2 Wind Loads: ASCE 7-10
- 1.2.3 Bike & Pedestrian Pathway Design: AASHTO

1.3 Dimensional Drivers

- 1.4.1 Vertical Datum: NAVD88
- 1.4.2 Total Canopy Area: 54,500 sq. ft.

2.0 Lens Canopy Subcomponents

2.1 Lens Canopy

- 2.1.1 The Lens Canopy is a 54,500 sq. ft. metal structure clad in metal panels and supported on composite columns.
- 2.1.2 The highest point of the Lens Canopy is +86'-0" MSL.
- 2.1.3 The Lens Canopy is 4' thick.
- 2.1.4 The Lens Canopy is the iconic focal point of the project

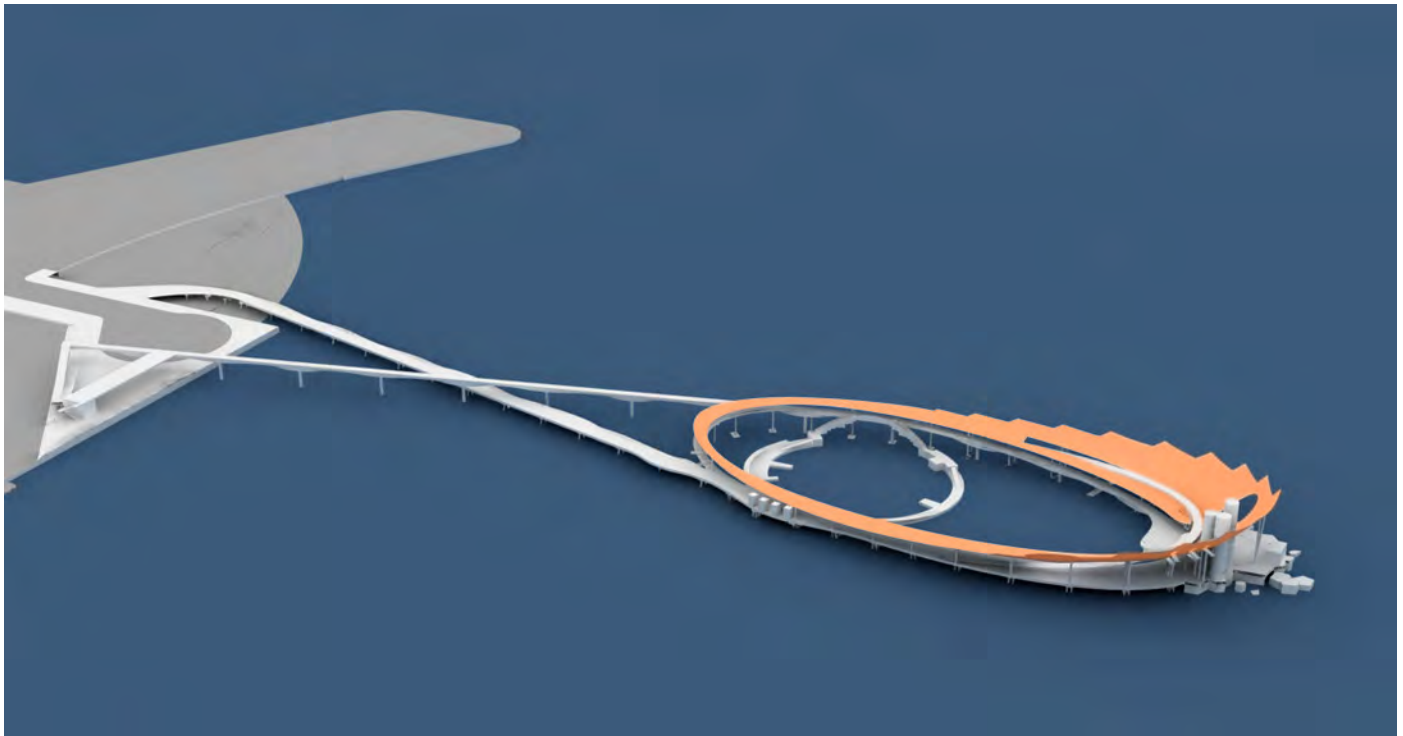
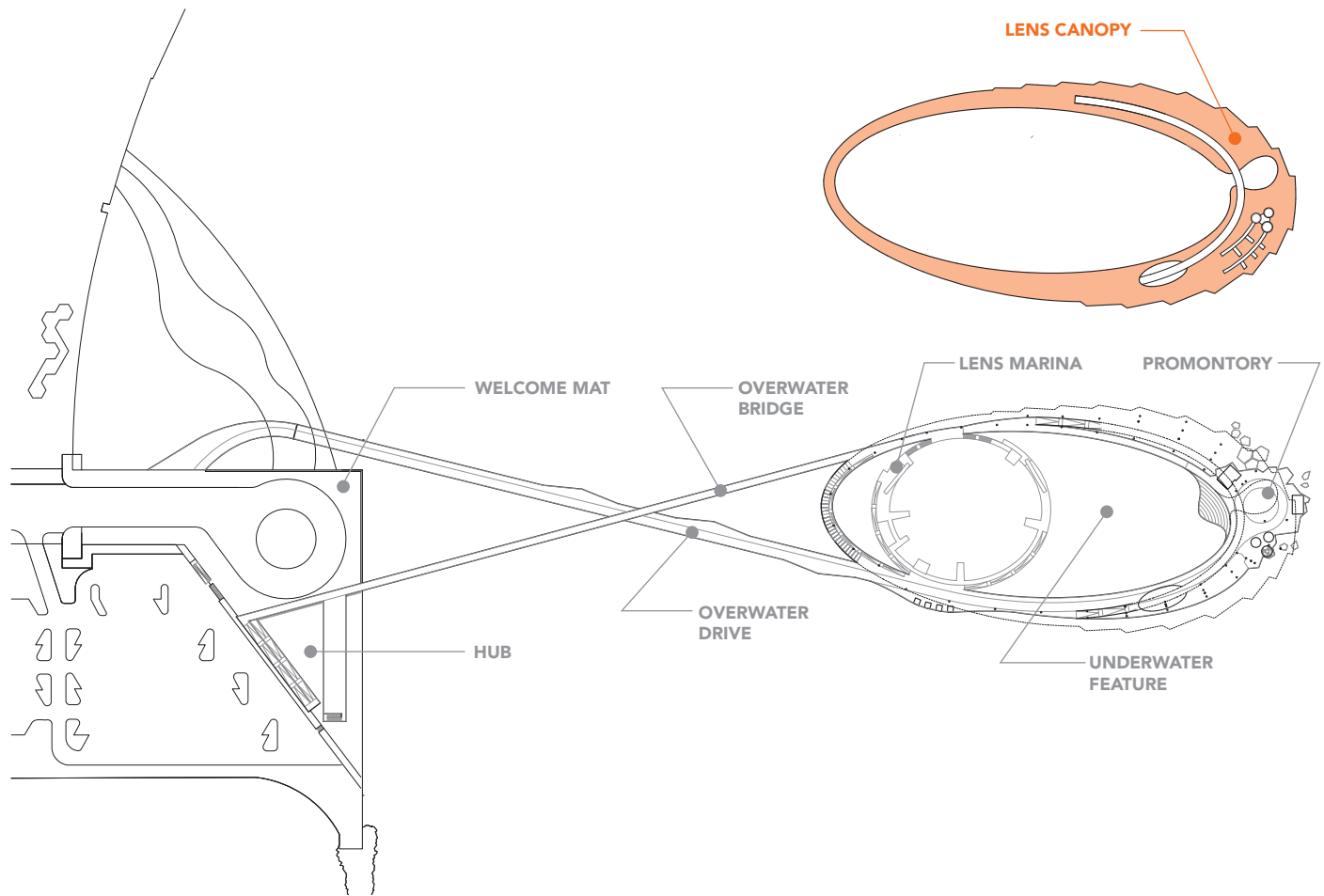


Figure 4.9 Lens Canopy Program Component and Related Subcomponents

- 2.1.5 The Lens Canopy provides shade for areas of the Overwater Drive, Overwater Bridge and Promontory.

2.2 Bike Path

- 2.2.1 The bike path consists of a 10' wide metal-framed sloping pathway with concrete decking.
- 2.2.2 The bike path will be designed according to AASHTO standards for mixed-use pathways.
- 2.2.3 The bike path is a fully ADA accessible route and is intended to accommodate biking, jogging and other forms of active recreation.
- 2.2.4 52" high aluminum guardrails will be provided on both sides of the bike path.

2.3 Overlook Balconies

- 2.3.1 The overlook balconies are 6' wide, metal framed balconies and catwalks with corrosion-resistant expanded metal mesh decking.
- 2.3.2 52" high aluminum guardrails will be provided wherever necessary.
- 2.3.3 The overlook balconies are accessible from the Promontory via an elevator or stairs.
- 2.3.4 The overlook balconies are designed to provide visitors with incredible views of downtown St. Petersburg and Tampa Bay.

2.4 Balcony Catwalks

- 2.3.1 The balcony catwalks are 6' wide, metal framed pathways with expanded metal decking that connect the balconies to the elevator and stair towers.
- 2.3.2 52" high aluminum guardrails will be provided wherever necessary.

3.0 Systems

3.1 Mechanical – None

3.2 Plumbing – None

3.3 Electrical

- 3.3.1 Architectural lighting will allow the top of the Canopy to be visible from the Uplands while allowing opportunities for light shows, movies, or a softly lit space.
- 3.3.2 Lighting for special events will be provided.

3.4 Technology – None

COMPONENT DESCRIPTIONS

Welcome Mat
Hub
Overwater Drive
Overwater Bridge
Lens Canopy (continued)
Promontory
Lens Marina
Underwater Feature

3.5 Sustainability

- 3.5.1 The Canopy offers opportunities for sustainable measures to be integrated onto its skin to provide renewable energy and reduce overall operating costs. An integrated design approach will enhance the iconic appearance of the Canopy while also serving as a learning opportunity for young visitors. The third structural core of the Promontory may act as server for the opportunities below.
- 3.5.1 Possible future integration of flexible photovoltaic panels
- 3.5.2 Possible future integration of wind turbines
- 3.5.3 Possible future integration of graywater collection system

COMPONENT DESCRIPTIONS

Welcome Mat
Hub
Overwater Drive
Overwater Bridge
Lens Canopy
Promontory
Lens Marina
Underwater Feature

Promontory

1.0 Architectural Description

- 1.1 Consisting of a rock-like platform that steps into the water, the Promontory serves as the experiential and programmatic apogee of the project. Constructed on top of the existing caissons and shaded by the Lens Canopy above, the Promontory accommodates a vehicular turn around, concessions space, learning steps and restrooms. Supplementing its formal program components, the Promontory is intended to be a place for special events, dances and other festivities.

One of the most important functions of the Promontory is to get people closer to the experience of the water. To that end, promontory rocks form a stepped bayside landscape that provides ample seating and gathering space, allowing visitors to interact directly with the water. The promontory rocks will also feature a dedicated fishing area. To the west, the Learning Steps extend out into the center of the Lens and provide a space for field trips and tour groups to gather and learn about the bay. As the foundation for the elevator core, stair core and alternate elevator core, the Promontory also serves as the main connection to the Lens Canopy.

The Promontory can be accessed directly from the Overwater Drive and Overwater Bridge and is fully ADA accessible.

1.2 Code References

- 1.2.1 Risk Category: ASCE/SEI 24-05
- 1.2.2 Wind Loads: ASCE 7-10
- 1.2.3 Bike & Pedestrian Pathway Design: AASHTO

1.3 Dimensional Drivers

- 1.4.1 Vertical Datum: NAVD88
- 1.4.2 Total Area: 18,050 sq. ft.

2.0 Promontory Subcomponents

2.1 Promontory Deck

- 2.1.1 The Promontory consists of a 18,050 sq. ft. concrete deck assembly supported on existing caissons.
- 2.1.2 The Promontory is the foundation for the concessions space, restrooms, elevator core, stair core and alternate elevator core.
- 2.1.3 The Promontory has a 35'-0" radius vehicular turnaround that can accommodate emergency vehicles and serves as the primary turnaround space for the Pier Trolley and the Downtown Looper.

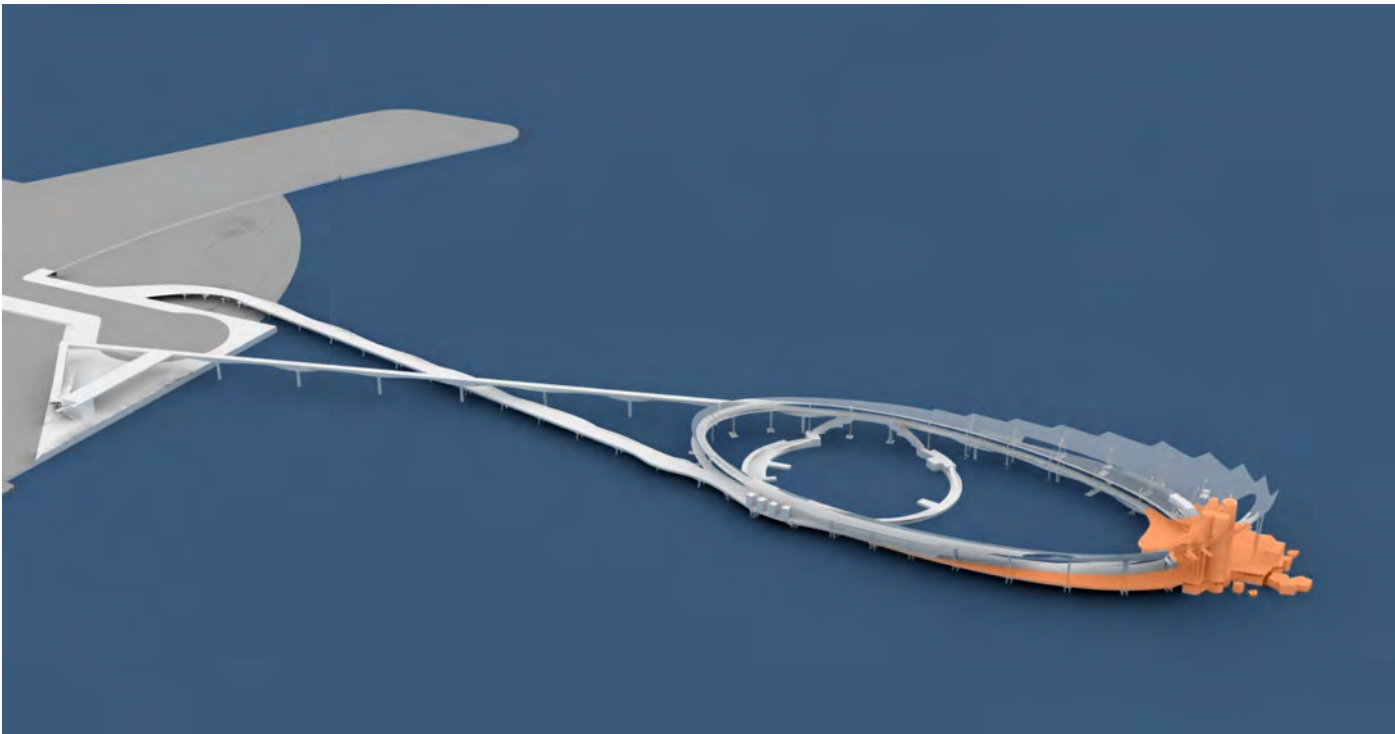
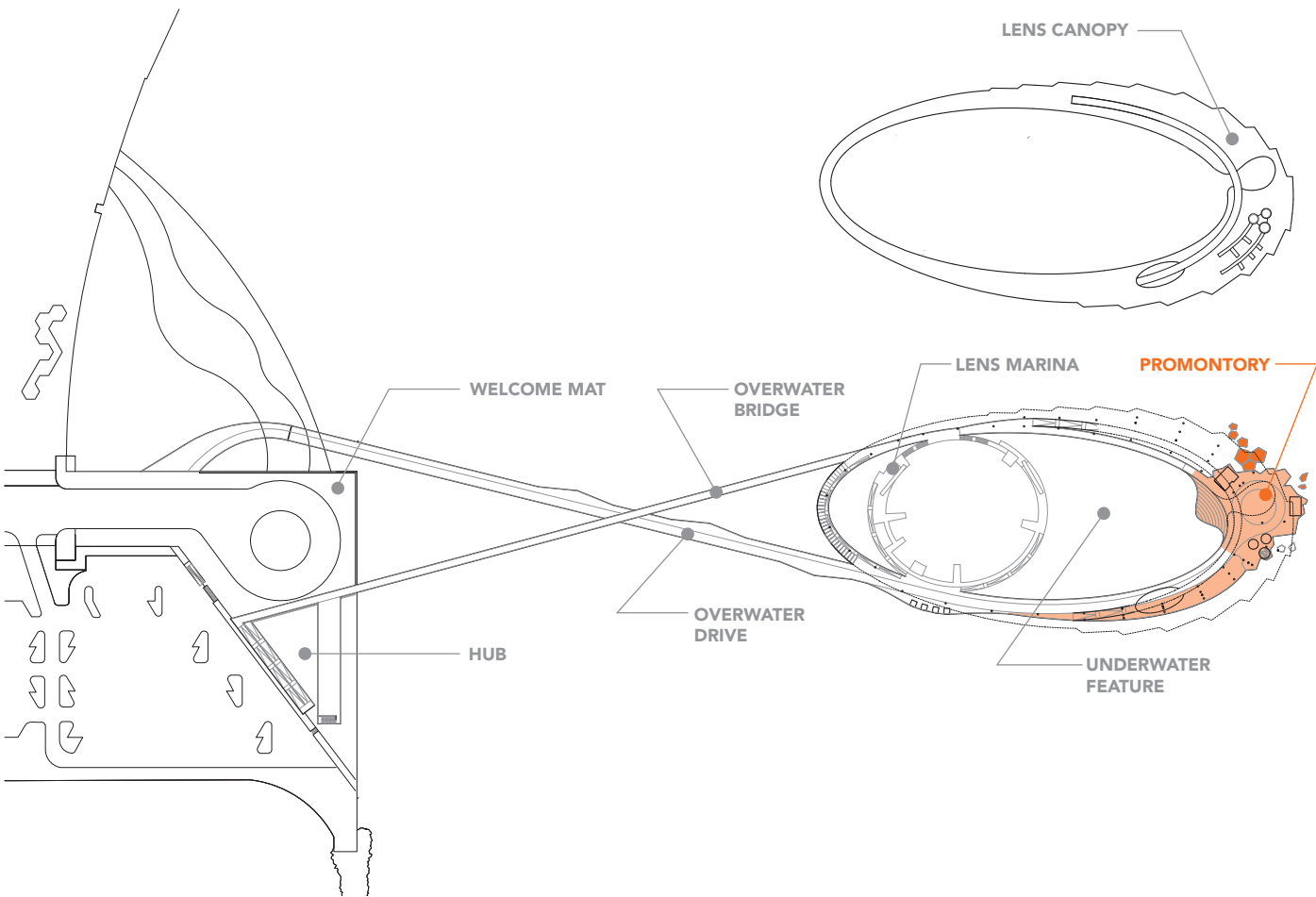


Figure 4.10 Promontory Program Component and Related Subcomponents

COMPONENT DESCRIPTIONS

Welcome Mat
Hub
Overwater Drive
Overwater Bridge
Lens Canopy
Promontory (continued)
Lens Marina
Underwater Feature

- 2.1.4 42" high aluminum guardrails will be provided wherever necessary.
- 2.1.5 The Promontory deck is fully compliant with Americans with Disabilities Act (ADA) guidelines.

2.2 Promontory Rocks

- 2.2.1 The promontory rocks are intended to replicate the experience of being on a rocky breakwater, allowing visitors the opportunity to sit and experience the water directly.
- 2.2.2 The promontory rocks consist of 2,100 sq. ft. of floating, rock-like platforms supported on piles.
- 2.2.3 42" high aluminum guardrails will be provided wherever the promontory rocks will be accessible.
- 2.2.4 The northern section of the promontory rocks will be dedicated to fishing.

2.3 Concessions Space

- 2.3.1 The 375 sq. ft. concessions space sells gelato, ice cream and other refreshments.
- 2.3.2 The space will be fully equipped with HVAC, electrical, plumbing and sanitary hookups.
- 2.3.3 The concessions space will feature bar-style seating.
- 2.3.4 Additional seating can be accommodated beneath the Lens Canopy on the promontory rocks.
- 2.3.5 Located south of the turnaround, space and utilities will be provided for a freestanding open-air grill to allow for light cooking.
- 2.3.6 Each column along the extended Promontory to the north will provide electrical hook-ups for food truck support. Additionally, every other column will provide services such as potable water and wastewater removal.

2.4 Restrooms

- 2.4.1 (2) restrooms will be provided on the northern end of the Promontory - one men's and one women's.
- 2.4.2 The men's restroom will be equipped with 2 toilets and 2 urinals. The women's restroom will be equipped with 4 toilets.
- 2.4.3 Hand washing stations will be located adjacent to the restrooms.
- 2.4.4 Each restroom will be equipped with an independent baby changing station.
- 2.4.5 (2) Drinking fountains will be provided adjacent to the restrooms.

COMPONENT DESCRIPTIONS

Welcome Mat
Hub
Overwater Drive
Overwater Bridge
Lens Canopy
Promontory (continued)
Lens Marina
Underwater Feature

2.5 Learning Steps

- 2.5.1 The learning steps are a 1,850 sq. ft. cast in place amphitheater supported by an existing caisson.
- 2.5.2 The learning steps will feature seating and accommodations for public lectures, school field trips, guided tours and other events.
- 2.5.3 42" high aluminum guardrails will be provided throughout.

2.6 Elevator Core

- 2.8.1 The elevator core will be a 13'-4" diameter cast-in-place concrete structural core.
- 2.8.2 The elevator core will have a three-stop piston-lift elevator that bridges the Promontory and the Lens Canopy above.

2.7 Stair Core

- 2.9.1 The stair core will be constructed as a 14'-8" diameter cast-in-place concrete structural core.
- 2.9.2 The stair core will have a cast in place pan stair.

2.8 Alternate Structural Core

- 2.9.1 The alternate structural core will be constructed as a 13'-4" diameter cast-in-place concrete structural core.
- 2.9.2 The alternate structural core will be designed to accommodate maintenance storage and temporary services including A/V plug-in. Additionally, the area above-ground can be used for storing resources generated from possible sustainability measures.
- 2.9.3 The alternate structural core's primary purpose is to provide structural lateral support for the canopy framing.

3.0 Systems

3.1 Mechanical

- 3.1.1 The concessions space will be equipped with a package air conditioning (AC) unit.

3.2 Plumbing

- 3.2.1 The concessions space will be provided with potable water and waste water removal.
- 3.2.2 Stub outs for potable water and waste water removal will be provided and sized for a future open air grill, as well as in select locations along the Promontory for food trucks.
- 3.2.3 Drainage will be provided for the elevator core and the stair core.

- 3.2.1 Potable water will be supplied for use at the restrooms.
- 3.2.2 Wastewater removal will be provided for the restrooms.

3.3 Electrical

- 3.3.1 Electrical service will be provided for the concessions space, restrooms, elevator core and stair core.
- 3.3.2 General pedestrian lighting will be provided throughout.
- 3.3.3 Additional architectural lighting will be provided throughout the Promontory.
- 3.3.4 Emergency lighting will be provided where needed.
- 3.3.5 Electrical outlets will be provided in specific columns along the southern end of the Promontory to accommodate special events.
- 3.3.6 Step lighting will be provided at the learning steps.

3.4 Technology

- 3.4.1 Wi-Fi will be provided at the Promontory, as well as at all other project components.

COMPONENT DESCRIPTIONS

Welcome Mat
Hub
Overwater Drive
Overwater Bridge
Lens Canopy
Promontory (continued)
Lens Marina
Underwater Feature

Marina

1.0 Architectural Description

- 1.1 The Marina is a key component of the new Pier, offering a multitude of opportunities for water-based activities. The Marina will accommodate a range of non-motorized watercraft from kayaks, to paddle boats and stand-up paddle boards. The Marina consists of a modular floating dock approximately circular in shape. The floating dock has an integrated wave barrier that protects the interior of the Marina from Bay wind and waves.

The Marina is accessible from the Overwater Drive via a pair of articulated, fully ADA compliant gang planks and from the Overwater Bridge via the arched stair.

The floating dock will accommodate a series of planned enhancements: a concessions stand, bait shop and kayak rental facility among others. The marina bathrooms are located south of the Marina on the Overwater Drive. The Marina's north-east side will also feature a dedicated fishing area.

1.2 Code References

- 1.2.1 ASCE, 1994. Planning and Design Guidelines for Small Craft Harbours, ASCE Manual on Engineering Practice No. 50. New York: American Society of Civil Engineers, 291 p.
- 1.2.2 NFPA 303 - Fire Protection Standard for Marinas and Boatyards
- 1.2.3 PIANC, 1995. "Review of Selected Standards for Floating Dock Designs." PIANC Sport & Pleasure Navigation Commission, September 1995
- 1.2.4 Tobiasson, B.O., and Kollmeyer, R.C., 2000. Marinas and Small Craft Harbours, Second Edition. Westviking Press, Medfield, MA.
- 1.2.5 UFC-4-152-07 – Design: Small Craft Berthing Facilities (14 July 2009; Change 1, 1 September 2012)
- 1.2.6 Layout & Design Guidelines for Marina Berthing Facilities – California Department of Boating and Waterways, July 2005.

1.3 Permitting Agencies

- 1.3.1 US Army Corps of Engineers – Section 10 Rivers and Harbors Act
- 1.3.2 US Army Corps of Engineers – Section 404 Clean Water Act
- 1.3.3 SW Florida Water Management District – Environmental Resources Permit

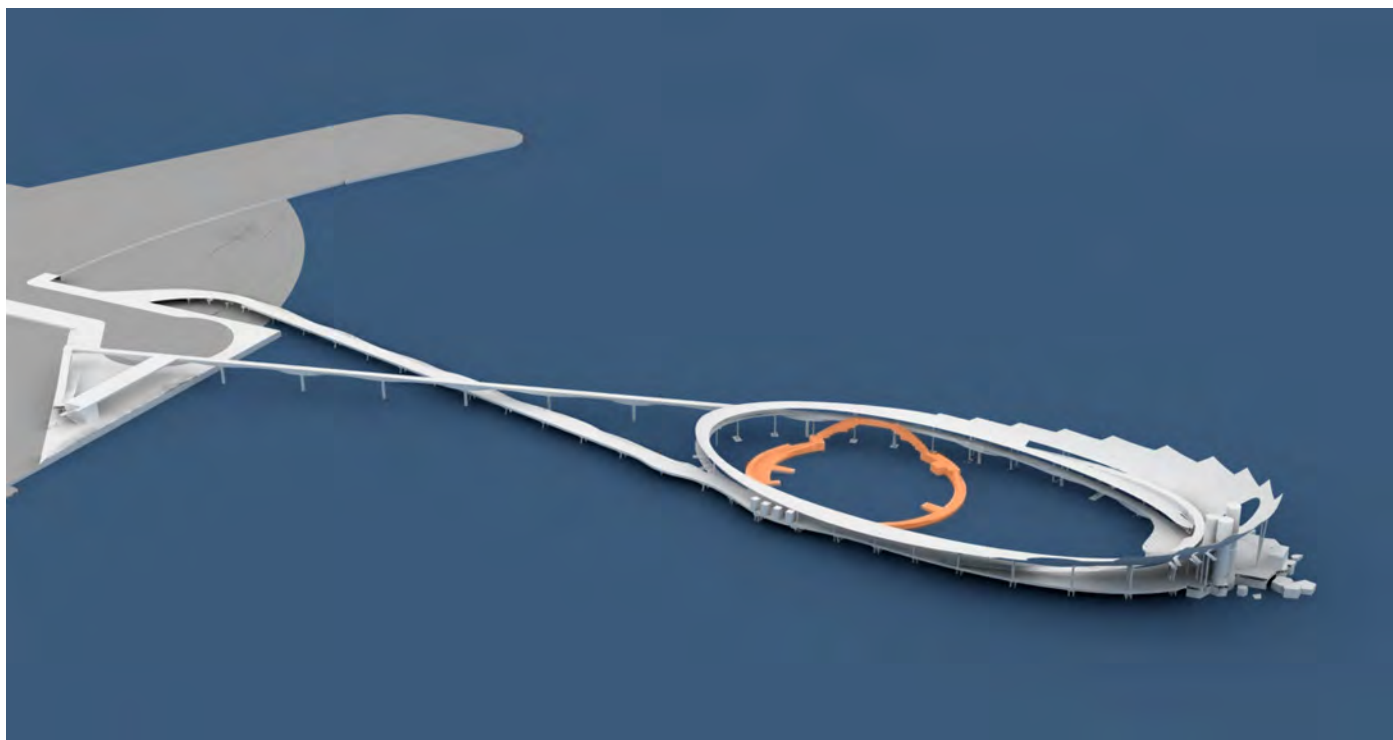
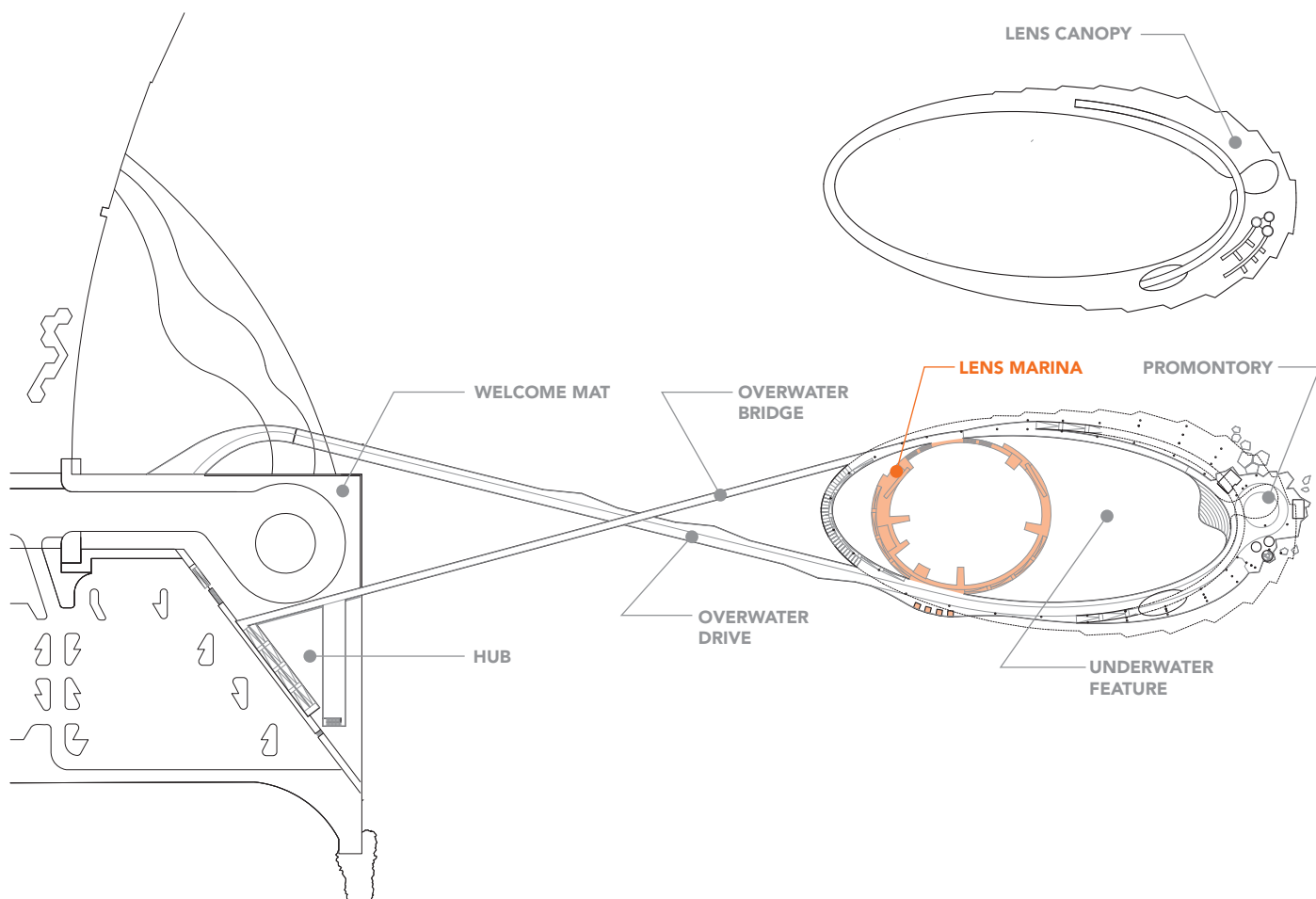


Figure 4.11 Marina Program Component and Related Subcomponents

COMPONENT DESCRIPTIONS

Welcome Mat
Hub
Overwater Drive
Overwater Bridge
Lens Canopy
Promontory
Lens Marina (continued)
Underwater Feature

- 1.3.4 SW Florida Water Management District – Coastal Zone Management Act Consistency Determination
- 1.3.5 SW Florida Water Management District – Section 401 Clean Water Act Certification
- 1.3.6 Pinellas County – Commercial and Multi-Use Dock Permit
- 1.3.7 City of St. Petersburg – Building Permit

1.4 Dimensional Drivers

- 1.4.1 All dimensions in relationship to N 23
- 1.4.2 Vertical Datum = NAVD88
- 1.4.3 Total Area = 9,150 sq. ft.

2.0 Marina Subcomponents

2.3 Restrooms

- 2.3.1 There are (4) restroom stations.
- 2.3.2 The restrooms are located to the south of the Marina on the Overwater Drive.
- 2.3.2 Each restroom station will be equipped with (1) toilet and (1) lavatory.
- 2.3.3 A baby changing station will be provided in each restroom.

2.5 Floating Dock

- 2.5.1 The total area of the floating dock is 9,150 sq. ft.
- 2.5.2 The floating dock will likely be a proprietary product made from combinations of concrete, marine grade aluminum, and composite plastics. Durability of the floating docks shall be at least 25 years as per international accepted standards for these products.
- 2.5.3 The deck surface of the floating dock will be of treated timber construction.
- 2.5.4 Access to the floating dock during all tide cycles requires articulated gangways. Gangway structures will be marine grade aluminum and have a maximum slope of 3H:1V for safe access at mean low water (MLW). The design load of the gangway platform is 100 psf for the structural load and 50 psf for the load transferred to float plus the dead load of the gangway. All gangway transition plates and handrails will comply with Americans with Disabilities Act (ADA) requirements. The elevation of the gangway access platforms will be above the design high water level (100-year event).

- 2.5.5 All utilities will run in a trench around the floating dock forming a basic utility spine. As the Marina expands, utilities can be plugged into this basic system.
- 2.5.6 A dedicated fishing area is located on the north-east side of the Marina

2.6 Arched Stair

- 2.6.1 The arched stair is the gateway to the Marina and has a maximum opening of 50 ft. wide. At its highest point, the bottom surface of the arched stair is 20 ft. above mean sea level. The sides of the structure step up as they form the arch.
- 2.6.2 The arched stair is 6 ft. wide, and has 40 steps from the wave wall deck to the intersection between the arched stair and the Overwater Bridge.
- 2.6.3 The top of the arched stair will be fixed to the Overwater Bridge with the bottom of the stair resting on the floating dock. The arched stair will be articulated to account for tidal change.
- 2.6.4 The arched stair will be constructed of aluminum.
- 2.6.5 The walls of the arched stairs will be clad in wood with aluminum guardrails provided on both sides.
- 2.6.6 The arched stair will have step lights on the stairs and side warning lights for watercraft.

3.0 Systems

3.1 Mechanical – None

3.2 Plumbing

- 3.2.1 Potable water will be supplied for use at the restrooms.
- 3.2.2 Wastewater removal will be required from the restrooms.
- 3.2.3 Hook ups for sanitary and domestic water will be provided for the floating dock.

3.3 Electrical

- 3.3.1 Low level fixtures will be provided at the floating dock.
- 3.3.2 Step lighting will be provided at the arched stair.
- 3.3.3 Hook ups for electrical will be provided at the floating dock

3.4 Technology – None

- 3.4.1 Wi-Fi will be provided at the Lens Marina, as well as at all other project components.

COMPONENT DESCRIPTIONS

Welcome Mat
Hub
Overwater Drive
Overwater Bridge
Lens Canopy
Promontory
Lens Marina
Underwater Feature

Underwater Feature

1.0 Description

1.1 The future Underwater Feature can become an exciting attraction to the Lens and an important resource for the bay and the community. After gathering significant information from technical workshops, research and meetings with individuals in the marine community, the design team remains excited about the possibilities for an Underwater Feature as a part of the Lens and the potential benefits it will bring to the community. Before a basis of design for this feature can be established, further in-depth study and specific research will be needed to evaluate feasibility, impacts and benefits on environmental, cost and community levels. The Underwater Feature is intended to function as a framework supporting future habitat enhancement by the local scientific community, potentially funded by grants or future city funds.

1.2 Permitting Agencies

- 1.2.1 US Army Corp of Engineers
- 1.2.2 Florida Department of Environmental Protection
- 1.2.3 Southwest Florida Water Management District
- 1.2.4 Pinellas County

1.3 Additional Agencies and Organizations that may provide comments

- 1.3.1 Tampa Bay Estuary Program
- 1.3.2 Tampa Bay Regional Planning Council
- 1.3.3 Florida Department of Environmental Protection
- 1.3.4 Florida Fish and Wildlife Conservation Commission
- 1.3.5 Save the Manatee
- 1.3.6 US Environmental Protection Agency
- 1.3.7 National Oceanic & Atmospheric Administration
- 1.3.8 National Marine Fisheries

1.4 Permits

- 1.4.1 An application for an Environmental Resource Permit from the State and Federal government has been submitted and is currently in progress. The granting of the permit is dependent upon the feature's impacts, the proposed mitigation of these impacts and the relative value of existing conditions versus the proposed project. If proposed changes are significant, the future Underwater Feature may require additional studies for this permit.

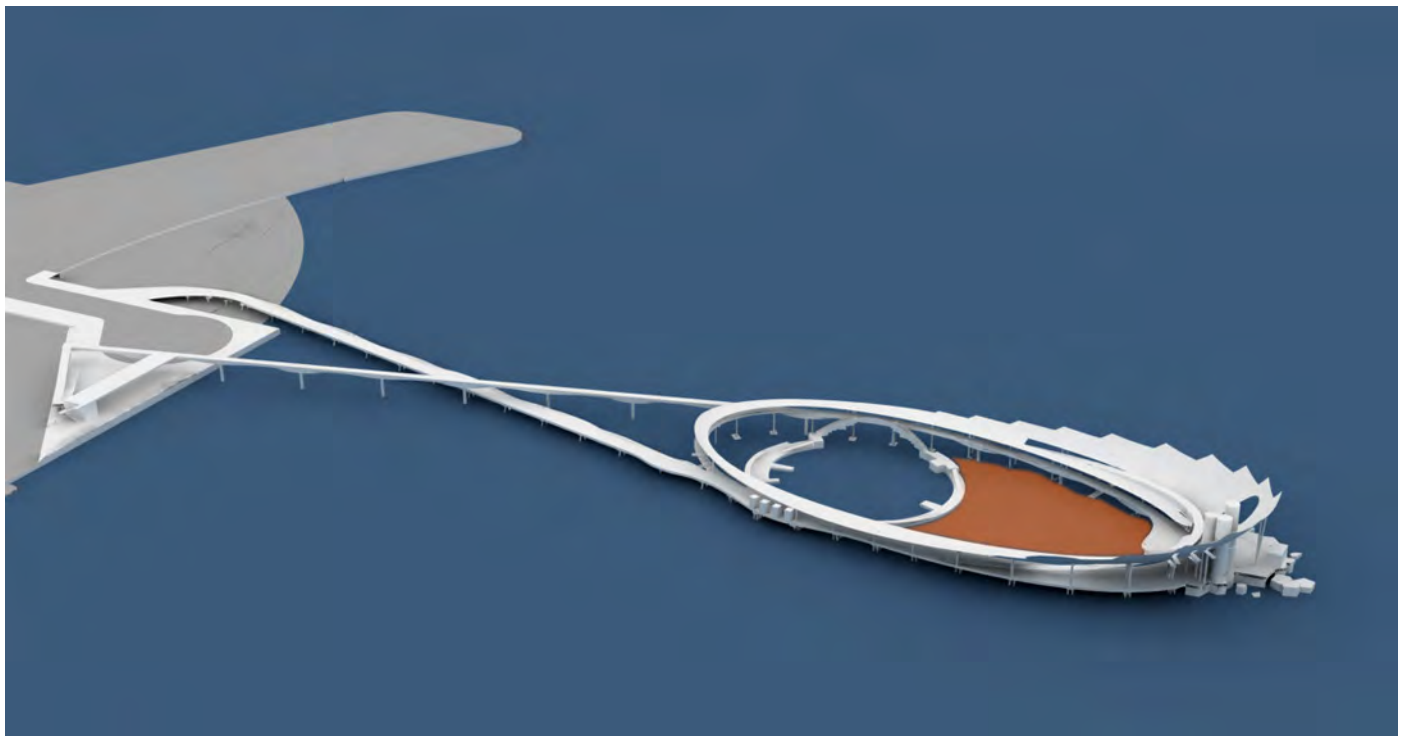
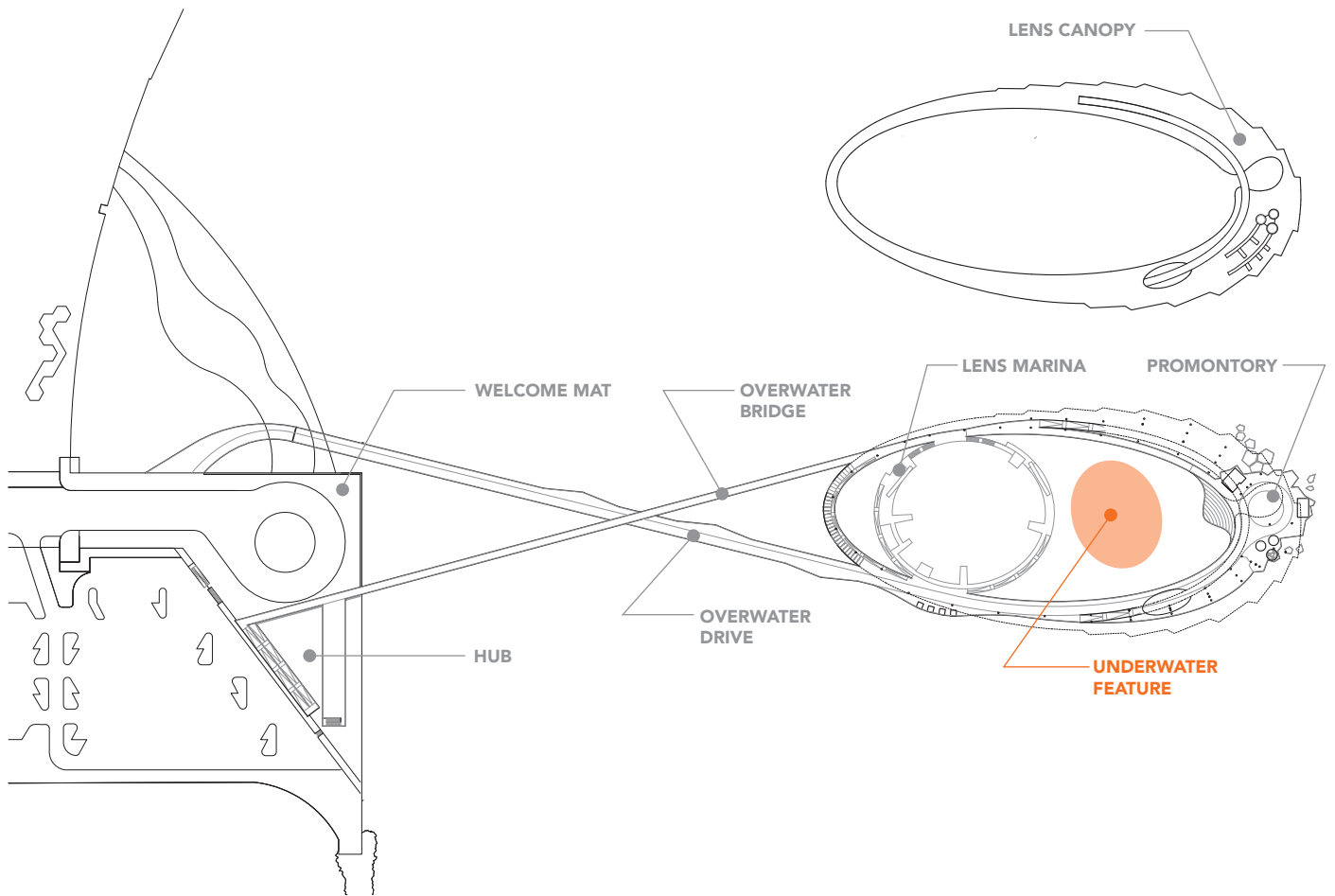


Figure 4.12 Underwater Feature Program Component and Related Subcomponents

COMPONENT DESCRIPTIONS

Welcome Mat
Hub
Overwater Drive
Overwater Bridge
Lens Canopy
Promontory
Lens Marina
Underwater Feature (continued)

1.5 Data gathering

- 1.5.1 Structural, geotechnical, scientific and cost analysis will be necessary. Educational studies will evaluate how the feature can be introduced into local curricula. Marketing and business studies will evaluate how the feature can function as a St. Petersburg attraction.
- 1.5.2 A detailed benthic study needs to be performed to document the existing habitat. The permitting agency, design team and an environmental fieldwork consultant will develop and agree upon the scope of the study, which may include topics such as seasonal observations or observations of varying durations.
- 1.5.3 The design team is cautiously investigating the capacity of existing piles to remain in place so that they may become a component of the Underwater Feature. Thorough investigation and structural analysis will be needed to accurately assess their condition and to determine their structural suitability.

2.0 Possible Subcomponents

- 2.1 When additional environmental, geotechnical, structural, and technical data becomes available, subcomponents will be studied for system compatibility and for sensitivity to the habitat. All construction and introduction of new components will follow Florida Fish and Wildlife manatee protection construction guidelines and manatee exclusion devices guidelines. The goal is to minimize the impact to existing habitats while maximizing diversity.
- 2.2 Artificial reef construction components (possibilities include the existing piles, reef balls and concrete culverts)
- 2.3 Lighting equipment and systems
- 2.4 Acoustical equipment and systems
- 2.5 Digital camera/imaging equipment and systems
- 2.6 Linkages to internet, remote access and monitoring
- 2.7 Solar power equipment and systems
- 2.8 Components to allow docent-led tours by kayak or boat

5

**BASIS OF DESIGN
CONCEPT ANALYSIS**

INTRODUCTION

The purpose of this section is to describe, through drawings, diagrams and descriptive analysis, the new St. Petersburg Pier. The following is a list of drawings appearing in the section, the pagination of which refers to the complete drawing set.

- **A0-00 Cover Sheet**
- **A0-52 Existing Pier Plan**
- **A0-53 Existing Structure Plan**
- **A0-54 Existing Pier/Proposed Pier Plan**
- **A1-00 Site Plan**
- **A2-01 Marina Plan**
- **A2-02 Overwater Drive Plan**
- **A2-03 Overwater Bridge Plan**
- **A2-04 Balcony Plan**
- **A2-05 Canopy Plan**
- **A3-01 Elevations**
 - 1 / North Elevation
 - 2 / South Elevation
 - 3 / East Elevation
- **A4-01 Sections**
 - 1 / Longitudinal Section
 - 2 / Transverse Section
- **A4-02 Upland Sections**
 - 1 / Upland East-West Section
 - 2 / Upland North-South Section
- **A4-03 Drive, Bridge & Canopy Sections**
 - 1 / Bike Path - Lens Canopy
 - 2 / Promontory - Lens Canopy
 - 3 / Overwater Drive Section
 - 4 / Alt. Overwater Drive Section
 - 5 / Alt. Overwater Drive Pile Cap Section
 - 6 / Overwater Bridge Section
- **A4-04 Marina Sections**
 - 1 / Marina Entrance Section
 - 2 / Typ. Floating Dock Section
 - 3 / Typ. Floating Dock Section
- **A5-10 Enlarged Hub Plan**
- **A5-11 Enlarged Marina Plan**
- **A5-12 Enlarged Promontory Plan**
- **A5-13 Underwater Feature Plan**
- **A5-14 Promontory Double "T" Beam Layout Plan**
- **A5-30 Enlarged Elevator Plans and Section**
 - 1 / Promontory Level Plan
 - 2 / Balcony Level 1 Plan
 - 3 / Roof Plan
 - 4 / Hoistway Section
- **A9-01 Guardrail Details**
 - 1 / Guardrail Type A Section
 - 2 / Guardrail Type B Section
 - 3 / Guardrail Type C Section
 - 4 / Guardrail Type D Section

ENGINEERING NARRATIVE

Marine Work

The design team has preliminarily identified potential supports for the new Pier elements, which include new piles and caissons, as well as selective reuse of the existing caissons supporting the Inverted Pyramid building. Actual design of foundations for the Pier will begin following execution of the geotechnical exploration program and more precise site-specific evaluation of wind and wave loads during the next stage of work. At this early phase, the engineers believe the following foundation types would be viable options:

- Overwater Drive – A three-pile pier system, with one vertical and two batter piles supporting pile caps spaced at approximately 60', could support the roadway/walkway. The pile type could be a precast 18" square concrete pile driven into place.
- Overwater Bridge – Single large diameter (estimated at 48") caissons spaced at 100' could support the relatively narrow structure. The caisson would be a steel shell drilled into the bay bottom and filled with concrete.
- The Promontory, Lens Canopy, and related decking would be supported by a series of pile caps custom poured to match the varying horizontal surface area. Again, precast 18" square piles could be used, although some areas may need 20" piles, and the stair may use drilled steel pipe piles with concrete fill. The design team has examined reconfiguration of the Promontory layout to engage the existing caissons presently supporting the Inverted Pyramid building.

Structural Approach

The design team has preliminarily identified potential superstructures for the new Pier elements. Actual design of these structures will begin following a more precise site-specific evaluation of wind and wave loads, but at this early phase, the engineers believe the following superstructure types would be viable options:

- Overwater Drive and Overwater Bridge – Precast beams are appropriate for construction of what are essentially bridges over water. The design team consulted the PCI Manual and identified several standard shapes which would function well for the 60' span of the Overwater Drive and the 100' span of the Overwater Bridge. Precast box beams and standard tees were sketched as options for the structural concept plans. Further discussions led by the Construction Manager revealed that Florida tee beams and/or double tees could be more economical due to local availability. Further investigation and design will be conducted in the next design phase to select the optimal precast beam shape. A concrete slab would be placed atop the beams and extend past the edges of the beam to form the full width of structure and support the edge railings. The superstructures may receive a cladding for aesthetic purposes.

- Promontory – the Promontory and related decking would consist of similar precast beams supporting a cast in place deck. In some areas where the Promontory is planned to “step down” into the Bay, the engineers will investigate the placement of large unreinforced concrete block on piles driven below the tidal zone, both to help absorb wave forces and to avoid placing reinforcing bar in the tidal zone.
- Lens Canopy – the Canopy will consist of a galvanized steel and concrete support structure onto which prefabricated panels will be affixed. The design team has investigated concrete and aluminum panels. Aluminum panels may present advantages of less weight and easier placement onto the structure.
- Various protection strategies for structural steel and reinforcing steel were discussed during the BOD phase. Structural steel would be protected either by galvanization or a three- or four coat protective coating (paint) system which would consist of a zinc-rich primer, two epoxy mid-coats and a urethane top coat if exposed. Cathodic protection can also be considered for protecting steel reinforcing bar, and such components as steel sheet piling. Cathodic protection can consist of sacrificial systems, where such components as zinc or magnesium are placed in strategic locations to serve as an (positive) anode to absorb stray electrons, or active systems, where low voltage (approximately 40 V) impressed currents are placed within the steel and connected to a grounding system to attract away stray electrons. For assured protection, repainting may need to occur once every 15 years.
- In all structures, low maintenance and corrosion- and UV-resistant materials designed for aggressive marine environments will be specified.

Site Work

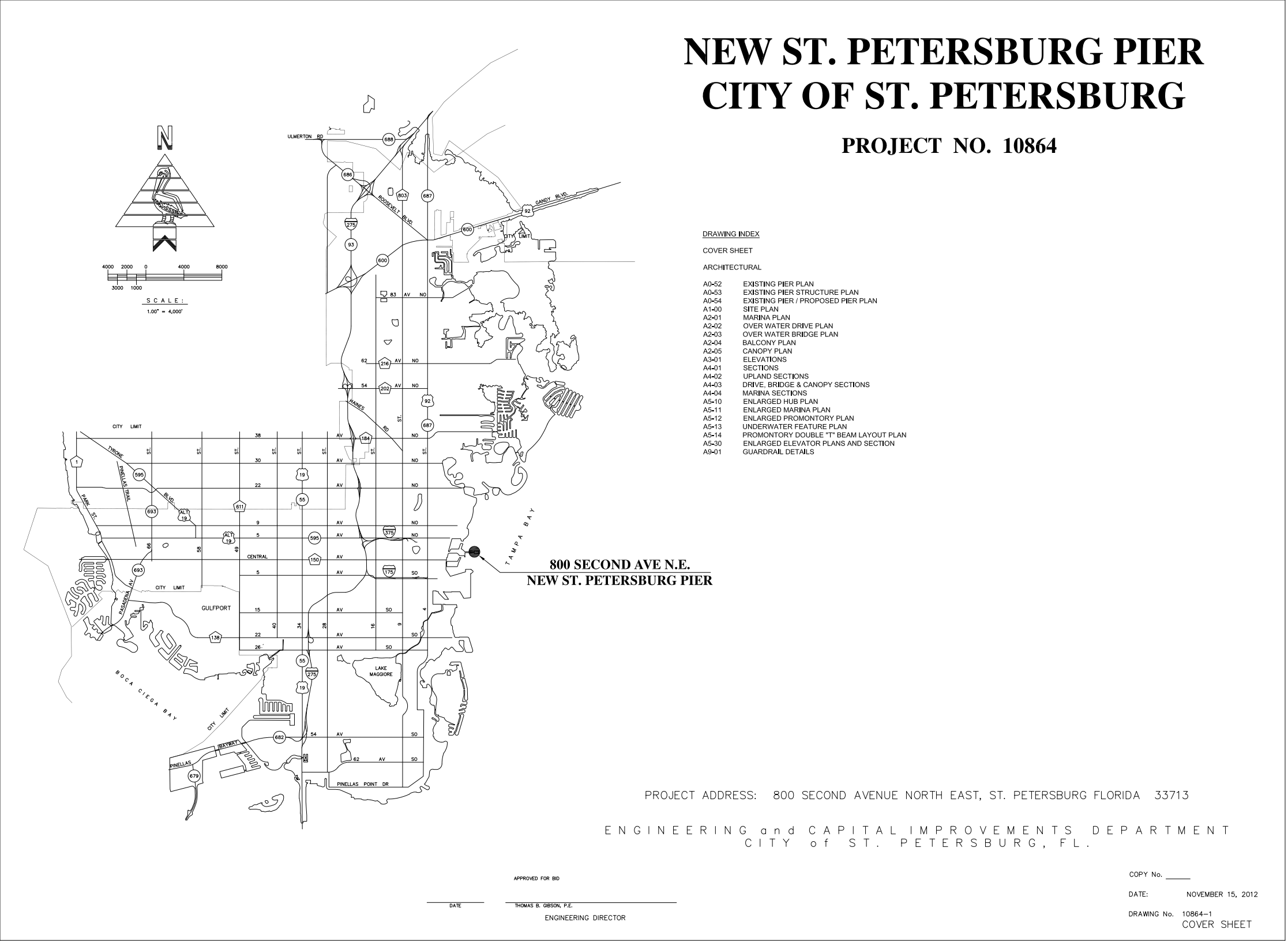
The Hub on the Uplands will require site work to create an appropriate entryway to the Pier. Work will include new paving, lighting, planting and restoration of the areas occupied by the existing Pier.

Utilities

The project needs to provide utility services for the new Pier and Hub elements. This will include water for potable use and fire protection, electrical service and natural gas. A propane system will be investigated for the Promontory area in lieu of providing a gas service from the Uplands. A sanitary sewer ejector system will originate at the Promontory and discharge into the existing Uplands sanitary system. Modifications will be made to the existing storm system.

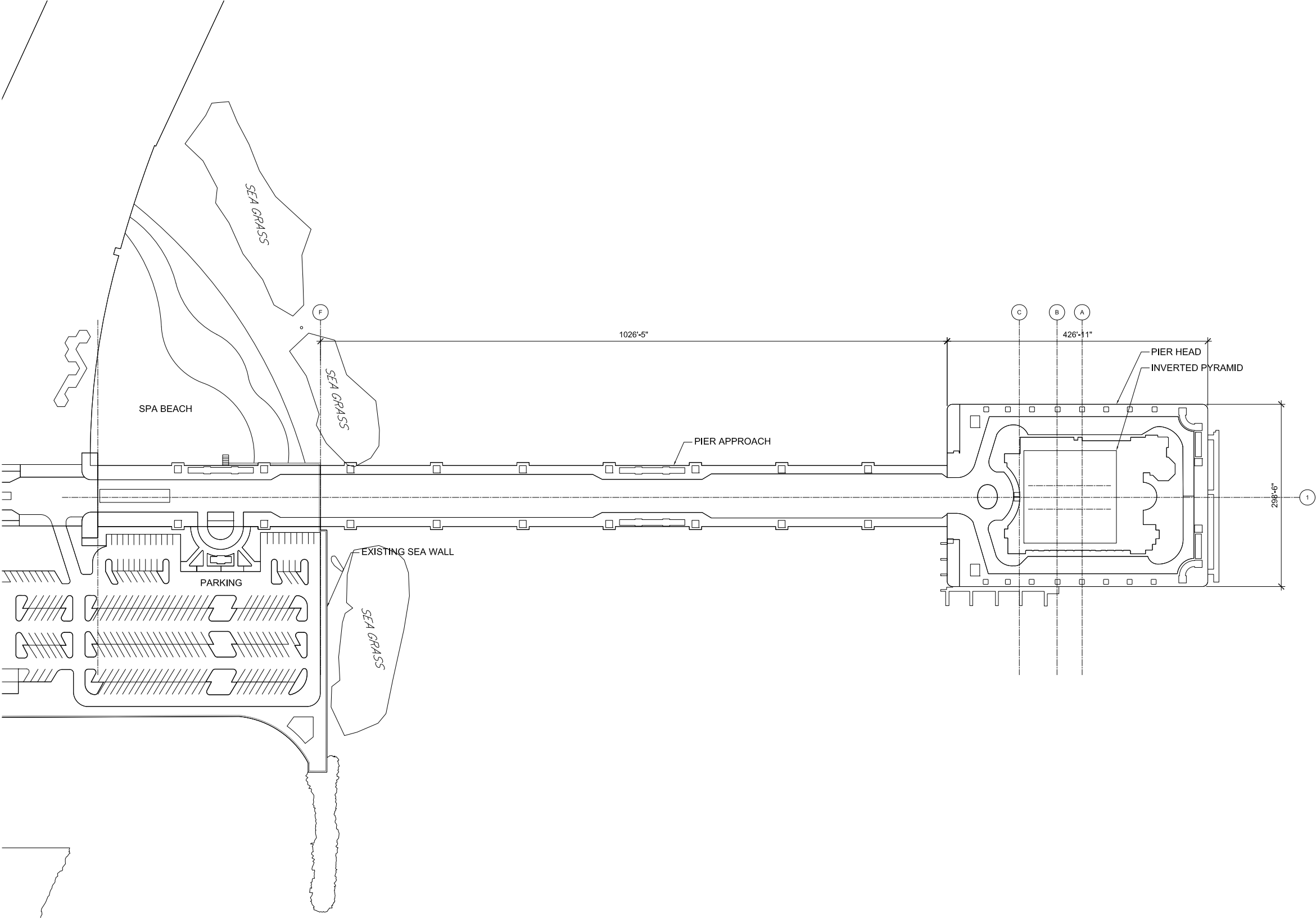
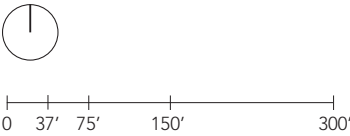
BASIS OF DESIGN CONCEPT
PLANS AND DIAGRAMMS

A0-00
Cover Sheet

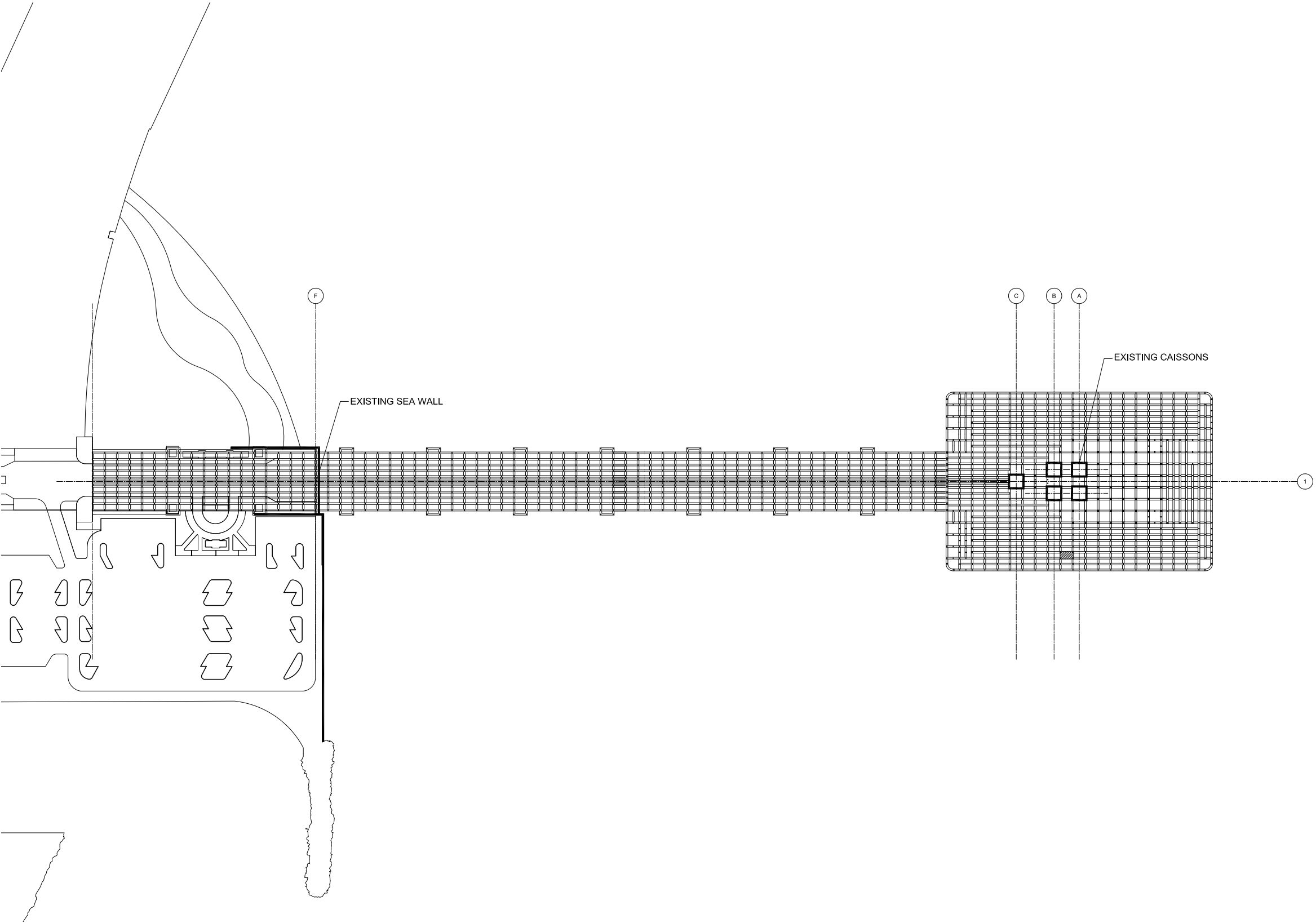
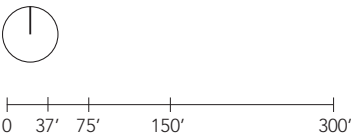


BASIS OF DESIGN CONCEPT
PLANS AND DIAGRAMS

A0-52
Existing Pier Plan

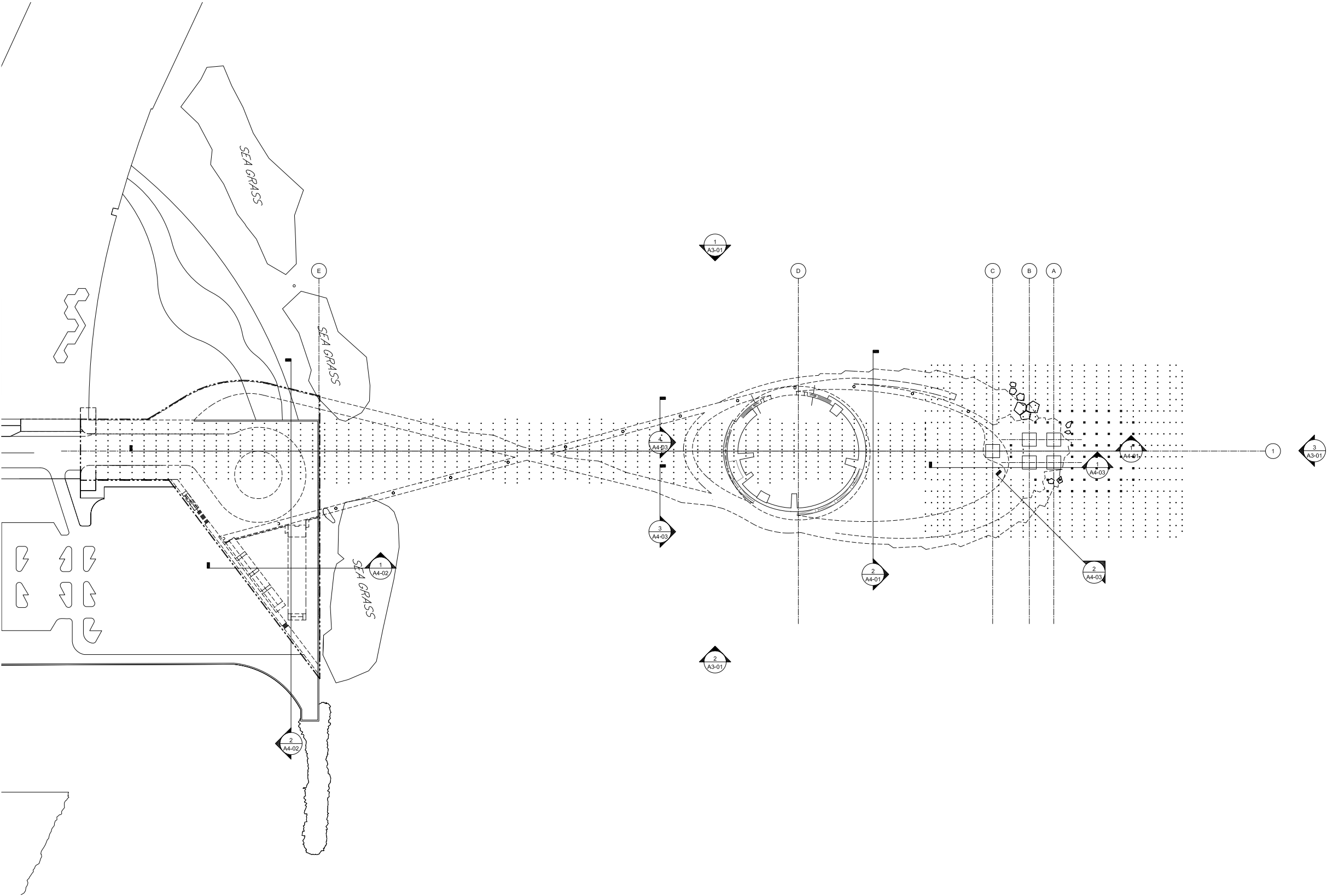
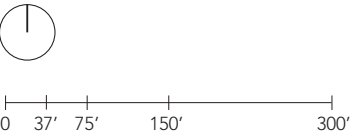


A0-53
Existing Structure Plan

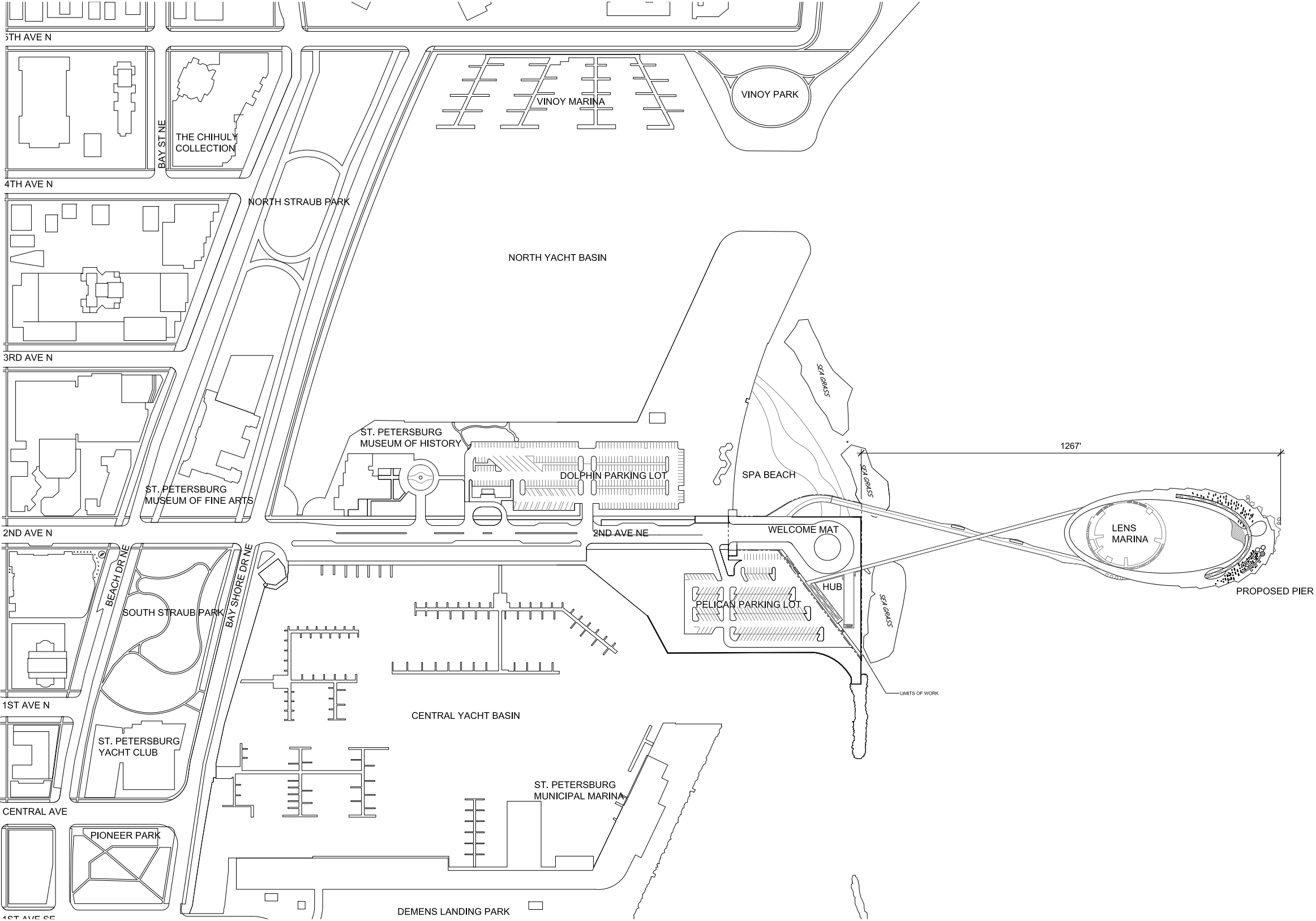
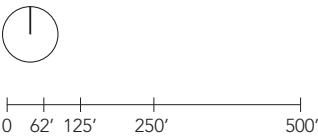


BASIS OF DESIGN CONCEPT
PLANS AND DIAGRAMMS

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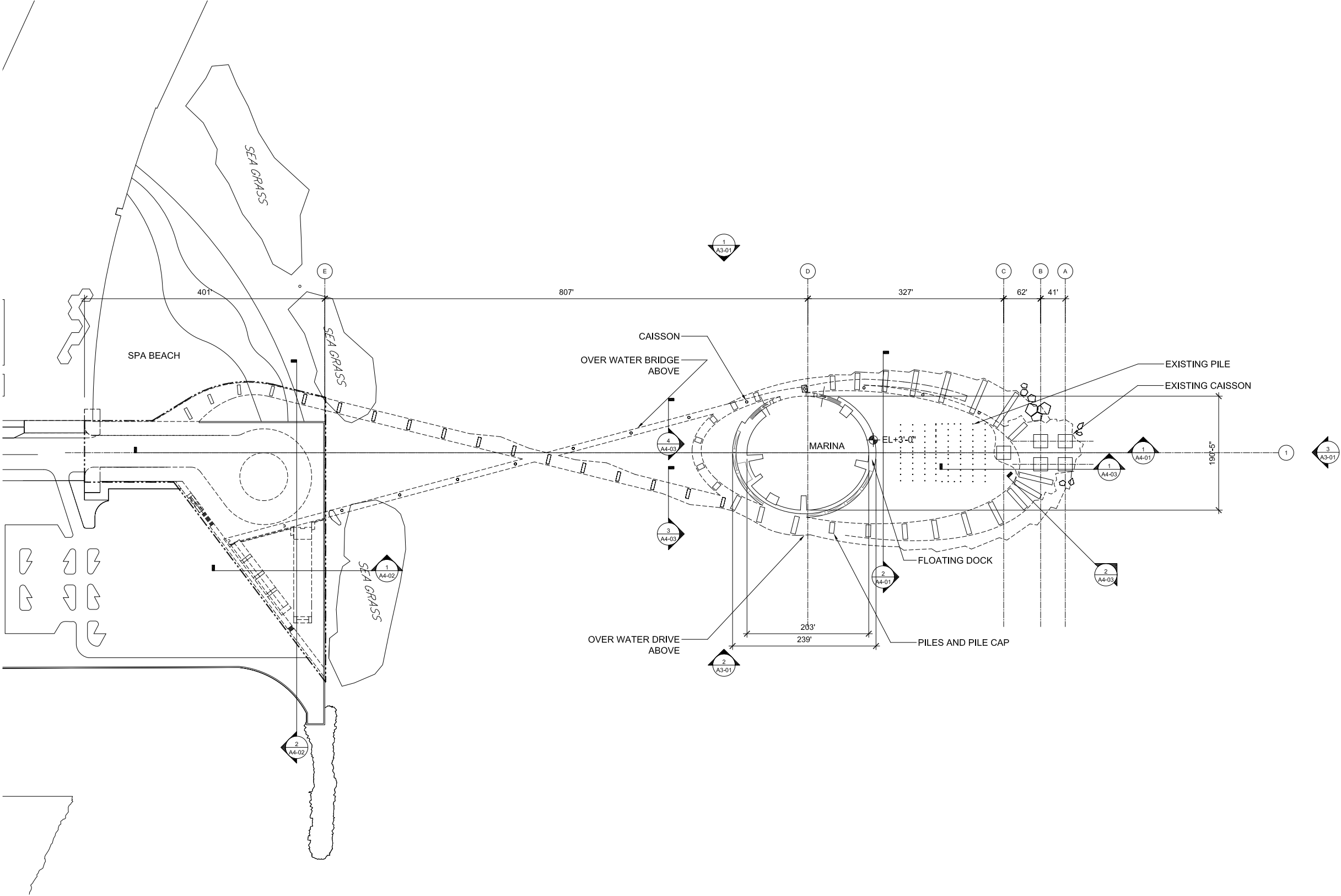
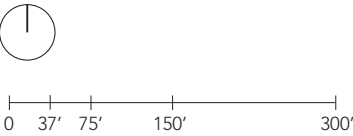


A1-00
Site Plan

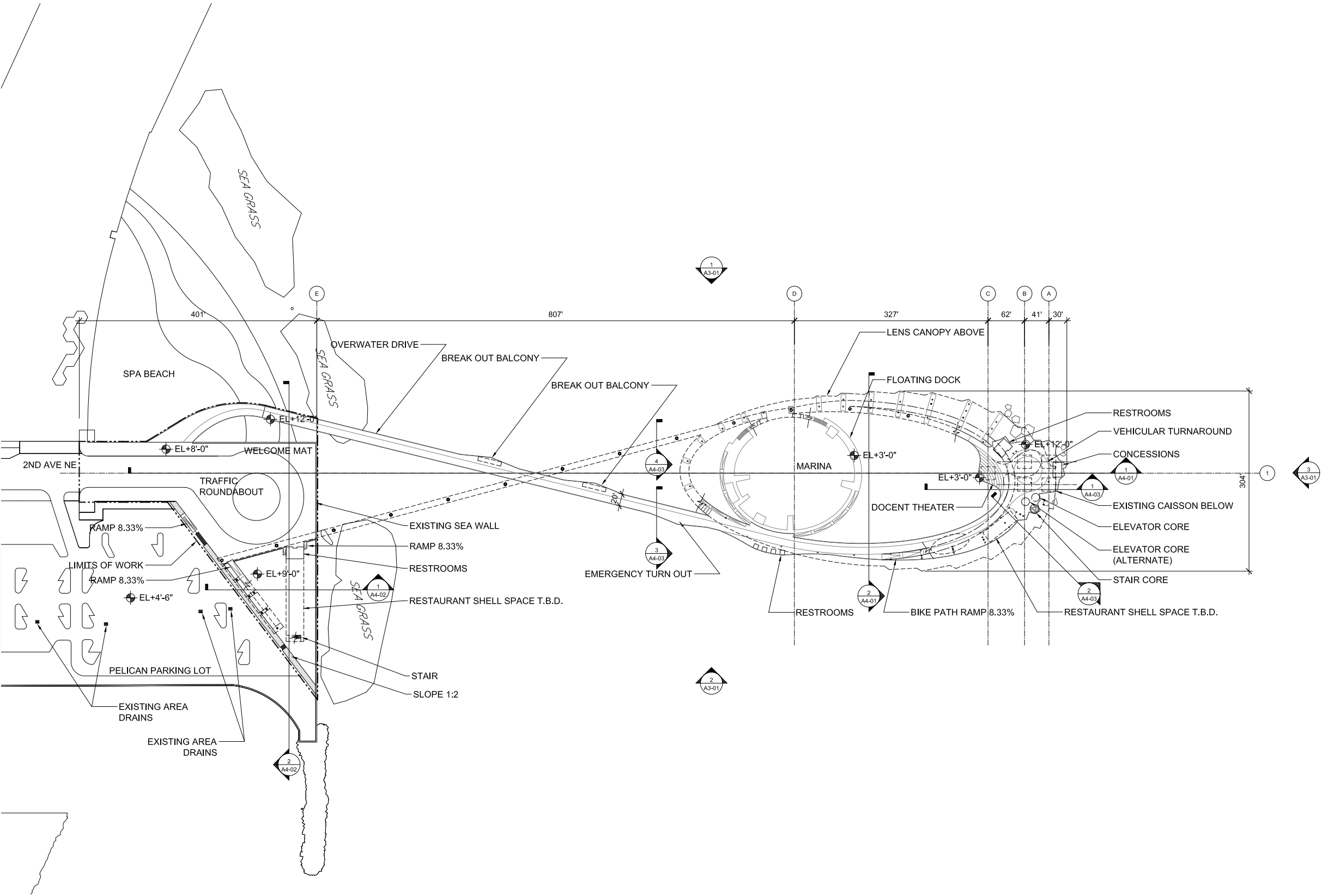
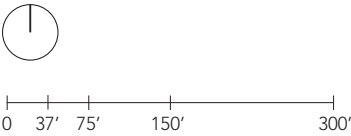


BASIS OF DESIGN CONCEPT
PLANS AND DIAGRAMS

A2-01
Marina Plan

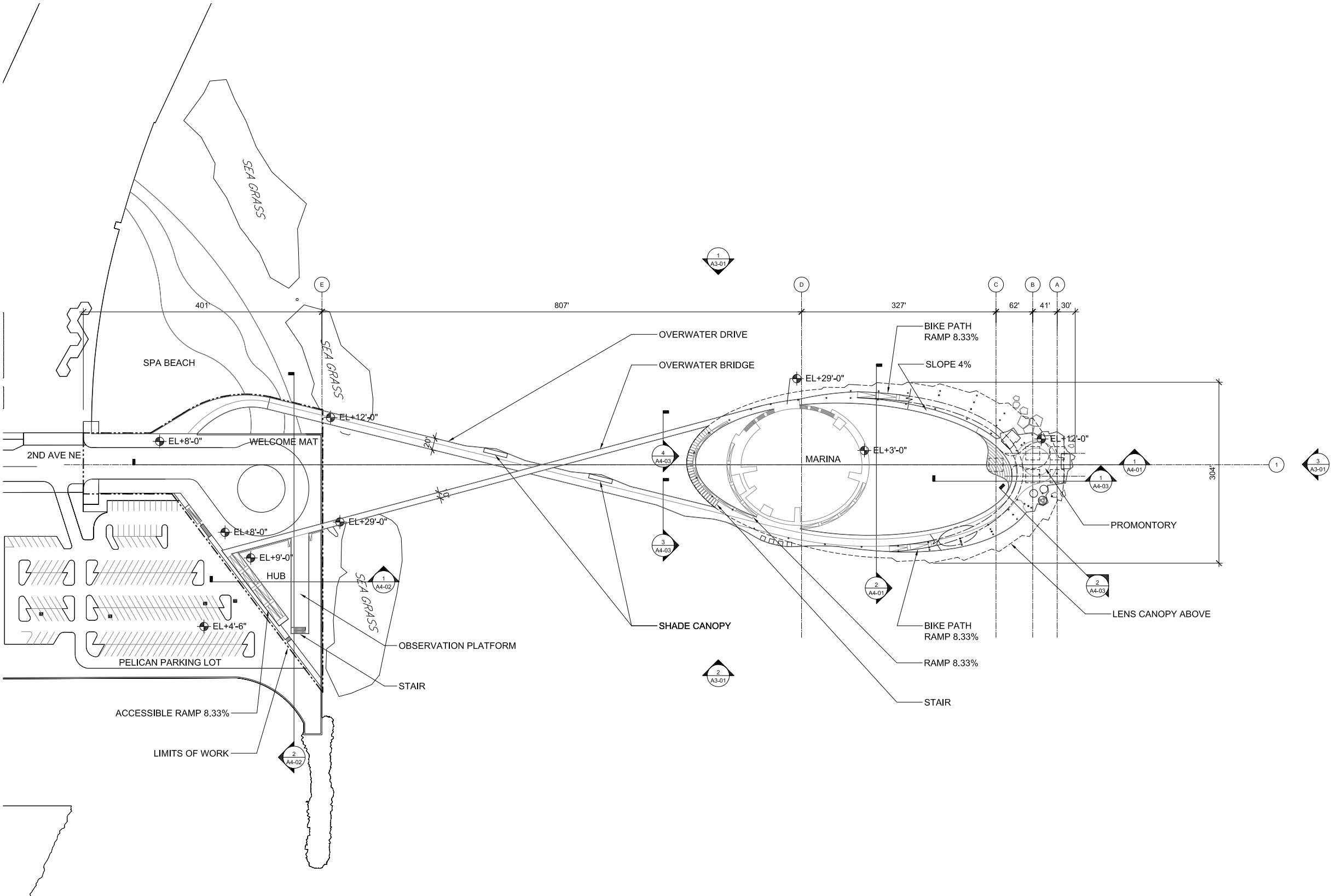
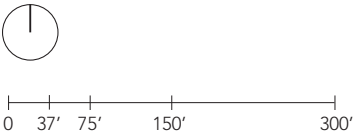


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Overwater Drive Plan

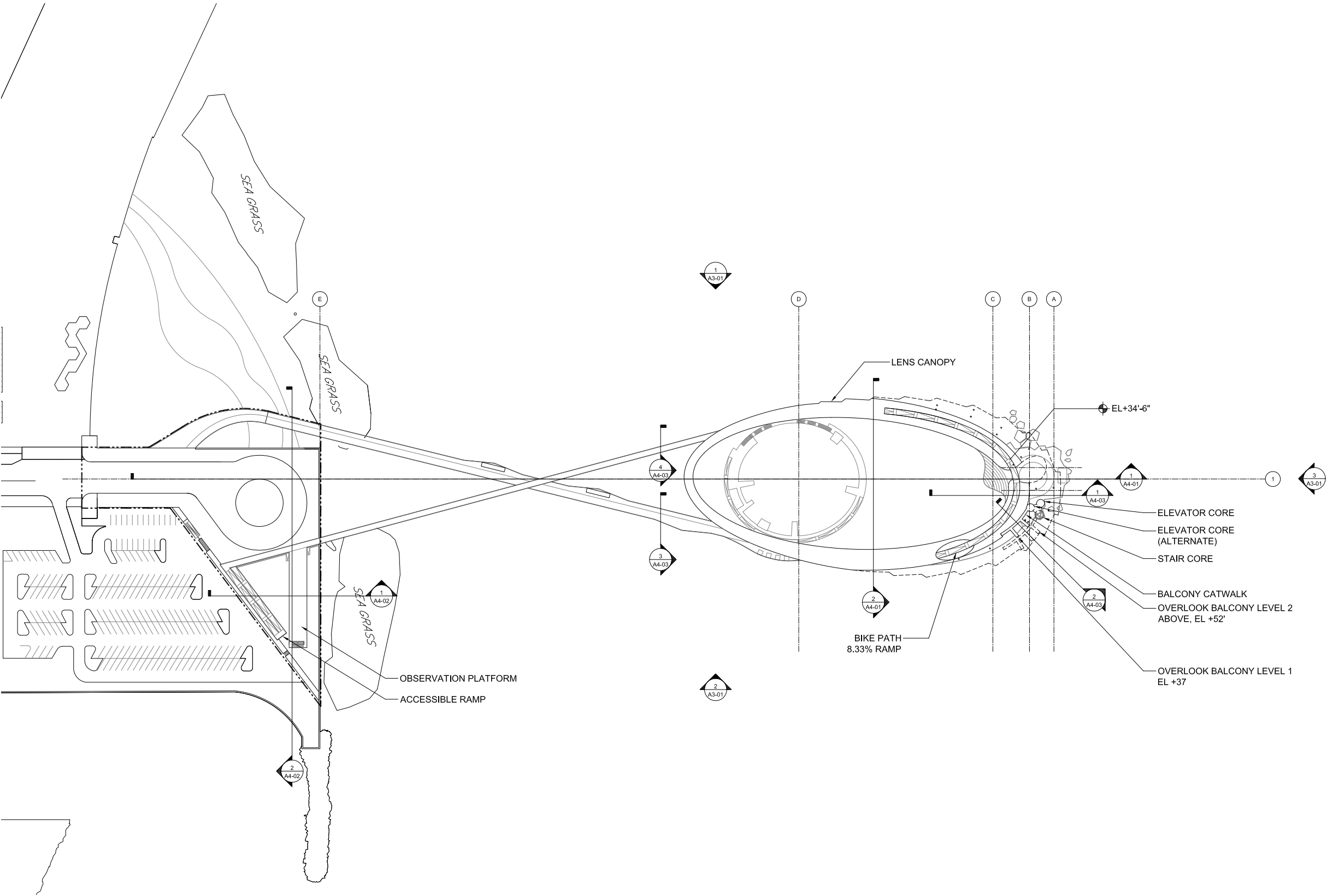
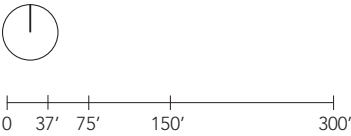


BASIS OF DESIGN CONCEPT
PLANS AND DIAGRAMS

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Overwater Bridge Plan

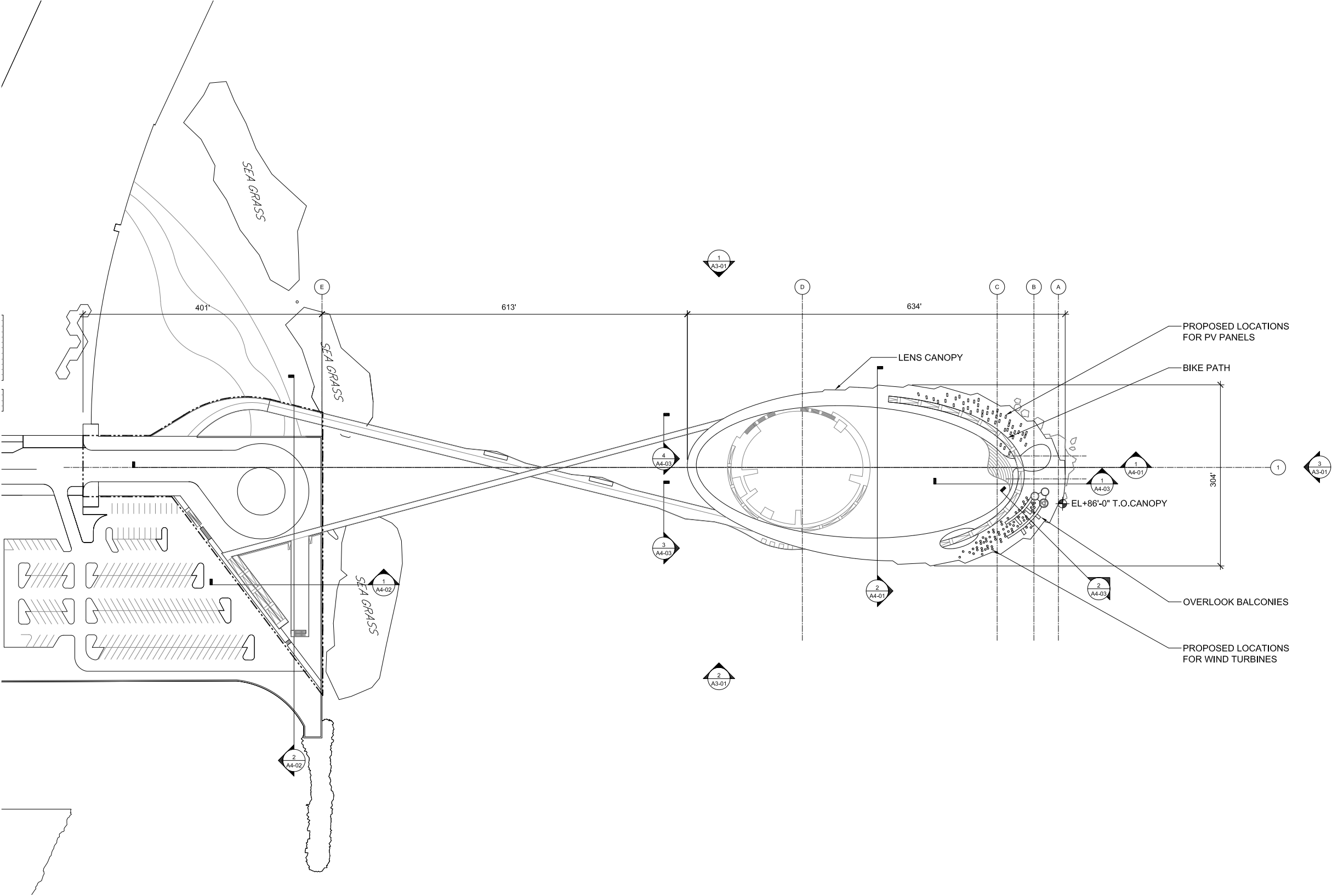
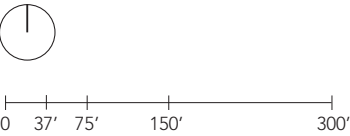


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Balcony Plan

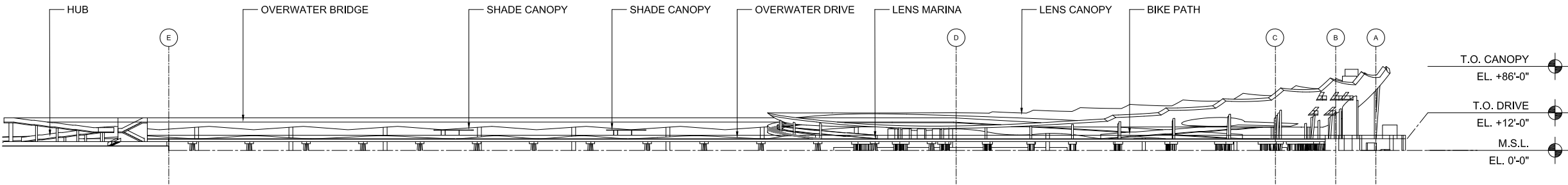
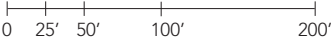


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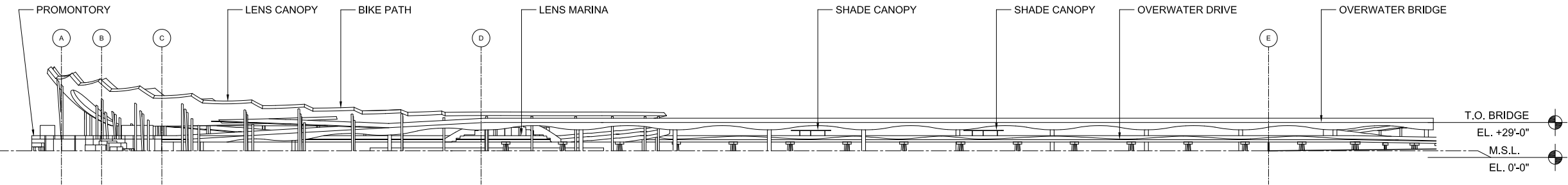
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Canopy Plan



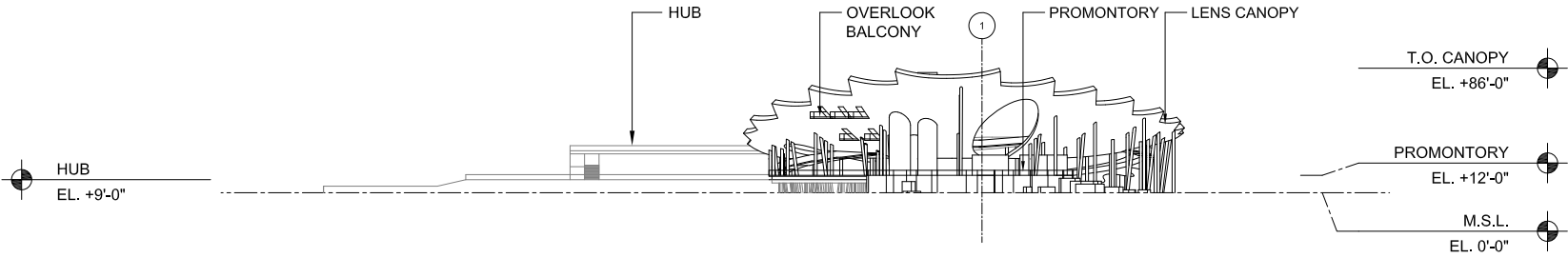
A3-01
Elevations
1 / North Elevation



A3-01
Elevations
2 / South Elevation

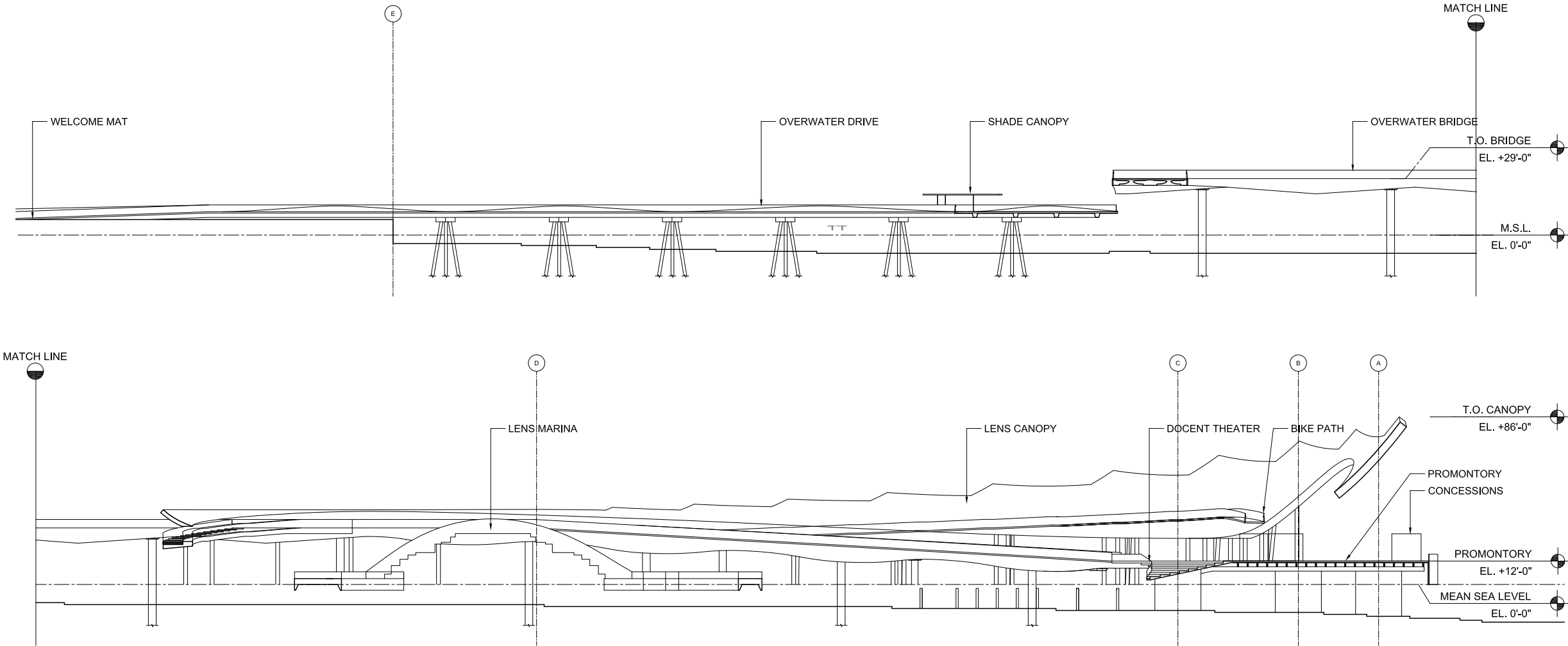
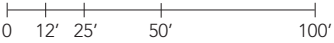


A3-01
Elevations
3 / East Elevation

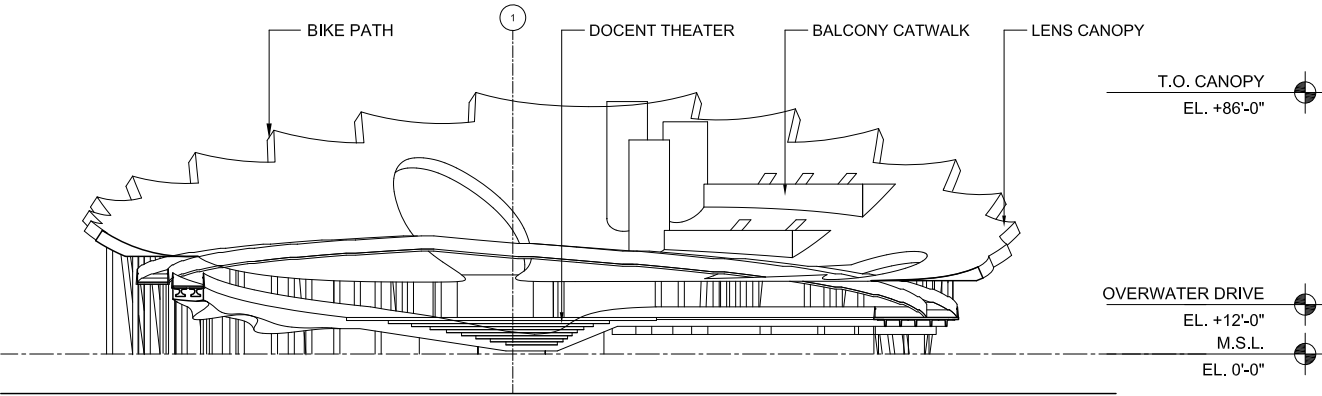
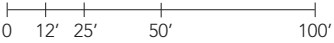


BASIS OF DESIGN CONCEPT
PLANS AND DIAGRAMMS

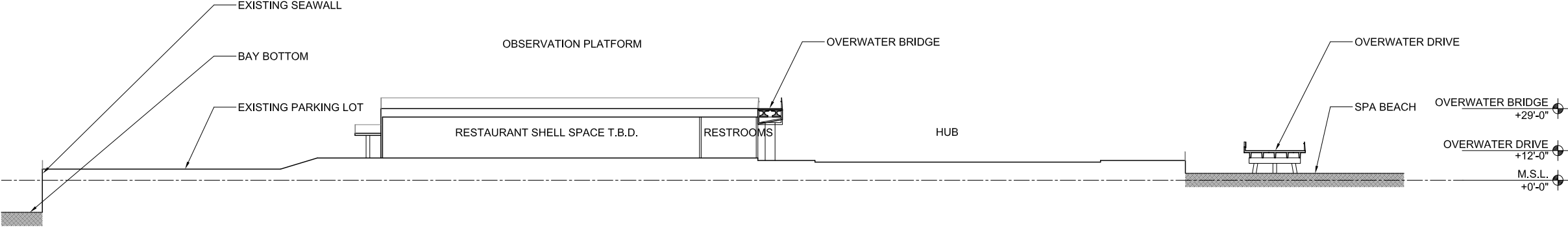
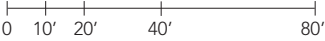
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Sections
1 / Longitudinal Section



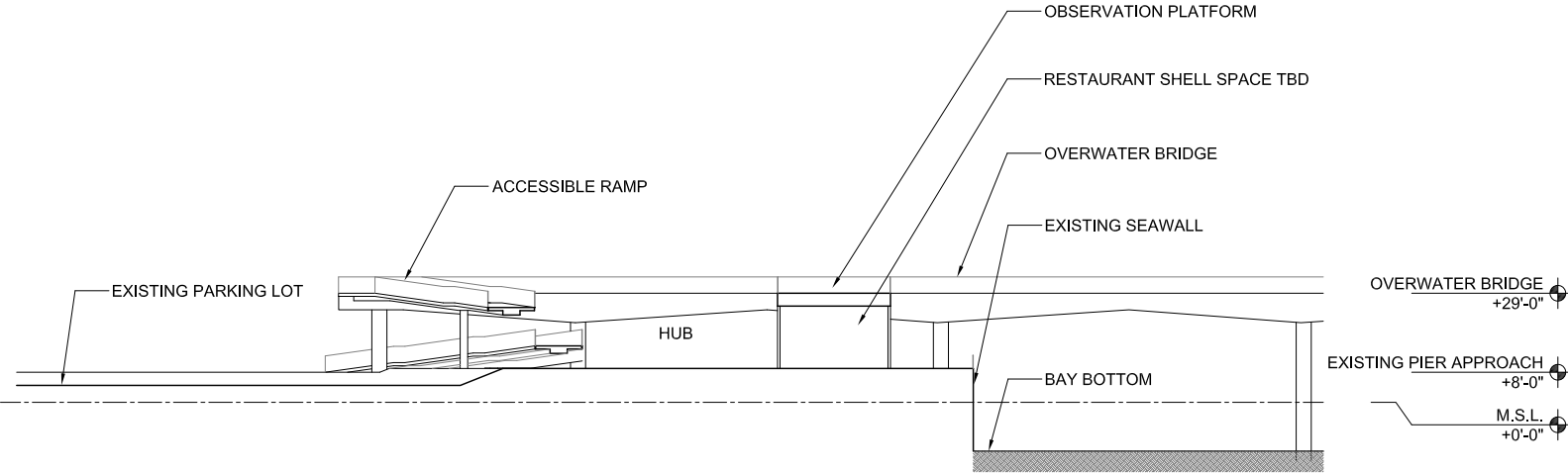
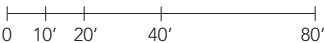
A4-01
Sections
2 / Transverse Section



A4-02
Upland Sections
1 / Upland East-West Section

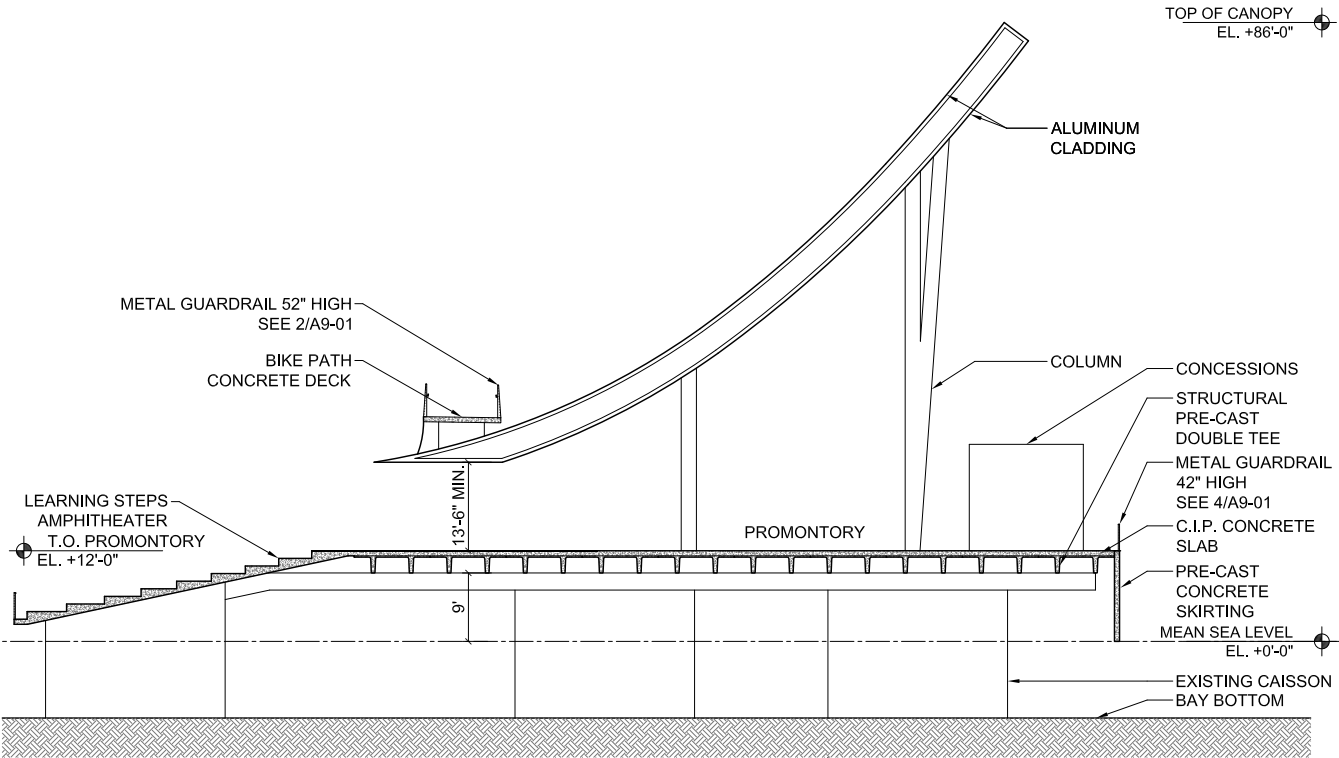
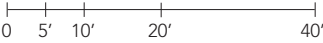


A4-02
Upland Sections
2 / Upland North-South Section

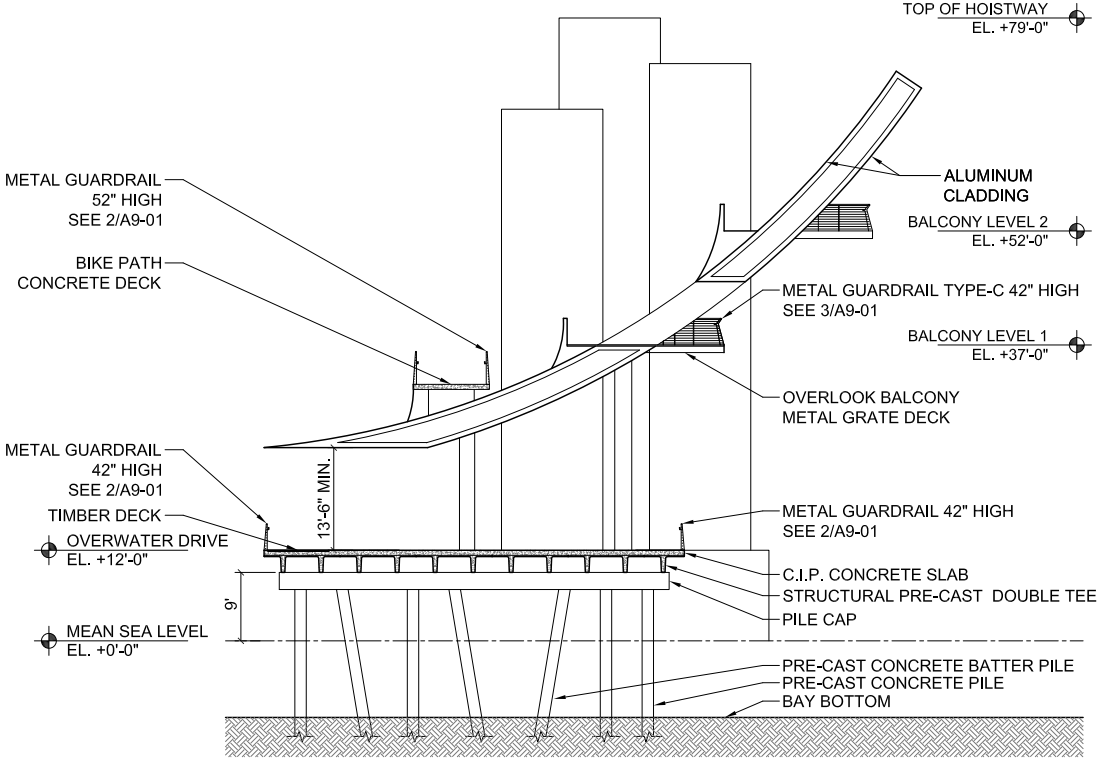
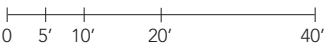


BASIS OF DESIGN CONCEPT
PLANS AND DIAGRAMMS

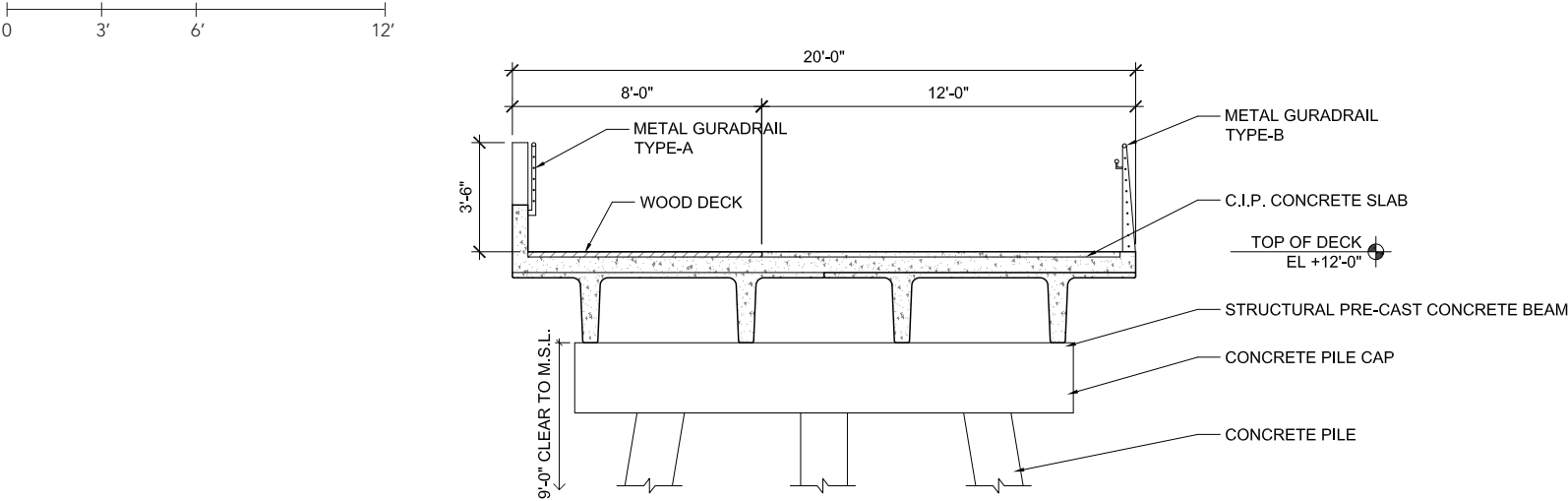
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Drive, Bridge and Canopy Sections
1 / Bike Path - Lens Canopy



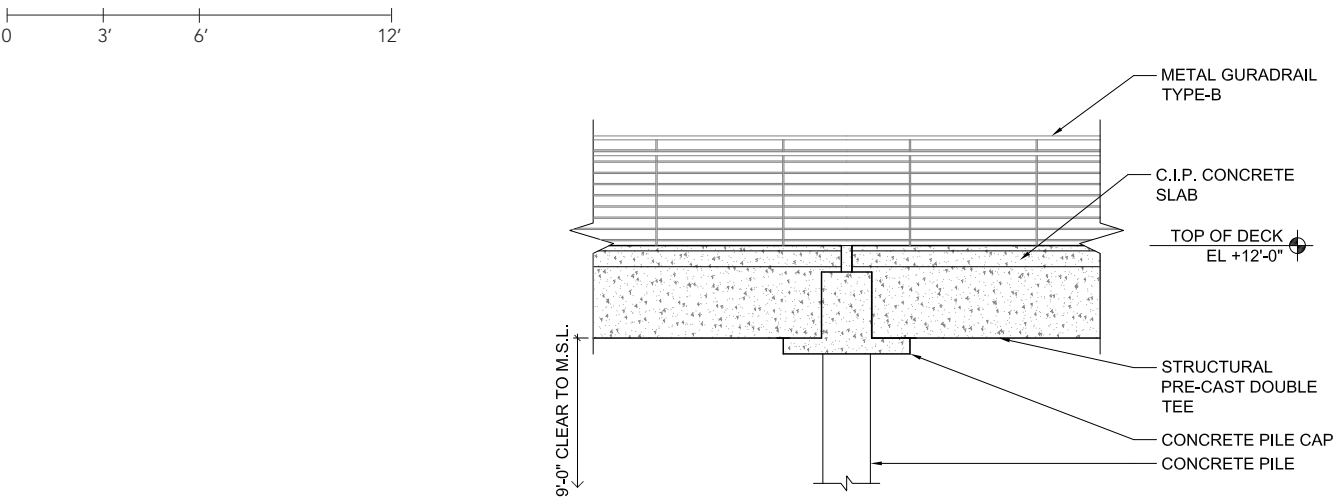
A4-03
Drive, Bridge and Canopy Sections
2 / Promontory - Lens Canopy



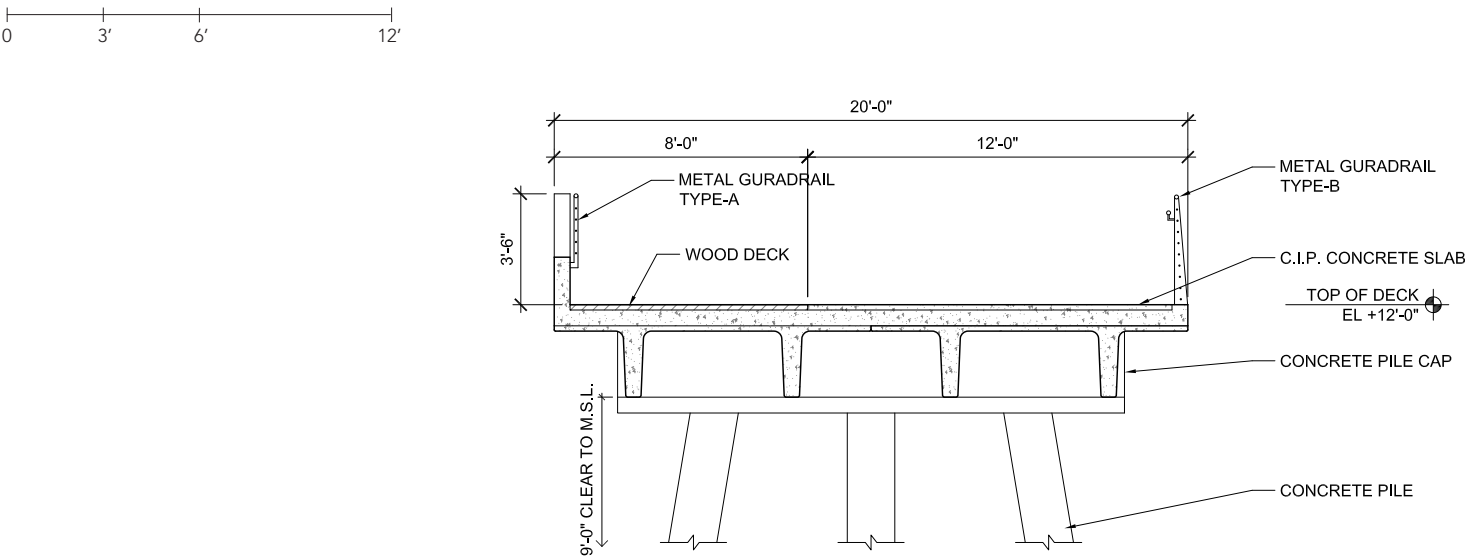
A4-03
Drive, Bridge and Canopy Sections
3 / Overwater Drive Section



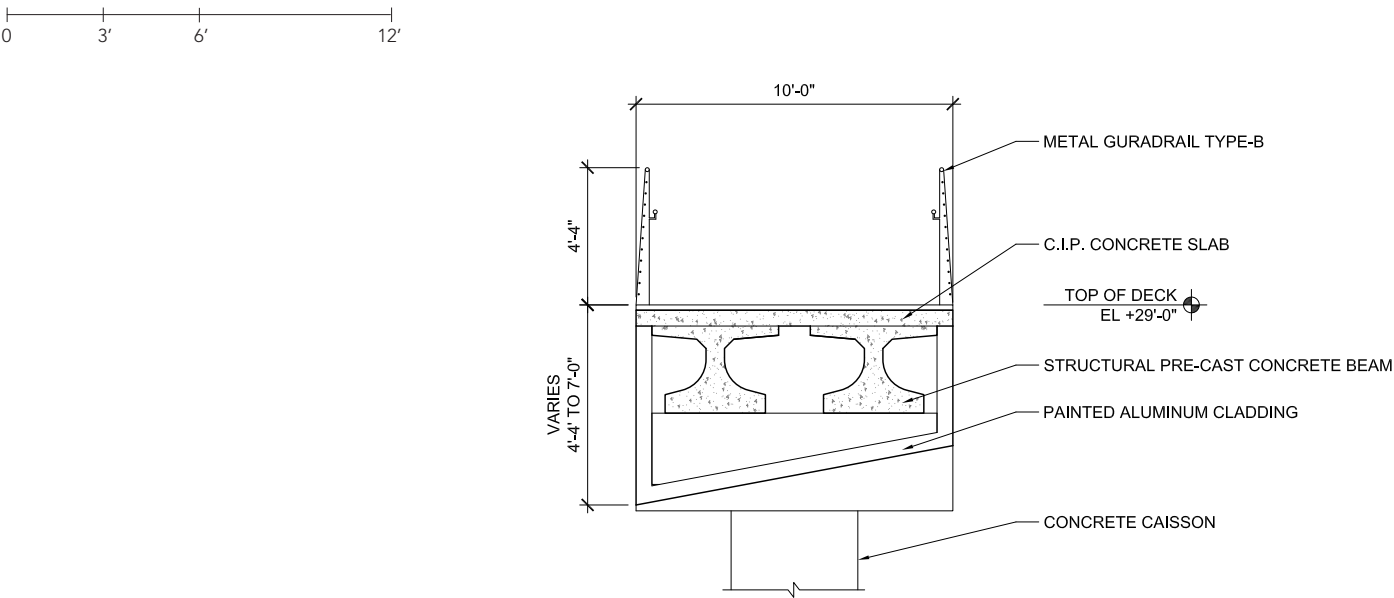
A4-03
Drive, Bridge and Canopy Sections
5 / Alt. Overwater Drive Pile Cap Section



A4-03
Drive, Bridge and Canopy Sections
4 / Alt. Overwater Drive Section

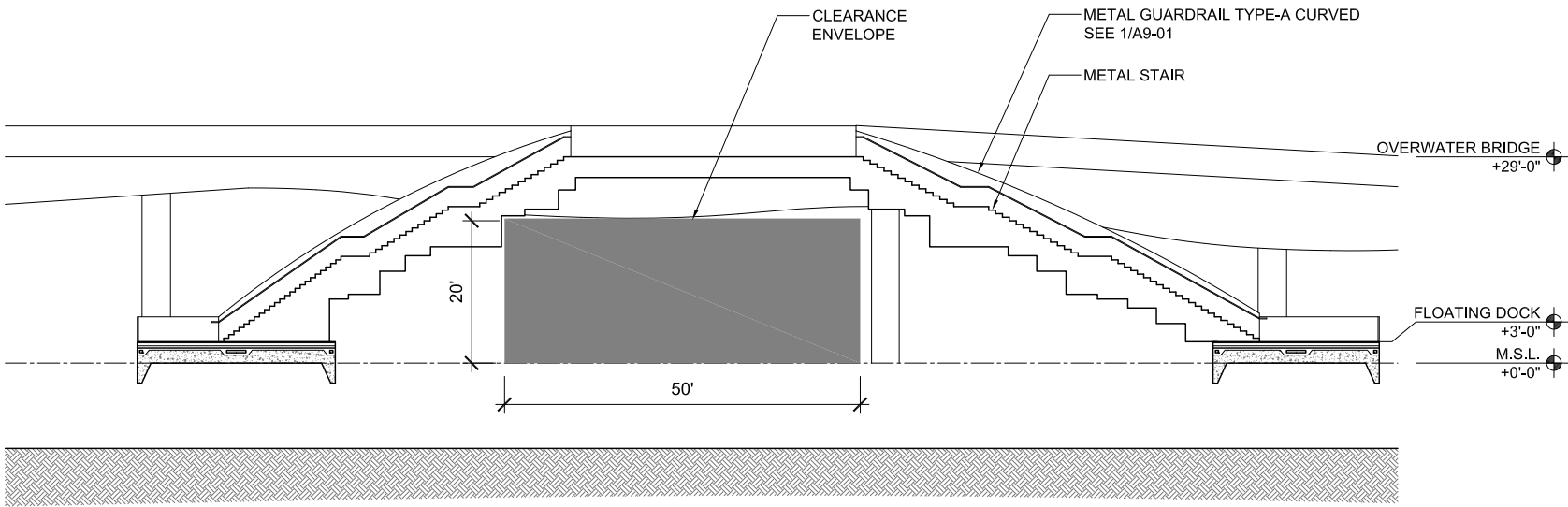
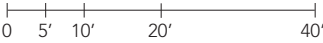


A4-03
Drive, Bridge and Canopy Sections
6 / Overwater Bridge Section

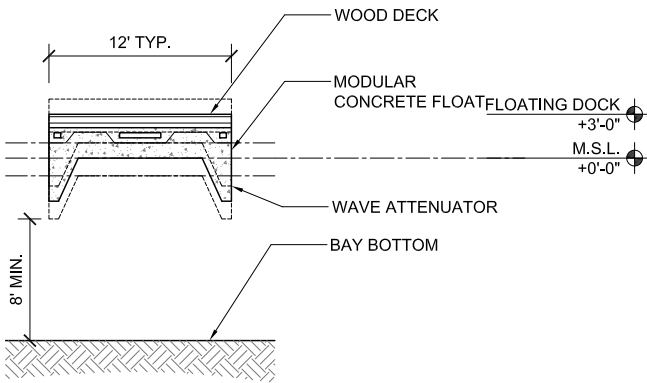
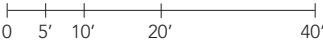


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PLANS AND DIAGRAMMS

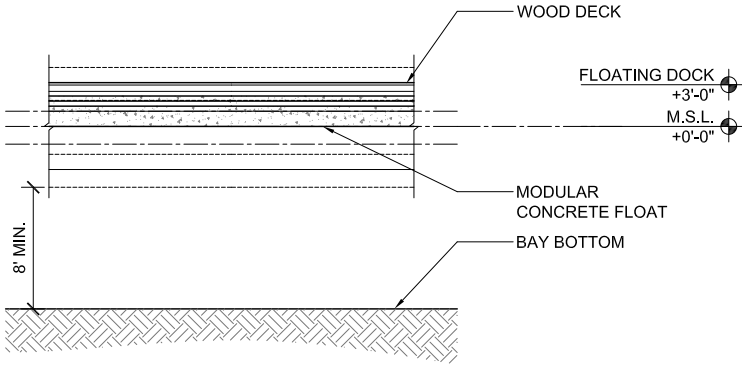
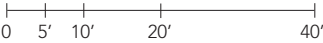
A4-04
Marina Sections
1 / Marina Entrance Section



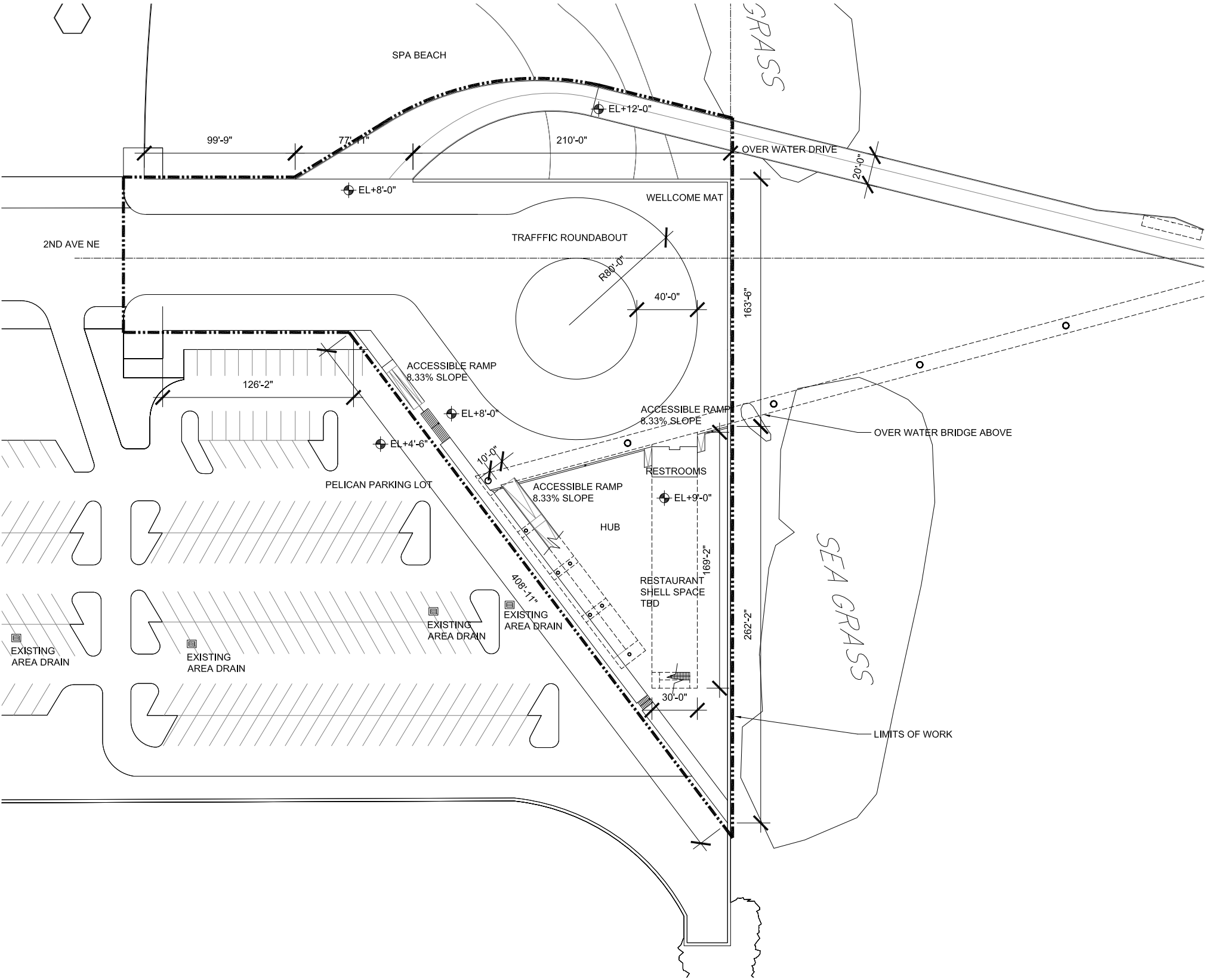
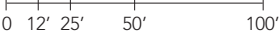
A4-04
Marina Sections
2 / Typ. Floating Dock Section



A4-04
Marina Sections
3 / Typ. Floating Dock Section

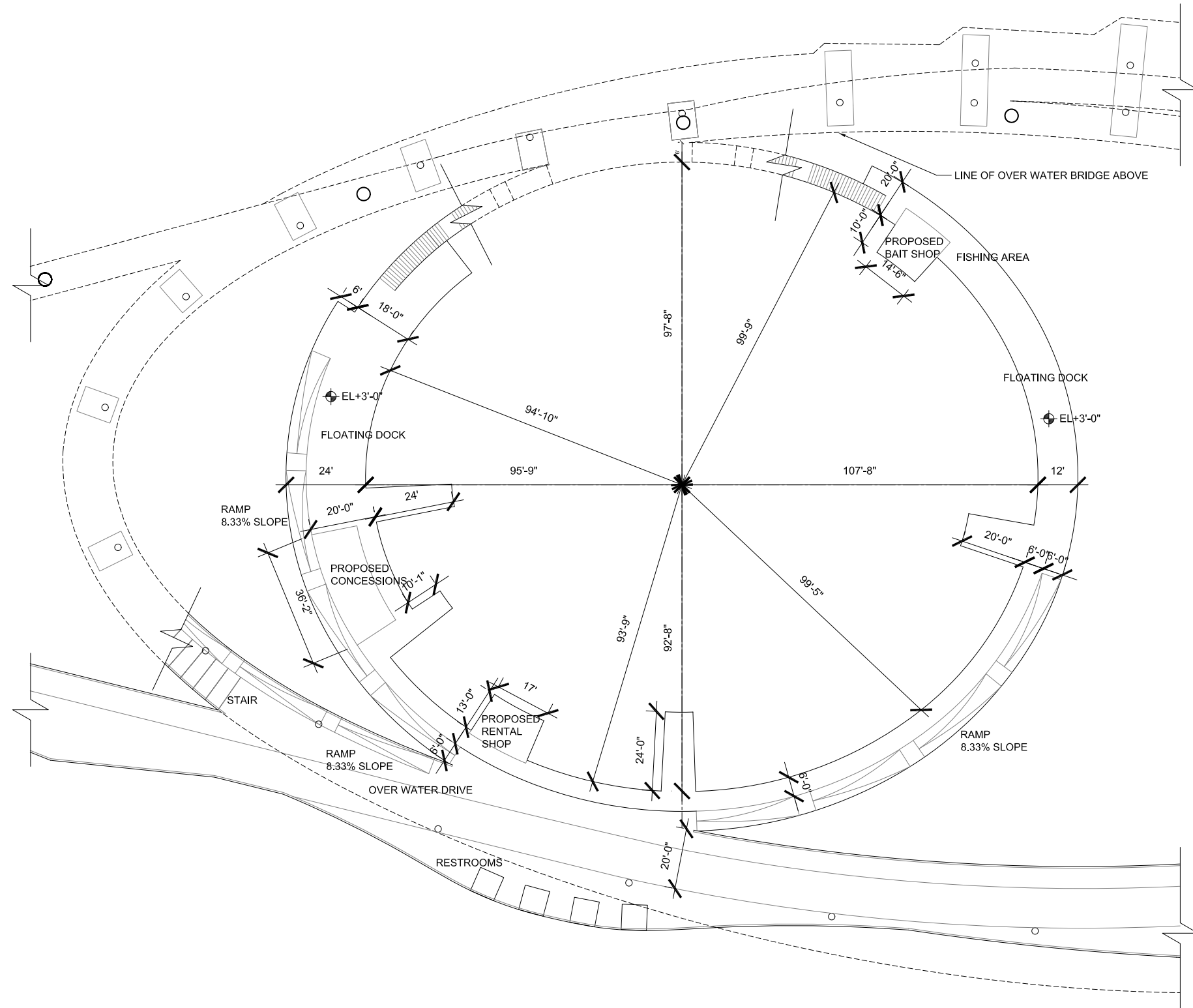
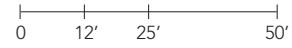


A5-10
Enlarged Hub Plan

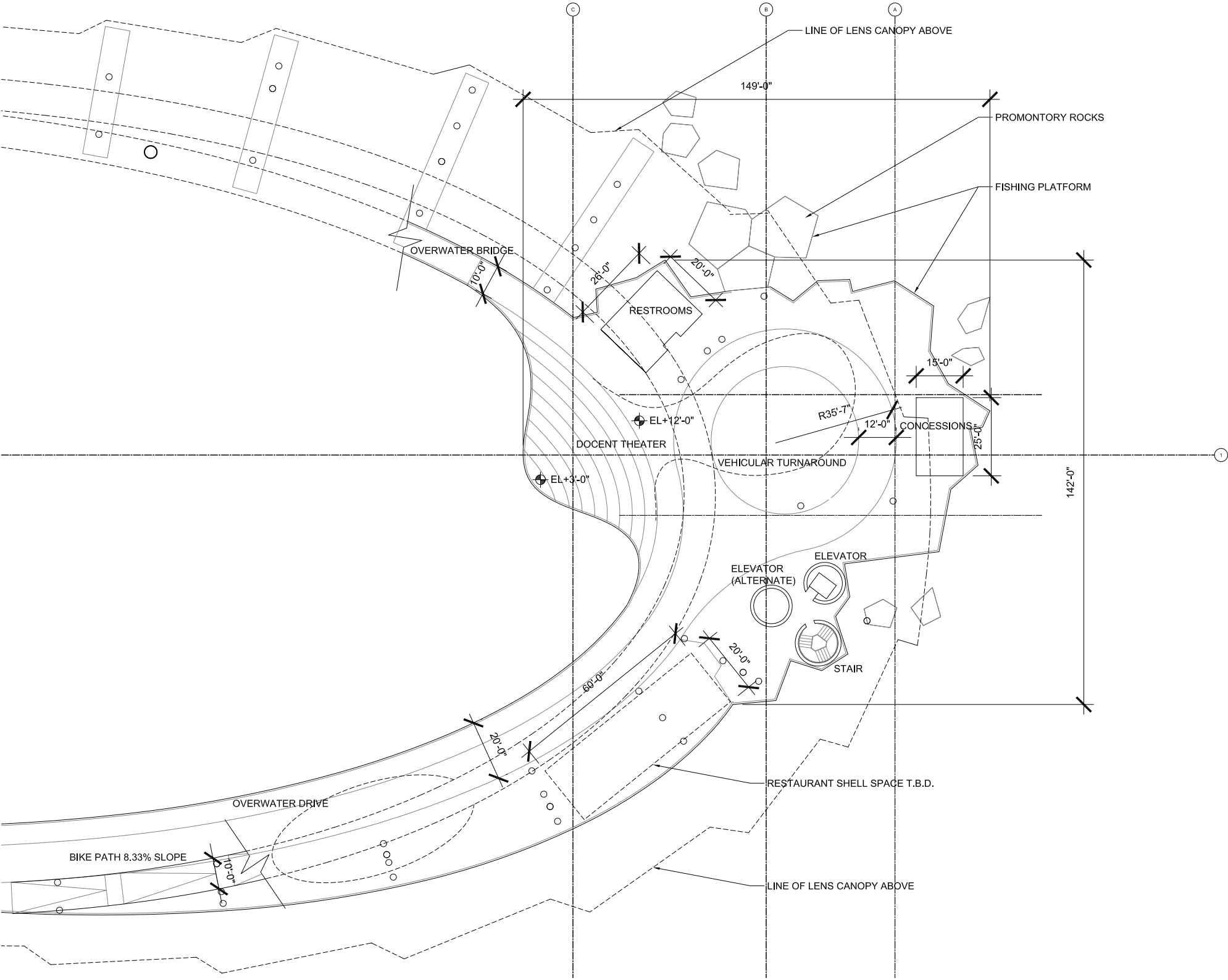
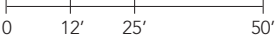


BASIS OF DESIGN CONCEPT PLANS AND DIAGRAMS

A5-11 Enlarged Marina Plan

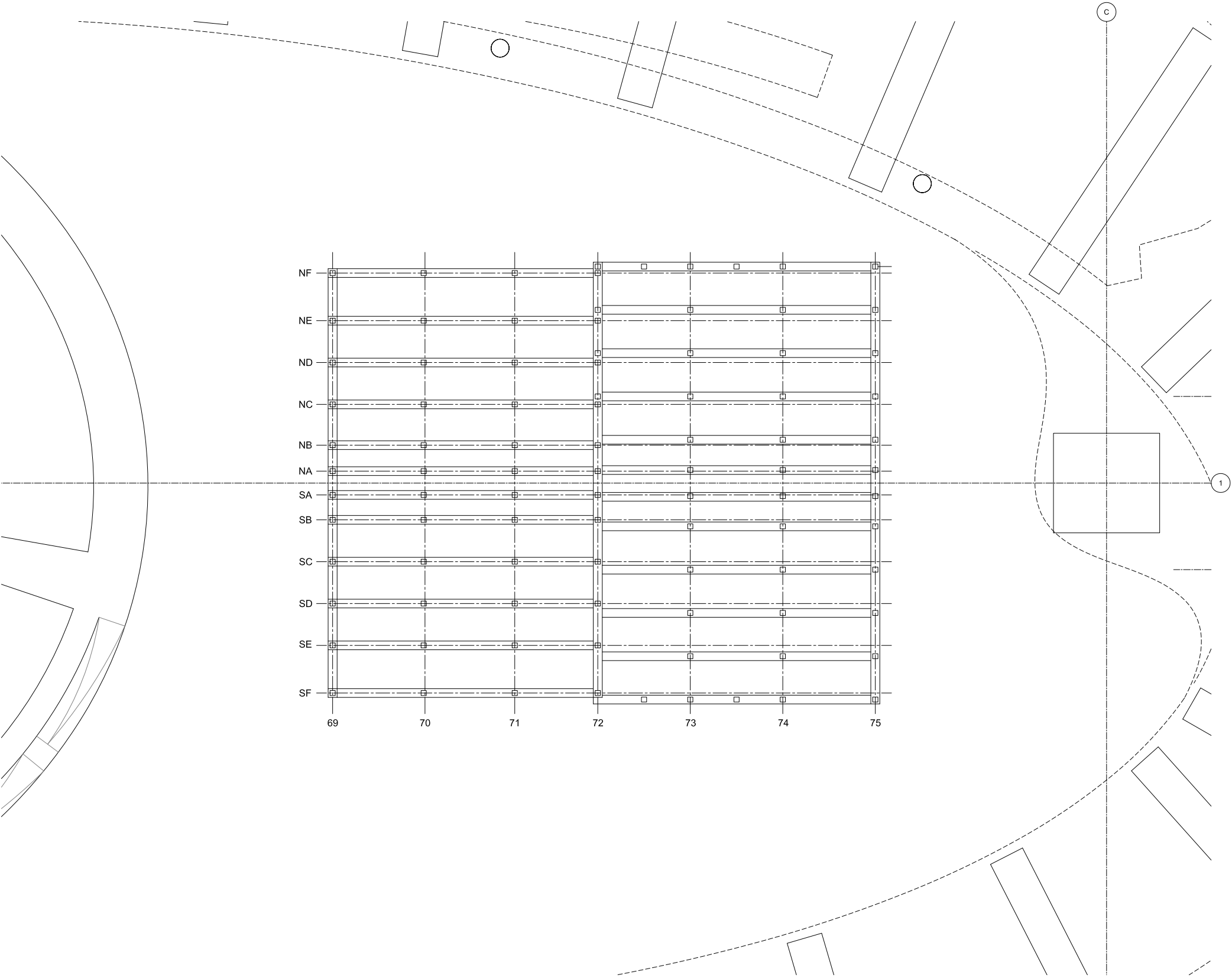


A5-12
Enlarged Promontory Plan

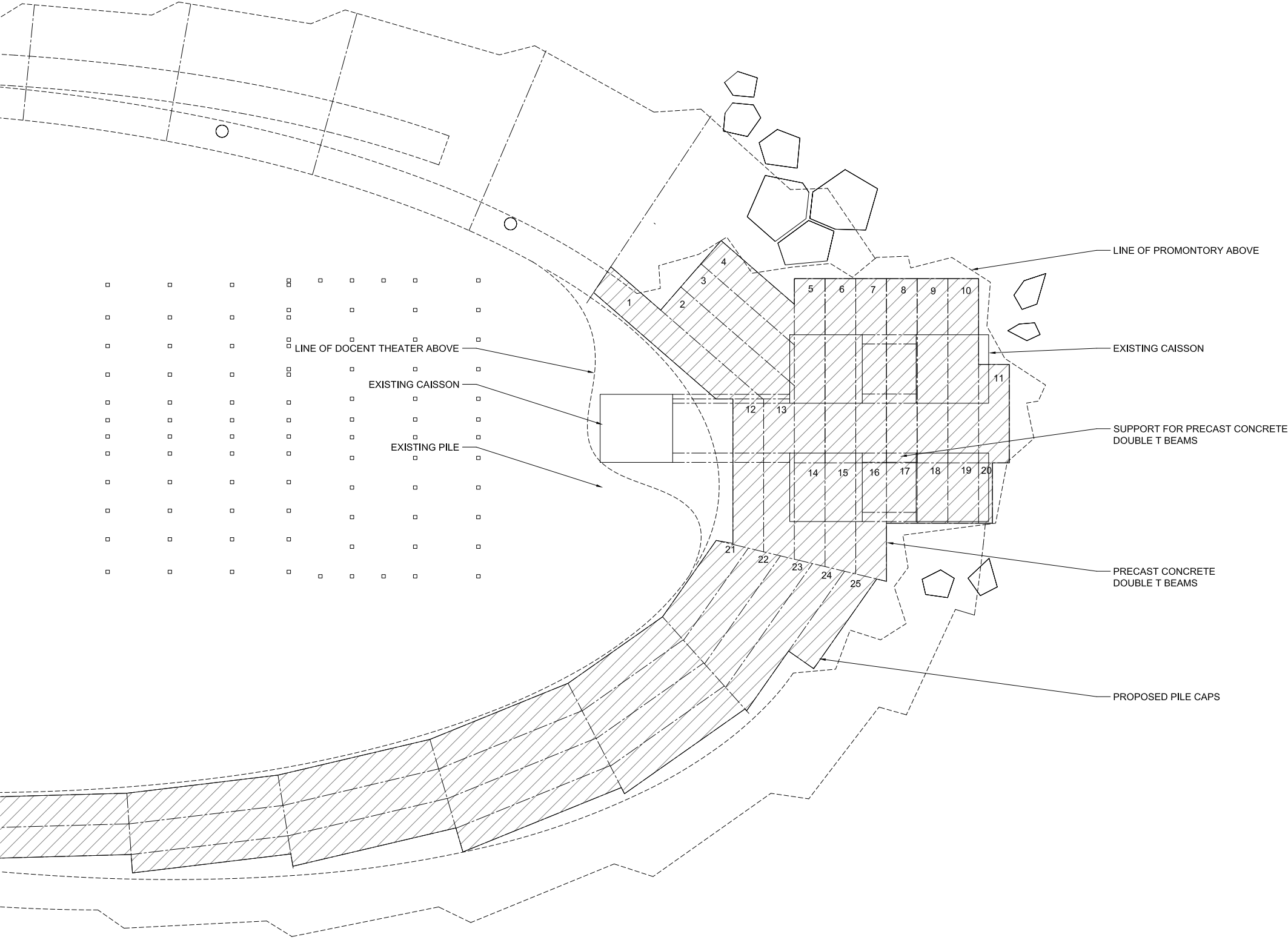
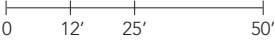


BASIS OF DESIGN CONCEPT
PLANS AND DIAGRAMMS

A5-13
Underwater Feature Plan

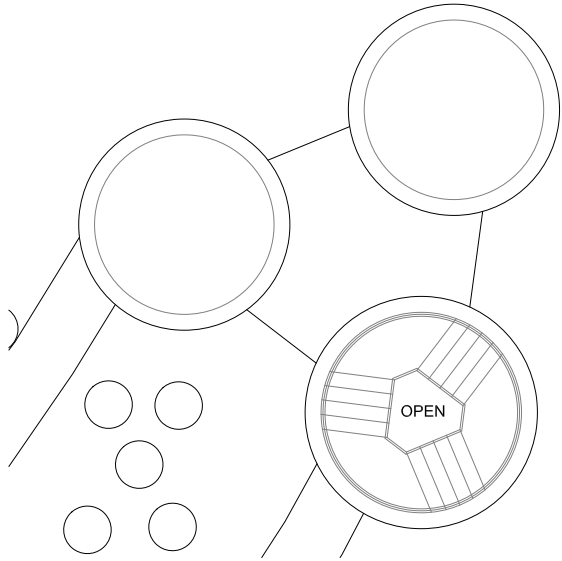
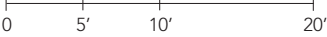


A5-14
Promontory Double “T” Beam Layout Plan

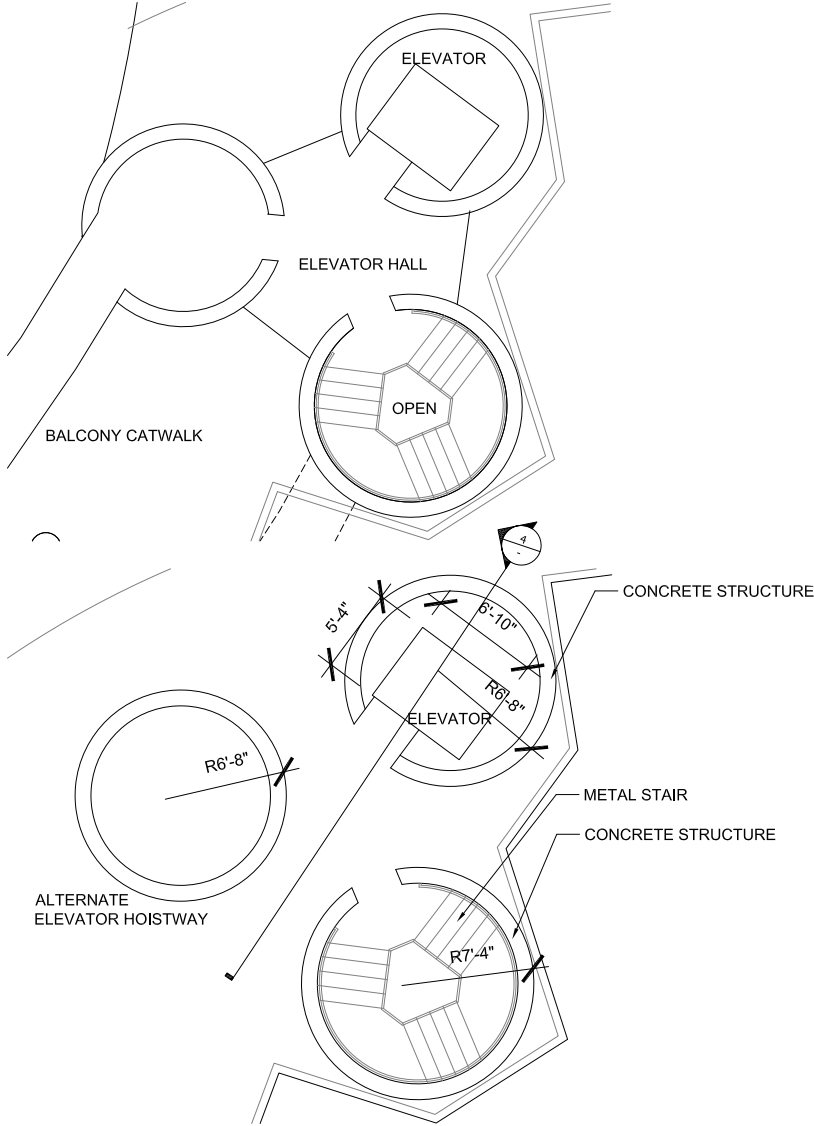
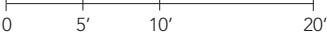


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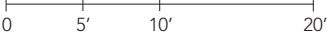
A5-30
Enlarged Elevator Plans and Sections
3 / Roof Plan



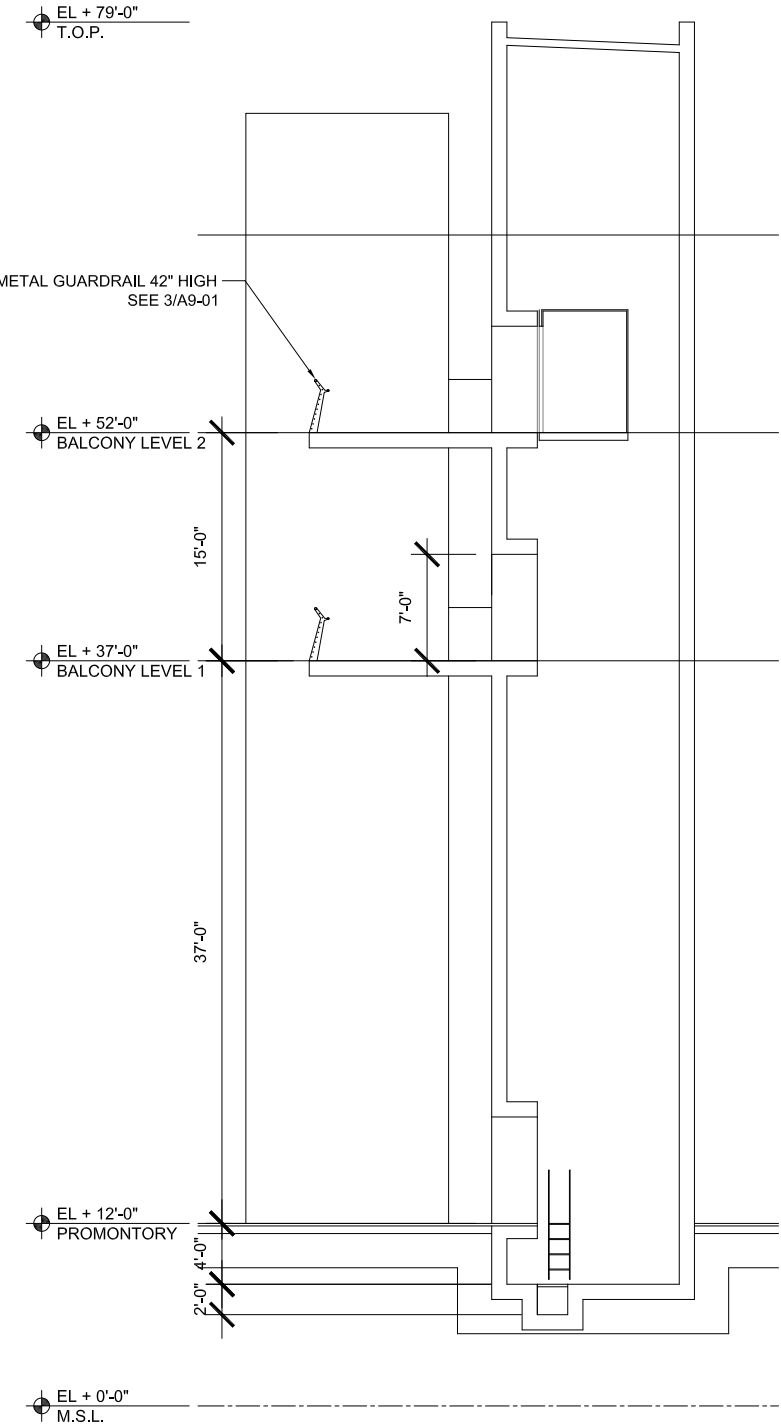
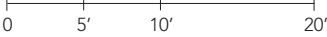
A5-30
Enlarged Elevator Plans and Sections
2 / Balcony Level 1 Plan



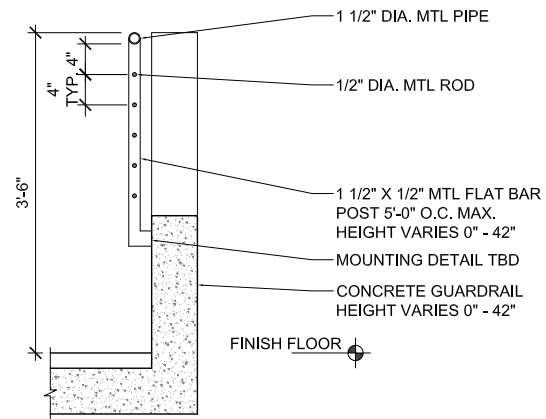
A5-30
Enlarged Elevator Plans and Sections
1 / Promontory Level Plan



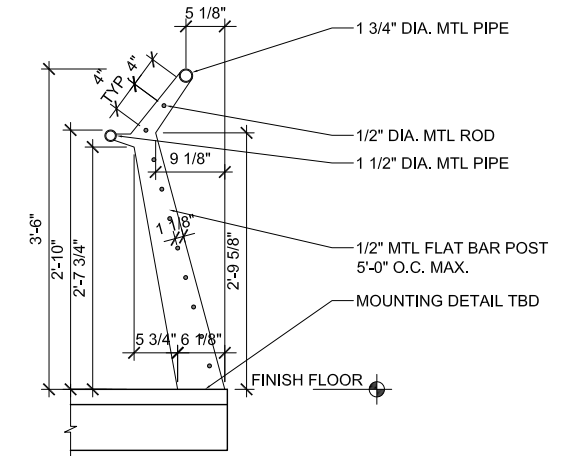
A5-30
Enlarged Elevator Plans and Sections
4 / Hoistway Section



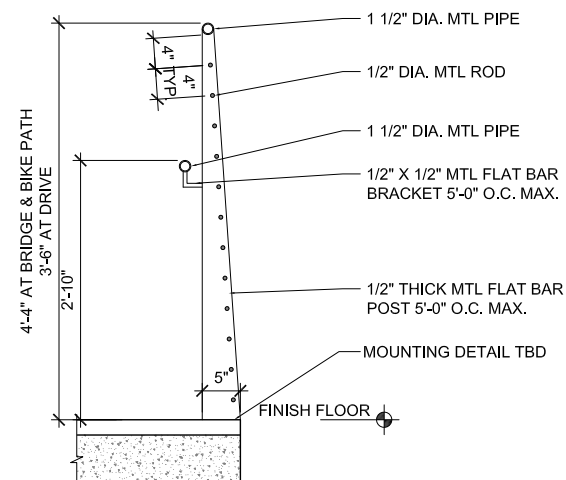
A horizontal number line representing a distance of 1 foot. The line has four tick marks labeled from left to right: 0, 3", 6", and 1'. The distance between 0 and 3" is equal to the distance between 3" and 6", which is equal to the distance between 6" and 1'.



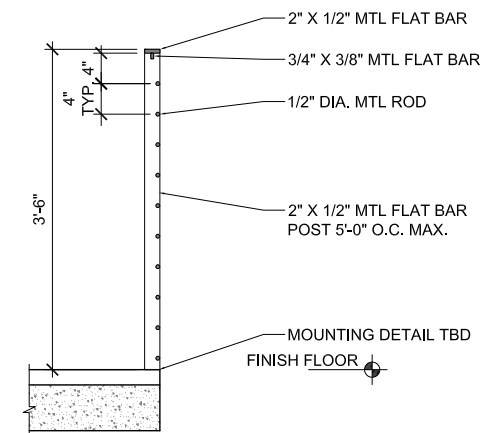
A horizontal number line with tick marks at 0, 3", 6", and 1. The line is labeled with these values below the tick marks.



A horizontal number line representing a distance of 1 foot. The line has four tick marks labeled from left to right: 0, 3", 6", and 1'. The distance between 0 and 3" is equal to the distance between 3" and 6", which is equal to the distance between 6" and 1'.



A horizontal number line with tick marks at 0, 3", 6", and 1. The line is labeled with these values below the tick marks.



6

**CONSTRUCTION MANAGER AT
RISK: PROJECT IMPLEMENTATION**

COST ESTIMATE PROCESS

The process in which Skanska, the A/E team, and key representatives of the City of St. Petersburg have engaged in over the past months has been intensive, thorough, and collaborative. Since July 21st, 2012, the day that Skanska was recommended as the Construction Manager for the project, the process has been based on real time costing and constructability concepts. By reaching out to the A/E team, developing a collaborative process and keeping all lines of communication open, Skanska was successful not only in describing a project that can be built on budget and on schedule, but also in developing a framework that will allow the team to take on any challenges that may arise as the project moves forward.

This process has involved the following:

- (7) Cost Estimates or Rough Order of Magnitudes
- (3) Revised 3D cost models which were utilized to capture true quantities for accurate estimates
- (4) Face-to-face multi-day work sessions that included the A&E team, the client, and collaborative experts contributing real time pricing and constructability input
- Over a dozen internal meetings with our collaborative experts
- (7+) all hands on deck conference calls to discuss data as it developed, allowing the team to mutually identify opportunities worthy of exploring
- Several remote 3D collaborative interface meetings that functioned as tutorials of the 3D project as it developed, allowing both the A/E team and the construction team to be fully aware of changes as they occurred, thereby rendering the data necessary for costing immediately accessible (Figure 6.1).

Through this immersive process the cost estimate developed is complete. Because decisions made during BOD are not final, the architects, engineers and builders of this project look forward to continuing the process described here, and to engaging the City and the community in the next phases of work. Through a process of fine-tuning, confirming and making adjustments where necessary, the project will be realized on budget and on schedule.

This following pages of the BOD Report outline Skanska's engagement with local businesses, small business enterprises, minority and women owner enterprises, as well as the general Tampa Bay community. This section also includes a preliminary schedule for the project. A detailed cost model, prepared by Skanska with the A/E team, appears as Appendix M, while a Cost Summary is included in the Executive Summary of this Report, on page 2-10.

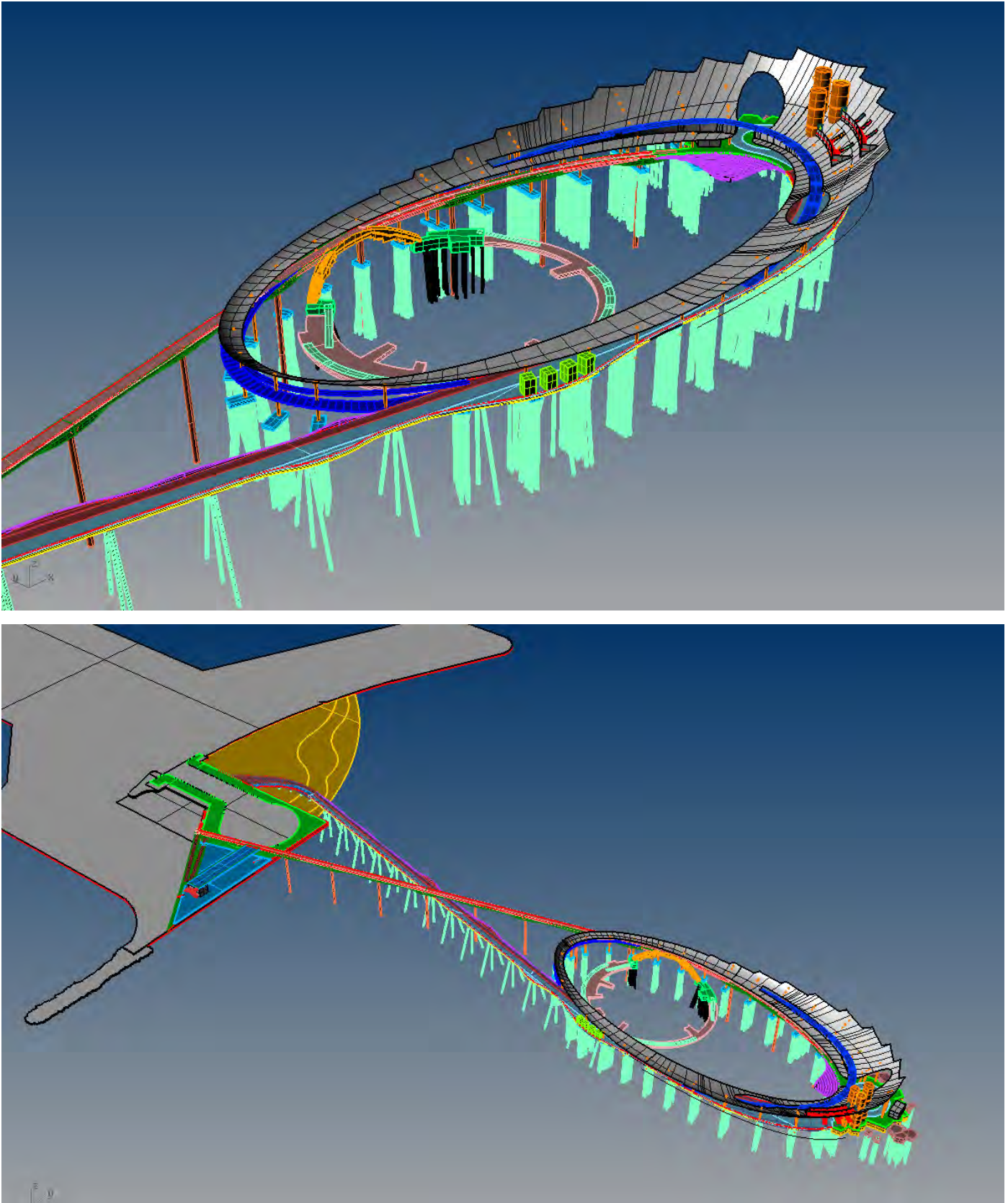
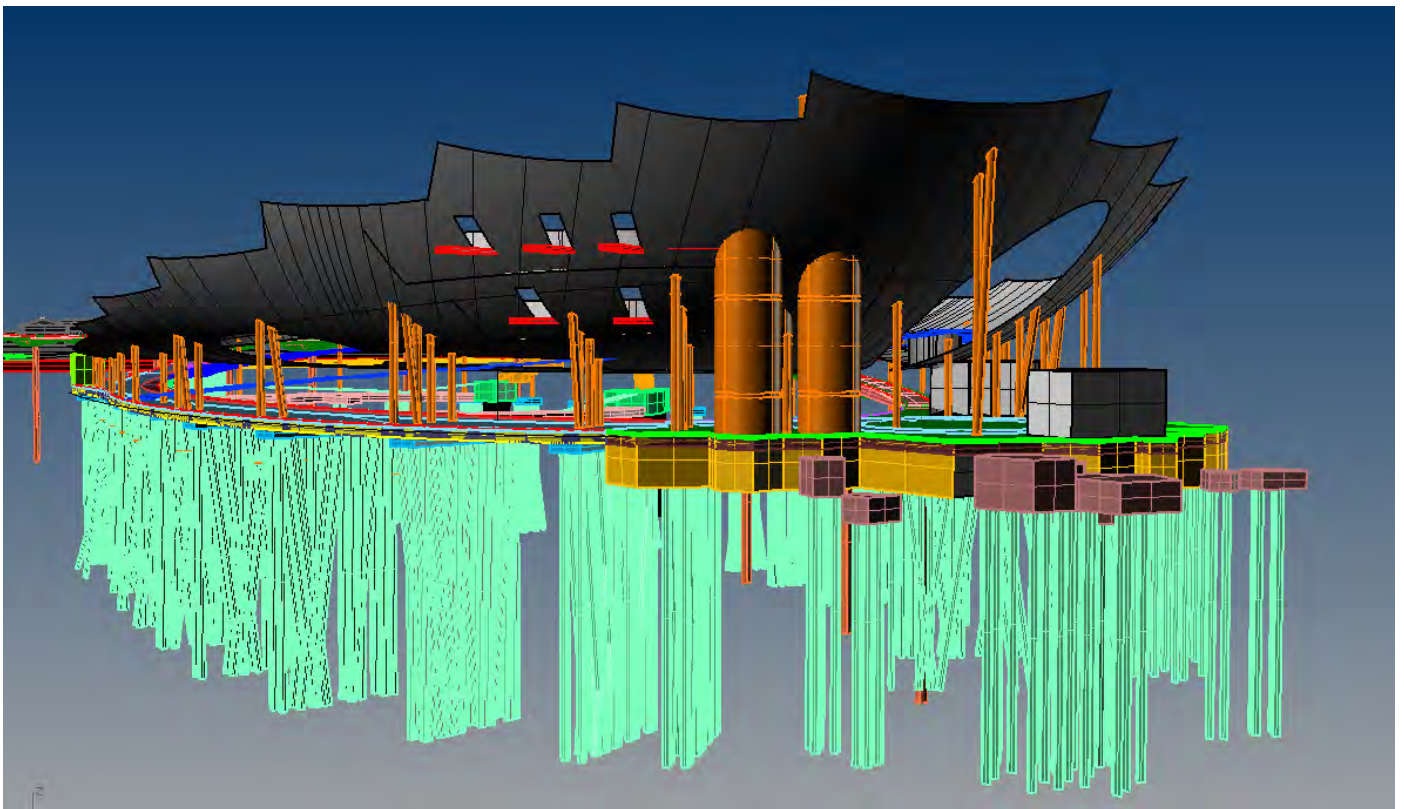
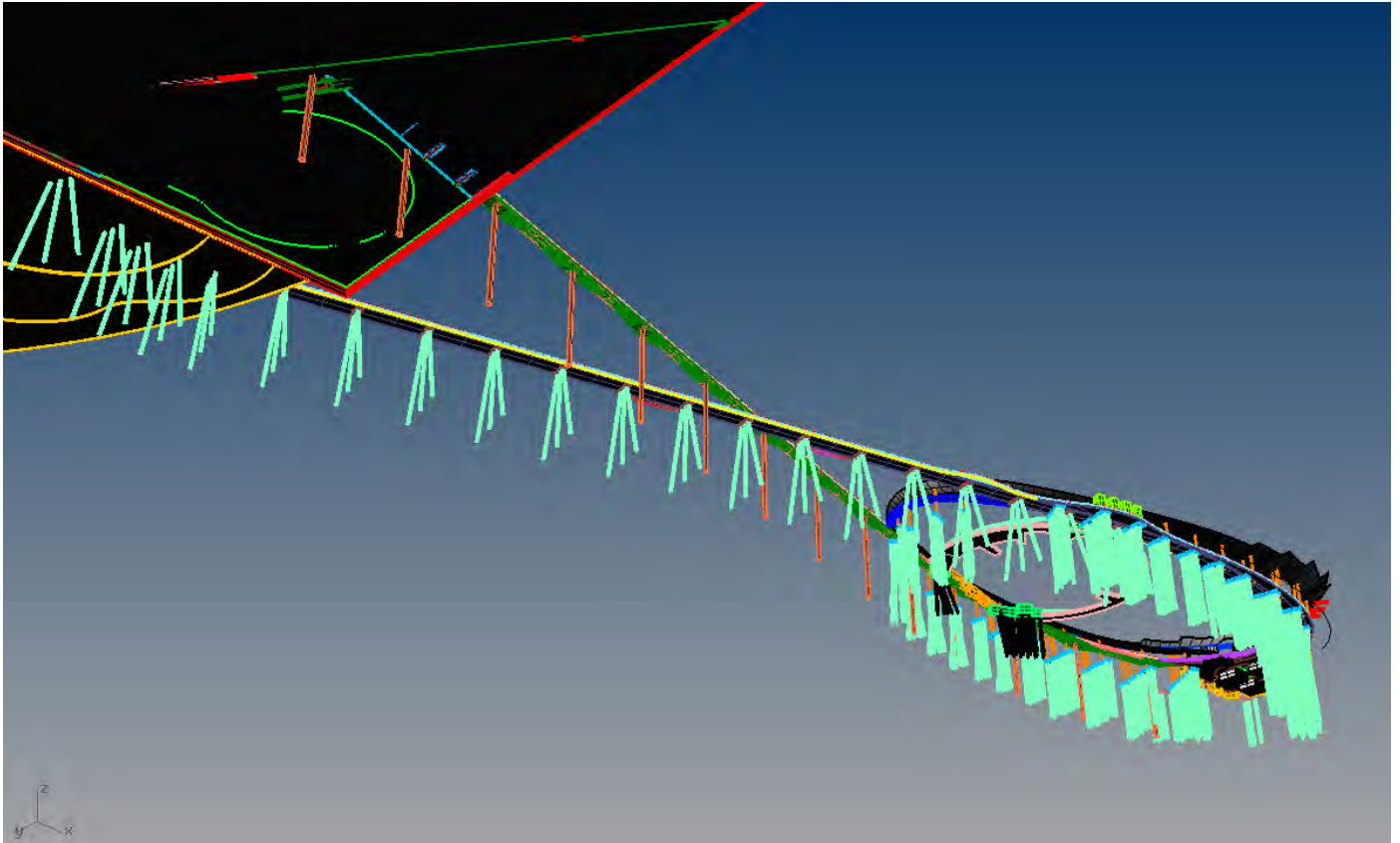


Figure 6.1 Screenshots of 3D Model Used for Costing



LOCAL BUSINESS ENTERPRISE PARTICIPATION

Local Business Enterprise Participation

Understanding the importance of investing in local communities and promoting the use of local businesses is one of the keys to Skanska's success. The team intends to maximize participation of local and SBEs at all levels of the new Pier project, including, but not limited to:

- **Step 1: Skanska's SBE Partner**
The first step of including Local Business Enterprises was made with the partnership between Skanska and Ward Construction, a City of St. Petersburg based construction firm. This union represents only the beginning of the team's proactive initiative to optimize local Pinellas County businesses and SBE participation. Skanska Ward is committed to creating a sustainable economic impact for Pinellas County during and after the realization of the new Pier.
- **Step 2: Community Outreach to Construction Trade Subcontractors**
The Skanska team's history of outperforming owner expectations and goals for local participation at the trade level is evidenced by the achievements of many projects, the direct result of a strategic outreach program that builds relationships with local subcontractors. For the new Pier, outreach efforts will have a focused target on local St. Petersburg and Pinellas County businesses.
- **Step 3: Workforce / Labor Force**
Recognizing the unique opportunity for job creation resulting from this effort, the Skanska team is taking proactive steps to ensure that all efforts are made to hire locally on this project.

SBE/MWBE Outreach Approach

Since opening its Tampa office nearly 20 years ago, Skanska's success in the community has been in part due to a commitment to incorporate diversity as one of the company's core values.

Skanska's strategies for proactive outreach to small business enterprises and minority and women owner enterprises (SBE/MWBE) have consistently positioned its Owners to outperform their small business participation goals. As a result, strong relationships within the small business/minority communities throughout Pinellas and Hillsborough counties have been established. The success of Skanska's program is built on an understanding of the capabilities and specific scope assigned to each SBE/MWBE firm, enabling Skanska to effectively match capable small businesses with the right opportunity, thereby positioning them for success. While many construction firms simply utilize SBE/MWBEs at the subcontractor level, Skanska includes a SBE as part of its prime team, working in association with Ward Construction and Remodeling to create the SkanskaWard Team.

The goal for the new Pier is to utilize the economic impact of the project to benefit local St. Petersburg/Pinellas County communities and to grow reliable small/minority and women owned businesses. Skanska promotes the long term viability of SBE/MWBE businesses through a proven, proactive approach that maximizes inclusion and participation on all projects. SkanskaWard will focus on relationship building through rigorous, personalized outreach activities that will closely align with the City's program.

Following research on the City of St. Petersburg's Business Assistance Division and Small Business Enterprise program, it has been concluded that Skanska's approach and performance history is greatly aligned with the City's objectives in regard to the means and methods for obtaining the best SBE/MWBE participation results. In furtherance of this research, SkanskaWard visited the City of St. Petersburg Purchasing Department and spoke with Louis Moore, Director of the department, as well as the Business Assistance Division.

The following list summarizes the Small Business Luncheons and related sponsored events organized by Skanska over the past three years. These events, coupled with other outreach and development tools, are recognized throughout the Tampa Bay community as evidence of Skanska's commitment to the development of small businesses:

- 10/05/2012: Construction Management Building Blocks Training Program - Learn how to successfully do business with Skanska
- 6/21/2011: Meet and Greet with local Brevard County subs for upcoming work at Port Canaveral

LOCAL BUSINESS ENTERPRISE PARTICIPATION (continued)

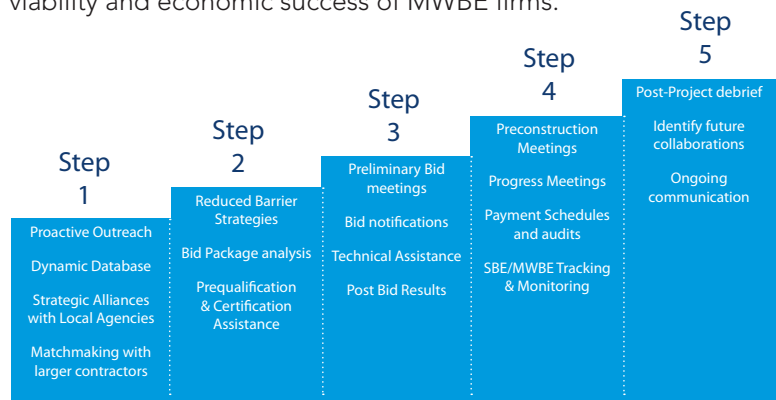
- 3/20/2011: Construction Management Building Blocks Training Program - Learn how to successfully do business with Skanska
- 3/01/2011: Bay Pines VA Inpatient/Outpatient Improvements and Mental Health Addition, St. Petersburg, FL
- 1/10/2011: 2011 Opportunities for Small Businesses - Featured Project: New US Federal Office Building, Miramar, FL
- 7/29/2010: Small Business Tools and Strategies for Success in the Federal Market
- 2/17/2009: Construction Management Building Blocks Training Program - Learn how to successfully do business with Skanska
- 5/12/2009: Risk Management Strategies for Small Businesses - Skanska Bonding and Subguard Program
- 9/22/2009: Today's Market Conditions and Updates

Outreach, Recruitment and participation of SBE/MWBE programs

One of Skanska's most successful outreach programs is the Small Business Luncheon held several times annually. The "lunch and learn" format features a topic of interest to the small business community. Topics can include trends in construction, bonding, financing, risk management and upcoming bid opportunities. The key note speakers for these meetings are a combination of Skanska executives and leaders from small business agencies and associations. The table Figure 6.2 provides a summary of the Small Business Luncheons and related sponsored events by Skanska over the past three years.

5-Step Approach

Skanska's track record of outperforming Owner expectations for small MWBE participation on every project is a direct result of the 5-step approach. Skanska's 5-step approach has been the foundation of MWBE programs nationwide. Skanska's approach is customized and tailored to reflect the unique dynamics of each project and each individual community. Participation levels consistently exceed projected goals and promote the long term viability and economic success of MWBE firms.



Project Owner/Name and Location	Required Participation	Actual Participation
University of South Florida ISA, Tampa, FL	0%*	15%
University of South Florida Sundome and Convocation Center, Tampa, FL	0%*	14%
Clay County School Board Shadowlawn Elementary, Green Cove Springs, Florida	0%*	32%
Clay County School Board Oakleaf Elementary, Green Cove Springs, Florida	0%*	30%
Duval County School Board Bartram Springs Elementary, Jacksonville, Florida	20%	29%
State of Florida Department of Veteran Affairs FDVA Nursing Home, St. Augustine, Florida	20%	33%
Gainesville Regional Utilities Operations Center, Gainesville, Florida	0%*	23%
H. Lee Moffitt Research Cancer Center and Research Institute International Plaza Outpatient Facility, Tampa, Florida	15%	48%
Broward Board of County Commissioners Ft. Lauderdale-Hollywood International Airport Terminal 4 Expansion, Ft. Lauderdale, Florida	30%	42%
Broward Board of County Commissioners Ft. Lauderdale-Hollywood International Airport Terminal 4 Expansion, Ft. Lauderdale, Florida	24%	29%
School Board of Broward County Heron Heights Elementary School, Parkland, Florida	0%*	20%
University of Central Florida Health and Public Affair Building, Orlando, Florida	30%	35%
School Board of Broward County Liberty Elementary School, Margate, Florida	0%*	42%
Florida International University Frost Art Museum, Miami, Florida	0%*	22%
General Services Administration United States Courthouse, Jacksonville, Florida	25%	25%
City of Orlando City of Orlando Operations Center, Orlando, Florida	25%	27%
Orange County Public Schools Colonial High School, Orlando, Florida	20%	36%

(*) Denotes projects where no participation requirements were set

Figure 6.2 Small Business Luncheons and Related Sponsored Events by Skanska

LOCAL BUSINESS ENTERPRISE PARTICIPATION (continued)

Training Programs

To further assist MWBE partners, Skanska has developed a formal Mentor-Protégé Program and Construction Management Building Blocks (CMBB) Program. These programs are available for any Skanska project.

Mentor-Protégé Program

Under Skanska's Mentor-Protégé Program, an appropriate MWBE contractor is selected to be mentored throughout a project, exposing the firm to the level of service expected by Skanska's clients and assisting the firm in gaining experience without financial risk. The MWBE contractor assists Skanska during preconstruction through review of bid packages and the identification of capable minority and/or woman-owned firms within the local area. During construction, the firm provides project engineers or assistant supervisors to work under the tutelage of Skanska's on-site staff.

Construction Management Building Blocks (CMBB) Program

Skanska offers CMBB, a training course available throughout the country, both in conjunction with a specific project and as a stand-alone. The philosophy behind CMBB is to share the extensive industry expertise of Skanska's employees with small and emerging companies. The eight-week program addresses topics that are traditionally challenging for contractors including Accounting for Construction, How to Structure a Joint Venture, Estimating and more. Material is taught through lecture, group discussions and hands-on demonstrations of proven business practices. Course materials are presented by internal and external Skanska subject matter experts.

History of Success

Skanska's Contractor Diversity Program has proven successful through the use of strategic joint ventures, partnering and mentoring programs with the MWBE community. Skanska is recognized as one of the most progressive Construction Management firms in the nation in promoting MWBE participation, particularly on large private, public or semi-public projects.

Skanska's award-winning Diversity Business Enterprise Program is an integral component of its organizational culture. Additionally, Skanska has won numerous awards in the past few years for its minority participation including the 2008 Corporate Member of the Year - United Minority Contractors, 2007 Circle of Influence Diversity Award, 2007 Contractor of the Year from the Minority Business Opportunities Committee, Hispanic Contractors Association of Georgia Contractor of the Year Award and Oregon Association of Minority Entrepreneurs Construction Industry Award 2008.

Strategy and Tactical Approach for the City of St. Petersburg Pier Replacement Project

SkanskaWard will engage the City of St. Petersburg Purchasing and Business Assistance Division regarding the following:

- Host a SBE networking event to maximize local economic impact
- Begin pre-qualification of SBE's firm, which supports their bonding and encourages participation
- Break down the project and identify the various components for review and availability of SBE inclusion
- Establish SBE participation goals for the project
- Begin developing strategic bid packages
- Facilitate partnerships between large primary and SBE subcontractors
- Conduct workshops to deliver detailed information containing clear instructions for participation
- Closely monitor the work of SBE firms' prime and lower tiers to ensure their success.
- Maintain project status log that identifies all of the SBE firms' performance and payments
- Document the entire process so that the City of St. Petersburg may utilize the model going forward

LOCAL BUSINESS ENTERPRISE PARTICIPATION (continued)

Local Experience

Skanska has been the premier builder of the Tampa Bay area's most significant projects for the past 20 years. With St. Petersburg as its home, the team has worked on both sides of the Bay. Figure 6.3 lists several significant projects that have been built by Skanska. Skanska's commitment to the local community is exemplified by the expertise and history of its employees, many of whom are native to the Tampa Bay Area. The following are key local team members; resumé containing detailed information on their experience and qualifications can be found in *Appendix J: Skanska - Key Personnel*.

- Chuck Jablon, Project Executive, Account Manager and Point-of-Contact
- Roger Stephan, LEED AP, Executive Support
- OT Delancy, Executive Support - SBE/MWBE Liaison
- William Flemming, CEO - Executive Support
- Mark McLaughlin, LEED AP, Senior Project Manager - Crown and Pathways Construction
- Meoi Plummer, Project Manager - Crown and Pathways Construction
- Richard Lee, Superintendent/Quality Control - Crown and Pathways Construction
- Tommy Ward, Superintendent/Quality Control - Crown and Pathways Construction
- Patrick McGlynn, Superintendent/Quality Control - Marine Construction
- Jake Krehbiel, LEED AP, Assistant Project Manager - Crown and Pathways Construction
- Christina Huber, LEED AP, BIM Manager
- Brian Coakley, Preconstruction Support
- Mark Apaliski, Preconstruction
- Steve Arsht, Preconstruction Support
- Robert Ward, Local SBE/MWBE
- David Espy, Environmental, Health and Safety Manager

Skanska has 202 total employees in its Tampa office. 163 live in the Tampa Bay Area; 15 live in the City of St. Petersburg; 24 live in Pinellas County. Figure 6.4 describes these employees' areas of residence.



1 BayCare Corporate Offices



2 Pinellas County Florida Botanical Gardens



3 Interstate 275 Expansion



4 St. Anthony's Carillon Outpatient Center



5 Bayfront Medical Center MOB and Parking Garage



6 Tropicana Field Renovation



7 Tampa International Airport Airside "E" Delta Terminal



8 SR 60 TIA Expansion



9 100 North Tampa



10 Tampa General Hospital West Pavilion Expansion



11 Curtis Hixon Waterfront Park, Kiley Gardens Repair



12 Tampa Museum of Art

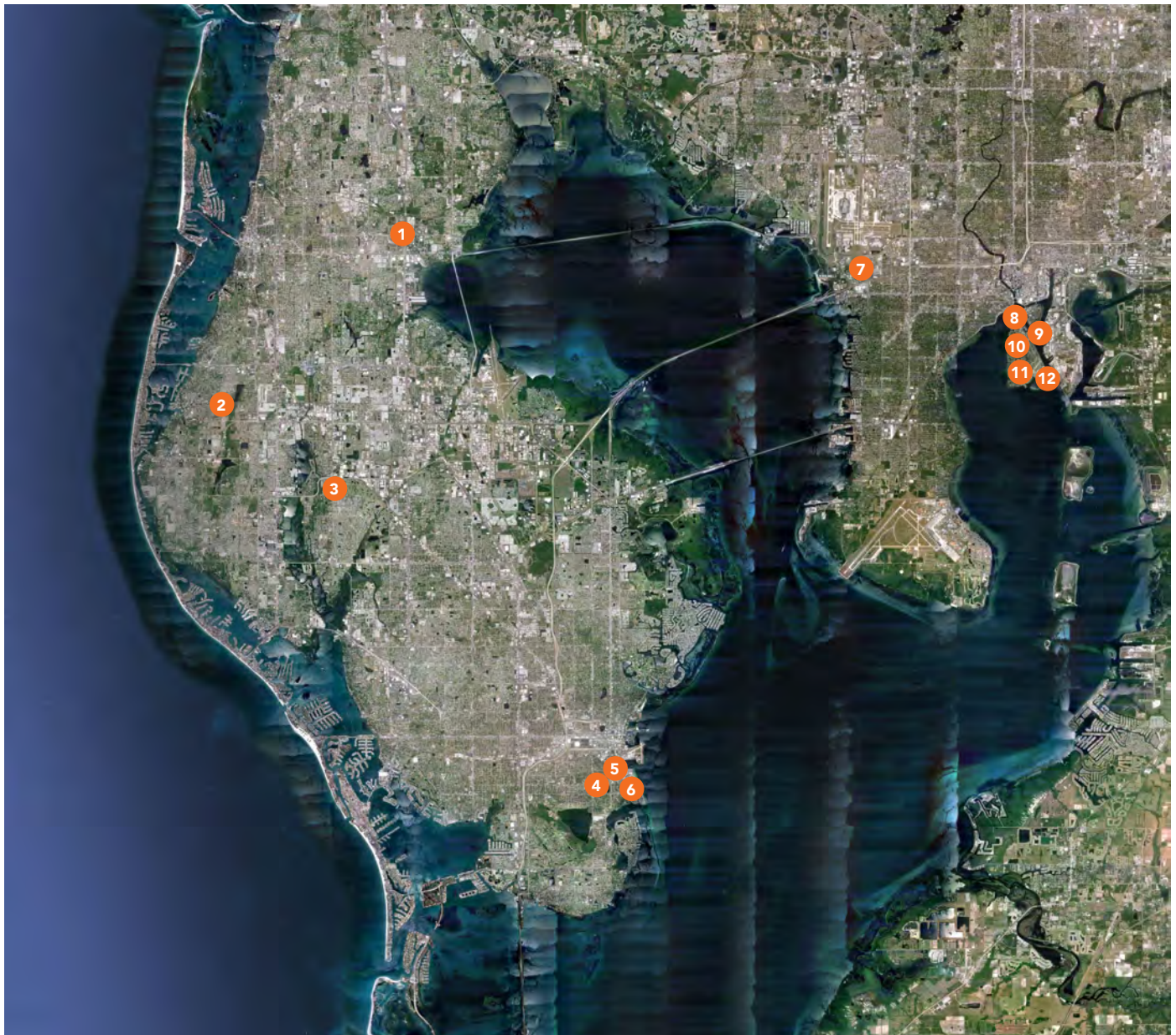


Figure 6.3 Tampa Bay Area Skanska Projects

LOCAL BUSINESS ENTERPRISE PARTICIPATION (continued)

Local Subcontractors

St. Petersburg and Pinellas County offer a wealth of resources in the construction industry. Skanska is committed to collaborating with local subcontractors on the construction of the new Pier. Figures 6.5 and 6.6 are images of two recent projects completed with high levels of local business participation. Port Canaveral Cruise Terminal No. 6, completed in August 2012, achieved 82% local business participation, while the ongoing Florida Polytech project has already achieved 78% local business participation. Figure 6.7 describes a database of local Pinellas County subcontractors, the master list of which includes over 1,200 companies specifically from Pinellas County.

Community Partnership and Sponsoring Events

Hand in hand with promoting local participation is the Skanska Ward commitment to reinvesting in the community, evidenced by a long history of partnering with, and giving back to, key clients through the support of numerous events, causes and fundraisers. The following highlights are examples of the firms' community involvement events.

- **Ronald McDonald House**
Fishing for Hearts Tournament
- **St. Petersburg Christian School**
Annual Golf Tournament
- **All Children's Hospital Event**
Big Catch for Kids Fishing Tournament
Annual Gala Event
- **Tampa General Hospital Fundraising**
Golf Tournament
Clay Shooting
Valentine's Day event
Supers Reading with Santa
- **Tampa Museum of Art**
Fishing Tournament
Pavilion Gala Event
- **USF Fishing Tournament**
- **American Cancer Society**
Cattle Baron's Ball
- **Florida Polytechnic Tilt Event**
- **Walk to Defeat ALS - Tampa**
- **Corporate 5k - Orlando**
- **Moffitt Cancer Center**
- **Miles for Moffitt**
- **Callahan Tire Pro Am Tournament**
- **Key for the Cure Event**

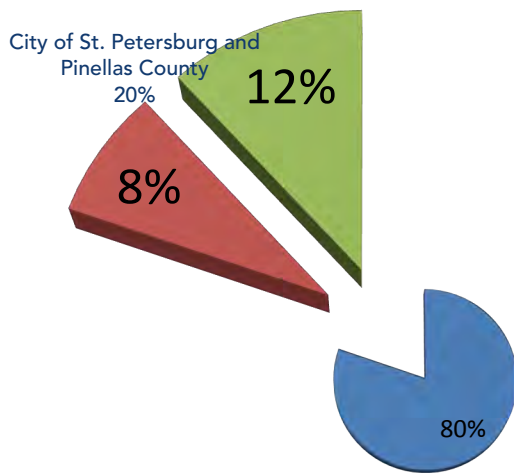


Figure 6.4 Areas of Residence of Skanska's Tampa Employees

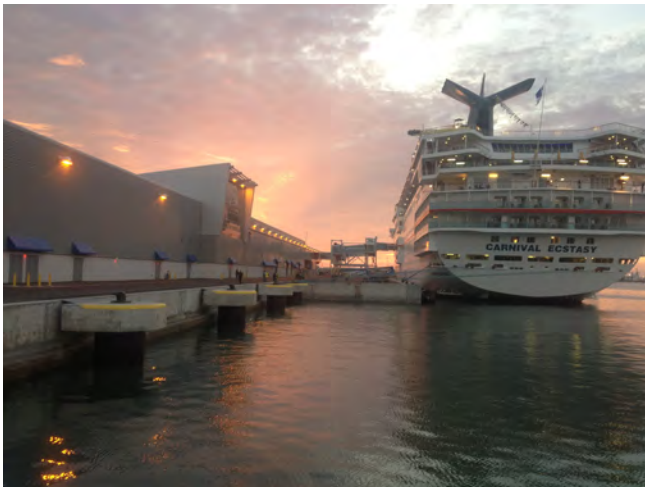


Figure 6.5 Port Canaveral Cruise Terminal No. 6



Figure 6.6 Florida Polytech

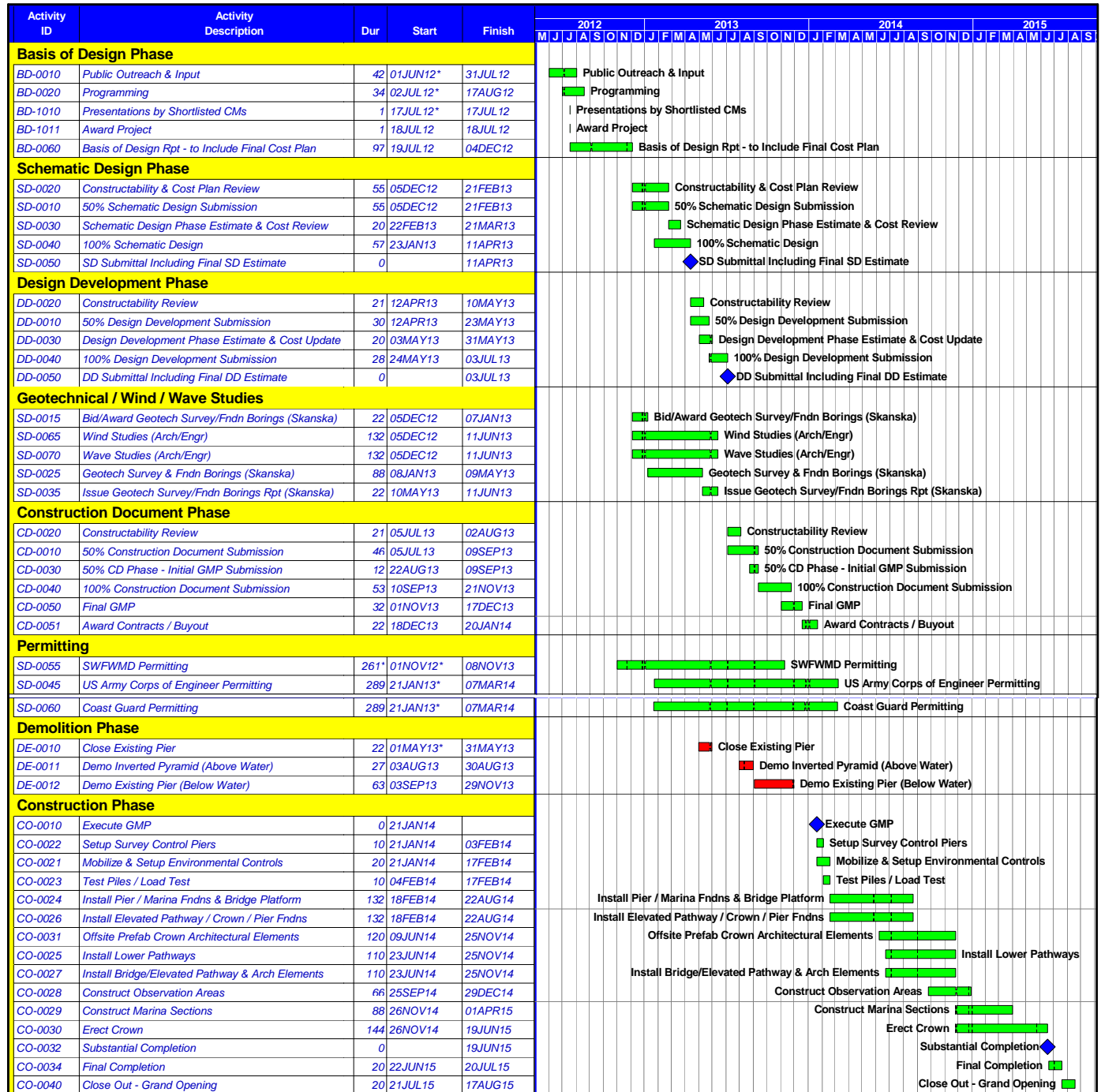
03200-Concrete Reinforcement			
Bar-Fab of FL., Inc.	(727) 572-6669	Clearwater	FL
Block-Busters Of Pinellas Park Inc.	(727) 397-0746	Seminole	FL
IROK Constructional Services	(727) 320-5286	St. Petersburg	FL
J.B. Bromley Construction, Inc.	(727) 224-2966	Pinellas Park	FL
Mark 1 Contracting, Inc.	(727) 894-3600	St. Petersburg	FL
Par Builders	(727) 532-6111		
Stalba Construction	(727) 363-1400		
Suncoast Builders Development Inc.	(727) 848-3200	New Port Richey	FL
United Steel Works, Inc.	(727) 572-6669	Clearwater	FL
03205-Rebar Erection/ Rodbusting			
J.B. Bromley Construction, Inc.	(727) 224-2966	Pinellas Park	FL
03330-Architectural Concrete			
E.L. Shearer Concrete	(727) 548-7959	Pinellas Park	FL
Stalba Construction	(727) 363-1400		
03350-Concrete Finishing			
A & B Concrete Concepts	(727) 237-4048	New Port Richey	FL
J.B. Bromley Construction, Inc.	(727) 224-2966	Pinellas Park	FL
Par Builders	(727) 532-6111		
Stalba Construction	(727) 363-1400		
03380-Post-Tensioned Concrete			
Carr & Sons Masonry, Inc.	(727) 526-9585	Pinellas Park	FL
MacDonald Builders Inc.	(727) 502-0240	St. Petersburg	FL
Mark 1 Contracting, Inc.	(727) 894-3600	St. Petersburg	FL
MasRam Construction Services	(727) 330-7580	Clearwater	FL
Reinforced Structures Inc.	(727) 447-2535	Clearwater	FL
Stalba Construction	(727) 363-1400		
Suncoast Builders Development Inc.	(727) 848-3200	New Port Richey	FL
03410-Precast Structural Concrete			
Caladesi Construction Company	(727) 585-9945	Largo	FL
Concrete Erectors, Inc.	(727) 321-6000	Saint Petersburg	FL
E.L. Shearer Concrete	(727) 548-7959	Pinellas Park	FL
03470-Tilt-Up Precast Concrete			
Caladesi Construction Company	(727) 585-9945	Largo	FL
Carr & Sons Masonry, Inc.	(727) 526-9585	Pinellas Park	FL
Cocoa Masonry of Pinellas Co.	(727) 573-3717	Clearwater	FL
Mark 1 Contracting, Inc.	(727) 894-3600	St. Petersburg	FL
P.J. Callaghan Co., Inc.	(727) 573-2505	Clearwater	FL
Reinforced Structures Inc.	(727) 447-2535	Clearwater	FL
Suncoast Builders Development Inc.	(727) 848-3200	New Port Richey	FL
03520-Lightweight Concrete Roof Insulation			
Pro-Crete Systems, Inc.	(727) 526-8090	Pinellas Park	FL
03552-Self-Leveling Toppings			
Pro-Crete Systems, Inc.	(727) 526-8090	Pinellas Park	FL
03930-Concrete Rehabilitation			
Pro-Crete Systems, Inc.	(727) 526-8090	Pinellas Park	FL
04000-MASONRY			
Bettencourt Construction, LLC	(727) 656-5570		FL
Block-Busters Of Pinellas Park Inc.	(727) 397-0746	Seminole	FL
Cortes Construction Services, LLC	(727) 937-4700	Tarpon Springs	FL
E. L. Shearer Concrete & Masonry	(727) 548-7959	Pinellas Park	FL
E.L. Shearer Concrete	(727) 548-7959	Pinellas Park	FL
E/S CONCRETE SERVICE, INC.	(727) 821-5029		
Florida Concrete & Masonry, Inc.	(727) 209-3526	St. Petersburg	FL
Gilbert & Byrd Masonry Contractors, I	(727) 541-2662	Largo	FL
Ginty Construction, Inc.	(727) 337-8377	St. Petersburg	FL
IROK Constructional Services	(727) 320-5286	St. Petersburg	FL
J & J Masonry	(727) 247-2235		
JJ Masonry Construction Company	(727) 247-2235	Holiday	FL
Mangan Masonry	(727) 796-7272	Clearwater	FL
P.J. Callaghan Co., Inc.	(727) 573-2505	Clearwater	FL
Par Builders	(727) 532-6111		
Peter Glaser Construction, Inc.	(727) 461-1166	Clearwater	FL
Rick Perry Masonry	(727) 466-0840	Crystal Beach	FL
Southeast Granite Works	(727) 667-5829	Palm Harbor	FL
Stalba Construction	(727) 363-1400		
Suncoast Builders Development Inc.	(727) 848-3200	New Port Richey	FL
Suncoast Building CONTRACTORS	(727) 623-1036	st.petersburg	FL
Suncoast Surfaces and Granite Inc	(727) 847-6327	New Port Richey	FL
Zemke General Contracting, Inc.	(727) 856-6600	Spring Hill	FL
04001-Masonry Contractor			
Block-Busters Of Pinellas Park Inc.	(727) 397-0746	Seminole	FL
Carr & Sons Masonry, Inc.	(727) 526-9585	Pinellas Park	FL
Daminato Enterprises LLC	(727) 638-2254	St. Petersburg	FL
E/S CONCRETE SERVICE, INC.	(727) 821-5029		
Gilbert & Byrd Masonry Contractors, I	(727) 541-2662	Largo	FL
Ginty Construction, Inc.	(727) 337-8377	St. Petersburg	FL
IROK Constructional Services	(727) 320-5286	St. Petersburg	FL
J & J Masonry	(727) 247-2235		
J.B. Bromley Construction, Inc.	(727) 224-2966	Pinellas Park	FL
JJ Masonry Construction Company	(727) 247-2235	Holiday	FL
Mangan Masonry	(727) 796-7272	Clearwater	FL
MasRam Construction Services	(727) 330-7580	Clearwater	FL
Par Builders	(727) 532-6111		
Rainbow Concrete & Masonry	(727) 327-9499	St. Petersburg	FL
Rick Perry Masonry	(727) 466-0840	Crystal Beach	FL
Stalba Construction	(727) 363-1400		
Suncoast Builders Development Inc.	(727) 848-3200	New Port Richey	FL
United Tile Contractors of Florida, Inc	(727) 834-8453	New Port Richey	FL

Figure 6.7 Sample Database of Pinellas County Subcontractors

**LOCAL BUSINESS
ENTERPRISE PARTICIPATION
(continued)**

- **Annual Golf Tournament**
Magnolia Ball
Cure on Wheels
- **Miami Corporate 5k Run**
- **Make A Wish Foundation Walk**
- **Coral Springs Medical Center 5k Run**
- **Pasco Hernando Community College**
Annual Golf Tournament
Annual Fishing Tournament
- **Hillsborough Community College**
- **Presidential Showcase**
Annual Foundation Golf Tournament
- **Lee Memorial Hospital**
- **Cancer Care by the Gulf Coast Medical Center Team**
- **Sarasota Memorial Hospital**
Annual Gala
Walk in October
- **United Way Campaign (through United Way of North Central Florida)**
- **Harvest Drive for Broward County**
- **Broward Health Foundation**
Glam Doll Strut

PRELIMINARY SCHEDULE



7

OPERATING EXPENSE AND MAINTENANCE ESTIMATES

OPERATING EXPENSE AND MAINTENANCE ESTIMATES

This section is intended to provide insight into the anticipated operating costs, revenue potential, and resulting subsidies required to operate the new Pier. Based on the escalation of operating costs and compression of revenues at the current Pier over the last 10 years, the new Pier's operating costs and beneficial design efficiencies have been carefully considered. While full estimates are included in Appendix N, It is important to note that the information provided in this section as well as in the Appendix is intended to provide a rough order of magnitude in terms of anticipated costs. Major considerations for the project and estimate presented here include:

- The opportunity for sustainable design and conservation measures to inform the design and reduce energy use.
- A forty percent reduction in overwater footprint between the existing and new Piers, thereby reducing operating expenses
- Reduced tenant and common area square footage means less unrecovered maintenance and operating costs.
- Encased utilities assure safer, lower maintenance operations for all common utilities.
- While the new Pier is fully ADA compliant and trolley capable, visitor vehicles will not be allowed, resulting in lower maintenance and substantial improvement to environmental conditions, both above the surface of the water as well as in the bay, where toxic runoff will no longer have an impact. The new Pier provides activities and engagement for pedestrians, cyclists and all other patrons along its journey, looking to the future while simultaneously taking a cue from our pedestrian pier past.
- A larger restaurant space is to be land-based, reducing both short term construction costs and long term operating costs (for both tenant based and common area-unrecoverable based).
- The new Pier will still require a certain level of security and a trolley service, both of which are existing expenses.

Future revenues from the new Pier have great positive potential. Baseline revenues from typical leasing opportunities include restaurant and retail spaces. These revenues are supplemented by very conservative estimates from special event revenues and fees at the iconic Lens structure, such as wedding receptions, special events and parties. While these revenues, along with standard commercial revenues, have been conservatively estimated, it is important to recognize the upside potential to grow these figures.

**OPERATING EXPENSE AND
MAINTENANCE ESTIMATES
(continued)**

While fiscal year 2011 expenses for the Pier were \$2,443,000, the ten year average expenses were \$2,868,000. The new Pier's initial projected expense level is \$961,980, with a 10 year average of \$1,066,878. Factoring in conservative revenue estimates, the new Pier's initial subsidy level is \$592,840 in 2016 (with a projected 10 year average of \$666,356), substantially less than the current pier's 10 year average subsidy of \$1,425,000. Revenues in 2016 are estimated to be \$369,140, with a projected 10 year average of \$400,522.

Appendix N provides an analysis of operating and maintenance costs for the project, prepared by Willis Construction Estimating, Inc. The Report includes tables containing a revenue forecast, a maintenance cost forecast, and a replacement schedule.

Willis Construction Consulting, Inc. is an estimating company with in-house estimators for civil, structural, architectural, mechanical, and electrical trades for the purpose of providing construction cost estimates, feasibility estimates, program estimates, and life cycle and operating cost estimates for architects, general contractors, developers, and owners, among others. An acute working knowledge of critical elements, such as project size, location, design, construction market conditions and other factors that directly impact project cost, allows Willis to address individual client needs, while giving clients control of project costs throughout all phases of the project life cycle.

Based in Florida, Willis Construction provides services for both national and international projects, including many local clients in Tampa, such as the Florida Aquarium, the James A. Haley VA Hospital, MacDill Joint Systems Command Headquarters, and Pinellas Suncoast Transit Authority.

From 2006 through 2011 Willis Construction estimated over twelve billion dollars in construction costs for clients.

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