Feburary 2019

ENVIRONMENTAL NOTIFICATION FORM/PROJECT NOTIFICATION FORM

Commonwealth Pier Revitalization

Boston, Massachusetts

PROPONENT
Commonwealth Pier Trust II

DEVELOPER
Pembroke Real Estate LLC

SUBMITTED TO
Massachusetts Executive Office of Energy and Environmental Affairs MEPA Office

Boston Redevelopment Authority d/b/a Boston Planning & Development Agency

SUBMITTED BY
vhb

IN ASSOCIATION WITH
CBT Architects
Schmidt Hammer Lassen Architects
Sasaki
Goulston & Storrs
Fort Point Associates, Inc.
ARUP
Haley & Aldrich
Thornton Tomasetti

PEMBROKE

February 13, 2019

Secretary Matthew A. Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

Director Brian P. Golden
Boston Planning & Development Agency
Boston City Hall, 9th Floor
Boston, MA 02201

Re: Commonwealth Pier Revitalization
200 Seaport Boulevard, Boston, MA

Dear Secretary Beaton and Director Golden:

Commonwealth Pier Trust II, c/o Pembroke Real Estate LLC (the “Proponent”) is pleased to submit this combined Environmental Notification Form (“ENF”)/Project Notification Form (“PNF”) for the revitalization of the Seaport World Trade Center (the “Project”) located at 200 Seaport Boulevard in the South Boston Waterfront of Boston, Massachusetts (the "Project Site"). The Proponent leases the Project Site from the Massachusetts Port Authority (“Massport”) pursuant to a long-term ground lease, which will be amended to accommodate the Project.

The proposed revitalization of Commonwealth Pieris a transformative project that will modernize and reposition the existing building and the pier for its next generation of use as a vibrant place to work and visit, including enhanced retail and public amenities within the City’s exciting South Boston Waterfront. The Project will enhance its current uses by converting the existing exhibition/event space into extensive public realm improvements, expanded retail space on the upper and ground-floors, new innovative office space and first-class event spaces. A key design goal is to improve and maximize public access to the waterfront by expanding public realm area and open space on-site.

The entire Project Site is located within Chapter 91 jurisdiction, and most of it is within the South Boston Designated Port Area (“DPA”). The application of Chapter 91 regulations and the permitting process of the Massachusetts Department of Environmental Protection (“DEP”) for the Project Site are governed by a Memorandum of Understanding between Massport and DEP dated March 2001 regarding the Project Site and certain other parcels owned by Massport in South Boston. The enclosed ENF/PNF discusses how the Project will continue to comply with Chapter 91 and provides an assessment of traffic/transportation, potential environmental impacts, and infrastructure needs to inform reviewing agencies and the community about the Project, its potential impacts, and the mitigation measures proposed to address those potential impacts.

The ENF is being filed jointly with the PNF for review by the BPDA, in accordance with Article 80B of the Boston Zoning Code (the “Code”). On December 7, 2018, the Proponent submitted a Letter of Intent (

"LOI") to the BPDA and intends to work diligently with the community, and city and state agencies to voluntarily complete the Article 80 Large Project review process, as well as the MEPA process.

We respectfully request that notice of availability of this ENF is published in the February 20, 2019 edition of the MEPA Environmental Monitor. We will also publish notice of the PNF submission in the Boston Herald on February 14th and of the ENF submission on February 20th, as required by 301 CMR 11.15(1). Based upon this schedule, public comments on the ENF will be due by March 12, 2019 and a decision is anticipated to be issued on or around March 22, 2019. Public comments on the PNF may be submitted to the BPDA through March 15, 2019. Requests for copies of the ENF/PNF should be directed to Lauren DeVoe at 617-607-0091 or via e-mail at ldevoe@vhb.com.

We look forward to working with you and your staff in your continuing review of the Project.

Sincerely,

Andrew Dankwerth
Senior Vice President, Design & Development, Pembroke

Commonwealth Pier Revitalization

Boston, Massachusetts

SUBMITTED TO **Executive Office of Energy & Environmental Affairs**
MEPA Office
100 Cambridge St., Suite 900 (9th Floor)
Boston MA, 02114

Boston Redevelopment Authority, d/b/a Boston Planning and Development Agency
One City Hall Square, 9th Floor
Boston, MA 02201

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In association with:

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Fort Point Associates, Inc.
ARUP
Haley & Aldrich
Thornton Tomasetti

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Environmental Notification Form

For Office Use Only
EEA#: _____
MEPA Analyst: _____

The information requested on this form must be completed in order to submit a document electronically for review under the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: **Commonwealth Pier Revitalization**		
Street Address: **200 Seaport Boulevard**		
Municipality: **Boston**	Watershed: **Boston Harbor**	
Universal Transverse Mercator Coordinates: **N 4690837.25, E 331948.56**	Latitude: **42°21'05.2"N** Longitude: **71°02'25.8"W**	
Estimated commencement date: **Q3 2020**	Estimated completion date: **December 2024**	
Project Type: **Mixed-use**	Status of project design: **Schematic Design**	
Proponent: **Commonwealth Pier Trust II, c/o Pembroke Real Estate LLC**		
Street Address: **255 State Street**		
Municipality: **Boston**	State: **MA**	Zip Code: **02109**
Name of Contact Person: **Lauren DeVoe**		
Firm/Agency: **VHB**	Street Address: **99 High Street, 10th Floor**	
Municipality: **Boston**	State: **MA**	Zip Code: **02110**
Phone: **(617) 607-0091**	Fax: **(617) 728-7782**	E-mail: **ldevoe@vhb.com**

Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)?
☐**Yes** ☒No

If this is an Expanded Environmental Notification Form (ENF) (see 301 CMR 11.05(7)) or a Notice of Project Change (NPC), are you requesting:

a Single EIR? (see 301 CMR 11.06(8)) ☐Yes ☒**No**
a Special Review Procedure? (see 301CMR 11.09) ☐Yes ☒**No**
a Waiver of mandatory EIR? (see 301 CMR 11.11) ☐Yes ☒**No**
a Phase I Waiver? (see 301 CMR 11.11) ☐Yes ☒**No**
(Note: Greenhouse Gas Emissions analysis must be included in the Expanded ENF.)

Which MEPA review threshold(s) does the project meet or exceed (see 301 CMR 11.03)?

301 CMR 11.03(3)(b)(5) Ch. 91 license for existing unlicensed non-water dependent use

301 CMR 11.10(b)(1) demolition of all or any exterior part of any Historic Structure listed in or located in any Historic District listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth

Which State Agency Permits will the project require?

Chapter 91 License from Massachusetts Department of Environmental Protection ("DEP"), Waterways Program

Order of Conditions from the Boston Conservation Commission, which is subject to review by DEP if appealed

Amendment to the Existing Ground Lease and Project Design Review from Massachusetts Port

Authority ("Massport")

Identify any financial assistance or land transfer from an Agency of the Commonwealth, including the Agency name and the amount of funding or land area in acres:

The Project may include a land transfer from Massport in the form of easement or lease rights to expand the apron/walkway surrounding the Project Site.

Summary of Project Size & Environmental Impacts

	Existing	Change	Total
LAND			
Total site acreage	**18.9 acres**		
New acres of land altered		**-0-**	
Acres of impervious area	**10.9 acres**	**0.49[1]**	**11.39 acres**
Square feet of new bordering vegetated wetlands alteration		**-0-**	
Square feet of new other wetland alteration		**1,271 sf[2]**	
Acres of new non-water dependent use of tidelands or waterways		**-0-**	
STRUCTURES			
Gross square footage[3]	**705,700 GFA**	**31,860 GFA**	**737,560 GFA**
Number of housing units	**-0-**	**None**	**-0-**
Maximum height (feet)	**77 feet**	**-0-**	**77 feet**
TRANSPORTATION			
Vehicle trips per day (Unadjusted ITE Trips)[4]	**7,763**	**534**	**8,297**
Adjusted Vehicle trips per day[5]	**1,682**	**142**	**1,824**
Parking spaces	**-0-[6]**	**-0-**	**-0-**
WASTEWATER			
Water Use (Gallons per day)	**212,443**	**(-48,448)**	**163,995**
Water withdrawal (GPD)	**-0-**	**-0-**	**-0-**
Wastewater generation/treatment (GPD)	**193,130**	**(-44,044)**	**149,086**
Length of water mains (miles)	**-0-**	**-0-**	**-0-**
Length of sewer mains (miles)	**-0-**	**-0-**	**-0-**

Has this project been filed with MEPA before?
☐ Yes (EEA #_____) ☒**No**

Has any project on this site been filed with MEPA before?
☒ **Yes** (**EEA #4133**) ☐**No**

Footnotes:

1. **Accounts for apron expansions area.**
2. **Represents area of impact from piles in Land Under Ocean approximately 1,116 sf of which is within the South Boston Designated Port Area.**
3. **Represents Gross Floor Area (GFA), as defined by the Boston Zoning Code.**
4. **Based on ITE Trip Rates for Office and Retail, and actual attendance data for Exhibition and Event/Ballrooms, before adjustment for availability of site-specific alternate transportation modes, including public transit.**
5. **Net project vehicle trips after adjustment for site-specific available alternate transportation modes, including public transit.**
6. **Currently there is no on-site parking, other than a limited number of executive spaces, and the existing site is supported by an allocation of 890 spaces in the nearby Seaport Parking Garage.**

GENERAL PROJECT INFORMATION – all proponents must fill out this section

PROJECT DESCRIPTION:

Existing Conditions

Describe the existing conditions and land uses on the project site:

Figures 1.1 and 1.2 present the site location and context, respectively. The Project Site is located along the historic and vibrant Boston Harbor waterfront, ideally situated at the nexus of the growing South Boston Waterfront neighborhood of Boston.

The Project Site is bounded by water to the east, west, and north, and Seaport Boulevard to the south, and is comprised of filled and flowed tidelands. Of the 18.9-acre Project Site, much of it is filled (approximately 8.0 acres) and contained within a granite seawall. All of this filled area is covered with the existing World Trade Center building. A narrow strip of the building along the apron and the apron itself, totaling approximately 3.5 acres, are located over the water on piles. The balance of the Project Site is open watersheet (approximately 7.4 acres). As shown on Figure 1.3, the Project Site contains the following key components:

1. **The World Trade Center building consisting of a headhouse (the "Headhouse") and three connected rear sheds as a continuous structure that currently covers the majority of the 1,200-foot by 400-foot Commonwealth Pier;**
2. **The publicly-accessible walkway around the perimeter of the building (the "apron"), which includes a portion of the Harborwalk; and**
3. **An upper level walkway that carries pedestrian and vehicular traffic from World Trade Center Avenue over Seaport Boulevard to the second story of the building (the "Viaduct").**

The Project Site is previously developed and consists entirely of impervious surface and open water sheet. Refer to Figure 1.3 for an existing conditions site plan and Figure 1.4 for photographs of the existing site conditions.

Project Description

Describe the proposed project and its programmatic and physical elements:

The Project consists of converting a large amount of the existing exhibition/event space (approximately 135,300 gross floor area) into extensive public realm improvements, expanded ground-floor retail space, additional and upgraded innovative office space and first-class event spaces. The proposed development program consists of approximately 635,920 GFA of office space (134,020 GFA net new), including lobby and amenity space, and approximately 11,240 square feet of co-working space. Approximately 45,240 GFA of retail space (33,140 GFA net new) is proposed as part of the Project. The building's height and massing remain relatively unchanged with the proposed design except for removal of a portion of the building's southwest corner to create an open-air public plaza (the "Plaza"). The roof and parapet of the historic Headhouse are and will remain the highest points of the building. Overall, the existing building massing is being reduced by an estimated five percent. Figures 1.5a and 1.5b present the proposed conditions site plans. Refer to Chapter 1, *Project Description and Alternatives*, for additional information.

A key design goal is to maximize public access to the waterfront by expanding open space and public realm area on-site at both the Harbor and Viaduct levels. By carefully considering grand public gestures, such as the creation of the Plaza with city skyline views, and an enhanced

Harborwalk surrounding the pier, the Project Site will be activated with a true sense of place within its rich urban fabric. Refer to Chapter 2, *Urban Design*, for additional information.

The Project is a rehabilitation and revitalization development and does not introduce any new uses; therefore, the potential environmental impacts are limited, as described more fully herein. Sustainable and high-performance building strategies are at the core of the design for the proposed rehabilitation, including, but not limited to, energy and water conservation strategies. Additionally, climate change adaptation strategies have been integrated into site and building design to reduce vulnerability given future climate scenarios and natural events, including sea level rise, severe flooding events, and severe precipitation and heat. A design flood elevation (DFE) of 21.5 feet Boston City Base (BCB) has been established for the Project, which corresponds to the flood elevation for the 2070 one percent storm event defined by the City of Boston and meets additional 12 inches of freeboard from the Boston Planning and Development Agency (BPDA) defined Sea Level Rise Base Flood Elevation (SLR-BFE). Further, the Project's DFE exceeds Massport's guidelines for existing facilities of 20.16 feet BCB. Refer to Chapter 3, *Sustainability/Green Building and Climate Change Resiliency*, for additional information.

The Project will result in some alteration of resource areas in connection with the installation of new piles supporting the apron expansions and holding the floating docks, the replacement of deteriorated fender pilings on the north and east face of the apron and the repair of sheet piles adjacent to both sides of the Headhouse. Additionally, while much of the Project Site, including the pier and building, is above the floodplain at elevation 17.5 feet BCB, the Project is anticipated to result in temporary construction impacts to Land Subject to Coastal Storm Flowage. The watersheet on the north and east sides of the pier are located within the South Boston Designated Port Area (DPA). Impacts will be limited to the replacement of fender piles, repair of sheet piling, and construction of the apron expansions and floating docks to support water dependent uses. Refer to Chapter 4, *Waterways and Wetlands*, for additional information.

Given the Project consists of a shift in uses only and will not significantly increase the building square footage or introduce new uses, changes to peak hour vehicle trip generation by the Project are projected to be relatively limited. Increased trip generation by the office and retail components of the Project will be significantly off-set by the elimination of the existing Exhibition Hall and reduction in Event/Ballroom space. Refer to Chapter 5, *Transportation*, for additional information.

As part of the Project's overall design approach, particular sensitivity will be given to the building's rich historic components. The stone arches and cornice of the Headhouse facing Seaport Boulevard will be retained and contemporary glazing will be introduced within the arches. Some existing contemporary glazing in the Headhouse at the ground floor will be removed to create a pedestrian arcade. The Viaduct over Seaport Boulevard will be retained and continue to serve as a primary pedestrian connection to the Project. Refer to Chapter 7, *Historic Resources*, for additional information.

NOTE: The project description should summarize both the project's direct and indirect impacts (including construction period impacts) in terms of their magnitude, geographic extent, duration and frequency, and reversibility, as applicable. It should also discuss the infrastructure requirements of the project and the capacity of the municipal and/or regional infrastructure to sustain these requirements into the future.

Alternatives

Describe the on-site project alternatives (and alternative off-site locations, if applicable), considered by

the proponent, including at least one feasible alternative that is allowed under current zoning, and the reasons(s) that they were not selected as the preferred alternative:

In accordance with MEPA requirements for an ENF, Section 1.5 of Chapter 1, *Project Description and Alternatives*, describes the on-site project alternatives, considered by the Proponent and the reason(s) that they were not selected as the preferred alternative. No alternative off-site locations were considered for the Project.

The following project alternatives have been considered:

1. **No-Build Alternative – would leave in place the existing conditions at the Project Site. It would remain a previously developed site with the existing Seaport World Trade Center building and operations.**
2. **Tower Alternative – consists of rehabilitation of the existing building with the addition of a commercial tower on top of a portion of the Seaport World Trade Center building.**
3. **Preferred Alternative – the Project as proposed consisting of renovation and adaptive reuse and revitalization of the Seaport World Trade Center building with public realm and public waterfront access improvements.**

Refer to Section 1.5 for a comparison of the potential environmental impacts of the project alternatives.

NOTE: The purpose of the alternatives analysis is to consider what effect changing the parameters and/or siting of a project, or components thereof, will have on the environment, keeping in mind that the objective of the MEPA review process is to avoid or minimize damage to the environment to the greatest extent feasible. Examples of alternative projects include alternative site locations, alternative site uses, and alternative site configurations.

Mitigation

Summarize the mitigation measures proposed to offset the impacts of the preferred alternative:

The Project is a rehabilitation and revitalization development where the potential environmental impacts are limited, and environmental conditions are expected to be improved, including water quality and increased energy efficiency resulting in reduced Greenhouse Gas (GHG) emissions. The Project includes work within wetland resource areas and has been designed to fully comply with the performance standards of each impacted resource area in the Wetland Protection Act (WPA). The Project includes erosion and sedimentation controls and complies with DEP's stormwater management policy. During marine pile driving, silt curtains will be used to minimize dispersion of fine-grained materials. The proposed mitigation includes improved transportation improvements, including re-design of the service and loading area, specifically, removal of these operations off Seaport Boulevard, and development and implementation of a thoughtful Transportation Demand Management (TDM) Plan, including bicycle accommodations.

Phasing

If the project is proposed to be constructed in phases, please describe each phase:

The Proponent anticipates starting construction of the Project in Q3 2020. The currently anticipated schedule for the Project would allow for full occupancy in 2024.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN:

Is the project within or adjacent to an Area of Critical Environmental Concern?

☐Yes (Specify_____) ☒**No**

if yes, does the ACEC have an approved Resource Management Plan? ___Yes ___No;
If yes, describe how the project complies with this plan.

_____
Will there be stormwater runoff or discharge to the designated ACEC? ___Yes ___No; If yes, describe and assess the potential impacts of such stormwater runoff/discharge to the designated ACEC.

_____

RARE SPECIES:

Does the project site include Estimated and/or Priority Habitat of State-Listed Rare Species? (see http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/priority_habitat_home.htm)
☐Yes (Specify_____) ☒**No**

HISTORICAL /ARCHAEOLOGICAL RESOURCES:

Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?
☒**Yes** (Specify **The Commonwealth Pier (or, the Project Site, consisting of a continuous structure and the pier that it virtually covers) is listed in the National and State Registers of Historic Places and is referred to as "Commonwealth Pier Five" in such Registers.**) ☐No
If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources? ☒Yes (Specify: **Small sections of Commonwealth Pier will be removed to create a pedestrian arcade in the Headhouse and new Plaza and five publicly-accessible Niches in the shed buildings.**) ☐**No**

WATER RESOURCES:

Is there an Outstanding Resource Water (ORW) on or within a half-mile radius of the project site? ___Yes _**X**_No; if yes, identify the ORW and its location.

(NOTE: Outstanding Resource Waters include Class A public water supplies, their tributaries, and bordering wetlands; active and inactive reservoirs approved by MassDEP; certain waters within Areas of Critical Environmental Concern, and certified vernal pools. Outstanding resource waters are listed in the Surface Water Quality Standards, 314 CMR 4.00.)

Are there any impaired water bodies on or within a half-mile radius of the project site? ___Yes _**X**_No; if yes, identify the water body and pollutant(s) causing the impairment:

Is the project within a medium or high stress basin, as established by the Massachusetts Water Resources Commission? ___Yes _**X**_No

STORMWATER MANAGEMENT:

Generally describe the project's stormwater impacts and measures that the project will take to comply with the standards found in MassDEP's Stormwater Management Regulations:

The Project is considered a redevelopment project and expected to comply with the MassDEP standards to the extent practicable. The Proponent also intends to voluntarily comply with sustainability guidelines, in accordance with Article 37 of the Boston Zoning Code.

Based on the Proponent's discussions with Massport, the existing drains in Seaport Boulevard are owned by Massport and the outfalls coming through the building are owned and maintained by the building owner, currently the Proponent. The stormwater management controls will be established in compliance with the local regulatory standards. The Project is not expected to

introduce peak flows, pollutants, or sediments that would potentially impact the local stormwater drainage system. The Proponent intends to reuse the existing outfalls from the building that discharge directly into Boston Harbor and not create new outfalls. This approach will be further evaluated as design progresses. The Proponent is evaluating stormwater control measures to reduce flow and pollutants, such as new landscape areas and installation of new water quality units (which are most fitting given the Project's location and site constraints). These potential stormwater control measures will be an improvement to the existing condition. As part of the permitting process and as design progresses, the Project will review the proposed stormwater management plans with Massport.

MASSACHUSETTS CONTINGENCY PLAN:

Has the project site been, or is it currently being, regulated under M.G.L.c.21E or the Massachusetts Contingency Plan? Yes___ No_**X** ; if yes, please describe the current status of the site (including Release Tracking Number (RTN), cleanup phase, and Response Action Outcome Classification):
_____

Is there an Activity and Use Limitation (AUL) on any portion of the project site? ___Yes _**X**_No;
if yes, describe which portion of the site and how the project will be consistent with the AUL:
_____.

Are you aware of any Reportable Conditions at the property that have not yet been assigned an RTN?
___Yes _**X**_No; if yes, please describe: _____

SOLID AND HAZARDOUS WASTE:

If the project will generate solid waste during demolition or construction, describe alternatives considered for re-use, recycling, and disposal of, e.g., asphalt, brick, concrete, gypsum, metal, wood:

(NOTE: Asphalt pavement, brick, concrete and metal are banned from disposal at Massachusetts landfills and waste combustion facilities and wood is banned from disposal at Massachusetts landfills. See 310 CMR 19.017 for the complete list of banned materials.)

All demolition debris waste will be separated and disposed of in regional landfills in accordance with applicable legal requirements. Any material which cannot be separated and recycled (structural steel, electrical, metal plumbing) will be sorted and recycled. Concrete from the demolition will be stockpiled on-site and processed for use as site fill material during construction. Any steel located within concrete will be removed and recycled. During construction, wood, metals, gypsum, cardboard and plastic will be segregated and sent to recycling facilities. All construction debris will be sent to a solid waste sorting facility for separation of any recyclable materials. Overall, the project is expected to divert at least 75% of construction debris from landfills.

Will your project disturb asbestos containing materials? ___Yes _**X**_No; if yes, please consult state asbestos requirements at http://mass.gov/MassDEP/air/asbhom01.htm

If asbestos containing materials are discovered during demolition, the Proponent will comply with the notification and disposal process in accordance with applicable local, state, and/or federal regulations, including MassDEP Asbestos Regulation (310 CMR 7.15).

Describe anti-idling and other measures to limit emissions from construction equipment:

The Project will enforce anti-idling measures consistent with MGL Chapter 90 Section 16A. In addition, all diesel construction machinery will be fitted with oxidation catalysts to reduce

emissions.

DESIGNATED WILD AND SCENIC RIVER:

Is this project site located wholly or partially within a defined river corridor of a federally designated Wild and Scenic River or a state designated Scenic River? ___Yes _**X**_No; if yes, specify name of river and designation:

ATTACHMENTS:

1. List of all attachments to this document.

   Appendix A – MEPA Distribution List
   Appendix B – BPDA Letter of Intent
   Appendix C – Metes and Bounds
   Appendix D – BPDA Checklists
   Appendix E – Transportation

2. U.S.G.S. map (good quality color copy, 8-½ x 11 inches or larger, at a scale of 1:24,000) indicating the project location and boundaries.

   Refer to Figure 1.1 - Locus Map

3. Plan, at an appropriate scale, of existing conditions on the project site and its immediate environs, showing all known structures, roadways and parking lots, railroad rights-of-way, wetlands and water bodies, wooded areas, farmland, steep slopes, public open spaces, and major utilities.

   Refer to Figure 1.3 - Existing Site Conditions

4. Plan, at an appropriate scale, depicting environmental constraints on or adjacent to the project site such as Priority and/or Estimated Habitat of state-listed rare species, Areas of Critical Environmental Concern, Chapter 91 jurisdictional areas, Article 97 lands, wetland resource area delineations, water supply protection areas, and historic resources and/or districts.

   Refer to Figure 4.2 - Waterways Jurisdiction, Figure 4.3 - Wetlands Resource Areas, Figure 4.4 - FEMA FIRM, and Figure 7.1 - Historic Resources.

5. Plan, at an appropriate scale, of proposed conditions upon completion of project (if construction of the project is proposed to be phased, there should be a site plan showing conditions upon the completion of each phase).

   Refer to Figure 1.5 - Proposed Conditions Site Plan

6. List of all agencies and persons to whom the proponent circulated the ENF, in accordance with 301 CMR 11.16(2)

   Refer to Appendix A – MEPA Distribution List

7. List of municipal and federal permits and reviews required by the project, as applicable.

   Refer to Table 1-2 of Chapter 1, *Project Description*

LAND SECTION – all proponents must fill out this section

I. Thresholds / Permits

A. Does the project meet or exceed any review thresholds related to **land** (see 301 CMR 11.03(1)
___Yes _**X**_No; if yes, specify each threshold:

II. Impacts and Permits

A. Describe, in acres, the current and proposed character of the project site, as follows:

	Existing	Change	Total
Footprint of buildings	**9.15 Acres**	**-1.28 Acres**	**7.87 Acres**
Internal roadways	**NA**	**NA**	**NA**
Parking and other paved areas	**1.75 Acres[1]**	**1.75 Acres**	**3.50 Acres[2]**
Other altered areas	**NA**	**NA**	**NA**
Undeveloped areas	**8.00 Acres[3]**	**-0.49 Acres**	**7.51 Acres**
Total: Project Site Acreage	**18.9 Acres**	**-0-**	**18.9 Acres**

1 No on-site parking; consists of apron and existing vehicular cut through within building

2 No on-site parking; consists of apron, apron extension, Plaza, Niches, arcade, private courtyards, and private dining terrace at ground level

3 Represents watersheet area

B. Has any part of the project site been in active agricultural use in the last five years? ___Yes _**X**_No; if yes, how many acres of land in agricultural use (with prime state or locally important agricultural soils) will be converted to nonagricultural use?

C. Is any part of the project site currently or proposed to be in active forestry use? ___Yes _**X**_No; if yes, please describe current and proposed forestry activities and indicate whether any part of the site is the subject of a forest management plan approved by the Department of Conservation and Recreation:

D. Does any part of the project involve conversion of land held for natural resources purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth to any purpose not in accordance with Article 97? ___Yes _**X**_No; if yes, describe:

E. Is any part of the project site currently subject to a conservation restriction, preservation restriction, agricultural preservation restriction or watershed preservation restriction? ___Yes _**X**_No; if yes, does the project involve the release or modification of such restriction? ___Yes ___No; if yes, describe:

F. Does the project require approval of a new urban redevelopment project or a fundamental change in an existing urban redevelopment project under M.G.L.c.121A? ___Yes _**X**_No; if yes, describe:

G. Does the project require approval of a new urban renewal plan or a major modification of an existing urban renewal plan under M.G.L.c.121B? ___Yes _**X**_No; if yes, describe:

III. Consistency

A. Identify the current municipal comprehensive land use plan

There is no municipal comprehensive land use plan applicable to the Project Site.

B. Describe the project's consistency with that plan with regard to:
   1) economic development _____
   2) adequacy of infrastructure _____

3) open space impacts _____
4) compatibility with adjacent land uses_____

C. Identify the current Regional Policy Plan of the applicable Regional Planning Agency (RPA)
RPA: _**Metropolitan Area Planning Agency**___
Title:_ ***MetroFuture***_____
Date__**May 2008**_____

D. Describe the project's consistency with that plan with regard to:
1) economic development _**Refer to Section 1.5 of Chapter 1, *Project Description***
2) adequacy of infrastructure **Refer to Chapter 8, *Infrastructure***
3) open space impacts _**Refer to Sections 2.5 and 2.6 of Chapter 2, *Urban Design***

RARE SPECIES SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **rare species or habitat** (see 301 CMR 11.03(2))? ___Yes **_X_** No; if yes, specify, in quantitative terms:

(NOTE: If you are uncertain, it is recommended that you consult with the Natural Heritage and Endangered Species Program (NHESP) prior to submitting the ENF.)

B. Does the project require any state permits related to **rare species or habitat**? ___Yes **_X_** No.

C. Does the project site fall within mapped rare species habitat (Priority or Estimated Habitat?) in the current Massachusetts Natural Heritage Atlas (attach relevant page)? ___Yes **_X_** No.

D. D. If you answered "No" to all questions A, B and C, proceed to the **Wetlands, Waterways, and Tidelands Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Rare Species section below.

WETLANDS, WATERWAYS, AND TIDELANDS SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wetlands, waterways, and tidelands** (see 301 CMR 11.03(3))? _**X**_ Yes ___No; if yes, specify, in quantitative terms:

301 CMR 11.03(3)(b)(5) Ch. 91 license for existing unlicensed non-water dependent use

B. Does the project require any state permits (or a local Order of Conditions) related to **wetlands, waterways, or tidelands**? _**X**_ Yes ___No; if yes, specify which permit:

The Project requires a Chapter 91 License from DEP and an Order of Conditions from the Boston Conservation Commission, which is subject to review by DEP if appealed.

C. If you answered "No" to both questions A and B, proceed to the **Water Supply Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wetlands, Waterways, and Tidelands Section below.

II. Wetlands Impacts and Permits

A. Does the project require a new or amended Order of Conditions under the Wetlands Protection Act (M.G.L. c.131A)? _**X**_ Yes ___No; if yes, has a Notice of Intent been filed? ___Yes _**X**_ No; if yes, list the date and MassDEP file number: _____; if yes, has a local Order of Conditions been issued? ___ Yes___ No; Was the Order of Conditions appealed? ___Yes ___No. Will the project require a Variance from the Wetlands regulations? ___Yes _**X**_ No.

B. Describe any proposed permanent or temporary impacts to wetland resource areas located on the project site:

Proposed minor alteration to Land Under Ocean (LUO) for the installation of new piles to support the apron expansions and floating docks around the pier, new mini piles under the existing apron, added sheet piling adjacent to the Headhouse for stability, and new fender piles along portions of the east, north and west sides, impacting approximately 1,271 sf.

Proposed expansion of the east apron, new dock piles, mini piles and fender piles on the east and north side the pier, impacting approximately 1,116 sf of DPA on the Project Site's east and north side, all of which is encompassed within the approximately 1,271 sf of LUO impact area mentioned above.

Proposed alterations to a structure located in Land Subject to Coastal Storm Flowage, temporarily impacting approximately 347,630 sf.

Project Site also contains Coastal Bank, but the Project will not alter this resource area.

The Project includes reconstruction of the existing apron (approximately 59,160 sf) and expansion of the west apron (approximately 7,520 sf) and east apron (approximately 12,785 sf) all of which are located above, but not within wetland resource areas (with the exception of the piles, as described above).

C. Estimate the extent and type of impact that the project will have on wetland resources, and indicate whether the impacts are temporary or permanent:

See Chapter 4, *Waterways and Wetlands*, for more detail.

Coastal Wetlands	Area (square feet) or Length (linear feet)	Temporary or Permanent Impact?
Land Under the Ocean	**1,271 sf**	**Permanent**
Designated Port Areas	**1,116 sf**[1]	**Permanent**
Coastal Beaches		
Coastal Dunes		
Barrier Beaches		
Coastal Banks	**-0-**	
Rocky Intertidal Shores		
Salt Marshes		
Land Under Salt Ponds		
Land Containing Shellfish		
Fish Runs		

Land Subject to Coastal Storm Flowage **347,630 sf** **Temporary**

1 Within the 1,271-square foot impact area of LUO.

Inland Wetlands		
Bank (lf)	_____	_____
Bordering Vegetated Wetlands	_____	_____
Isolated Vegetated Wetlands	_____	_____
Land under Water	_____	_____
Isolated Land Subject to Flooding	_____	_____
Borderi ng Land Subject to Flooding	_____	_____
Riverfront Area	_____	_____

D. Is any part of the project:
1) proposed as a **limited project**? __Yes _**X**_ No; if yes, what is the area (in sf)?____
2) the construction or alteration of a **dam**? ___Yes __**X** No; if yes, describe:
3) fill or structure in a **velocity zone** or **regulatory floodway**? ___**X**_Yes ___No.
4) dredging or disposal of dredged material? ___Yes __**X**__No; if yes, describe the volume of dredged material and the proposed disposal site:
5) a discharge to an Outstanding Resource Water (ORW) or an Area of Critical Environmental Concern (ACEC)? ___Yes _**X**_No.
6) subject to a wetlands restriction order? ___Yes __**X**__No o; if yes, identify the area (in sf):
7) located in buffer zones? ___Yes _**X**__No; if yes, how much (in sf) _____

E. Will the project:
1) be subject to a local wetlands ordinance or bylaw? _**X**_Yes _ __No.
2) alter any federally-protected wetlands not regulated under state law? ___Yes _**X**__No. If yes, what is the area (sf)?

III. Waterways and Tidelands Impacts and Permits

A. Does the project site contain waterways or tidelands (including filled former tidelands) that are subject to the Waterways Act, M.G.L.c.91? _**X**_Yes ___No; if yes, is there a current Chapter 91 License or Permit affecting the project site? __**X**__Yes __No; if yes, list the date and license or permit number and provide a copy of the historic map used to determine extent of filled tidelands:

The entire Project Site is subject to MGL c. 91. For existing licenses, refer to Table 4-1 of Chapter 4, *Waterways and Wetlands*.

B. Does the project require a new or modified license or permit under M.G.L.c.91? _**X**_Yes ___No; if yes, how many acres of the project site subject to M.G.L.c.91 will be for non-water-dependent use?
Current **440,000 sf +/-**___ Change **- 22,755 sf +/-** Total **- 22,755 sf +/-**
If yes, how many square feet of solid fill or pile-supported structures (in sf)?

Existing building and apron area on piles is approximately 154,610 sf. Apron expansions are approximately 20,395 sf.

C. For non-water-dependent use projects, indicate the following:
Area of filled tidelands on the site: **+/- 345,000 sf**
Area of filled tidelands covered by buildings: **+/- 327,700 sf**
For portions of site on filled tidelands, list ground floor uses and area of each use:

The Harbor Level of the building will contain approximately 25,690 sf of retail space and approximately 11,240 sf of Co-working space, all of which are Facilities of Public

Accommodation ("FPA"), along with approximately 258,158 sf of other office space.

Does the project include new non-water-dependent uses located over flowed tidelands?
___Yes _**X**_No
Height of building on filled tidelands__**77 feet**_____

Also show the following on a site plan: Mean High Water, Mean Low Water, Water-dependent Use Zone, location of uses within buildings on tidelands, and interior and exterior areas and facilities dedicated for public use, and historic high and historic low water marks.

Refer to Figure 4.4 and 4.5 in Chapter 4, *Waterways and Wetlands*, for site plans identifying the resource areas within the Project Site.

D. Is the project located on landlocked tidelands? ___Yes _**X**_No; if yes, describe the project's impact on the public's right to access, use and enjoy jurisdictional tidelands and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

E. Is the project located in an area where low groundwater levels have been identified by a municipality or by a state or federal agency as a threat to building foundations? ___Yes _**X**_No; if yes, describe the project's impact on groundwater levels and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

F. Is the project non-water-dependent **and** located on landlocked tidelands **or** waterways or tidelands subject to the Waterways Act **and** subject to a mandatory EIR? _ _Yes _**X**__No; *(NOTE: If yes, then the project will be subject to Public Benefit Review and Determination.)*

G. Does the project include dredging? ___Yes _**X**_No; if yes, answer the following questions:
What type of dredging? Improvement ___ Maintenance ___ Both ____
What is the proposed dredge volume, in cubic yards (cys) _____
What is the proposed dredge footprint ____length (ft) ___width (ft)____depth (ft);
Will dredging impact the following resource areas?
Intertidal ___Yes ___No; if yes, ___ sq ft
Outstanding Resource Waters ___Yes ___No; if yes, ___ sq ft
Other resource area (i.e. shellfish beds, eel grass beds) ___Yes ___No; if yes __ sq ft

If yes to any of the above, have you evaluated appropriate and practicable steps to: 1) avoidance; 2) if avoidance is not possible, minimization; 3) if either avoidance or minimize is not possible, mitigation?

If no to any of the above, what information or documentation was used to support this determination? Provide a comprehensive analysis of practicable alternatives for improvement dredging in accordance with 314 CMR 9.07(1)(b). Physical and chemical data of the sediment shall be included in the comprehensive analysis.

Sediment Characterization
Existing gradation analysis results? ___Yes ___No: if yes, provide results.
Existing chemical results for parameters listed in 314 CMR 9.07(2)(b)6? ___Yes ___No; if yes, provide results.
Do you have sufficient information to evaluate feasibility of the following management options for dredged sediment? ___Yes ___No; If yes, check the appropriate option.

Beach Nourishment ___
Unconfined Ocean Disposal ___

Confined Disposal:
Confined Aquatic Disposal (CAD) ___
Confined Disposal Facility (CDF) ___
Landfill Reuse in accordance with COMM-97-001 ___
Shoreline Placement ___
Upland Material Reuse____
In-State landfill disposal____
Out-of-state landfill disposal ____
(NOTE: This information is required for a 401 Water Quality Certification.)

IV. Consistency:

A. Does the project have effects on the coastal resources or uses, and/or is the project located within the Coastal Zone? _**X**_ Yes ___No; if yes, describe these effects and the projects consistency with the policies of the Office of Coastal Zone Management:

Refer to Section 4.4 of Chapter 4, *Waterways and Wetlands*.

B. Is the project located within an area subject to a Municipal Harbor Plan? ___Yes _**X**__No; if yes, identify the Municipal Harbor Plan and describe the project's consistency with that plan:

Refer to Section 4.2.3 of Chapter 4, *Waterways and Wetlands*.

WATER SUPPLY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **water supply** (see 301 CMR 11.03(4))? ___Yes _**X**_No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **water supply**? ___Yes _**X**_No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Wastewater Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Water Supply Section below.

WASTEWATER SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wastewater** (see 301 CMR 11.03(5))? ___ Yes _**X**_ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **wastewater**? ___ Yes _**X**_ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Transportation -- Traffic Generation Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wastewater Section below.

TRANSPORTATION SECTION (TRAFFIC GENERATION)

I. Thresholds / Permit

A. Will the project meet or exceed any review thresholds related to **traffic generation** (see 301 CMR 11.03(6))? ___Yes _**X**_No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **state-controlled roadways**? ___Yes _**X**_No; if yes, specify which permit:

The proposed roadway layout and design of Seaport Boulevard (a Massport-controlled roadway) will be subject to Massport Design Review.

C. If you answered "No" to both questions A and B, proceed to the **Roadways and Other Transportation Facilities Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Traffic Generation Section below.

TRANSPORTATION SECTION (ROADWAYS AND OTHER TRANSPORTATION FACILITIES)

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **roadways or other transportation facilities** (see 301 CMR 11.03(6))? ___Yes _**X**__No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **roadways or other transportation facilities**? ___Yes _**X**__No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Energy Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Roadways Section below.

ENERGY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **energy** (see 301 CMR 11.03(7))? ___Yes _**X**_No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **energy**? ___Yes _**X**_No; if yes, specify which permit:

A. If you answered "No" to both questions A and B, proceed to the **Air Quality Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Energy Section below.

AIR QUALITY SECTION

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **air quality** (see 301 CMR 11.03(8))? ___Yes _**X**__No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **air quality**? ___Yes _**X**__No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Solid and Hazardous Waste**

Section. If you answered "Yes" to either question A or question B, fill out the remainder of the Air Quality Section below.

SOLID AND HAZARDOUS WASTE SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **solid or hazardous waste** (see 301 CMR 11.03(9))? ___Yes __**X**_No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **solid and hazardous waste**? ___Yes _**X**__No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Historical and Archaeological Resources Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Solid and Hazardous Waste Section below.

HISTORICAL AND ARCHAEOLOGICAL RESOURCES SECTION

I. Thresholds / Impacts

A. Have you consulted with the Massachusetts Historical Commission? ___Yes _**X**__No; if yes, attach correspondence. For project sites involving lands under water, have you consulted with the Massachusetts Board of Underwater Archaeological Resources? _ ___Yes _**X**_No; if yes, attach correspondence

A copy of this ENF/PNF has been provided to the Commission, as well as the Board.

B. Is any part of the project site a historic structure, or a structure within a historic district, in either case listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? _**X**__Yes ___No; if yes, does the project involve the demolition of all or any exterior part of such historic structure? __**X**_Yes ___No; if yes, please describe:

As discussed in Chapter 7, *Historic Resources*, Commonwealth Pier Five is listed in the State and National Registers of Historic Places. Small sections of the building will be removed to create a public pedestrian arcade in the Headhouse and Plaza, as well as and five publicly-accessible Niches in the shed buildings (as shown on Figures 1.5a and 2.10a).

C. Is any part of the project site an archaeological site listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? ___Yes _**X**__No; if yes, does the project involve the destruction of all or any part of such archaeological site? ___Yes ___No; if yes, please describe:

D. If you answered "No" to all parts of both questions A, B and C, proceed to the **Attachments and Certifications** Sections. If you answered "Yes" to any part of either question A or question B, fill out the remainder of the Historical and Archaeological Resources Section below.

II. Impacts

Describe and assess the project's impacts, direct and indirect, on listed or inventoried historical and archaeological resources:

The Project proposes renovating Commonwealth Pier Five for continued use as office space, first-class event spaces, retail, and public amenities. As discussed in Chapter 2, *Urban Design*, the Project

includes improvements to the building exterior, including the Headhouse. As part of the Project's overall design approach, particular attention has been paid to the building's historic components. The stone arches and cornice of the Headhouse facing Seaport Boulevard will be retained and contemporary glazing will be introduced within the arches. Some existing contemporary glazing in the Headhouse at the ground floor will be removed to create a pedestrian arcade. The proposed façade design along the pier celebrates the building's unique steel structure by retaining exposed columns and column connections, staying authentic to the existing building's original design intent. A portion of the southwest corner of the shed buildings along the pier will be removed to create the Plaza (Figure 1.5a). The proposed design of the Project will have no impact on nearby historic resources.

The Project does not propose any building additions or new construction that would significantly alter the height or mass of the building. The roof and parapet of the Headhouse will remain the highest points of the building. The intent of the proposed apron expansions is to enhance and expand public realm and waterfront access. Specifically, the apron expansion along the east side will not introduce any visual elements that are out of character with, nor have any impact to Commonwealth Pier Five or nearby historic resources.

III. Consistency

Describe measures that the proponent will take to comply with federal, state, regional, and local plans and policies related to preserving historical and archaeological resources:

The submission of this ENF/PNF will initiate review of the Project by both the Massachusetts Historical Commission under MEPA and State Register Review procedures, as well as voluntary review by the Boston Landmarks Commission under the BPDA Article 80B, Large Project Review process, in association with the Boston Environment Department.

CERTIFICATIONS:

1. The Public Notice of Environmental Review has been/will be published in the following newspapers in accordance with 301 CMR 11.15(1):

   (Name) Boston Herald (Date) 2/20/19

2. This form has been circulated to Agencies and Persons in accordance with 301 CMR 11.16(2).

Signatures:

	2/13/19		
Date	Signature of Responsible Officer or Proponent	Date	Signature of person preparing ENF (if different from above)

Andrew Dankwerth	Lauren DeVoe
Name	Name
Pembroke Real Estate LLC	VHB
Firm/Agency	Firm/Agency
255 State Street	99 High Street, 10th Floor
Street	Street
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1

Project Description

In accordance with the Massachusetts Environmental Policy Act ("MEPA") Massachusetts General Law ("MGL") Chapter 30, Section 61-62I and the regulations promulgated thereunder set forth at 301 CMR 11.00, and Article 80B of the City of Boston Zoning Code and Enabling Act (the "Code"), Commonwealth Pier Trust II ("the Proponent") respectfully submits this joint Environmental Notification Form and Project Notification Form ("ENF/PNF") for the revitalization of the Seaport World Trade Center (the "Project") located at 200 Seaport Boulevard in the South Boston Waterfront District of Boston, Massachusetts (the "Project Site"). The Proponent leases the Project Site from the Massachusetts Port Authority ("Massport") pursuant to a long-term ground lease, which will be amended to accommodate the Project. Refer to Figure 1.1 for the site location map.

The Proponent and its affiliates have owned or occupied the Seaport World Trade Center (the "World Trade Center") on the prominent Commonwealth Pier for over three decades. The proposed revitalization of the World Trade Center is a transformative project that will modernize and reposition the existing building and Commonwealth Pier for its next generation of use as a vibrant place to work and visit, including enhanced retail and public amenities within the City's exciting South Boston Waterfront District. While the existing building and Project Site require a significant infrastructure investment to enable the adaptive re-use development, the Project has tremendous potential to create both an exciting, flexible, and creative workspace that attracts and retains the best employees and a unique waterfront experience for the public. The Project will enhance its current uses by converting a large amount of the existing exhibition/event space into extensive public realm improvements, expanded ground-floor retail space, additional and upgraded innovative office space and first-class event spaces.

A key design goal is to maximize public access to the waterfront by expanding open space and public realm area on-site at both the Harbor and Viaduct levels. By carefully considering grand public gestures, such as the creation of an open-air public plaza ("the Plaza") with city skyline views, and an enhanced Harborwalk surrounding the pier, the Project Site will be activated with a true sense of place within its rich urban fabric. Through revitalization of the Project Site, the Proponent strives to:

- Enhance public access to the waterfront through promotion and activation of the Harborwalk improving the connectivity and permeability of the pier;
- Accommodate and future support for the existing water-dependent tenants within the proposed apron design;

- Improve pedestrian environment and safety along Seaport Boulevard by relocating service access into the eastern side of building off of the public way and providing drop-off areas;
- Employ resiliency measures to meet the challenges anticipated from forecasted rising tides and increased storm intensity;
- Cultivate vibrancy within the public realm through expansion of public open space
- Provide a diverse mix of retailers and event facilities;
- Create a clearly defined arrival experience from multiple transit options, including providing accommodations for planned future water shuttle service by the Proponent or others;
- Improve light and water view permeability and improved access to the Seaport Hotel event space; and
- Incorporate best practices for sustainability and wellness for occupants and visitors.

The entire Project Site is located within Chapter 91 jurisdiction, and most of it is within the South Boston Designated Port Area ("DPA"). The application of Chapter 91 regulations and the permitting process of the Massachusetts Department of Environmental Protection ("DEP") for the Project Site are governed by a Memorandum of Understanding ("MOU") between Massport and DEP dated March 2001 regarding the Project Site and certain other parcels owned by Massport in South Boston (discussed further in Chapter 4, *Waterways and Wetlands*).

Over the last year, the Proponent has worked with its design team, Massport, abutters, elected officials and BPDA staff to develop the enclosed plans for the Project. In doing so, the Proponent strived to make the Project substantially consistent with waterfront development goals and objectives.

This ENF/PNF presents details about how the Project will continue to comply with Chapter 91 and provides an evaluation of traffic/transportation, potential environmental impacts, and infrastructure needs to inform reviewing agencies and the community about the Project, its potential impacts, and the mitigation measures proposed to address those potential impacts. Specifically, this chapter provides an overview of the existing site conditions and describes the Project. This chapter also presents Project-related community benefits, a description of project alternatives, regulatory context, and summary of community and agency outreach efforts.

1.1 Site Context and Existing Conditions

The Project Site is located along the historic and vibrant Boston Harbor waterfront, ideally situated at the nexus of the growing South Boston Waterfront District of Boston. The area features a mix of new and old commercial and marine uses, as well as municipal, cultural, hospitality and, more recently, office and residential uses. The Project Site is in close proximity to key area destinations, including the Boston

Convention and Exhibition Center ("BCEC"), the Institute of Contemporary Art and the numerous restaurants and entertainment uses within walking distance. Refer to Figure 1.2 for site context.

The Project Site is bounded by water to the east, west, and north, and Seaport Boulevard to the south, and is comprised of filled and flowed tidelands. Of the 18.9-acre Project Site, much of it is filled (approximately 8.0 acres) and contained within a granite seawall. All of this filled area is covered with the existing World Trade Center building. A narrow strip of the building along the apron and the apron itself, totaling approximately 3.5 acres, are located over the water on piles. The balance of the Project Site is open watersheet (approximately 7.4 acres). As shown on Figure 1.3, the Project Site contains the following key components:

1. The World Trade Center building consisting of a headhouse (the "Headhouse") and three connected rear sheds as a continuous structure that currently covers the majority of the 1,200-foot by 400-foot Commonwealth Pier;
2. The publicly-accessible walkway around the perimeter of the building (the "apron"), which includes a portion of the Harborwalk; and
3. An upper level walkway that carries pedestrian and vehicular traffic from World Trade Center Avenue over Seaport Boulevard to the second story of the building (the "Viaduct").

The Project Site is previously developed and consists entirely of impervious surface and adjacent watersheet. Refer to Figure 1.4 for photographs of the Project Site.

1.2 Project Description

The Project intends to be an impactful and significant revitalization endeavor for the World Trade Center located on Commonwealth Pier in the heart of the South Boston Waterfront District. A fundamental goal of the Project is to create a vibrant, active, multi-use environment by enhancing and increasing the public's ability to interact with the waterfront. The Project will enhance its current uses by converting a large amount of the existing exhibition/event space into extensive public realm improvements, expanded ground-floor retail space, additional and upgraded innovative office space and first-class event spaces. The new office space will feature open layouts that encourage greater collaboration and efficiencies reflective of the new way of conducting work. Refer to Figures 1.5a and 1.5b for the proposed conditions plan for the ground floor and Viaduct levels, respectively. All existing public boat dock operations will be accommodated by the completed Project by expanded apron areas, new docking facilities, and sheltered passenger waiting areas to support existing and future water transportation services.

The objective is to revitalize this existing important building and pier into the centerpiece of the South Boston Waterfront District and greater Boston waterfront by creating a vibrant lifestyle center for people to work, shop, visit and access the waterfront. The Project Site offers a rich heritage and waterfront access, which will be

developed sensitively, creatively, and effectively to position the Project as a seminal development and key waterfront destination for the entire area.

1.2.1 Development Program

The Project consists of converting a large amount of the existing exhibition/event space into extensive public realm improvements, expanded ground-floor retail space, additional and upgraded innovative office space and first-class event spaces. Table 1-1 presents the existing building areas and proposed development program.

Table 1-1 Proposed Building Development Program

Use/Element	Existing GFA	Proposed GFA	Change
Office	501,900	635,920[1]	+134,020
Retail	12,100	45,240[2]	+33,140
Exhibition Hall	132,050	-0-	(-132,050)
Event/Ballrooms	59,650	56,400	(-3,250)
Sub-Total Exhibit/Event	*191,700*	*56,400*	*(-135,300)*
Total GFA	**705,700**	**737,560**	**+31,860**

GFA Gross Floor Area, as defined by the Boston Zoning Code.
1 Includes lobby and amenity space, and approximately 11,240 square feet of Co-working space.
2 Includes restaurant uses.

1.2.2 Public Realm Improvements and Open Space

Public realm improvements will play a large role in the success of the Project and will be seamlessly integrated into the vibrant context of the South Boston Waterfront District and Boston's active waterfront. Existing opportunities are currently limited to an underutilized Harborwalk experience, as well as intermittent access to events in the Exhibition Hall. While the existing exhibit hall offers a certain quantity of publicly-accessible space, it lacks the quality of a true public waterfront experience as there is little relationship between the enclosed exhibit hall and the waterfront itself.

The proposed public realm improvements include the following variety of publicly-accessible spaces along the waterfront:

- Increase public realm/open space across the Project Site by over approximately 46,000 sf (a 37 percent increase) attributed to the approximately 20,395-square foot apron expansions and new Plaza, Niches, Seaport Boulevard arcade, as well as the enhanced Viaduct-level covered pedestrian walkway;
- An enhanced and inviting Harborwalk with new lighting, site furnishings, special paving, wayfinding signage, connectivity to retail/restaurant/café spaces and/or public art;
- New street-front arcade along Seaport Boulevard;

- A large new public plaza adjacent to the waterfront designed for flexibility of use;
- Multiple large Niches cut out of the perimeter of the building;
- Improved connectivity/porosity through the building to further enliven the public spaces; and
- Provide new and enhanced water transportation passenger queuing/waiting areas for improved passenger experience, such as:
  - New landscaped areas with seating, lighting, and wayfinding signage within the apron expansions with expansive views of harbor and direct access off of Seaport Boulevard;
  - Relocated boat and ferry ticket booth from the apron to the new Plaza with an expansive waiting area;
  - A Harbor-level covered pedestrian passage for protection during inclement weather with direct access to public bathrooms and retail; and
  - Smaller covered waiting areas within the Niches along the apron and indoor retail spaces along Seaport Boulevard for protection during inclement weather.

The new open-air public waterfront area located in the southwestern corner of the Project Site, or Plaza, defines the main central gathering space. As currently designed, the Plaza provides an open, flexible outdoor space with tree planting, custom seating elements, and areas for moveable tables and chairs. The goal of the Plaza is to accommodate large outdoor events, open markets, and even winter amenities to provide waterfront activities throughout the year. On the east end of the Plaza, public restrooms will be provided (Figure 1.5a). Access to retail offerings, terraces, views of the Plaza, and event offerings on the Viaduct will be provided via a public lobby located centrally within the Headhouse, an ideal location for visibility and access from Seaport Boulevard.

The approximately 35,520 sf of Harborwalk currently runs the periphery of the Project Site and provides the public with a continuous walkway along the harbor with views to Downtown Boston, East Boston, and Boston Harbor. With the proposed apron expansions, this public walkway will be expanded by a total of approximately 20,395 square feet, or by 57 percent, on both the east and west sides of the Headhouse (Figure 1.5a). Approximately 265 linear feet of sheet pile is required in front of the existing sheet pile on either side of the Headhouse area to accommodate these apron expansions. Other public realm improvements proposed along the Harborwalk include custom seating elements with integrated planters, lighting, and new artwork to line the building face edge of the walkway. Beyond the Headhouse, the Harborwalk maintains a minimum of 12-foot wide walking area and will be expanded at the Niches carved out of the building to break up the linearity of the walk and introduce program spaces (Figure 1.5a). Each Niche will represent a unique condition, and provide public amenities, such as seating areas, shelter from weather, open areas for artwork, and amenity zones for vendors. All but one Niche (a

dining terrace to support office space interior to the building) will be accessible by the public from the Harborwalk (Figure 1.5a).

The Viaduct, which forms the extension of World Trade Center Avenue, connects Summer Street, the MBTA World Trade Center Silver Line station, and the upper level of the Seaport Hotel to the a public plaza on the Viaduct level of the Headhouse with amenities, such as a dining terrace. The Viaduct will continue to serve as a pedestrian access point to the Project from the Seaport Boston Hotel and World Trade Center Avenue connection to the BCEC, as well as vehicular access only during special events and emergencies. Conceptually, the Viaduct will support plantings and include a covered walkway area for pedestrians. The Viaduct links to an upper dining terrace where planter elements are situated to provide shading for outdoor restaurant seating areas proposed for this upper level.

Pedestrian access and circulation to the Project Site and the building will be improved with the addition of the Plaza, enhanced Harborwalk, and cut-throughs to the Headhouse. Pedestrian access will also be improved with the removal of the loading docks at the south side of the Headhouse along Seaport Boulevard. This will eliminate the need for the existing ramps at the loading bays and provide greater activation of the public realm area along the southern facade of the building. The new Headhouse lobby space allows for direct pedestrian access to the upper dining terrace, and the Plaza provides multiple points of entry into the building. The Project will provide improved connectivity through and behind the Headhouse to further enliven the public spaces and provide a visual connection from the Headhouse to the Plaza below, as well as ADA-compliant pedestrian access from the Viaduct to Seaport Boulevard. Elevator access between the Viaduct to Seaport Boulevard will be available 24 hours 7 days a week. During non-operational or off hours, an intercom/camera system, or similar access control system, will be implemented and linked to security personnel to ensure pedestrian safety.

The Project's proposed landscape design will consist of planter elements along the Harborwalk, trees and plantings within the courtyards, plazas and upper dining areas. Green roofs are also proposed to cover a portion of the building.

1.2.3 Site Access and Circulation

Main access to the building will remain on Seaport Boulevard with two points of public access to the Viaduct. The pedestrian access from Harbor Level to Viaduct also provides a connection from the Project to the BCEC.

The building is located within close proximity to the MBTA World Trade Center Silver Line station and Massport's South Boston Waterfront Transportation Center ("SBWTC"), which opened in May 2018. Ample parking is available at the SBWTC, which includes an approximately 1,550-space parking garage. In addition, a total of up to 890 parking spaces is allocated to the Seaport World Trade Center in the Seaport Parking Garage located on the south side of Seaport Boulevard. Refer to Figure 5.1 for the location of the nearby parking facilities.

As described more fully in Chapter 5, *Transportation*, given the Project's minimal shift in uses and small increase in the building square footage, average peak hour vehicle trip generation by the Project is projected to be relatively limited. Specifically:

- Increased trip generation by the office and retail components of the Project will be significantly off-set by the elimination of the existing Exhibition Hall and reduction in event/ballroom space.
- The Project Site is well located in relation to the local and regional highway network, proximate to the I-90 and I-93 ramps and is well served by public transportation, including the MBTA Silver Line, the new SBWTC and express and local bus routes.
- Because a wide range of non-auto travel modes are available near the Project Site, including MBTA Silver Line and bus service, no new parking is needed to support the Project, consistent with the goal of minimizing auto-trips and encouraging alternative travel modes.
- The consolidation and relocation of the service docks along Seaport Boulevard to an off-street location on the building's east frontage will help reduce traffic and increase safety from the current situation during exhibition hall events.
- The Proponent will develop a detailed curb regulation and management plan in coordination with Massport to allocate appropriate zones to accommodate a variety of uses, including shuttles, buses, TNC services (e.g. Uber, Lyft), short-term parking and limited loading. A primary objective of the curbside management plan will be to maintain and improve traffic flow on Seaport Boulevard, which is a designated Massport truck route.
- The Project will continue to accommodate water taxi service without compromising potential for planned future water shuttle service by the Proponent or others.

1.2.4 Building Design Approach

Architectural Design Concept

The design concept incorporates a unique interplay between historic architecture and modern esthetic along with original building function and dynamic placemaking for today's world. The proposed design has been sensitive to not only proportion and context from a neighborhood perspective, but also carefully considers site orientation and human scale/experience. Connectivity to water, daylight and open air is the back bone to this endeavor with the goal of providing World Trade Center occupants with a healthy and vibrant work environment while promoting community connections for occupants and the public. Additionally, attention has been given – both inside and out – to the building's industrial-style warehouse character while introducing future-forward design concepts and materiality.

Height and Massing

The building's height and massing remain relatively unchanged with the proposed design except for removal of a portion of the building's southwest corner to create the open-air public Plaza (Figure 1.5a). The roof and parapet of the historic Headhouse are and will remain the highest points of the building.

Façade Improvements Approach

As part of the overall design approach, attention will be paid to the building's rich historic components consistent with its mercantile and waterfront origins. The stone arches and cornice of the Headhouse facing Seaport Boulevard will remain intact with integration of contemporary glazing beyond and between to create unique retail, Food & Beverage ("F&B") and event space. The proposed design of the east and west elevations along the pier will celebrate the building's unique structure by exposing columns and beam connections as they have been since the building's conception in the twentieth century. A new energy -efficient façade will replace the existing stucco along the east, west and north and will include large areas of glass for an abundance of views and natural light. The fenestration design will reference the warehouse esthetic of the original building.

Workspace Experience

The building currently consists of deep, low floorplates with minimal natural light. The existing restroom/technical cores are small and few in number limiting the flexibility of the space and future ability to multi-tenant. The Project proposes to open the ceilings and expose the rich structural detailing of beams and columns while maximizing the interior volumes. Large perimeter windows and several new large interior courtyards will bring an abundance of natural light and views to the workplace and are designed to work in concert with interior building programs. The placement and size of new cores will be planned to increase the building's achievable average density, as well as provide for future multi-tenancy. The new design will provide a more flexible, collaborative office experience that is suited to the changing needs of workforces and offer variety and choice in workplace settings depending on the type of work that is required.

1.2.5 Resiliency

Within the context of forecasted impacts associated with predicted sea level rise, and increased frequency and intensity of storm events, resiliency provisions are included in both the building and site design. Design strategies include:

› Establishment of a Design Flood Elevation (DFE) of 21.5 feet Boston City Base (BCB), which corresponds to the flood elevation for the 2070 one percent storm event defined by the City of Boston and meets additional 12 inches of freeboard from the BPDA defined Sea Level Rise Base Flood Elevation (SLR-BFE) and exceeds Massport's guidelines for existing facilities (20.16 feet BCB);

- A new façade with a continuous upturned waterproof curb running along the building perimeter that raises the glass level above vulnerable elevations. Integrated wall/apron slab is designed to withstand lateral pressure of wave action;
- Hardening of the portion of ground floor structure that extends over water to resist buoyancy forces resulting from rising tides and storm surges;
- Provisions for deployable flood barriers;
- Use of landscaping walls, walkways, stairways, railings, benches and bike racks designed using materials that can withstand saltwater inundation;
- Resilient ground floor finish specifications that can withstand incident exposure to flooding without major repair or replacement; and
- Operational planning/readiness procedures and coordination with Massport and other agencies.

1.2.6 Sustainability

Sustainable and high-performance building strategies are at the design's core, beginning with the reuse of an existing urban site and building in proximity to multiple modes of public transportation. The building will be completely modernized with a new energy -efficient façade and roofing assemblies, as well as new mechanical, electrical and plumbing systems which meet or exceed best practices. The key sustainable initiatives include:

- Energy conservation measures targeting a 25 percent energy cost reduction from the Massachusetts Energy Code, which exceeds minimum requirement for energy performance and results in a reduction of approximately 3,313 short tons of CO_2 emissions annually.
- Comply with Article 37, Green Buildings of the Code by demonstrating that early project design would achieve a Gold level under the LEEDv4 for Core & Shell (LEED-CS) rating system (a minimum of 60 points).
- Feasibility studies are underway on a number of sustainable options, including: roof top solar photovoltaic (PV) panels, energy storage, partial green roof, and on-site composting.
- Enhancing health and wellness through the base building design to support future tenants that may choose to achieve certifications in the WELL Building Standard and/or Fitwel®. Strategies that are being explored to support a health and wellness approach include testing water quality, active design and stair promotion, cleaning and maintenance services, and air handling unit specifications.

1.2.7 Anticipated Project Schedule/Phasing

The Proponent submitted a Letter of Intent ("LOI") to the BPDA on December 7, 2018. Throughout the coming months, the Proponent will work diligently with the community and city and state agencies to voluntarily complete the Article 80 Large

Project review process as well as the MEPA process. The Proponent anticipates commencing construction of the Project in Q3 2020, and the anticipated schedule for the Project would allow for full occupancy in 2024.

1.3 Summary of Public Benefits

The many public benefits associated with the Project include the resiliency, sustainability and traffic improvements described above, as well as:

Public Realm/Open Space Activation

- Several new public realm improvements are proposed as part of the Project while remaining protective of the Public Trust rights inherent in filled tidelands by enhancing public access to and use of the waterfront on the Project Site.
- The Project will provide approximately 170,445 square feet of outdoor public realm space (an increase of over 46,000 sf, or 37 percent), including the apron expansions on either side of the Headhouse on the southernmost portion of the Project Site.
- An enhanced and inviting Harborwalk with new lighting, site furnishings, special paving, wayfinding signage, connectivity to retail/restaurant/café spaces and/or public art.
- A new street-front arcade along Seaport Boulevard and a significantly upgraded streetscape, including removal of four existing exhibition hall loading docks on Seaport Boulevard, construction of a recessed ground floor to create a new arcade for pedestrian access, new site works and landscaping, greatly improving the street-level experience.
- A new publicly-activated open-air building opening on to the waterfront and Harborwalk (the Plaza).
- Multiple public Niches cut out of the perimeter of the building.
- An enhanced Viaduct Level pedestrian connection with plantings and a covered walkway with include seating and outdoor restaurant seating area.
- Introduction of interpretive signage and amenities along the Harborwalk.
- Improved connectivity through the building and introduction of new retail offerings to further enliven the public spaces.
- The Project will reflect and complement the unique architectural character of the Headhouse.

Economic Benefits

- Create approximately 1,000 to 1,500 new construction jobs.
- Comply with City and State guidelines for diversity and inclusion in the procurement of construction services.

- Create substantial net new annual real estate tax revenue for the City, as well as state sales and business tax revenue.

Resiliency

- Evaluate and employ resiliency measures to meet the challenges proposed from forecasted rising tides and storm intensity.
- Integrate climate change adaptation strategies into site and building design that reduce vulnerability given future climate scenarios and natural events, including sea level rise, severe flooding events, and severe precipitation and heat.
- Place critical mechanical and life safety/standby emergency building systems above vulnerable elevations by setting a DFE of 21.5 feet BCB for the Project. (This accounts for the predicted flood elevation for the 2070 one percent storm event plus 12 inches of freeboard and exceeds Massport's guidelines for existing facilities).
- Potential impacts associated with predicted sea level rise, and increased frequency and intensity of storm events, as well as the need for a flexible building space have been considered through the following design strategies:
  - Provide an overland drainage path around the buildings and elevated pedestrian areas for inland flooding;
  - Design flexible heating and cooling systems;
  - Use of a native/adaptive landscape, such as tidal zone planting materials that will connect to the history of the area and be resilient against flooding and saltwater intrusion; and
  - Use of landscaping walls, walkways, stairways, railings, benches and bike racks designed using materials that can withstand saltwater inundation.

Sustainability

Sustainable and high-performance building strategies are at the core of the design for the proposed rehabilitation. Design is aligned with the guiding principles of sustainability, resiliency, and wellness, as summarized:

- Reuse of an existing urban site and building in proximity to public transportation and within a walkable area with many amenities and services.
- Comply with Article 37, Green Buildings of the Code by demonstrating the early design would achieve a LEEDv4 Gold rating.
- Energy conservation measures targeting a 25 percent energy usage reduction, which exceeds minimum requirements of the from the Massachusetts Stretch Energy Code through upgraded/modernized and energy-efficient building systems. This target is estimated to reduce stationary source GHG emissions by approximately 3,313 short tons of CO2 emissions per year.

- Design of the Core & Shell building to support future solar photovoltaic (PV) panels and battery storage for additional energy usage and GHG emissions reductions.
- Conserve water and other resources to the maximum extent practicable to minimize impacts to regional infrastructure and water resources.
- Promote health and wellness, assists in improving air and water quality, and reduces the urban heat island effect through the incorporation of a variety of sustainable design strategies.

Transportation

- Given the Project consists of a shift in uses only and will not significantly increase the building square footage or introduce new uses, changes to peak hour vehicle trip generation by the Project is projected to be relatively limited.
- Increased trip generation by the office and retail components of the Project will be significantly off-set by the elimination of the existing Exhibition Hall and reduction in Event/Ballroom space.
- The Project Site is well located in relation to the local and regional highway network, proximate to the I-90 and I-93 ramps.
- The Project Site is transit-oriented, being well served by multiple public transportation services, including the MBTA Silver Line and Express and Local bus routes, as well as water transportation options.
- The Project will continue to accommodate water taxi service without compromising potential for planned future water shuttle service by the Proponent or others.
- No new parking is proposed as part of the Project with the goal of minimizing auto-trips and encouraging alternative travel modes.
- The relocation of the service area within the building will reduce the extent of the Harborwalk currently used by trucks and service vehicles and will improve the pedestrian experience along Seaport Boulevard by elimination the existing loading bays along the Boulevard.
- Develop a detailed curb regulation and management plan in coordination with Massport to maintain and improve traffic flow on Seaport Boulevard, which is a designated Massport truck route.
- The Project will be supported by a robust Transportation Demand Management (TDM) program.

1.4 Regulatory Context

This section lists the anticipated permits and approvals, as well as the local planning and regulatory controls applicable to the Project.

Table 1-2 below presents a list of permits and approvals from local, state, and federal governmental agencies, which may be required for the Project. It is possible that not all permits or actions listed will be required, or that additional permits or actions may be needed, based on determinations during project design and development.

Table 1-2 Anticipated Project Permits and Approvals

Agency/Department	Permit/Approval/Action
Federal	
Army Corps of Engineers	Individual Permit
State	
Executive Office of Energy and Environmental Affairs (EEA)	Review pursuant to the Massachusetts Environmental Policy Act
Massachusetts Port Authority	Amendment to existing ground lease Waterfront Development Plan approval Project design review, including approval for new/modified curb cuts on Seaport Boulevard
Massachusetts Department of Environmental Protection, Waterways Program	Waterfront Development Plan approval Chapter 91 License
EEA Office of Coastal Zone Management	Consistency Review
Massachusetts Historical Commission	State Register Review
Office of Public Safety and Inspections	Building Permit Other construction-related permits Certificates of Occupancy
City of Boston	
Boston Planning & Development Agency	Article 80B Large Project Review (voluntary) Cooperation Agreement (voluntary) Boston Residents Construction Employment Agreement (voluntary)
Boston Civic Design Commission	Schematic Design Review (voluntary)
Boston Transportation Department	Transportation Access Plan Agreement (voluntary) Construction Management Plan (voluntary)
Boston Water and Sewer Commission	Site Plan Review approval
City of Boston Conservation Commission	Order of Conditions

1.4.1 City of Boston Zoning

Due to its location on land owned by Massport, the Project is not subject to local zoning regulations. However, as with other projects developed on Massport property, the Project will voluntarily undergo review by the public and the BPDA

under Article 80 of the City of Boston Zoning Code. This section summarizes City of Boston zoning regulations for informational purposes only.

The Project Site is located within the Waterfront Transition Zone Sub-district of the Harborpark: Fort Point Waterfront Zoning District (the "Fort Point/Waterfront District") governed by Article 42E of the Boston Zoning Code (the "Code"), and the Restricted Parking Overlay District ("RPOD").

Uses

As described above, the Project will not introduce new uses to the Project Site. The existing uses, including retail, restaurant, office, pedestrian facilities, open space, docks for commercial vessels, open/recreation space and exhibition space are all allowed within the Fort Point/Waterfront District.

Dimensional Requirements

Within the Fort Point/Waterfront District, maximum building height is limited to 55 feet and floor area ratio (FAR) is limited to a maximum of 3.0. For projects on piers, the minimum side-yard pier width is 12 feet and the minimum end-yard pier width is 50 feet. The Project does not propose to alter the existing height of the building or the size of setbacks along the adjacent pier except to increase the side setback from the pier along certain portions of the building to create increased public realm/open space along the waterfront.

Parking and Loading Requirements

Within the RPOD, commercial parking and parking accessory to any use other than residential and hotel uses is conditional. The Project does not propose to introduce new parking. Parking for the Project will continue to be provided off-site in the Seaport Place Garage located across Seaport Boulevard and owned or operated by an affiliate of the Proponent.

Article 80B, Large Project Review

Although the Project is exempt from local zoning regulation, the Proponent has elected to submit the Project to Large Project Review by the BPDA pursuant to Article 80B of the Boston Zoning Code. The Large Project Review process was commenced by the filing of a Letter of Intent with the BPDA on December 7, 2018 and continued with the filing of this joint ENF/PNF, which commenced the public review period to run concurrently with the MEPA public review. It is anticipated that the BPDA will issue a Scoping Determination following the close of the public comment period.

1.4.2 Boston Conservation Commission

The Proponent anticipates filing a Notice of Intent ("NOI") with the Boston Conservation Commission after the Project voluntarily undergoes City of Boston

Article 80 and MEPA review, and public review and comment. Section 4.6 of Chapter 4, *Waterways and Wetlands*, provides a description of the Project Site's wetland resources and proposed compliance with applicable regulations.

1.4.3 Massachusetts Environmental Policy Act

A project requires MEPA review where such project is within MEPA jurisdiction and exceeds a MEPA review threshold. MEPA jurisdiction applies to, among other things: (i) those aspects of a project that are within the subject matter of any required state permit; and (ii) projects involving a state land transfer. MEPA review thresholds include:

- A Chapter 91 license for existing unlicensed non-water dependent use; and
- Demolition of all or any exterior part of any Historic Structure listed in or located in any Historic District listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth.

State actions anticipated in connection with the Project are an amendment to the property's existing Massport ground lease, MHC review/approval and issuance of a Chapter 91 license and Massport approvals required in connection with new/modified curb cuts onto Seaport Boulevard. The Proponent anticipates that the state review process will be undertaken concurrently with the City's Article 80B review process, in accordance with the Massachusetts Environmental Policy Act ("MEPA") M.G.L. c. 30, Sections 61-62I and the regulations promulgated thereunder set forth at 301 CMR 11.00.

1.4.4 Chapter 91 License

The entire Project Site is located within filled and flowed tidelands, and the jurisdiction of Chapter 91. All such Massport property in South Boston is governed by a Memorandum of Understanding (MOU) dated March 15, 2001 by and between Massport and DEP. A Chapter 91 License was not required in connection with the construction of the existing improvements on the Project Site. Pursuant to the Memorandum of Agreement, a Chapter 91 License is required with certain expansions, as most particularly described therein. Refer to Chapter 4, *Waterways and Wetlands*, for further details.

Waterfront Development Plan

Under the MOU, a Waterfront Development Plan (WDP) may be developed for certain Special Planning Areas, which provides a description of the proposed land uses, dimensional characteristics of buildings, and open space for a portion of the Special Planning Area, and describes the public benefits and offsets, if appropriate, that development projects will provide. When a specific development project subject to the MOU is proposed within an area covered by an approved WDP, the WDP shall be used as the framework for the approval of the project by DEP. DEP must find that the project is consistent with the use and dimensional characteristics in the

approved WDP and that it provides public benefits and offsets consistent with those proposed in the WDP.

A preliminary WDP has been prepared by Massport and is being discussed with DEP. The WDP will be subject to a public review and comment period prior to DEP approval. Refer to Section 4.3.1 of Chapter 4, *Waterways and Wetlands*, for further information.

Public Benefits Determination

Per 301 CMR 13.00, it is the discretion of the Secretary of the Executive Office of Energy and Environmental Affairs to issue a public benefits determination for the Project due to its waterways location.

1.4.5 Coastal Zone Management Policy

The Project Site is located within the Massachusetts Coastal Zone, and the Project will be consistent with the regulatory policies established by Massachusetts Office of Coastal Zone Management ("CZM") under the federally approved Massachusetts Coastal Zone Program. Refer to Section 4.4 of Chapter 4, *Waterways and Wetlands*, for a description of how the Project has been designed consistent with these goals to activate the waterfront and protect natural resources.

1.4.6 Massachusetts Historical Commission Review

The Massachusetts Historical Commission ("MHC") has advisory review over projects requiring any state or federal action, such as land transfers, funding, licensing, permitting, and/or approvals, in order to evaluate potential direct or indirect impacts to properties listed in, or eligible for listing in, the National and State Registers of Historic Places, in compliance with State Register Review requirements (M.G. L. Chapter 9, Sections 27-27c, as amended by Chapter 254 of the Acts of 1988) and Section 106 of the National Historic Preservation Act of 1966 (if necessary). The submittal of this ENF/PNF intends to initiate MHC review of the Project, as well as review by the Massachusetts Board of Underwater Archaeological Resources.

1.5 Project Alternatives

In accordance with MEPA requirements for an ENF, this section describes the on-site project alternatives, considered by the Proponent and the reason(s) that they were not selected as the preferred alternative. No alternative off-site locations were considered for this redevelopment project.

The following project alternatives have been considered:

› **No-Build Alternative** – would leave in place the existing conditions at the Project Site. It would remain a previously developed site with the existing Seaport World Trade Center building and operations.

- **Tower Alternative** – consists of rehabilitation of the existing building with the addition of a commercial tower on top of a portion of the Seaport World Trade Center building.
- **Preferred Alternative** – the Project as proposed consisting of renovation and adaptive reuse and revitalization of the Seaport World Trade Center building with public realm and public waterfront access improvements.

Table 1-3 below defines the programs of the two development alternatives.

Table 1-3 Project Build Alternatives

	Tower Alternative	Preferred Alternative
Total Square Footage (GFA)	1,023,250	737,560
Percent Increase in GFA	45%	1%
Building Height	Up to 225 feet	77 feet (no change)
Parking Spaces	-0-	-0-
Number of New Buildings	1	-0-
Primary Ground Floor Use	Office, Retail, Public Open Space	Office, Retail, Public Open Space
Primary Upper Floor Use	Commercial, Event Space[1]	Office, Event Space

1 In the form of an approximately 264,000-square foot tower extending from the existing building.

1.5.1 No-Build Alternative

The No-Build Alternative would leave in place the existing built conditions at the Project Site, as described previously in Section 1.1 and shown on Figures 1.3a and 1.3b. Therefore, it would not include any of the extraordinary economic benefits or comprehensive improvements associated with the Project, such as expanded publicly-accessible waterfront access/public realm area and improved Harborwalk.

The No-Build Alternative does not meet the Proponents' goals or needs, or the City's waterfront development objectives, and is inconsistent with Massport's economic and redevelopment goals for their land holdings within the South Boston Waterfront District, including economic support of maritime facilities.

Although the No-Build Alternative would not result in any new environmental and community impacts, it would not improve the environmental conditions of the Project Site, such as energy usage and associated GHG emissions reductions through upgraded/modernized building systems, enhanced resiliency to address predicted climate change impacts, or improved water quality through upgraded stormwater treatment. There would be very limited opportunity to increase revenues, which currently support the working port. Additionally, the No-Build Alternative would not realize the extraordinary public benefits discussed previously in Section 1.3. The No-Build Alternative would not create the proposed public facilities and programs, and similarly would not activate the Project Site or promote public use or enjoyment.

1.5.2 Tower Alternative

The Tower Alternative was a preliminary concept plan to expand the building area through the introduction of an 11-story tower element to be constructed above the existing structure. The tower would rise from the approximately 77-foot existing building for a total approximate height of up to 225 feet, and include commercial uses and reconfigured event space.

This build alternative would include new/expanded public realm area and waterfront access, but due to the additional building height would introduce new shadow and, potentially, wind impacts. Additionally, given the addition of the commercial use, the Tower Alternative would also introduce additional vehicular traffic to the area and require more area for vehicular circulation and loading. It would also introduce additional private uses to the Project Site without any additional public uses. This build alternative was dismissed because it was deemed not appropriate for the Project Site given the additional impacts and not economically viable.

1.5.3 Preferred Alternative

The Preferred Alternative (or the Project), as described in detail herein and shown on Figures 1.5a and 1.5b, proposes a major renovation program to transform the existing building and pier through adaptive reuse into a vibrant place for work, retail, events and public waterfront amenities. With the conversion of exhibit/event space to ground floor public uses, and additional office and retail uses, the Preferred Alternative increases the overall usable square footage by approximately 31,860 GFA of building program (Table 1-1).

The Preferred Alternative proposes to maximize public realm area and waterfront access throughout the Project Site, including a much improved Harborwalk around the Seaport World Trade Center building. The Preferred Alternative would be consistent with the requirements of the Chapter 91 MOU, as clarified or amended, by enhancing connectivity to the waterfront, and increasing public realm space/open space.

1.5.4 Impacts Comparison of Project Alternatives

Table 1-4 below compares the potential environmental impacts of the project alternatives.

Table 1-4 Project Build Alternatives

	No Build Alternative	Tower Alternative	Preferred Alternative
Land			
Site Area	18.9 acres	18.9 acres	18.9 acres
New Land Alteration	None	None	None
New Impervious Surface Area	None	None[1]	0.4 acres[1,2]
Transportation			
Traffic (Unadjusted)	6,912	9,711[3]	8,007
Parking	-0-	-0-	-0-
Water & Wastewater			
Water Use (GPD)	208,010	179,269	157,489
Sewage Generation (GPD)	189,100	162,971	143,171

1 Each build alternative may include incorporation of landscaping/pervious elements, but the reduction in overall impervious surface area is considered negligible.
2 Represents the apron expansion.
3 Represents total estimated daily vehicle trips.

As demonstrated by Table 1-4 above, the site area and land impacts remains constant across the project alternatives. With the additional building uses and density (totaling approximately 264,000 square feet), the Tower Alternative would result in additional potential environmental impacts associated with traffic generation, water demand and wastewater generation compared to the Preferred Alternative, which introduces only approximately 31,860 square feet of new area.

1.6 Agency Coordination and Community Outreach

The Proponent with its project team has worked closely with Massport, which owns the land on which the Project sits. The Proponent has also met with elected state and local officials, the City of Boston, abutters, and other interested parties to discuss the Project, and has reached out to neighborhood representatives. The Proponent will continue to meet with community stakeholders as the Project moves forward through the MEPA/Article 80 review process.

1.7 Project Proponent/Development Team

This section lists the members of the design and consulting team and provides their primary contact information.

Proponent	Commonwealth Pier Trust II c/o Pembroke Real Estate LLC 255 State Street Boston, MA 02109 617 563 3100 *Contact:* Jack Clark
Developer	Pembroke Real Estate LLC 255 State Street Boston, MA 02109 617 563 3100 *Contact:* Edward Johnson IV Andrew Dankwerth Terrence McNeil
Master Architect/Architect of Record ("AOR")	CBT 110 Canal Street Boston, MA 02114 617 262 4354 *Contact:* Philip Casey David Nagahiro Maren Reepmeyer Adrian LeBuffe
Architect for Building Renovation	Schmidt Hammer Lassen Architects Njalsgade 17A, Pakhus 2 2300 Copenhagen S Denmark +45 70 20 19 00 *Contact:* Kristian Lars Ahlmark Tiago Pereira
Landscape Architect	Sasaki 64 Pleasant Street Watertown, MA 02472 617 926 3300 *Contact:* Isabel Zempel Steve Engler Mauricio Gomez
Legal Counsel	Goulston & Storrs 400 Atlantic Avenue Boston, MA 02110 617 482 1776 *Contact:* Kevin Renna, Michael Flannery

Permitting, Transportation, Civil Engineering, Cultural Resources	VHB 99 High Street, 10th Floor Boston, MA 02110 617 728 7777 *Contact:* Elizabeth Grob Lauren DeVoe David Black Rick Dupuis Nicole Benjamin-Ma
Chapter 91 Licensing Consultant	Fort Point Associates, Inc., A Tetra Tech Company 31 State Street, 3rd floor Boston, MA 02109 617- 357-7044 *Contact:* Jamie Fay
Mechanical, Electrical, Plumbing/ Fire Protection Engineer, Sustainability	ARUP 60 State Street Boston, MA 02109 617 864 2987 *Contacts:* Brian Swett Geoff Gunn Rebecca Hatchadorian
Geotechnical Engineer	Haley & Aldrich 465 Medford Street, Suite 2200 Boston, MA 02129 617-886-7408 *Contact:* Mark Haley
Structural Engineer	Thornton Tomasetti 27 Wormwood Street, Suite 200 Boston, MA 02210 617 250 4100 *Contact:* Doug Anderson
Retail Strategy Consultant	Streetsense 1750 Pennsylvania Avenue NW, Suite 200 Washington, DC 20006 202 349 4000 *Contact:* Heather Arnold

1.8 Legal Information

1.8.1 Legal Judgments or Actions Pending Concerning the Proposed Project

The Proponent is not aware of any legal judgments in effect or legal actions pending that are adverse to the Project.

1.8.2 History of Tax Arrears on Property Owned in Boston by the Applicant

The Proponent does not have a history of tax arrears on any property owned within the City of Boston.

1.8.3 Site Control/Public Easements

The Proponent leases the Project Site from Massport pursuant to a long-term ground lease, which will be amended to accommodate the Project. The surrounding pier is subject to separate agreements between the Proponent, Massport, and other neighboring properties, and the public enjoys certain rights of pedestrian access across it.

Source: USGS

Project Boundary

Figure 1.1

Locus Map

Commonwealth Pier Revitalization
Boston, Massachusetts

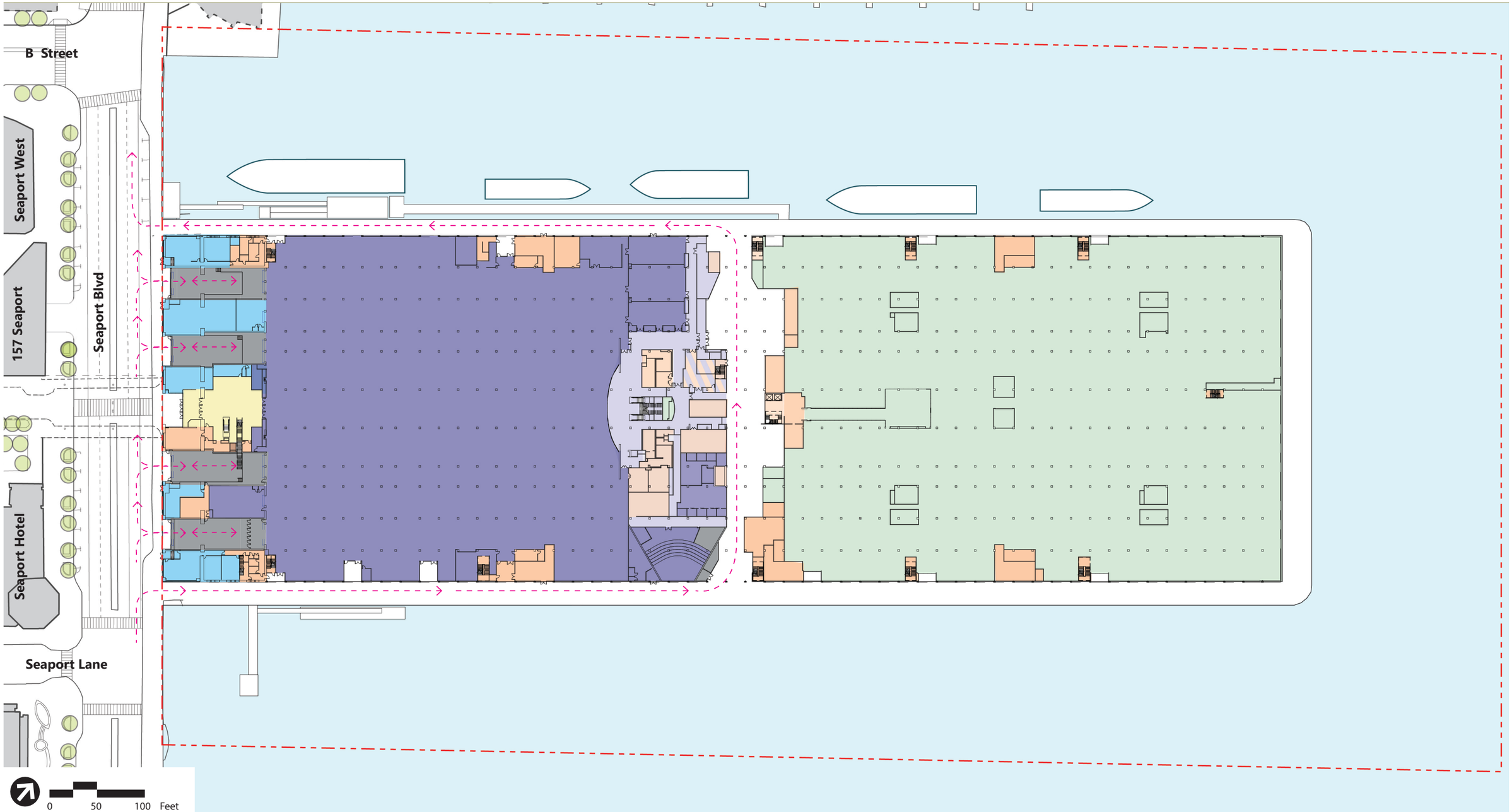
Source: City of Boston, Bing

Project Boundary

Figure 1.2

Project Site Context

Commonwealth Pier Revitalization
Boston, Massachusetts



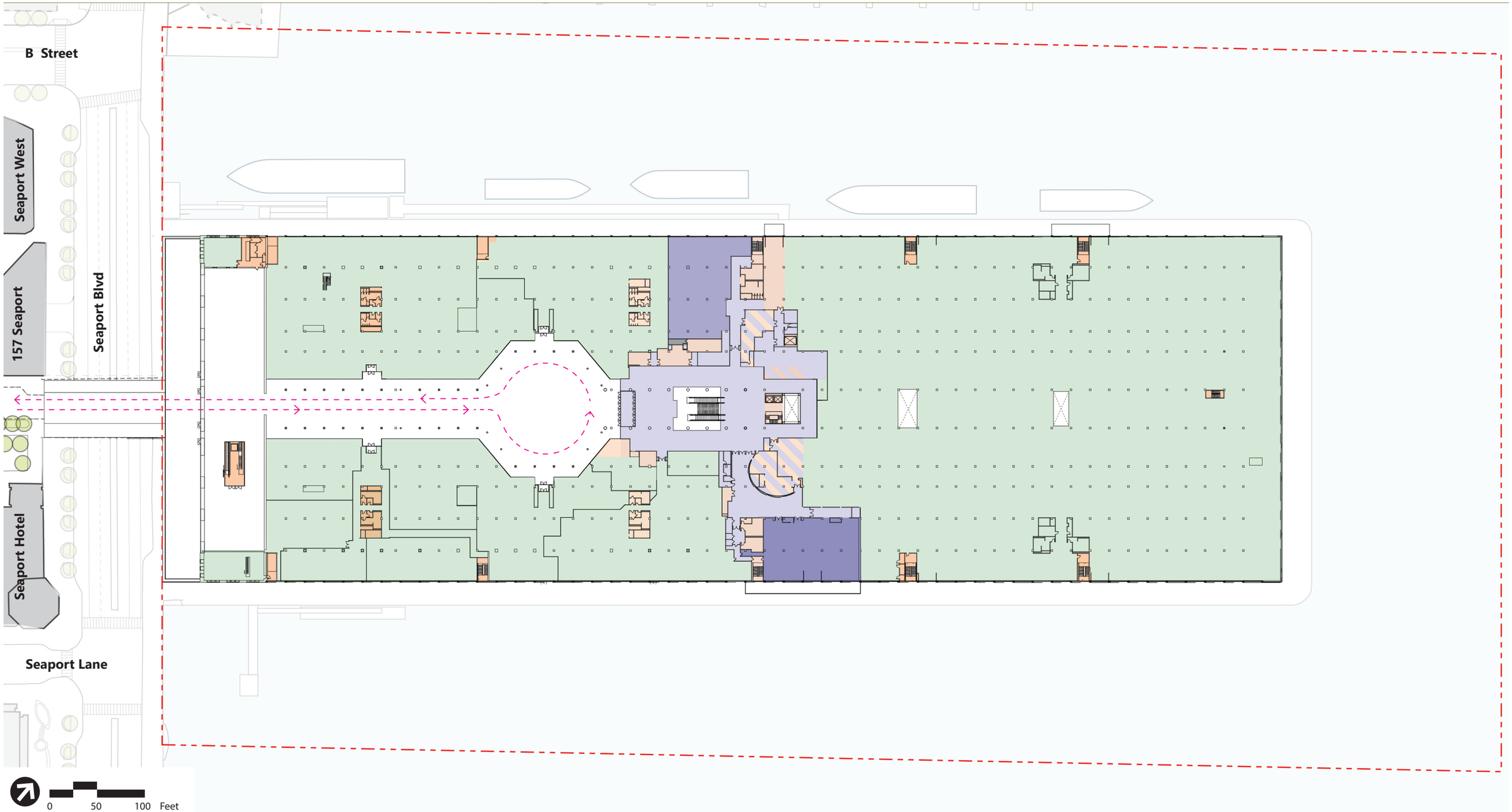
Source Info: Sasaki

Office
Commercial
BOH/Receiving
Core/Tech/Egress
Public Lobby
Pre-function
Event
Project Site Boundary
Truck/Delivery Routes

Figure 1.3a

Existing Conditions Plan
Ground Level

Commonwealth Pier Revitalization
Boston, Massachusetts



Source Info: Sasaki

Office
Commercial
BOH/Receiving
Core/Tech/Egress
Public Lobby
Pre-function
Event
Project Site Boundary
Truck/Delivery Routes

Figure 1.3b

Existing Conditions Plan
Viaduct Level

Commonwealth Pier Revitalization
Boston, Massachusetts

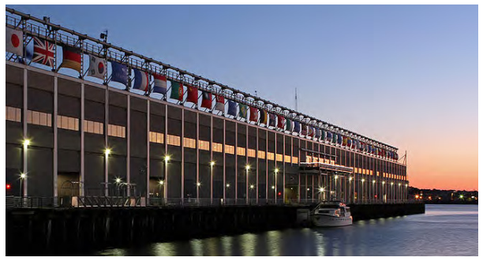
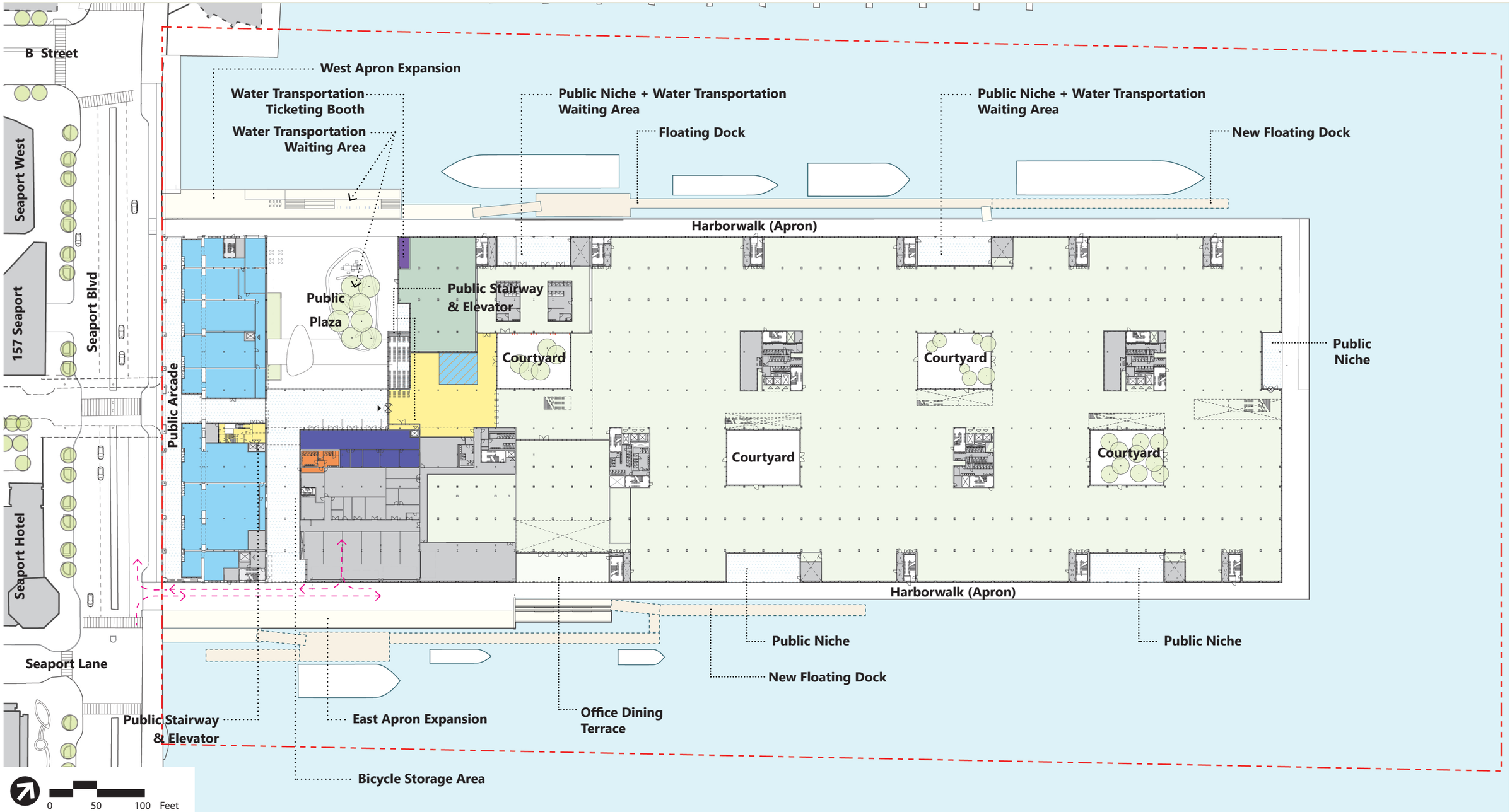


Figure 1.4
Existing Site Conditions Photos

Commonwealth Pier Revitalization
Boston, Massachusetts



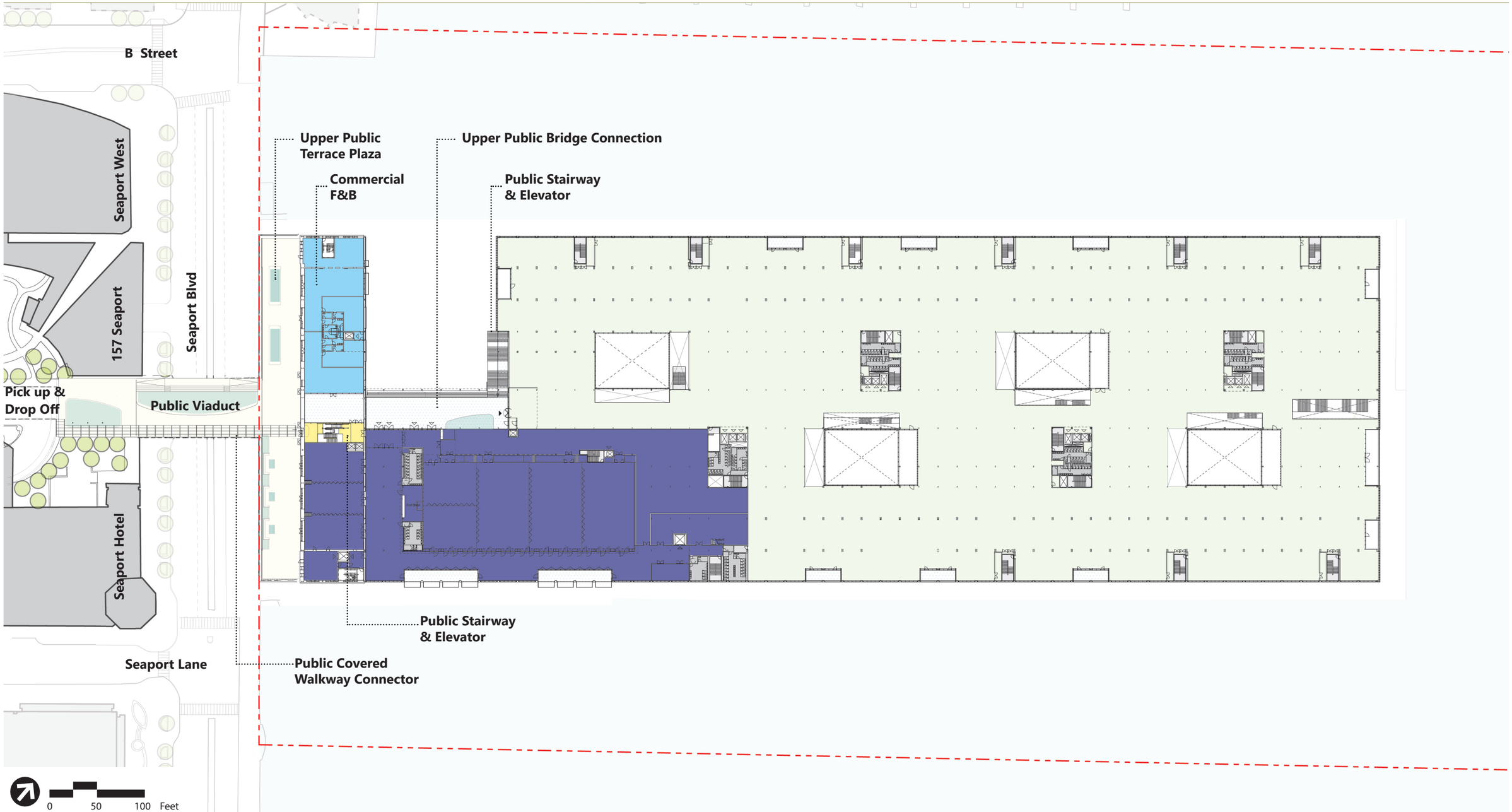
Source Info: Sasaki

- Office
- Commercial
- BOH/Receiving
- Public Restrooms
- Event
- Co-Working Space
- Public Lobby
- Egress
- MEP
- Water Transporation Ticket Booth
- Project Site Boundary
- Truck/Delivery Routes
- Open Area with Ext Soffit

Figure 1.5a

Proposed Conditions Site Plan
Ground Floor Level

Commonwealth Pier Revitalization
Boston, Massachusetts



Source Info: Sasaki

Office
Commercial
BOH/Receiving
Open Area with
Ext Soffit
Public Lobby
Egress
MEP
Event
Project Site Boundary

Figure 1.5b

Proposed Conditions Site Plan
Viaduct Level

Commonwealth Pier Revitalization
Boston, Massachusetts

2

Urban Design

This chapter provides a description of the design approach for the Project, including its public realm improvements. Within the context of the waterfront planning efforts, the Project provides the opportunity to create new publicly-accessible waterfront open space and public realm area with active ground floor uses, and an enhanced and enlivened pedestrian environment—all of which aim to activate this waterfront portion of Boston Harbor, including the Harborwalk.

2.1 Summary of Key Findings and Benefits

Key findings and benefits related to urban design and public realm include:

- A number of new public realm improvements while remaining protective of the Public Trust rights inherent in filled tidelands. Enhanced public access to, and use of, the waterfront at the Project Site.
- The Project will provide a total of approximately 170,445 sf (representing an increase of 37 percent across the Project Site) of new and enhanced public realm and open space, including:
  - An expanded and enhanced Harborwalk with apron expansions on either side of the Headhouse, and installation of new lighting and site furnishings, paving upgrades, interpretive and wayfinding signage, connectivity to retail/restaurant/café spaces and/or public art;
  - A new activated street front arcade along Seaport Boulevard and a significantly upgraded streetscape, including removal of four existing exhibition hall loading docks on Seaport Boulevard, construction of a recessed ground floor to create a new arcade for pedestrian access, new site works and landscaping, greatly improving the street-level experience;
  - The Plaza along the waterfront and connecting to the Harborwalk; and
  - Multiple public Niches cut out of the perimeter of the building.
- Improved connectivity through the building from the Plaza on the west to the east side of the Headhouse to further enliven the public spaces.
- Design that reflects and complements the unique architectural character of the Headhouse.
- Create a unique workplace, including co-working/incubator provisions, a diverse mix of retailers, "state-of-the-art" event facilities and promotion of Boston's Harborwalk.

› Develop a detailed curb regulation and management plan in coordination with Massport to maintain and improve traffic flow on Seaport Boulevard, which is a designated Massport truck route.

2.2 Neighborhood Context

For over three decades since the mid-1980s, the Proponent and its affiliates have owned or occupied the Seaport World Trade Center on the prominent Commonwealth Pier within the city's vibrant South Boston Waterfront District. The District has experienced vast growth over the last five or so years and has become a major destination for city dwellers and tourists alike. Offering a variety of open space, public realm amenities, retail, and entertainment opportunities, along with plentiful water frontage and city views, the South Boston Waterfront neighborhood has secured its foothold as having some of Boston's most desired real estate. As part of the design process for the Project, considerations have been made for vehicular traffic, waterway traffic, pedestrians, tourists, and commuters alike. The improvements made as part of this Project will position Commonwealth Pier as a destination within this bustling area inviting people to work, play, eat, and shop.

2.3 Planning Principles and Design Goals

One of the design team's main objectives with this Project is to provide porosity and successful public engagement elements to this unique property, which in its current condition lacks connectivity. A key design goal is to maximize public access to the waterfront by expanding open space and public realm area on-site at both the Harbor and Viaduct levels. By carefully considering grand public gestures such as the multi-functional public Plaza with amazing city views and waterfront engagement (e.g. the Harborwalk) along all three sides of the pier, the building opens itself to activation and a true sense of place within its rich urban fabric. The Project will bring together mixed uses to support the programming and activation of the Project Site. These include co-working, retail, event, and office along with an expanded public realm area, including apron expansions to support marine activity and connections. Refer to Figures 2.1a through 2.1f for the building floorplans.

2.4 Building Design Concept and Development

Overarching goals and key design elements provide a unique interplay between historic architecture/function and modern esthetic/place-making. With a focus on sustainable practices and resiliency, along with clean lines and materiality, this adaptive re-use Project will allow the Commonwealth Pier to become a true destination within the South Boston Waterfront that ultimately stands the test of time. The proposed design has been sensitive to not only proportion and context from a neighborhood perspective, but also carefully considers site orientation, and human scale and experience.

2.4.1 Height and Massing

As shown in Figure 2.2, the height and massing of the building remain relatively unchanged with the proposed design. The roof and parapet of the Headhouse are and will remain the highest points of the building. Removal of the decorative gantry that currently extends above the roof at the east and west facades of the building is proposed.

2.4.2 Character and Exterior Materials

The design intent of the adaptive re-use approach is to maintain the rich historic components of the Headhouse and celebrate the industrial-style warehouse character of the building's northern extension. This will be achieved by exposing the building's unique structure – both at the exterior façade and within the walls of this vibrant space. The building facades will be opened up to introduce new exterior materials, which will allow light and transparency to the space. With the introduction of curtainwall and other lighter materials, the building will integrate seamlessly into its vibrant neighborhood context, bringing sense of place while embracing its proximity to the waterfront. Figures 2.3a and 2.3d, and Figures 2.4a through 2.4c present the preliminary building elevations and sections, respectively.

2.4.3 Façade Improvements Approach

As part of the Project's over-all design approach, sensitivity will be given to the building's rich historic components. The stone arches and cornice of the Headhouse facing Seaport Boulevard will remain in-tact with integration of contemporary glazing beyond and between. The proposed design of the façades along the pier will celebrate the building's unique structure by exposing columns and column connections as they are today, staying authentic to the existing building's original design intent. Refer to Figures 2.5a through 2.5d for preliminary project view perspectives.

2.5 Public Realm Improvements

As illustrated in Figure 2.6, the proposed public realm improvements include a variety of publicly-accessible spaces along the waterfront, including:

- The new public Plaza;
- The renovated and expanded Harborwalk, including approximately 20,395-square foot apron expansions and Niches cut out of the perimeter of the building;
- The enhanced Viaduct pedestrian connection;
- Seaport Boulevard streetscape improvements; and
- Expanded retail offerings.

2.5.1 New Public Harbor Plaza

The new public waterfront Plaza located in the southwestern corner of the Project Site defines the main central gathering space (the "Plaza"). Conceptually designed, the Plaza provides an open, flexible outdoor space with tree planting, seating elements, and areas for moveable tables and chairs. The goal of the Plaza is to accommodate large outdoor events, open markets, and even winter amenities to provide waterfront activities throughout the year. On the east end of the Plaza, public restrooms are provided. See Figure 2.11 for conceptual configuration.

The Plaza provides for the relocation of the boat ticket booth from Seaport Boulevard to provide additional room for queuing that current spills out on the Seaport Boulevard sidewalk

2.5.2 Renovated Harborwalk

The Harborwalk currently runs the periphery of the Project Site and provides the public with a continuous and extensive walkway along the harbor with views to Downtown Boston, East Boston, and Boston Harbor. To encourage the public to more fully utilize the Harborwalk, the Project aims to make it more attractive by activating it with the Plaza and Niches, and installing new signage and custom seating elements with integrated planters, lighting, and artwork along the walkway. The Harborwalk's generous walking area will be maintained with the Project and enhanced with Niches to break up the linearity of the walk and introduce program spaces along the walkway. Each Niche will represent a unique condition, and five out of the six Niches proposed will provide public amenities, such as seating areas, shelter from weather, open areas for artwork, and amenity zones for vendors.

As shown in Figure 1.5a, the Harborwalk, or apron, will be expanded by a total of 20,395 sf (10 feet to 45 feet at the east and west sides of the Headhouse, respectively extending up to 460 feet north of the existing sea wall along Seaport Boulevard). The key purpose of this space is to provide improved pedestrian access to the Harborwalk, and the Plaza and Niches proposed along the Harborwalk. The proposed apron expansions may also provide seating and steps to allow visitors to approach the waterfront. Note, the docking of boats/ships may still be possible at these apron expansion locations.

2.5.3 The Viaduct

The Viaduct, which forms the extension of World Trade Center Avenue, connects Summer Street, the Seaport World Trade Center transit station, and the upper level of the Seaport Hotel to the Plaza on the Viaduct level of the Headhouse with amenities, such as a dining terrace. The Viaduct will be a primary pedestrian connection to the Project and will play a critical role in linking pedestrian access from the BCEC and World Trade Center Avenue to the waterfront. Conceptually, the Viaduct will support plantings and include a covered walkway area for pedestrians.

The Viaduct will include seating and planter elements situated to provide shading for outdoor restaurant seating areas proposed for this upper level.

2.5.4 Seaport Boulevard Streetscape Improvements

The streetscape improvements proposed along Seaport Boulevard include renovations between the existing eastern curb and the new retail entrance under the Headhouse arcade, as well as curb modifications along the southern edge of Seaport Boulevard. Along Seaport Boulevard, the curb is configured to provide a more visible and safer connection below the Viaduct at the existing crosswalk, as well as to provide a more spacious drop-off condition on the north and south sides of the street. The sidewalk at the edge of the street will be improved with new pavers which will also extend into the new arcade space. This new arcade space becomes a sheltered pedestrian connection with space for outdoor moveable seating and access to retail.

As described in Section 5.3.2 of Chapter 5, *Transportation*, the length of curb frontage will be maintained, and a detailed curb regulation and management plan will be developed in coordination with Massport to allocate appropriate zones to accommodate a variety of uses with the goal of maintaining and improving traffic flow on Seaport Boulevard, which is a designated Massport truck route. Section 5.5.1 describes the proposed on-site service and loading improvements, including the relocation of the service area within the building to reduce the extent of the Harborwalk currently used by trucks and service vehicles. The new service and loading design also improves the pedestrian experience along Seaport Boulevard by elimination of the existing loading bays along the Boulevard.

Refer to Figures 2.7 through 2.9 for the pedestrian access and circulation plans.

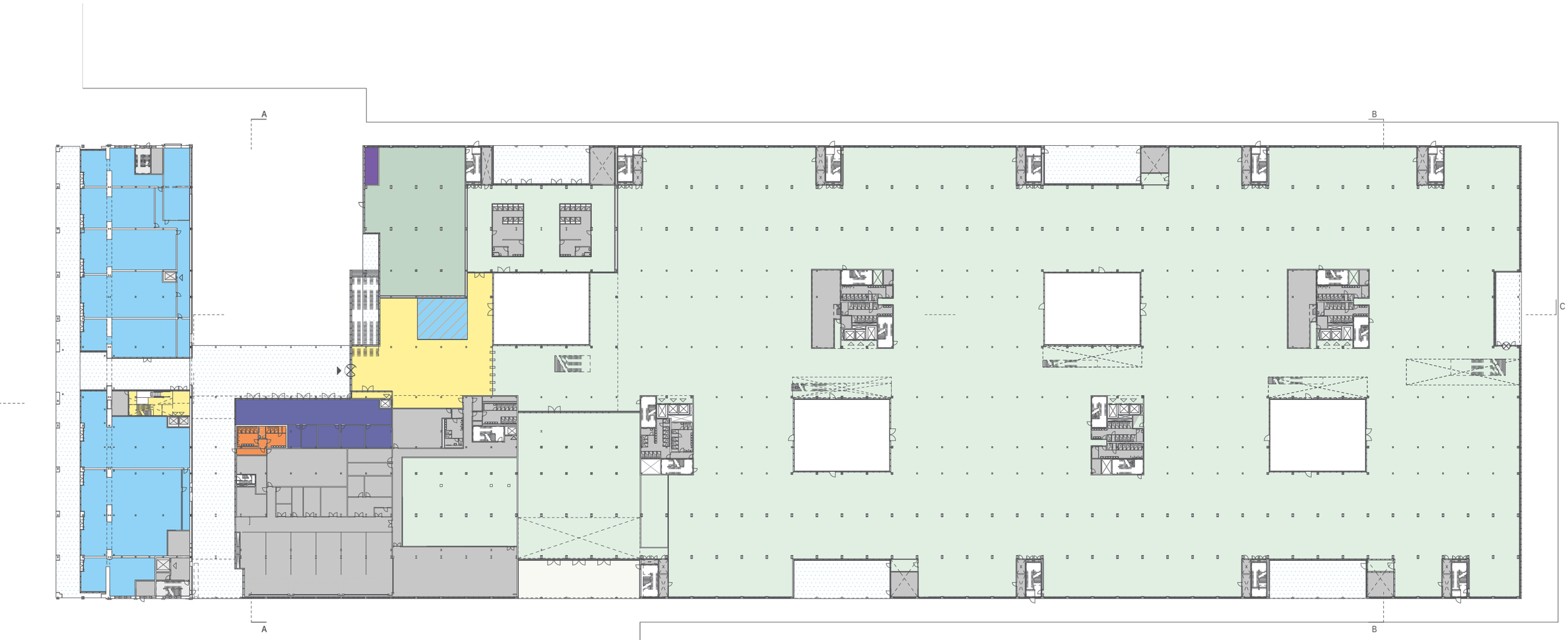
Accessibility

Main pedestrian entrances to the event space, office building and retail spaces will be ADA-compliant. The regrading of the Seaport Boulevard streetscape and regrading in the Plaza will provide access to the new elevated office and elevated retail finished floor entrances. All the pedestrian open space around the entire project areas will also be accessible. Refer to the completed BPDA Accessibly Checklist provided in Appendix D for further information.

2.6 Open Space and Landscaping

In addition to new public open spaces provided through the proposed public realm improvements, the Project will also provide daylit interior open spaces within the building through a series of unique courtyards designed to work in concert with interior building programs. Some of the proposed courtyards will provide outdoor shaded areas with trees and seating, whereas others will provide more flexible open exterior spaces for office gatherings or other office related programs. Refer to Figures 2.10a and 2.10b for the proposed open space plan.

The proposed landscape design approach for the Project will consist of planter elements along the Harborwalk, trees and plantings within the courtyards and upper and lower level plazas. Greenroofs are also proposed to cover a portion of the building over the ballroom space.



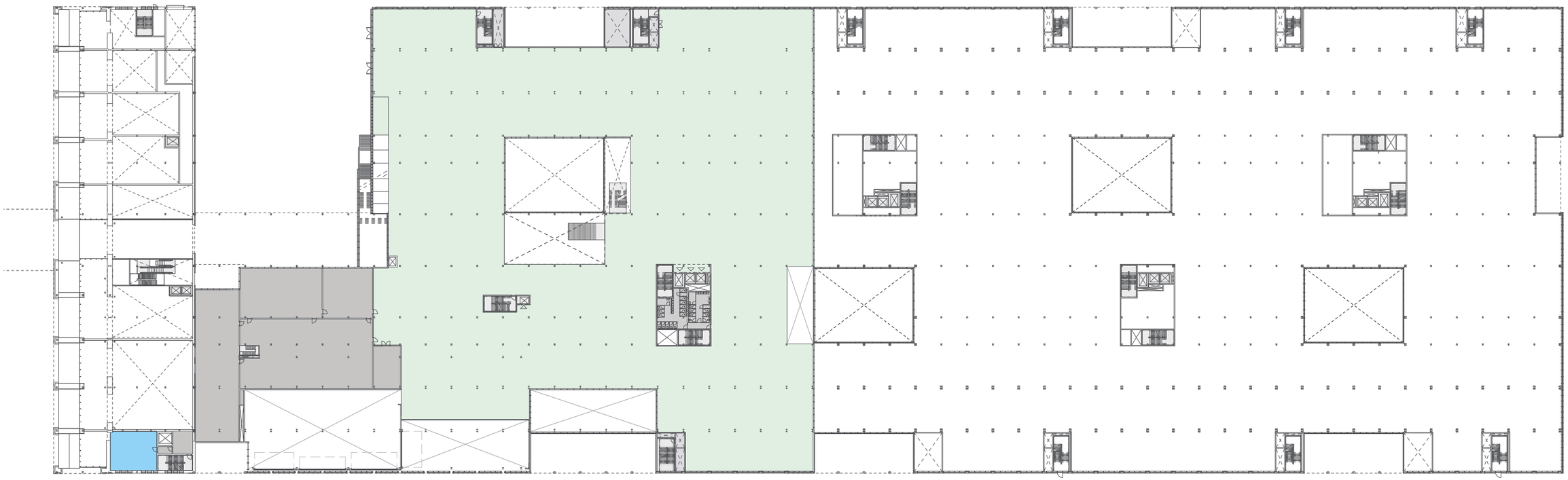
0 40 80 Feet

Office
Commercial
BOH/Receiving
Public Restrooms
Event
Co-Working Space
Public Lobby
Egress
MEP
Water Transporation Ticket Booth
Open Area with Ext Soffit

Figure 2.1a

Harbor Floor Plan
Level 01

Commonwealth Pier Revitalization
Boston, Massachusetts



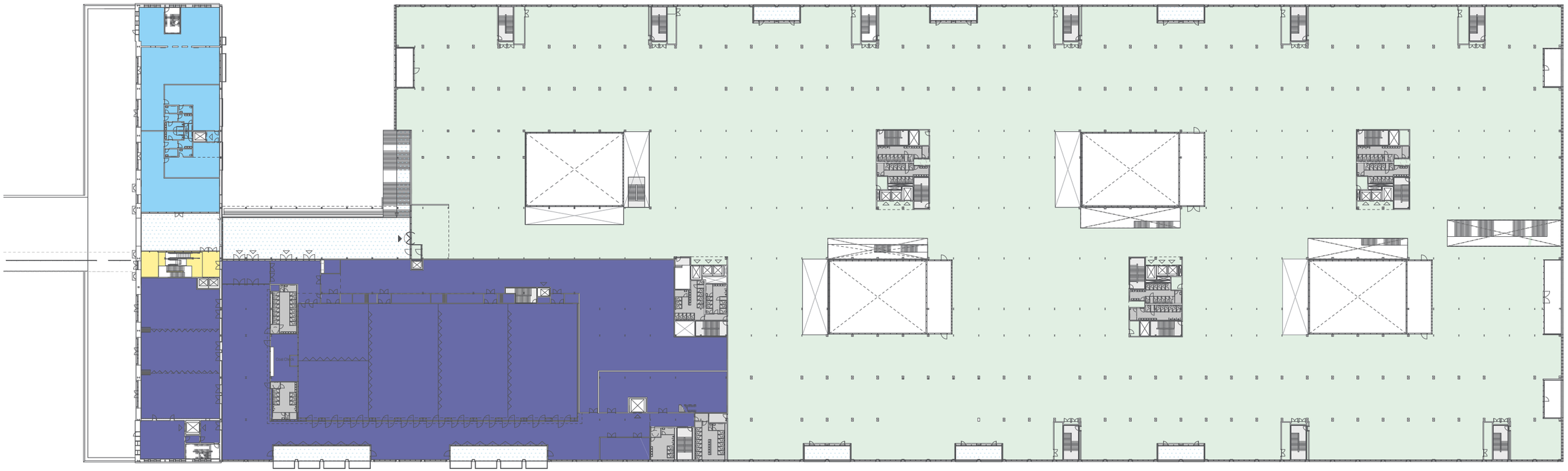
0 40 80 Feet

- Office
- Commercial
- BOH/Receiving
- Public Restrooms
- Event
- Co-Working Space
- Public Lobby
- Egress
- MEP
- Water Transporation Ticket Booth
- Open Area with Ext Soffit

Figure 2.1b

Mezzanine Floor Plan
Level 02

Commonwealth Pier Revitalization
Boston, Massachusetts



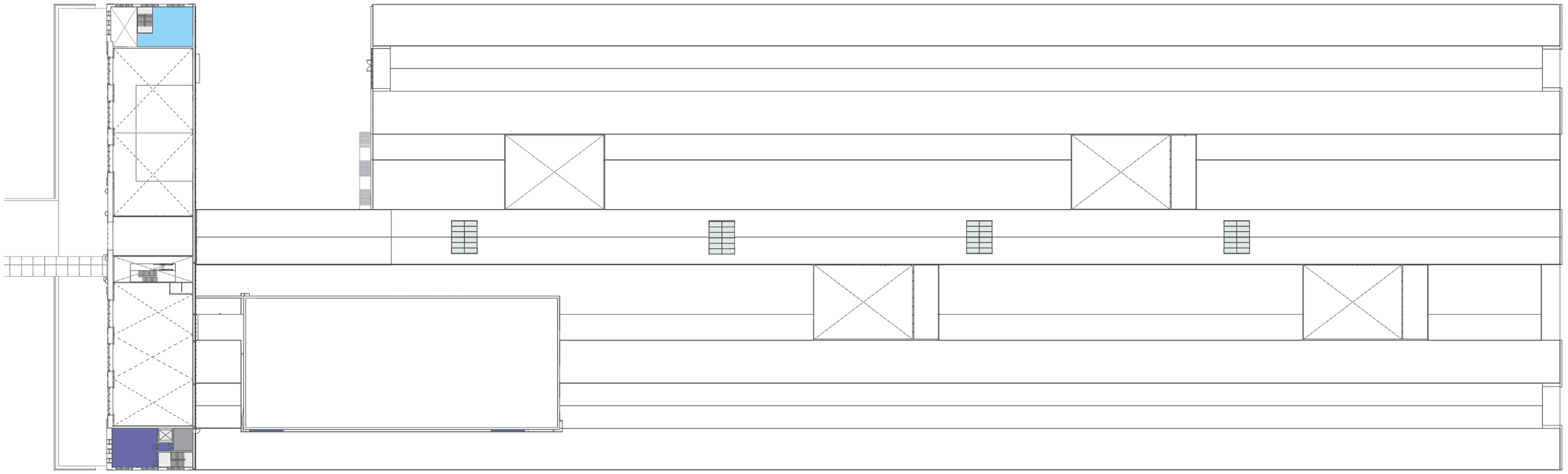
0 40 80 Feet

- Office
- Commercial
- BOH/Receiving
- Public Restrooms
- Event
- Co-Working Space
- Public Lobby
- Egress
- MEP
- Water Transporation Ticket Booth
- Open Area with Ext Soffit

Figure 2.1c

Viaduct Floor Plan
Level 03

Commonwealth Pier Revitalization
Boston, Massachusetts



0 40 80 Feet

- Office
- Commercial
- BOH/Receiving
- Public Restrooms
- Event
- Co-Working Space
- Public Lobby
- Egress
- MEP
- Water Transporation Ticket Booth
- Open Area with Ext Soffit

Figure 2.1d

Headhouse Mezzanine Floor Plan
Level 04

Commonwealth Pier Revitalization
Boston, Massachusetts

Figure 2.2
Massing Diagram

Commonwealth Pier Revitalization
Boston, Massachusetts

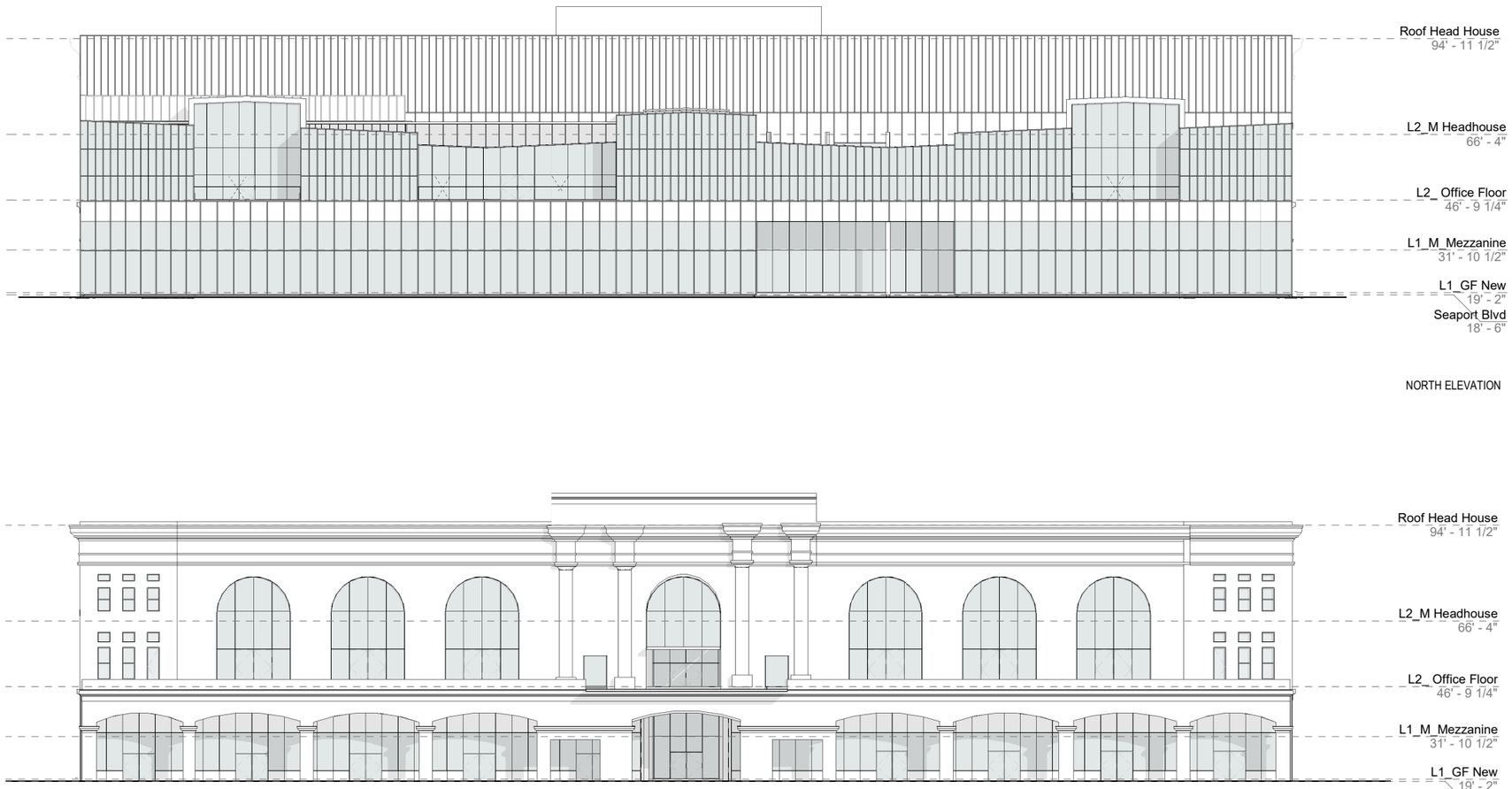


Figure 2.3a

Exterior Elevations
North and South

Commonwealth Pier Revitalization
Boston, Massachusetts

EAST ELEVATION

Figure 2.3b

Exterior Elevations
East

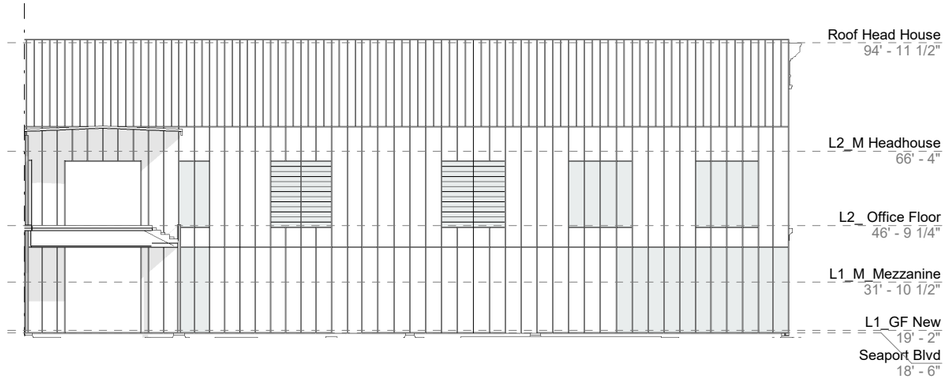
Commonwealth Pier Revitalization
Boston, Massachusetts

WEST ELEVATION

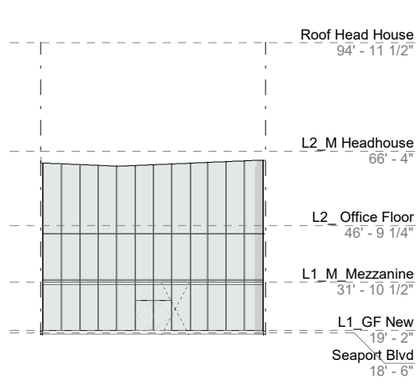
Figure 2.3c

Exterior Elevations
West

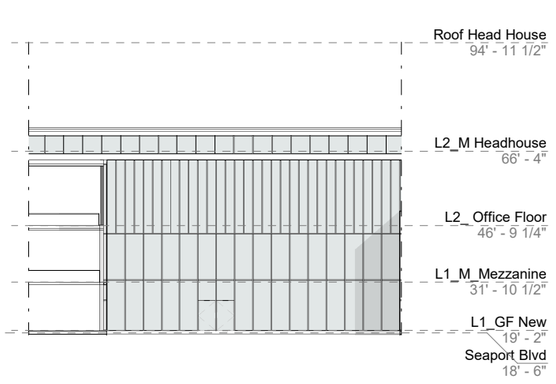
Commonwealth Pier Revitalization
Boston, Massachusetts



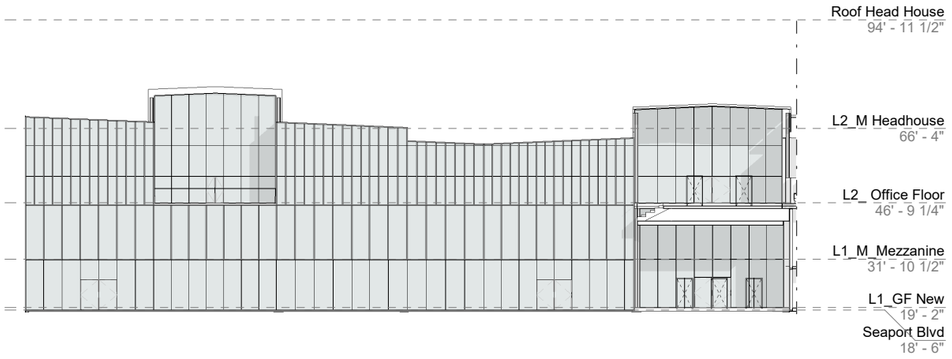
ELEVATION PLAZA - NORTH



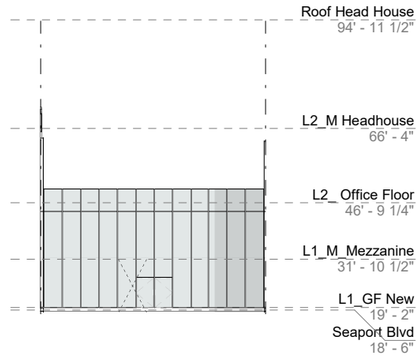
ELEVATION COURTYARD - NORTH



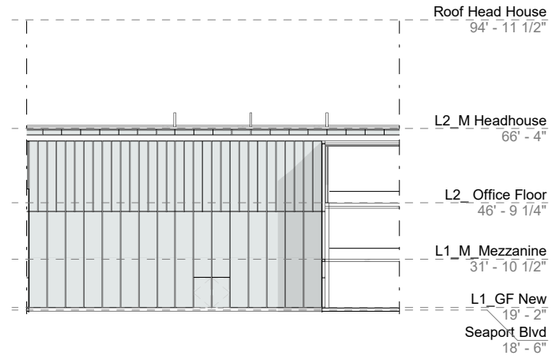
ELEVATION COURTYARD - EAST



ELEVATION PLAZA - SOUTH



ELEVATION COURTYARD - SOUTH



ELEVATION COURTYARD - WEST

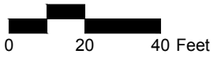
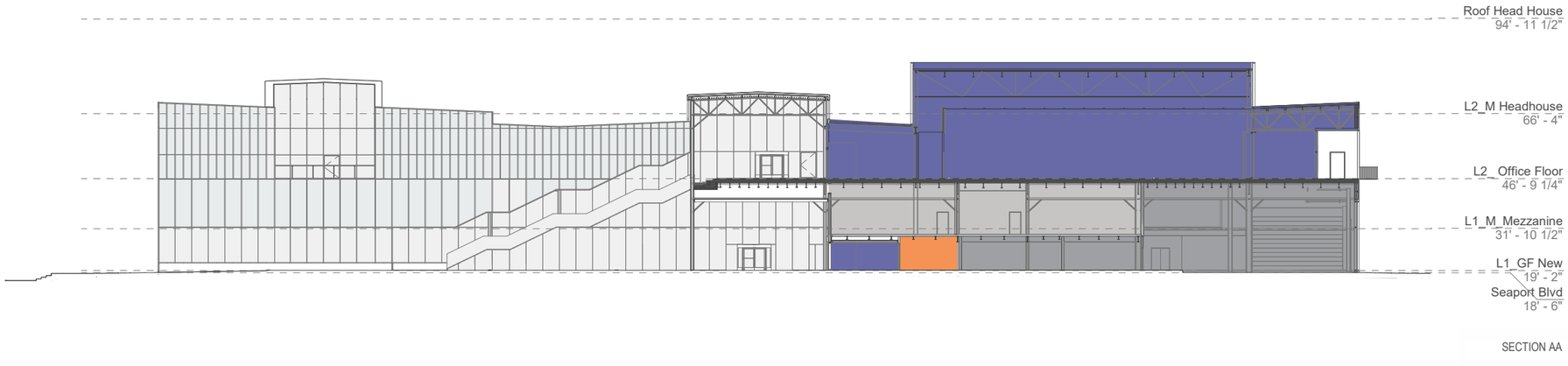


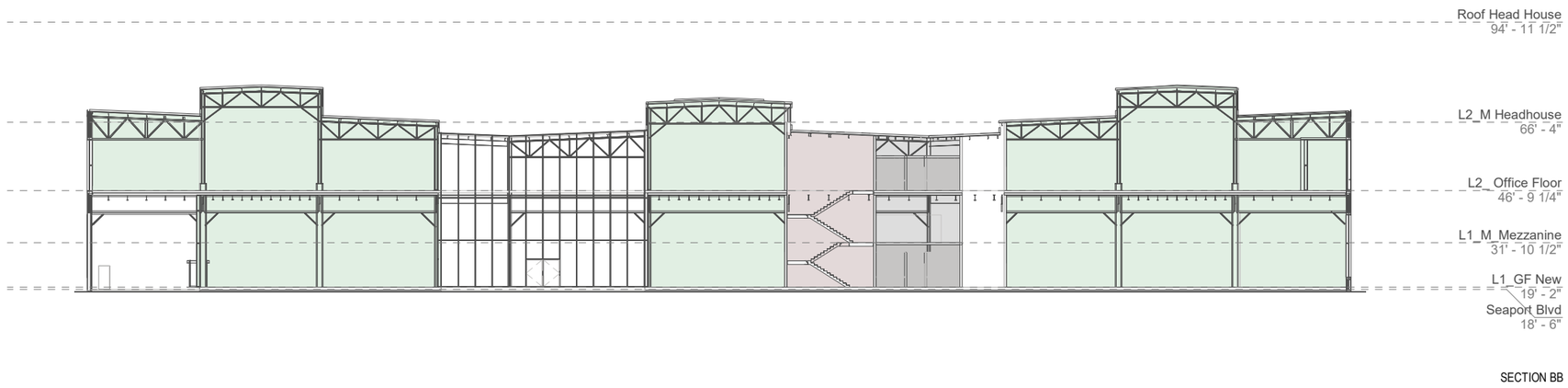
Figure 2.3d

Exterior Elevations
Plaza and Courtyards

Commonwealth Pier Revitalization
Boston, Massachusetts



SECTION AA



SECTION BB

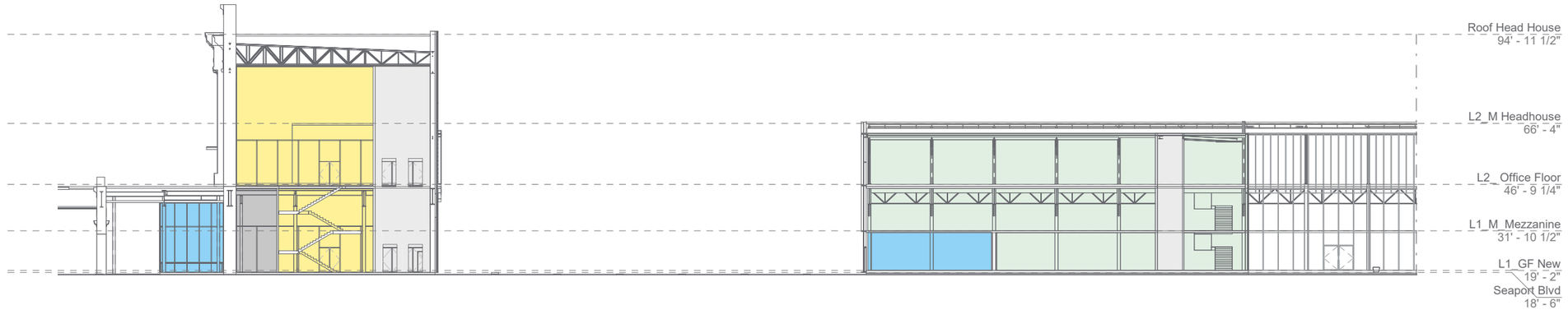
0 20 40 Feet

Office
Commercial
BOH/Receiving
Public Restrooms
Event
Co-Working Space
Public Lobby
Egress
MEP
Water Transporation Ticket Booth
Open Area with Ext Soffit

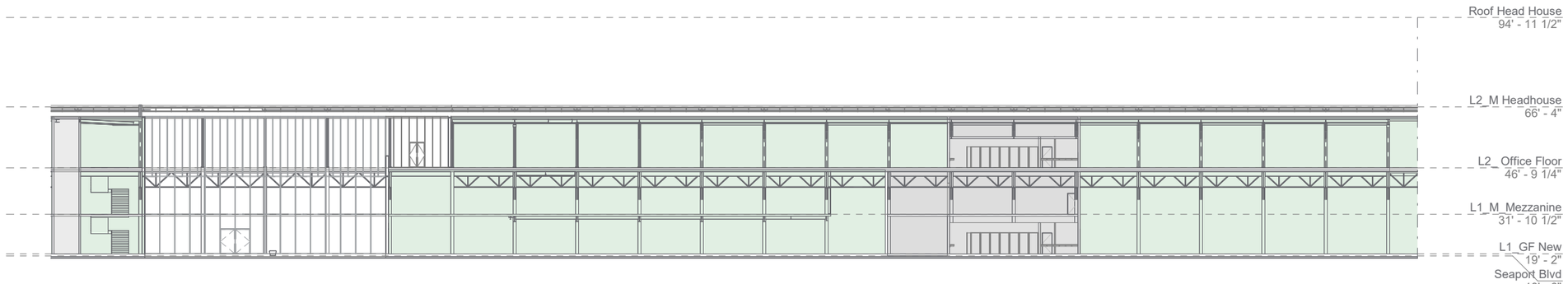
Figure 2.□a

Buildi□g Sectio□□
□a□t□□ e□t

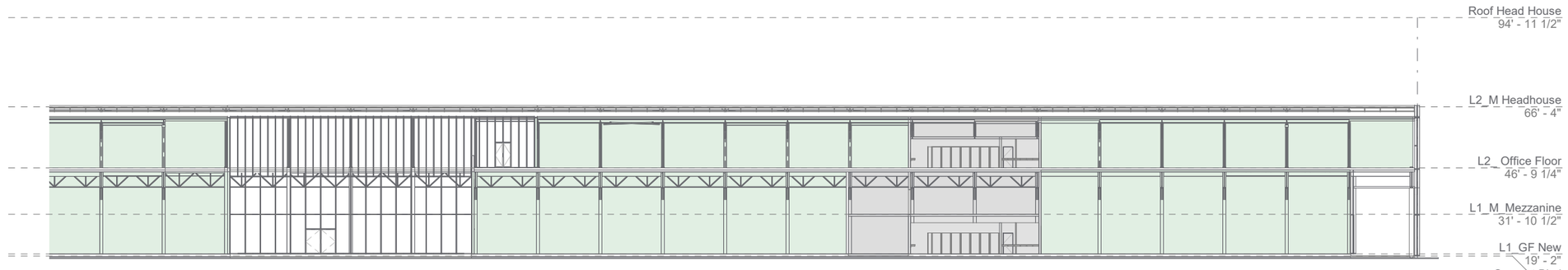
Commonwealth Pier Revitalization
Boston, Massachusetts



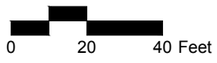
SECTION CC - SOUTH



SECTION CC - MID



SECTION CC - NORTH



Office
Commercial
BOH/Receiving
Public Restrooms
Event
Co-Working Space
Public Lobby
Egress
MEP
Water Transporation Ticket Booth
Open Area with Ext Soffit

Figure 2.4b

Building Sections
North-South

Commonwealth Pier Revitalization
Boston, Massachusetts

Figure 2.5a

Seaport Boulevard
East View

Commonwealth Pier Revitalization
Boston, Massachusetts

Figure 2.5b

Seaport Boulevard
West View

Commonwealth Pier Revitalization
Boston, Massachusetts

Figure 2.5c

Seaport Boulevard
Plaza View

Commonwealth Pier Revitalization
Boston, Massachusetts

Source Info: Sasaki

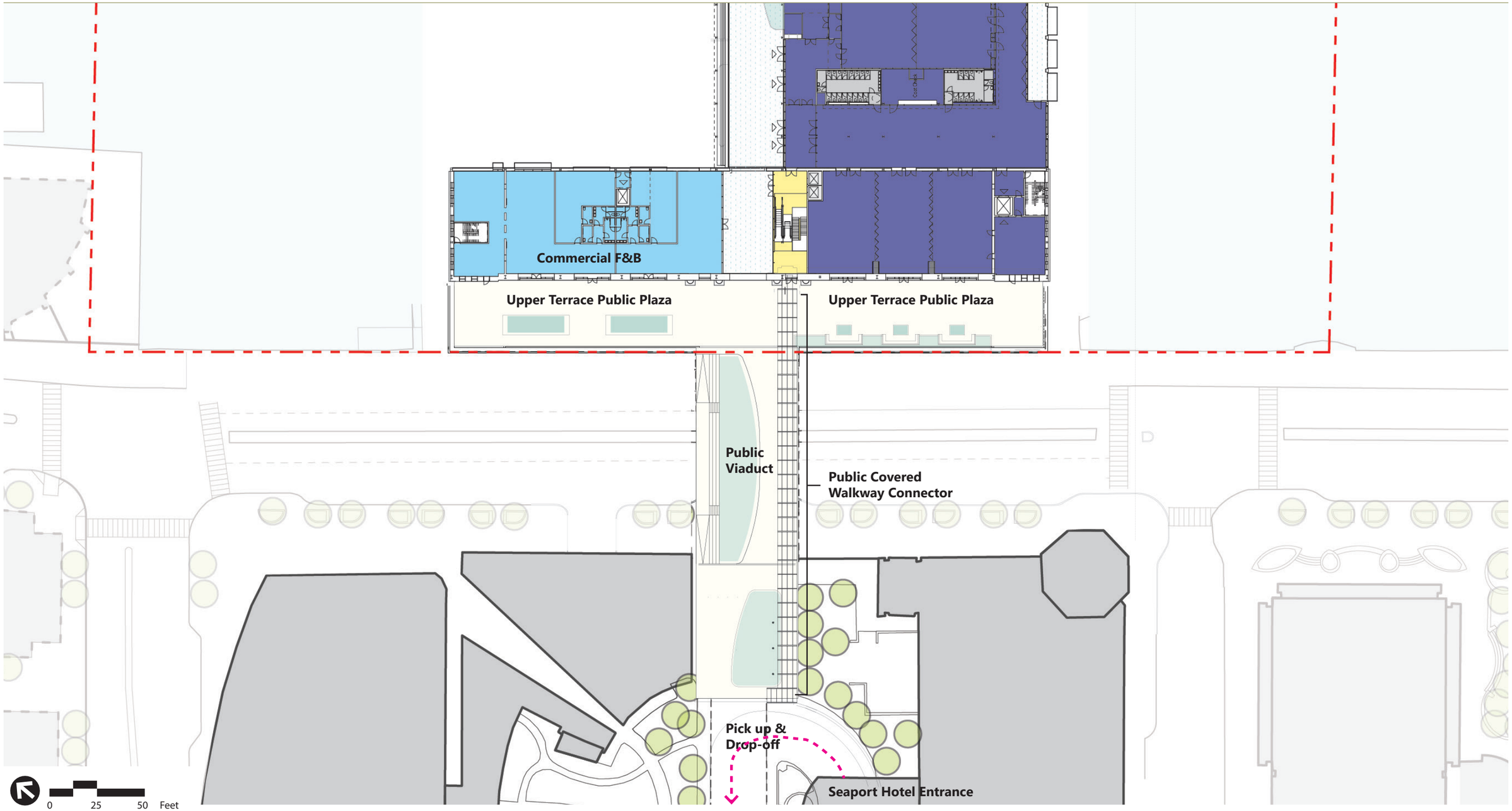
- Office
- Commercial
- BOH/Receiving
- Public Restrooms
- Event
- Co-Working Space
- Public Lobby
- Egress
- MEP
- Water Transporation Ticket Booth
- Project Site Boundary
- Truck/Delivery Routes
- Open Area with Ext Soffit

Note: The curbside regulations on Seaport Boulevard in the vicinity of the Project will be designated in collaboration with Massport to allocate appropriate zones to accommodate a variety of uses, including shuttles, buses, TNC services (e.g. Uber, Lyft), short-term parking and limited loading.

Figure 2.6a

Conceptual Streetscape Improvements Plan

Commonwealth Pier Revitalization Boston, Massachusetts



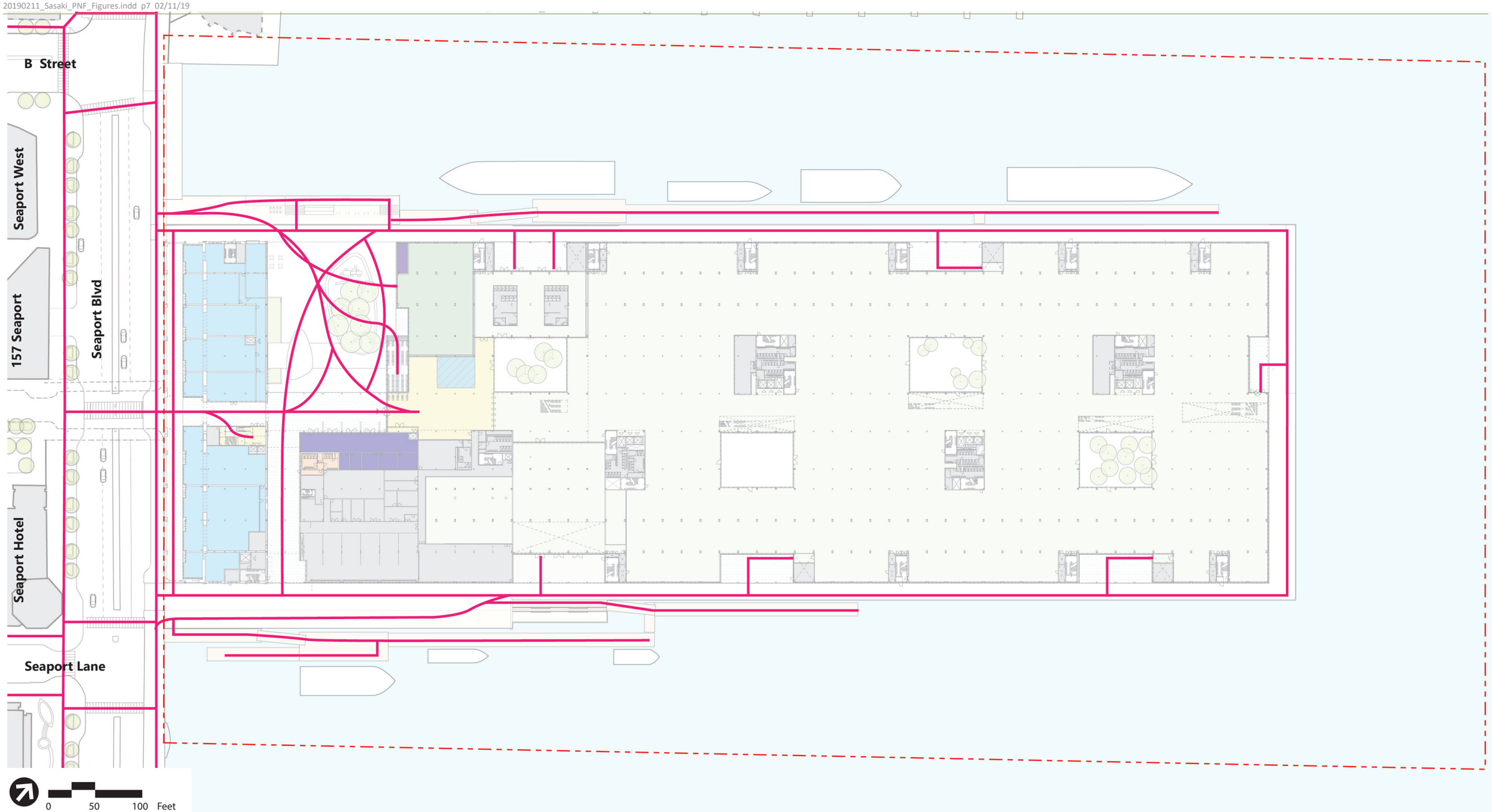
Source Info: Sasaki

Office
Commercial
BOH/Receiving
Open Area with Ext Soffit
Public Lobby
Egress
MEP
Event
Project Site Boundary
Truck/Delivery Routes

Figure 2.6b

Viaduct Level Conceptual Streetscape Improvement Plan

Commonwealth Pier Revitalization
Boston, Massachusetts



Source Info: Sasaki

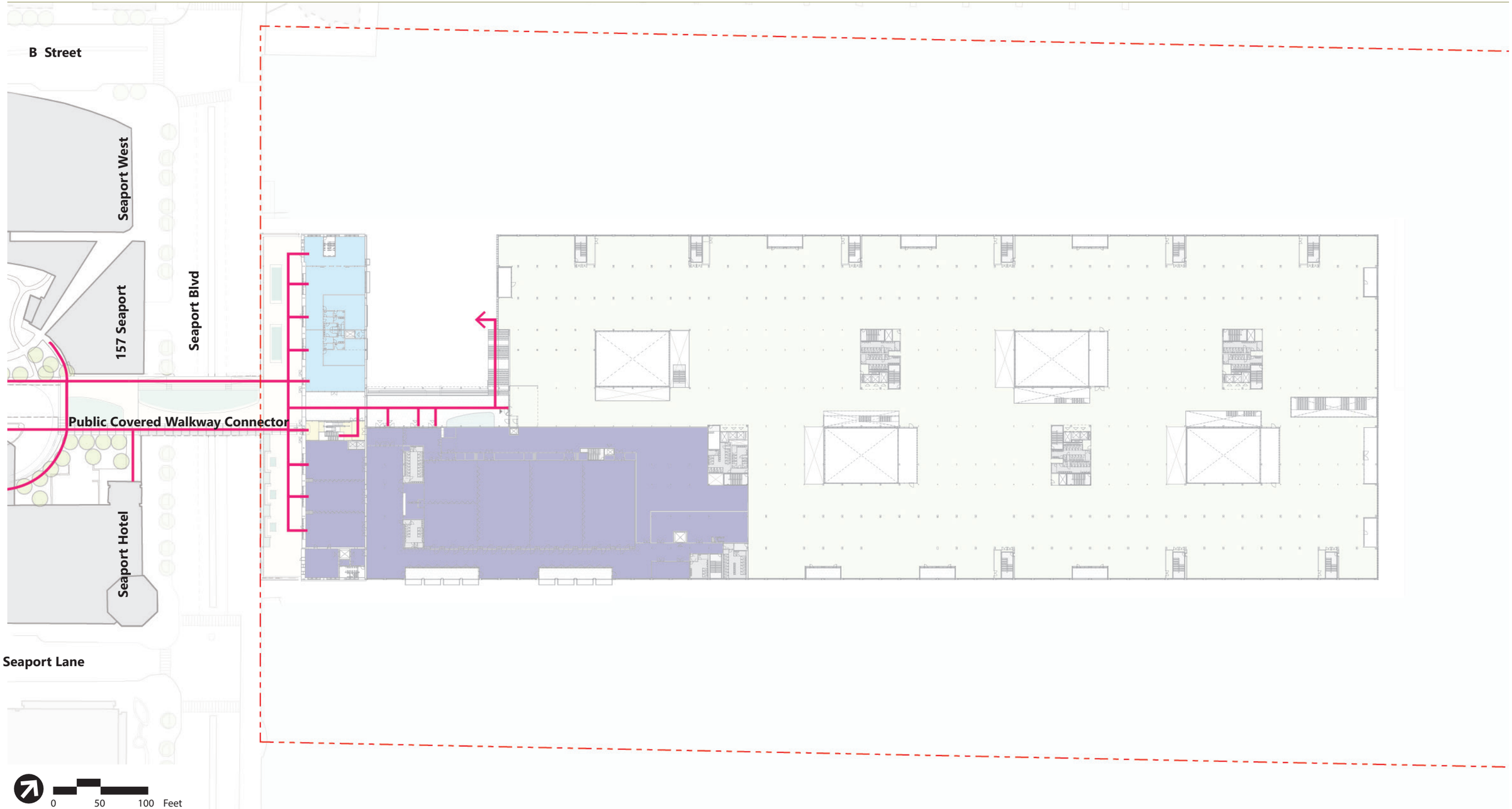
Pedestrian Circulation

Project Site Boundary

Figure 2.7a

Pedestrian Accessibility
Ground Level

Commonwealth Pier Revitalization
Boston, Massachusetts



Source Info: Sasaki

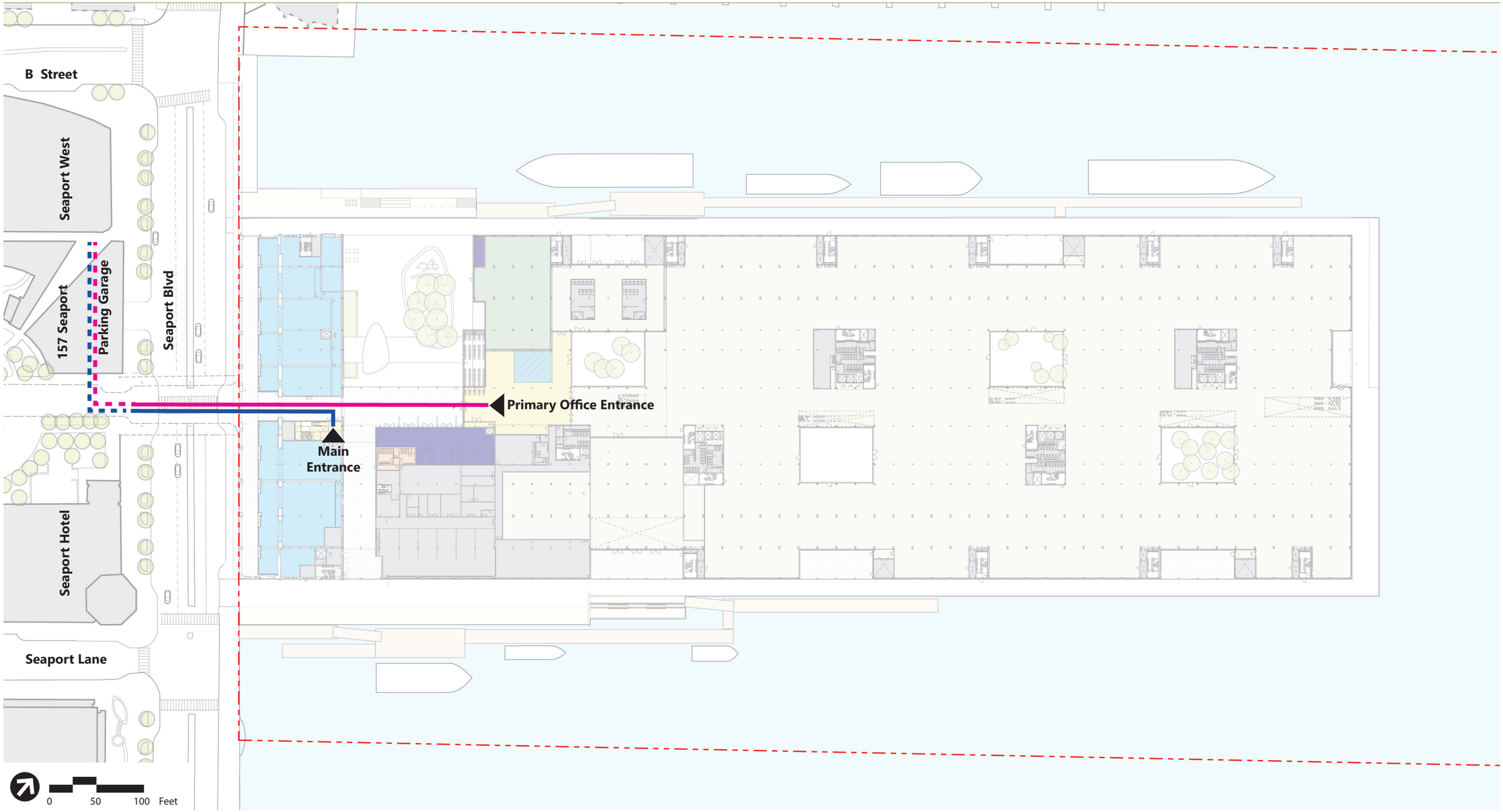
Pedestrian Circulation

Project Site Boundary

Figure 2.7b

Pedestrian Accessibility
Viaduct Level

Commonwealth Pier Revitalization
Boston, Massachusetts



Source Info: Sasaki

ADA Exterior Route to Office Entrance

ADA Interior Route to Office Entrance

ADA Exterior Route to to Main Entrance

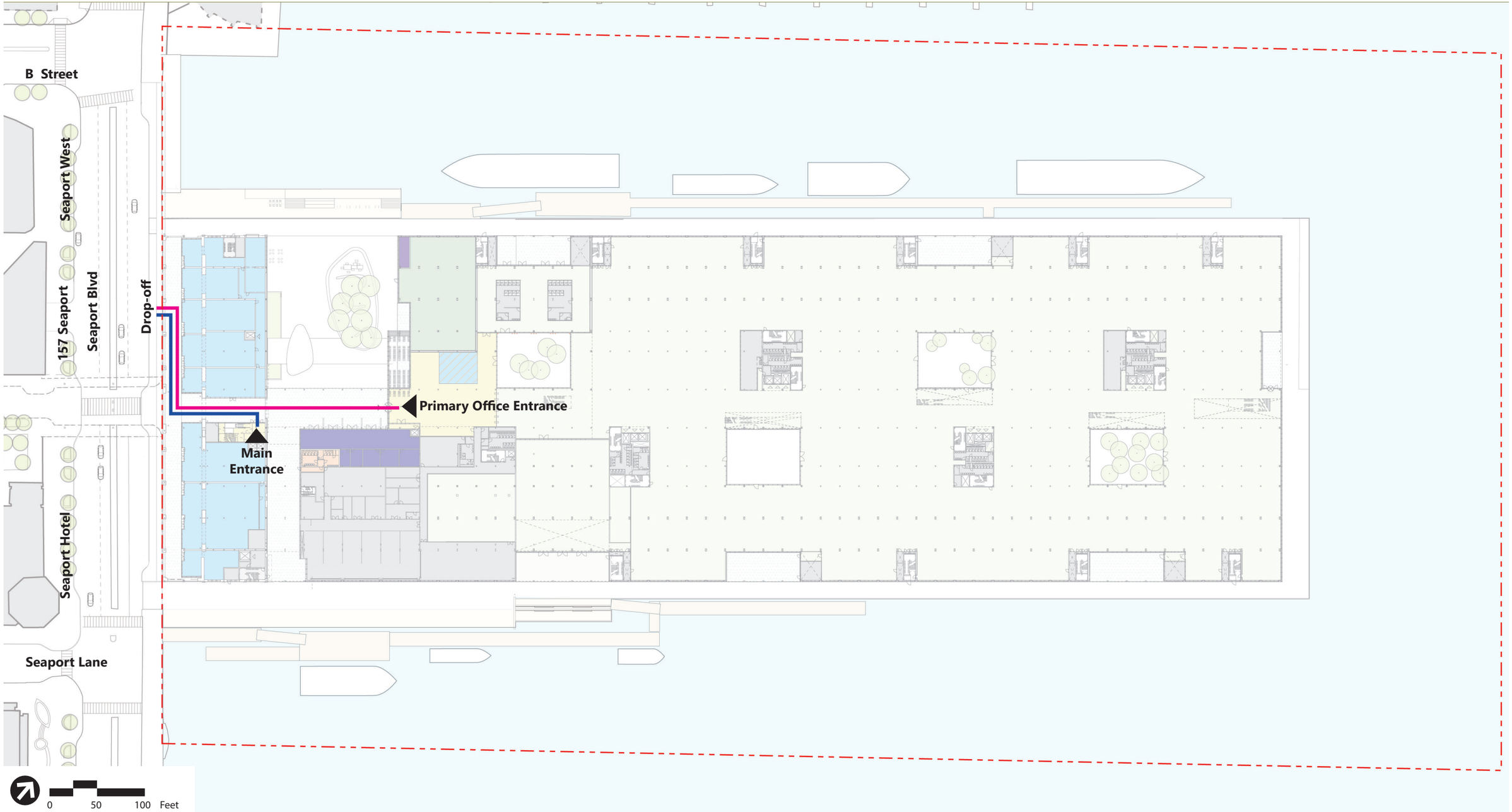
ADA Interior Route to to Main Entrance

Project Site Boundary

Figure 2.8a

Pedestrian Accessibility
Parking Garage Access

Commonwealth Pier Revitalization
Boston, Massachusetts



Source Info: Sasaki

ADA Exterior Route to Office Entrance

ADA Interior Route to Office Entrance

ADA Exterior Route to to Main Entrance

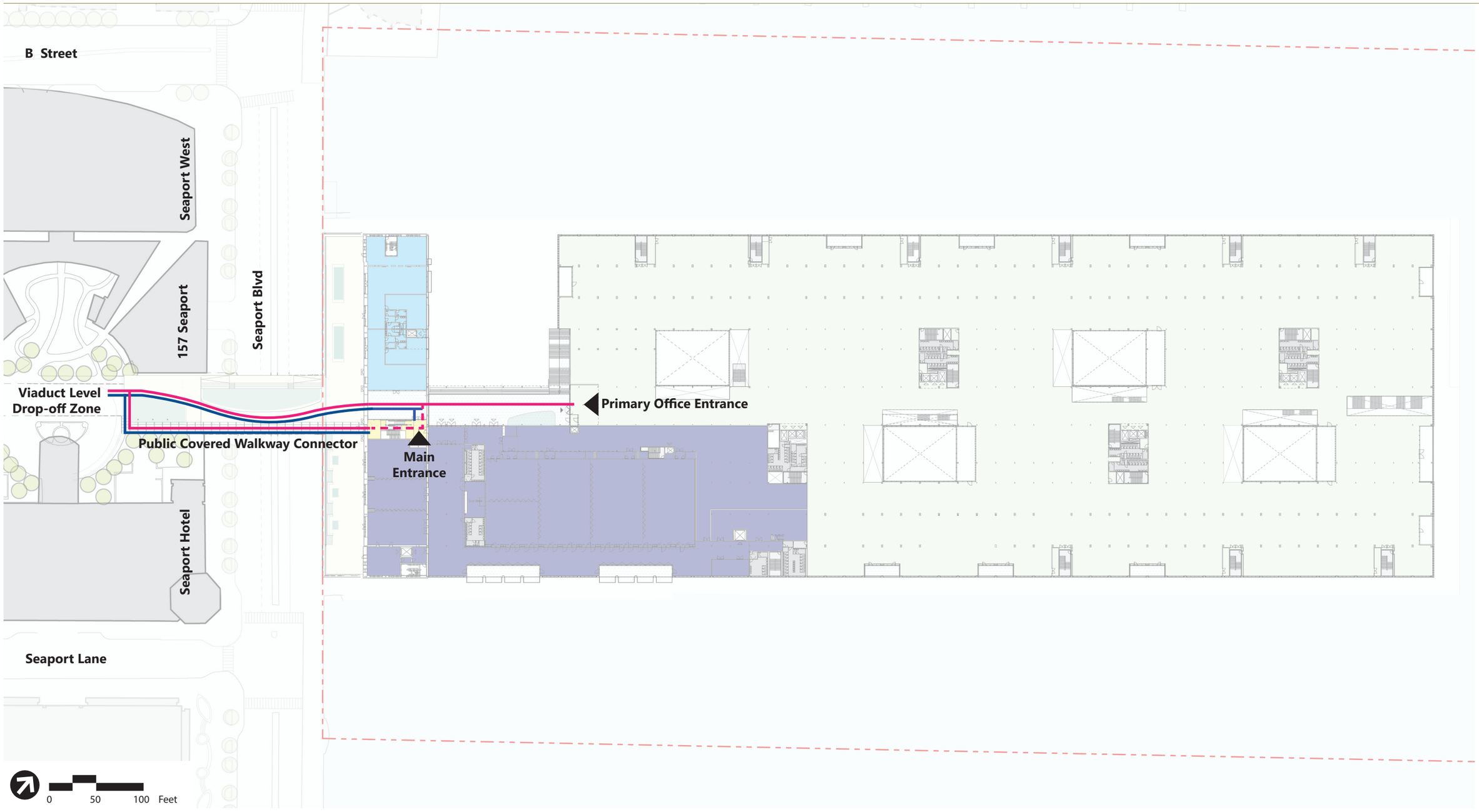
ADA Interior Route to to Main Entrance

Project Site Boundary

Figure 2.8b

Pedestrian Accessibility
Drop-off Access

Commonwealth Pier Revitalization
Boston, Massachusetts



Source Info: Sasaki

ADA Exterior Route to Office Entrance

ADA Interior Route to Office Entrance

ADA Exterior Route to to Main Entrance

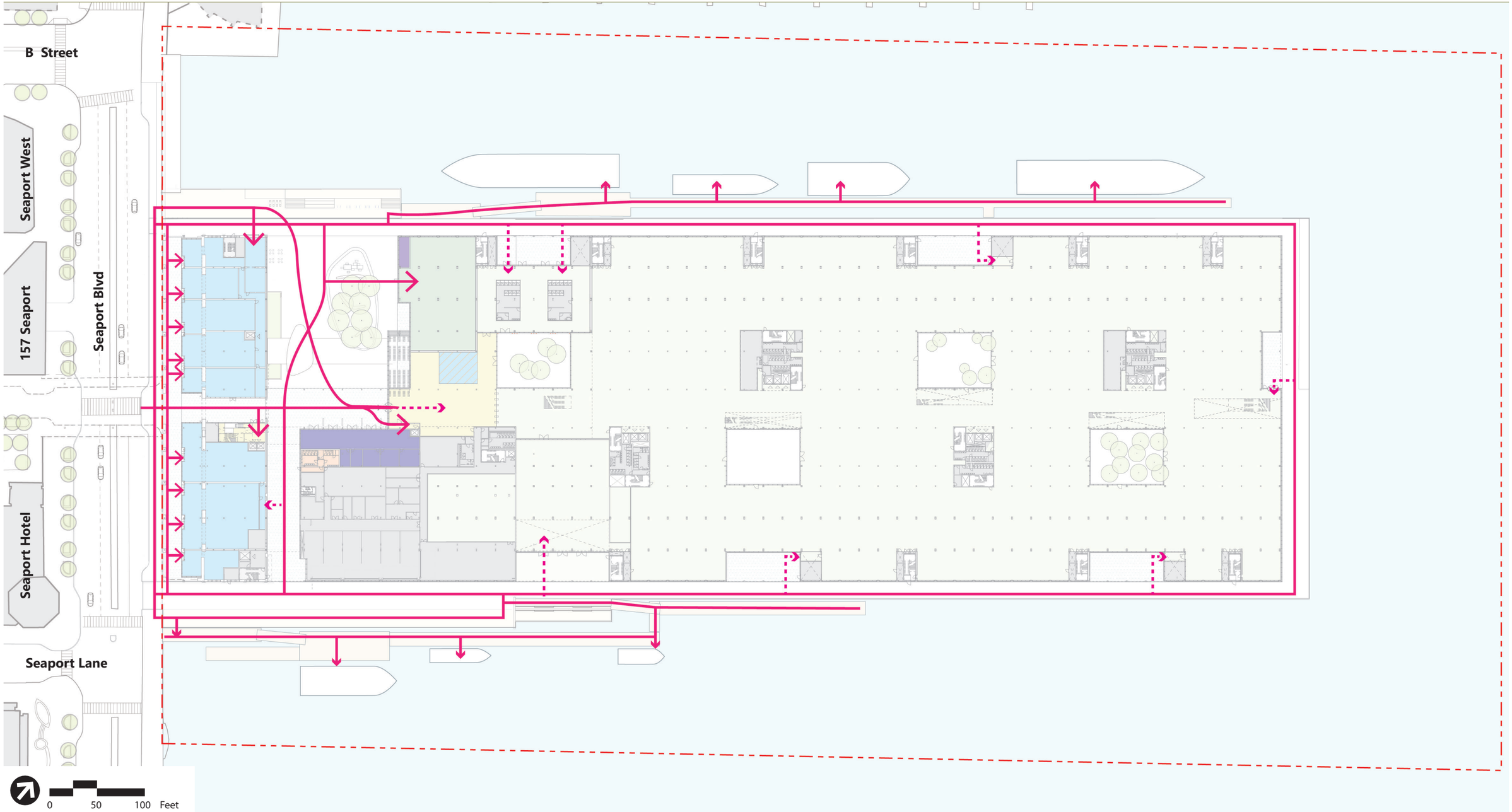
ADA Interior Route to to Main Entrance

Project Site Boundary

Figure 2.8c

Pedestrian Accessible Routes
from Viaduct Level Drop-Off Zone

Commonwealth Pier Revitalization
Boston, Massachusetts



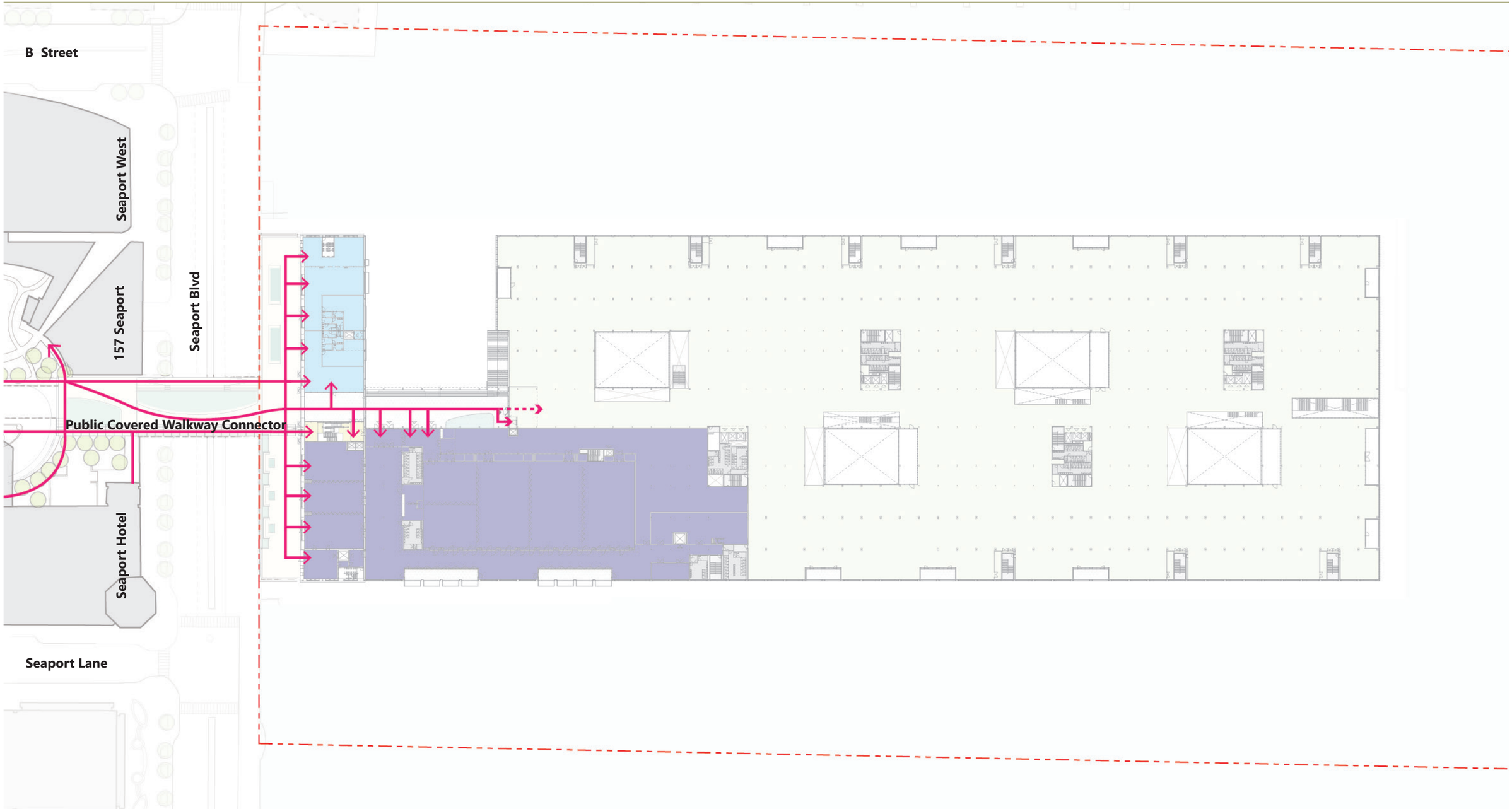
Source Info: Sasaki

Accessible Site Routes
Pubilc Accessible Entrances
Private Accessible Entrances
Project Site Boundary

Figure 2.9a

Site Accessible Routes
Ground Level

Commonwealth Pier Revitalization
Boston, Massachusetts



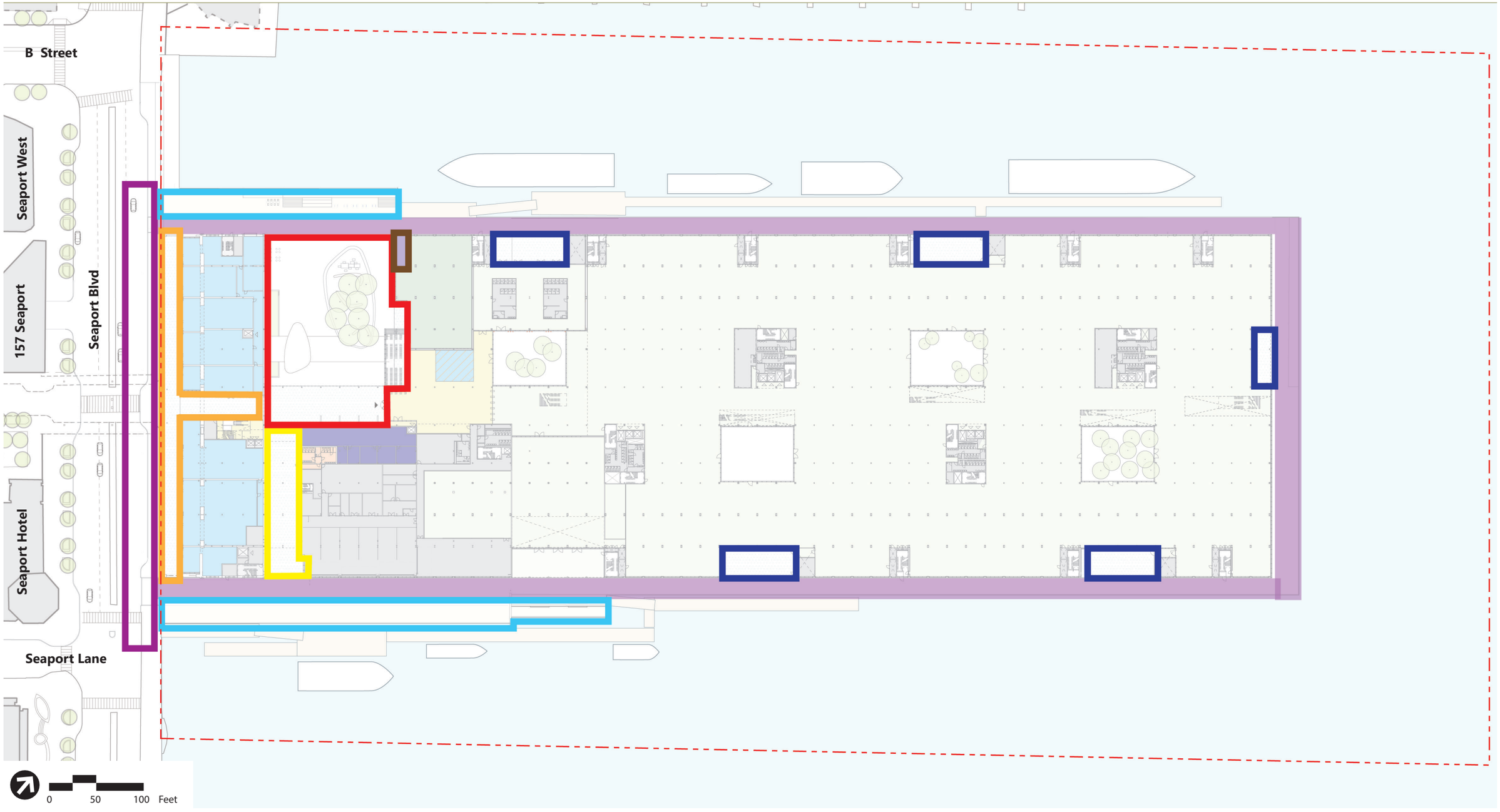
Source Info: Sasaki

Accessible Site Routes
Pubilc Accessible Entrances
Private Accessible Entrances
Project Site Boundary

Figure 2.9b

Site Accessible Routes
Viaduct Level

Commonwealth Pier Revitalization
Boston, Massachusetts



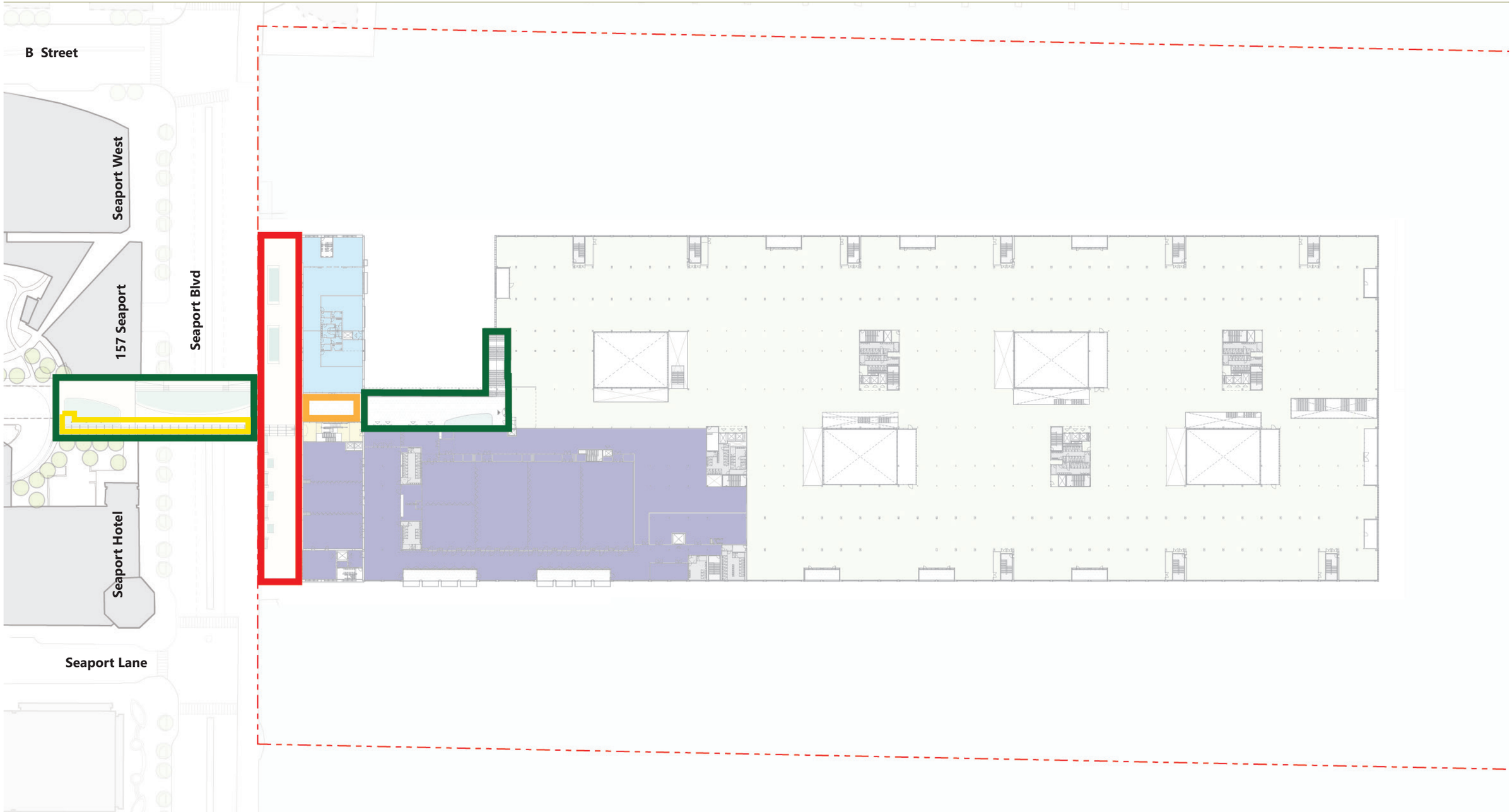
Source Info: Sasaki

- Public Harborwalk
- Public Plaza
- Public Covered Niches
- Public Covered Connector
- Streetfront Arcade
- Apron Extension
- Streetscape Improvements
- Water Transporation Ticketing
- Project Site Boundary

Figure 2.10a

Conceptual Public Realm Plan
Ground Level

Commonwealth Pier Revitalization
Boston, Massachusetts



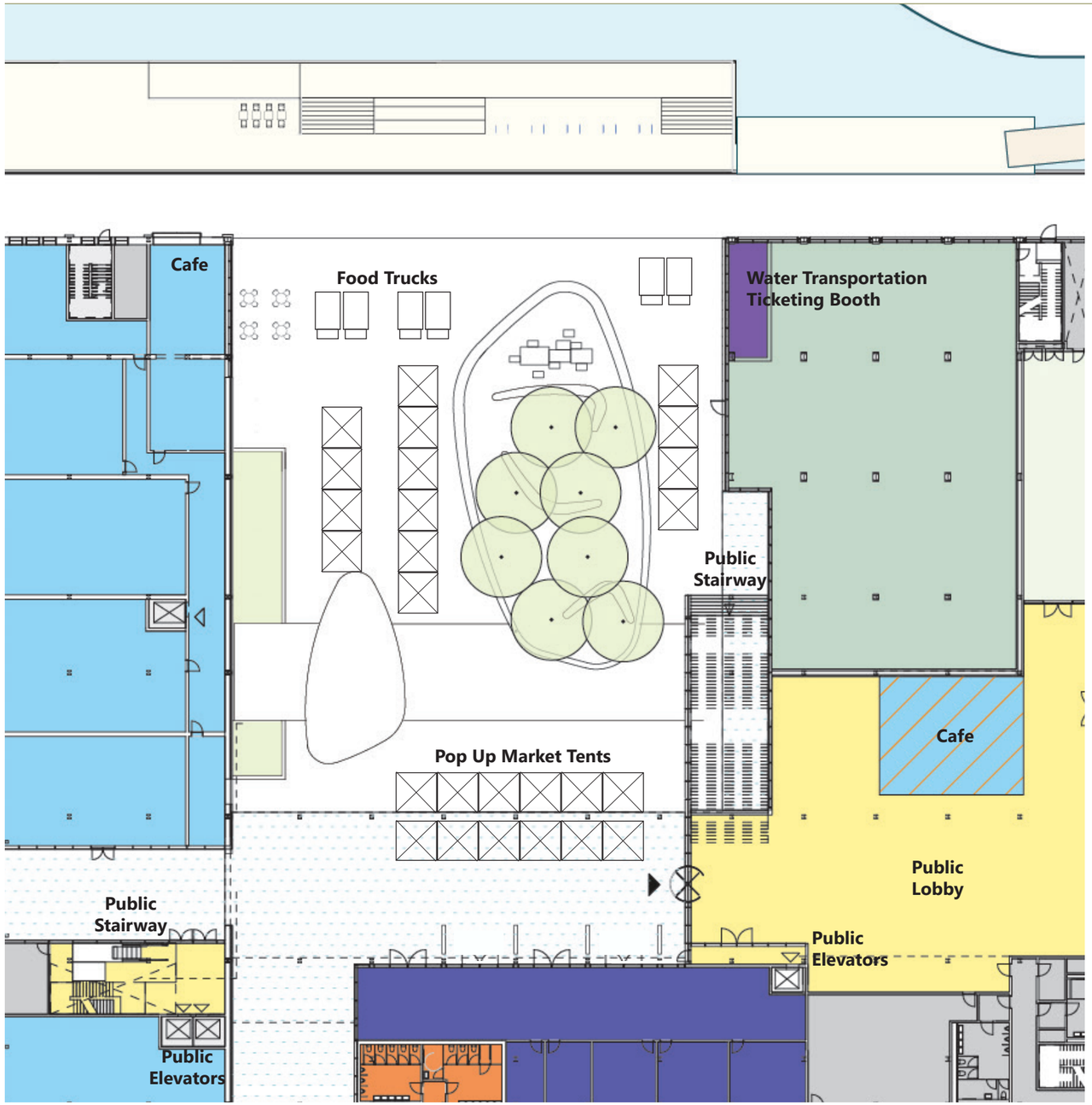
Source Info: Sasaki

Public Plaza
Public Arcade
Public Viaduct / Bridge
Public Covered Walkway Connector
Project Site Boundary

Figure 2.10b

Conceptual Public Realm Plan
Viaduct Level

Commonwealth Pier Revitalization
Boston, Massachusetts



Source Info: Sasaki

Office
Commercial
BOH/Receiving
Public Restrooms
Event
Co-Working Space
Public Lobby
Egress
MEP
Water Transporation Ticket
Project Site Boundary
Open Area with Ext Soffit

Figure 2.11
Public Plaza Conceptual Plan

Commonwealth Pier Revitalization
Boston, Massachusetts

3

Sustainability/Green Building and Climate Change Resiliency

This chapter provides preliminary information regarding the Project's sustainability/ green building, and climate change preparedness and resiliency strategies, as applicable. It identifies the proposed U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED™) version 4 ("v4") rating system level based on early design, describes building-specific strategies for each LEED category, and explains how key credits will be achieved. It also discusses a framework for considering present and future climate conditions in Project design.

The Project is inherently sustainable in that it is reusing an existing urban site and building. The Proponent is committed to building a livable, sustainable, and forward-thinking Project aligned with Massport's and the City of Boston's goals for climate change mitigation and adaptation.

The Project team will use the USGBC's LEEDv4 rating system for Core & Shell Developments as a model for incorporating sustainable design strategies into the Project. The Proponent will also consider the health and wellness of the Project's future occupants and users through consideration of the WELL Building Standard® ("WELL") principles in building design and during operation to support future tenants to pursue certification. As project design progresses, the Proponent will continue to research and consider additional green building and resilience strategies.

3.1 Summary of Key Findings and Benefits

The key findings and benefits related to sustainability/green building design and climate change preparedness include the following Project attributes:

- Reuse of an existing urban site and building in proximity to multiple public transportation services and within a mixed use walkable area with many amenities and services.
- Comply with Article 37, Green Buildings of the Code by demonstrating that early project design would achieve a Gold level under the LEEDv4 for Core & Shell (LEED-CS) rating system (a minimum of 60 points).
- Energy conservation measures targeting a 25 percent energy usage reduction, which exceeds minimum requirements of the Massachusetts Stretch Energy Code through upgraded/modernized and energy-efficient building systems. This target is estimated to reduce stationary source GHG emissions by approximately 3,313 short tons of CO_2 emissions per year.

- Design of the Core & Shell building to support future solar photovoltaic (PV) panels for the potential installation by the Proponent and/or future tenants, as well as battery storage for additional energy usage and GHG emissions reductions.
- Conserve water and other resources to minimize impacts to regional infrastructure and water resources.
- Promotion of health and wellness, which focuses on air and water quality, occupant comfort (i.e., thermal, visual, acoustic and olfactory, fitness and adaptable spaces).
- Biophilic design in the Core & Shell buildings that connect occupants to nature through strategies including opening views to the water, introduction of green spaces at the Plaza and courtyards, interior views to them, as well as a green roof, use of natural materials and patterns and optimizing daylight.
- Integrate climate change adaptation strategies into site and building design that reduce vulnerability given future climate scenarios and natural events, including sea level rise, severe flooding events, and severe precipitation and heat.

3.2 Regulatory Context

The following section provides an overview of the state and local regulatory context related to energy efficiency and Greenhouse Gas (GHG) emissions.

3.2.1 Massachusetts Energy Code

The Project is not new construction and, therefore, it is not subject to the requirements of the Massachusetts Energy Code. Either 780 CMR 13 or 780 CMR 51-Chapter 11 shall be used as applicable based on the use and occupancy of the building.

3.2.2 MEPA Greenhouse Gas Policy and Protocol

The Executive Office of Energy and Environmental Affairs (EEA) has developed the MEPA Greenhouse Gas Emissions Policy and Protocol (the "MEPA GHG Policy"), which requires project proponents to identify and describe the feasible measures to minimize both mobile and stationary source GHG emissions generated by their proposed project(s). Mobile sources include vehicles traveling to and from a project while stationary sources include on-site boilers, heaters, and/or internal combustion engines (direct sources), as well as the consumption of energy in the form of fossil fuels (indirect sources).

The MEPA GHG Policy calls for the evaluation of CO_2 emissions for any land development project requiring the submission of an Environmental Impact Report (EIR) because CO_2 is the predominant manmade contributor to global warming. Greenhouse gas emissions include several air pollutants, such as carbon dioxide

(CO_2), methane, hydrofluorocarbons, and perfluorocarbons. The GHG assessment evaluation makes use of the terms CO_2 and GHG interchangeably.

In addition to quantifying project-related GHG emissions, the MEPA GHG Policy requires proponents to quantify the effectiveness of proposed improvements in terms of energy savings and, therefore, potential emissions reductions. The goal of the MEPA GHG Policy is to identify and implement measures to minimize or reduce the total GHG emissions anticipated to be generated by that respective project.

While the Project is not subject to the MEPA GHG Policy because no MEPA review thresholds requiring a Mandatory EIR are met or exceeded, an evaluation of the stationary source GHG emissions reductions associated with building energy savings based on current design has been conducted for the Project, in accordance with City of Boston Article 37 submission requirements for PNF filings (described below).

3.2.3 Article 37 Green Buildings

Through Article 37, Green Buildings of the Code, the City of Boston encourages major building projects to be "planned, designed, constructed, and managed to minimize adverse environmental impacts; to conserve natural resources; to promote sustainable development; and to enhance the quality of life in Boston." Any project that is subject to Article 80, Large Project Review is also subject to the requirements of Article 37.

Article 37 requires that proposed projects meet LEED certification standards by either certifying the proposed project or demonstrating that it would meet the minimum requirements to achieve a LEED Certified level (all LEED pre-requisites and at least 40 points associated with credits listed on the LEED project checklist) without registering the project with the USGBC ("LEED certifiable"). With the LEED version 4 ("v4") rating system effective as of October 31, 2016, the BPDA requires initial Article 80 Large Project Review submissions to demonstrate LEED certifiable using LEEDv4.

The Boston Interagency Green Building Committee ("IGBC") advises the BPDA on a proposed project's compliance with the provisions of the article. The IGBC consists of representatives of city agencies including the BPDA, BED, BTD, the Inspectional Services Department and the Mayor's Office.

Boston Green Building Credits

Appendix A of Article 37 lists "Boston Green Building Credits," which are credits that may be included in the calculation toward achieving a LEEDv4 certifiable project. These credits along with the prerequisites were developed by the City and are intended to address local issues unique to development within Boston. The credits include the following categories: Modern Grid; Historic Preservation; Groundwater Recharge; and Modern Mobility.

3.2.4 BPDA Climate Change Preparedness and Resiliency Policy

In conformance with the Mayor's 2011 Climate Action Leadership Committee's recommendations, the BPDA requires projects subject to Boston Zoning Article 80 Large Project Review to complete the Climate Resiliency Checklist to assess potential adverse impacts that might arise under future climate conditions, and any project resiliency, preparedness, and/or mitigation measures identified early in the design stage. This checklist is reviewed by the IGBC. The Project is voluntarily submitting this checklist.

In December 2017, in conformance with the Mayor's 2014 Climate Action Plan and the 2016 Boston Research Advisory Group and the 2016 Climate Ready Boston recommendations, the BPDA updated the Climate Change Review Policy.

3.2.5 Coastal Resilience Solutions for South Boston

In October 2018, the City of Boston, as part of its Climate Ready Boston efforts, released Coastal Resilience Solutions for South Boston which presents near-term strategies as well as a long-term vision to reduce risk due to sea level rise and coastal flooding in the South Boston neighborhood. It studied five (5) distinct portions of the waterfront in South Boston, specifically, Fort Point Channel, South Boston Waterfront, Seaport Boulevard, Raymond L Flynn Marine Park and Reserved Channel, and the South Boston Neighborhood for flood adaptation options, recommendations and development of implementation timelines.

3.2.6 Massport Floodproofing Design Guidelines

The Massport Floodproofing Design Guidelines dated April 2015 establish designated DFEs for projects on Massport-owned land.[1] Along with the designated DFEs, the Guidelines indicate which systems and equipment should be dry floodproofed and which should be wet floodproofed in accordance with those DFEs. Different DFE standards have been established for Existing Facilities and New Facilities, which are 13.7 feet NAVD88 (20.16 feet BCB) and 17.0 feet (23.46 feet BCB), respectively. The DFE of 20.16 feet BCB is applicable to the Project since it is an existing facility.

The DFE for Existing Facilities corresponds to a 0.2% annual probability of exceedance in 2030 plus 3 feet of freeboard. The DFE for New Facilities is defined by the 0.2% probability of exceedance in 2070 plus 3 feet of freeboard.

3.3 Overall Sustainability and Climate Resilience Approach

In this initial concept phase of the Project, four (4) sustainability and resilience focused team workshops were held to define Project goals and drivers, define a

[1] http://www.massport.com/media/1149/massport-floodproofing-design-guide-revised-april-2015.pdf

framework, brainstorm strategies for consideration and assessment, including strategies for preliminary parametric energy modeling.

The initial full-day workshop included not only members of the entire Project team, but three external subject matter experts; Stok, Sweco and One Architecture. The workshop was a collaborative series of discussions which defined the Project sustainability and resilience framework across five topics; Resilience, Urban Design, Habitat, Efficiency and User Experience. Subsequent workshops occurred monthly to further refine the resilience and sustainability strategies and priorities for a waterfront Core & Shell project, in addition to defining a LEED-CS design strategy and target.

The following sustainability and resilience strategies form the Project's holistic approach:

- Resilience to future changes in climate, i.e. temperature and precipitation with particular attention to flood risk from sea level rise and storm surge. Refer to Section 3.6 for full details.
- Enhancing and expanding the apron to improve public amenity, the larger Boston Harborwalk and future-proof for the impacts of climate change. The public experience will be enhanced along the apron through activation and programming, and hardscape materials will have a low solar reflectance to reduce heat island impacts. Opportunities to introduce green space and/or planters with salt-water tolerant plant material are being explored.
- Introducing the Plaza adjacent to the headhouse to enhance public amenity, programming and access to the waterfront. The area will also serve as a location for public events and will be designed with a combination of green and hardscape with materials that are salt-water tolerant and will increase pervious area on-site.
- A combination of sustainable and resilient strategies are under consideration for the sizable roof area including a white membrane roof with the potential for increased insulation above prescriptive Massachusetts Energy Code requirements, and an approximately 20,000-square foot extensive green roof above the ballroom. These strategies contribute to reducing heat island impacts, stormwater peak flows and volume.

  A Solar photovoltaic (PV) system was explored however, structural limitations limited the available area for solar PV to the high roof areas only. The Project will be designed to be solar ready for the potential installation by the Proponent and/or future tenants to install on-site clean/renewable energy sources. Refer to section 3.5.2 for full details of the feasibility study conducted.
- Indoor environmental quality will be enhanced through the introduction of daylight into the building through several strategies. First, the envelope walls expand glass for views, as well as daylight into the perimeter spaces. Additionally, four (4) courtyards will be cut into the existing massing to bring daylight to the interior of the floor plate. Third, clerestory lighting will be added

to the high roof to further daylight the interior. The considerable amount of daylight added to the interior space is a passive design strategy to offset energy use associated with electric lighting while also making the building more resilient by being less reliant on electric lighting.

- Good indoor air quality will be achieved through filtration of ventilation air, source control, construction practices, and use of low-emitting materials.
- The Project is targeting a 25 percent energy reduction from the Massachusetts Energy Code, which exceeds minimum requirements for energy performance. The results of preliminary parametric energy modeling and LEED energy model are described in detail in section 3.4.1 below.
- Energy efficient HVAC systems have been incorporated into the design of the Project, including a highly efficient water-cooled chiller plant with condensing natural gas boilers. The office spaces are designed for dedicated outdoor air systems (DOAS) with fan coil units (FCUs) and variable air volume (VAV) systems with energy recovery will serve the ballrooms and function spaces. Fans and pumps will have variable speed/frequency drives. This combination of systems balance space use, energy efficiency, flexibility and resilience.
- Incorporation of highly efficient LED lighting with daylight and occupancy/ vacancy controls, such as light dimming sensors to reduce energy consumption associated with electric lighting.
- Enhancing health and wellness through the base building design to support future tenants that may choose to achieve certifications in the WELL Building Standard and/or Fitwel. Strategies that are being explored to support a health and wellness approach include, biophilic design, testing water quality, active design and stair promotion, provision of outdoor opportunities for fitness, adaptable spaces, cleaning and maintenance services, and air handling unit specifications.

3.4 Sustainability/Green Building Design Approach

Sustainability and resilience have been drivers in the planning of the redevelopment of the Project. A holistic approach has been developed that seeks to reduce environmental impacts, promote human health, and be resilient to an uncertain future and changing climate.

3.4.1 Compliance with Article 37

Compliance with Article 37 will be demonstrated using the LEEDv4 Core and Shell (C&S) rating system. The Project will exceed Article 37 requirements by registering and certifying the Project targeting a Gold level of certification (60-79 points), as demonstrated by the preliminary LEED-CS checklist provided in Figure 3.1. The preliminary LEED Scorecard shows up to 61 'yes' points and 8 'possible' points demonstrating the Proponent's goal to achieve a Gold level certification. A brief description of the LEED-CS approach by credit category is described below.

Integrative Process

The Proponent and Project team has already held multiple sustainability workshops for the Project to define sustainability and resilience goals and establish preliminary energy and water targets.

Location and Transportation

- The Project is redeveloping an existing building with a rich history in a highly developed and dense area within the City of Boston that has access to many diverse uses. It has a Walkscore of 74 or 'very walkable' which means most errands can be accomplished on foot.
- The Project Site has good access to multiple public transportation services with a Silver Line stop (SL1 and SL2), as well as access to multiple bus routes along Seaport Boulevard, including the 4, 7, 448, 449, and 459. It has a transit scope of 79 or 'excellent transit' which means transit is convenient for most trips. (Refer to Figure 5.1.) Additionally, the Project provides the opportunity to expand water taxi service, as well as ferry service.
- Additionally, approximately 100 short-and long-term bike storage spaces will be provided as part of the Project. End of trip facilities, such as showers and changing facilitates will be provided within the building to be fit-out by future tenants.
- The Project is linked to a bicycle network and has a bike score of 93 or 'bikers paradise'.

Sustainable Sites

- The Project will reduce heat island impacts through the use of hardscape materials with low solar reflectance, introduction of green space to the courtyards, apron and Plaza, and use of a combination of a white membrane and green roof.
- Tenant design and construction guidelines will be developed to highlight the Project goals, sustainability and health and wellness features incorporated into the Core and Shell building for future tenants to enhance their fit-outs. Recommendations will also be included for tenants to enhance the sustainability, resilience and health and wellness of their fit-outs.

Water Efficiency

- The Project will reduce potable water consumption from the baseline by implementing low flow water fixtures that are water sense labelled. The Project has a goal to reduce indoor potable water use by 35 percent and outdoor potable water use by 50 percent.
- Rainwater harvesting has been explored for potential implementation to offset potable water use for cooling tower water make-up and stormwater generation. While estimated to offset over 2.2 million gallons of potable water, the strategy

was found to be not financially feasible with a greater than 20-year payback for the 20,000-gallon system. As such, the Project will focus on fixture and irrigation efficiency and plant selection for reducing potable water demand.

Energy and Atmosphere

- Enhanced commissioning including building envelope commissioning will be implemented on the Project to verify systems and the building envelope meet the Owner's Project Requirements for energy, water, indoor environmental quality, durability and maintenance.
- Per LEED criteria, the current Project design is targeting a 23 percent energy cost reduction compared to a base design that complies with the minimum requirements of ASHRAE 90.1-2010. (Note, this is different than energy code compliance as LEED references a different version of ASHRAE 90.1 (version 2010) than the Massachusetts Energy Code (version 2013) and reports energy cost, not energy.)

Materials and Resources

- Materials will be selected to reduce environmental impacts and support good indoor air quality and human health. Consideration will be given to Environmental Product Declarations (EPDs), recycled content, FSC certification, sourcing, low-emitting materials, cradle to cradle certification, and transparency declarations such as health product declarations (HPDs) or declare labels.
- A construction and demolition waste management plan will be developed that will describe the strategies to divert at least 75 percent of waste from landfill and track four material streams.
- The Project is reusing a considerable portion of the existing building structure and roof deck, and portions of the façade; therefore, the Project anticipates meeting the LEED credit threshold for building reuse (including structure, façade and interiors) of at least 25 percent.
- Implementation of recycling facilities coupled with waste facilities to encourage recycling for plastics, metals, glass, paper and cardboard. Storage and disposal for batteries and e-waste will also be provided.
- On-site composting is also being explored to divert organic food waste from the waste stream from the two (2) kitchen areas in the Project. This strategy supports the City's goal for Zero Waste by further diverting a waste stream.

Indoor Environmental Quality

- Good indoor air quality will be achieved through filtration of ventilation air, source control, construction practices, and use of low-emitting materials.
- Quality views will be provided through the expansion of glazing to the building envelope, as well as the four internal courtyards.

Innovation in Design & Regional Priority

- Several innovation credits are being considered for achievement and include active design, green cleaning policy, low-mercury lamps, integrated pest management and a walkable site. Innovation credits will continue to be assessed and confirmed as the design develops.
- A LEED Accredited Professional will manage the LEED certification process.
- Two (2) regional priority credits defined by LEED are anticipated for achievement including energy performance (threshold of 17 percent energy cost savings) and building life-cycle impact reduction (threshold of 25 percent reuse). One (1) additional regional priority credit indoor water use reduction (threshold of 40 percent reduction) will be tracked for possible achievement as the design develops.

3.5 Preliminary Energy Conservation/GHG Emissions Reduction Approach

The Project is being designed to exceed the Massachusetts Energy Code with a target of a 25 percent reduction by exploring a range of passive and active design strategies to achieve this target. Benchmarking of energy use intensity (EUI), preliminary parametric energy modeling, and a further refined LEED energy model have been completed to determine the energy impacts of different energy conservation measures and overall energy performance

3.5.1 Parametric Building Energy Model

The parametric energy model utilizes Energy Plus as the energy modeling engine. The modeling interface uses via Rhino with Grasshopper providing the scripting for the iterative scenarios.

Parametric modeling allows multiple iterations to be run quickly across a range of design scenarios. This allows a design team to explore many more options than a traditional energy model and establishes relative improvement against each other to determine an optimal design scenario. Each scenario is compared to a baseline case which is defined as ASHRAE 90.1-2013 compliant.

The Project has focused attention on first principles of an energy efficient design to reduce loads (and energy demand) for the building by optimizing the building envelope and daylight design. Several options have been analyzed to optimize the façade design including window to wall ratios, roof, and slab insulation, glazing thermal performance and external shading. The results are shown in the images below which indicates the order of magnitude energy savings or penalty compared to the baseline associated with each isolated measure.

Graph 3-1 Preliminary Parametric Energy Model Results: Building Envelope Options

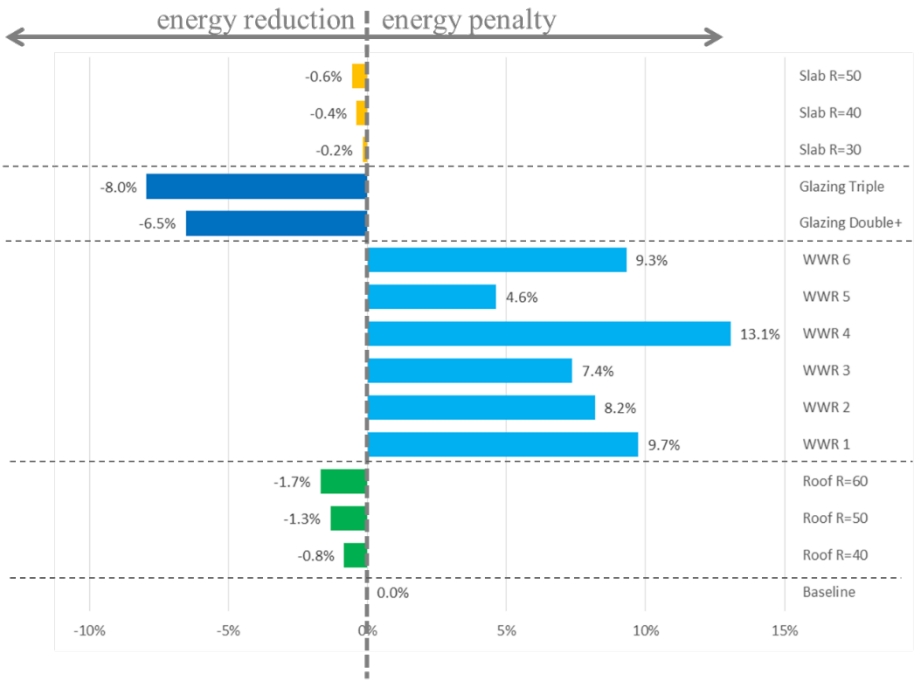


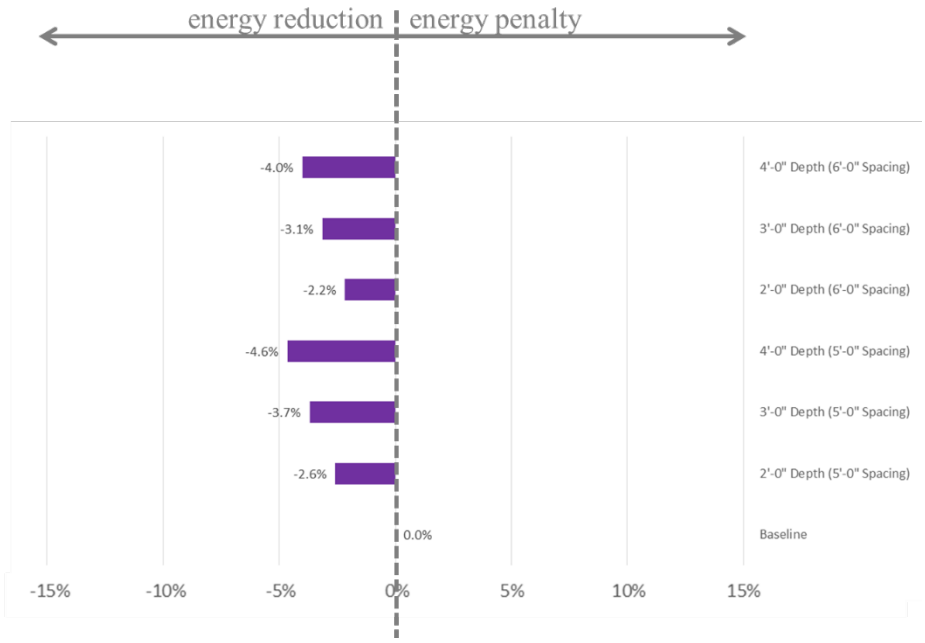
Table 3-1 below outlines the window to wall ratio options studied.

Table 3-1 Window-to-Wall Ratio Options

Design Option	Percent Glass	Percent Spandrel	Percent Wall
WWR 6	60	0	40
WWR 5	50	0	50
WWR 4	60	20	20
WWR 3	50	20	30
WWR 2	50	30	20
WWR 1	50	50	0
ASHRAE 90.1 baseline	40	0	60

Graph 3-2 below presents the energy results of a range of external shading options varying both spacing and depth.

Graph 3-2 Preliminary Parametric Energy Model Results: External Shading Options



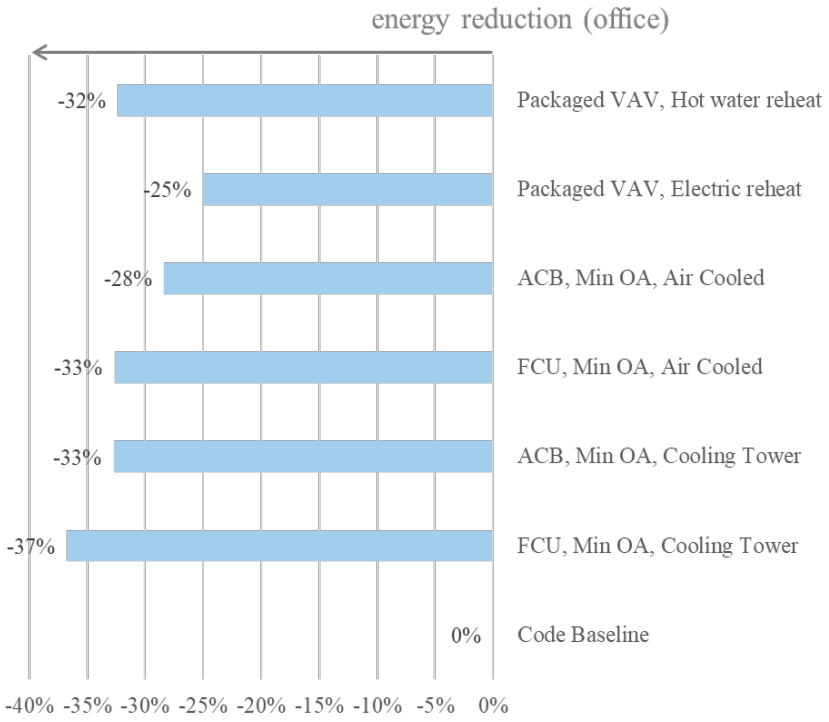
For active systems, a combination of seven (7) energy efficient HVAC plant and systems were considered for the Project. These systems contribute to further reduce energy consumption for the Project as compared to the baseline and include:

- Highly efficient water-cooled chiller plant or air-cooled chillers with condensing natural gas boilers or heat pumps.
- Dedicated outdoor air systems (DOAS) with energy recovery with fan coil units (FCUs), active chilled beams (ACB) or variable air volume (VAV) systems were evaluated for energy efficiency, flexibility and resilience.
- Incorporation of highly efficient LED lighting with daylight and occupancy/vacancy controls to reduce energy consumption associated with electric lighting.

Energy modeling using Integrated Environmental Solutions - Virtual Environment (IES-VE) software was used to model the HVAC plant and system scenarios for the office portion of the project to determine energy savings. For modeling purposes, no savings was claimed for lighting power at this early phase as the purpose of the modeling was to establish relative improvement against each option to narrow down the HVAC plant and system options. The results are shown in the images below. Only the proposed office space was modeled in this preliminary evaluation as it is the dominant use in terms of square footage for the Project.

It is important to note, not all strategies explored in the parametric modeling or energy modeling analysis will be implemented, but provide the sensitivity analysis to make decisions, coupled with cost information about which energy efficiency strategies have the best cost-benefit and meet project goals. Graph 3-3 presents the energy results of the HVAC system options studied for the office area.

Graph 3-3 HVAC System Options Evaluated for Office Area



Based on the energy analysis completed, the central chilled water plant serving FCUs and minimum outside air (DOAS) was chosen as the proposed design. This also utilizes an energy efficient condensing boiler. The system had the most favorable simple payback of approximately three years.

3.5.2 Preliminary LEED Building Energy Model

With the building envelope and HVAC base building systems identified, a preliminary LEED energy model was prepared to set a target for EAc2 Optimize Energy Performance. IES-VE version 2018.0.1.0 software was used to develop a ASHRAE 90.1-2010-compliant model and the proposed design model taking into account the full building and program. In addition to the base building HVAC systems and building envelope, lighting power density savings were included in the model.

The preliminary model for the proposed design resulted in an energy use intensity of 44 kBtu/sf/year, exceeding the Massachusetts Energy Code with a target of a 25 percent reduction. This represents a reduction in approximately 3,313 short tons of CO_2 emissions per year (approximately 604 short tons from natural gas and 2,709 short tons from electricity consumption annually).

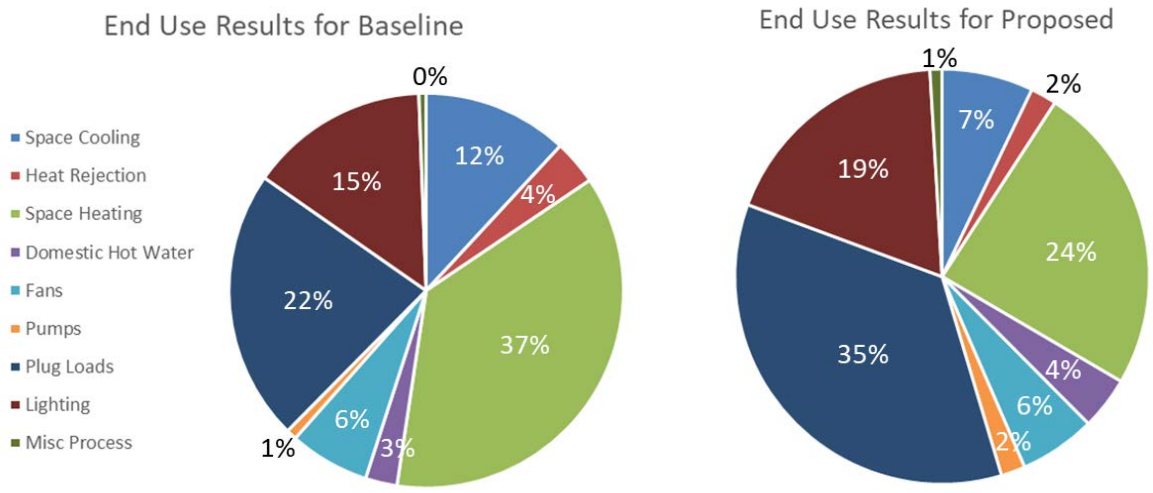
A summary of the various energy modeling inputs, including the energy conservation measures listed above, are presented in Table 3-2.

Table 3-2 Summary of Building Energy Model Assumptions

Modeling Parameter	Base Case	Design Case
Building Envelope		
Roof Insulation	U- 0.032 (R-30)	U- 0.032 (R-30)
Wall Assembly – Opaque	U- 0.055 (R-18)	U- 0.055 (R-18) East/West: 38% of Wall Area North/South: 23% of Wall Area
Slab Insulation	U- 0.058 (R-17)	U- 0.058 (R-17)
Fenestration and Shading		
Vertical Glazing U-Factor	U- 0.42 (R-2.4)	U- 0.35 (R-3)
Vertical Glazing SHGC	0.4	0.30
Overall % Window to Wall Ratio	40%	East/West: 62% of Wall Area North/South: 77% of Wall Area
HVAC		
HVAC System	System Type 7- VAV with Reheat	Dedicated outside air system (DOAS) serving fan coil units
Primary Cooling	On-site water-cooled chiller plant. COP 6.3	On-site water-cooled chiller plant. COP 6.5
CHW Loop Supply Temp / Delta-T	44°F/12°F	44°F/12°F
CHW Loop Temp Reset Parameters	44°F-54°F for OAT 80°F-60°F	44°F-54°F for OAT 80°F-60°F
Primary Heating	On-site gas-fired boiler plant	On-site condensing boiler plant
HW Loop Supply Temp/Delta-T	180°F/50°F	140°F/30°F
Service Hot Water Type	Gas fired storage water heater	Condensing hot water heater
Lighting		
Lighting Power Density (LPD)	0.82 W/sf	0.75 W/sf (all-LED lighting design)
Daylight Dimming Controls	In side-lighted areas as required by ASHRAE 90.1-2010 Section 9.4.1.1	Not modeled

Graph 3-4 below presents a breakdown of the energy use by end use for both the Base Case and the Design Case.

Graph 3-4 End Use Energy Breakdowns for Baseline and Proposed Design



As the proposed design develops, the project team will continue to refine the building envelope, daylight, HVAC system and electric lighting design for an energy efficient design, targeted at 25 percent more efficient than code that also meets Project budget, flexibility and resilience goals.

3.5.3 Preliminary Evaluation of Clean/Renewable Energy

The Proponent has explored the feasibility for installing a rooftop solar photovoltaic (PV) system in combination with a green roof and white membrane roof. The first step in the analysis was identifying available roof area for a solar PV system. Structural analysis was completed that concluded there are limitations in available structural capacity at large portions of the roof such that the available area for a solar PV system is limited to the three (3) high roof areas only.

The online software Helioscope was used and a 525kW (AC) system was defined for analysis. This system would produce approximately 625,905 kWh per year and offset 222 short tons CO_2 emissions. The analysis accounts for a continuation of the federal incentive of 30 percent of the total installed cost, in addition to the Solar Massachusetts Renewable Target (SMART) system rate of $0.207/kWh for 20 years. This included $0.187/kWh plus the compensation rate adder of $0.02/kWh for building mounted solar. Using the Proponent's electricity cost, a simple payback analysis indicates a payback of 14.5 years, which is not financially feasible.

Given installing a rooftop solar system was not financially feasible, the Proponent will make the Core & Shell project "solar ready" in the high roof areas, meaning space for conduit routing and breaker space for interconnection would be provided for a future solar PV system.

3.5.4 Early Outreach to Utilities

The Project will reach out to the private utility companies to discuss opportunities for energy efficiency incentives, as well as demand response once the HVAC system and lighting design have been refined further.

3.6 Climate Change Preparedness and Resiliency

Given the location of the Project on a pier in Boston Harbor, the Project team has considered anticipated changes in climate and completed the BPDA Climate Change Resiliency and Preparedness Checklist, which is provided in Appendix D.

The Checklist reflects the commitment of the Proponent to mitigate the impacts of climate change by considering a variety of mitigation and adaptation strategies at the Project Site and building level. These are further discussed in Section 3.6.3 below.

3.6.1 Sea Level Rise and Extreme Storms/Flooding

The Project Site is located within the FEMA AE flood zone (FIRM panel 25025C0081J, effective 3/16/2016) and is vulnerable to sea level rise and storm surge. The project team has developed a multi-tiered approach to address the vulnerability at the Project Site and building level to provide levels of redundancy.

The project team has considered projections for sea level rise in 2030, 2050 and 2070 which increase the flood risk to the Project Site. The BPDA Sea Level Rise Base Flood Elevation (SLR-BFE) for the Project Site is 19.3 feet Boston City Base (BCB), which is based on the one percent annual chance flood event with 40 inches of sea level rise. The BPDA Sea Level Rise Design Flood Elevation (SLR-DFE) is 20.3 feet BCB. The SLR-DFE is determined by adding 12 inches of freeboard to the SLR-BFE for buildings and uses that are not critical facilities or ground floor residential uses.

Additionally, the Massport Floodproofing Design Guidelines define a Design Flood Elevation (DFE) of 20.16 feet BCB (13.7 feet NAVD88) for Existing Facilities as it relates to critical systems and equipment.

The Proponent and project team have determined the resilience strategy to be rapid recovery (i.e., protection of the asset, as opposed to shelter in place). A design flood elevation (DFE) of 21.5 feet was established, which corresponds to the flood elevation for the 2070 one percent storm event defined by the City of Boston in its Coastal Resilience Solutions for South Boston report and meets additional 12 inches of freeboard from the BPDA defined SLR-BFE. Further, the Project's DFE exceeds Massport's guidelines for existing facilities.

Figures 3.2 and 3.3 show the changing flood projections at the Project Site for the one percent, or 100-year event, and the Mean High Tide for the present-day, 2030, 2050, and 2070, respectively. These projections were derived from the Boston Harbor Flood Risk Model (BH-FRM) developed by Woods Hole Group, that

underpins the Climate Ready Boston and Coastal Resilience Solutions for South Boston reports. Based on these projections, there will be flood impacts in the immediate area around the Project Site in the near-term and predicted flood impacts to the building in the longer term (i.e., mid-century). The Coastal Resilience Solutions for South Boston Executive Summary released in October 2018, identified Seaport Boulevard as one of two areas for near-term intervention. The analysis demonstrated the location represents a present-day flood risk as a flood pathway for the larger district. The section of Seaport Boulevard identified is immediately adjacent to the Project Site. The proposed near-term actions in the Summary seek to harden and protect Seaport Boulevard from the one percent annual chance flood event in the near term. The specific actions identified in the report include a flood wall that may be integrated with the Harborwalk, floodproofing of existing structures, and a berm near the dry dock that could be integrated with future open space improvements. The longer-term target elevation for this area is two (2) feet higher. While important, these near-terms actions do not directly address the vulnerability of the Project Site. As such, the Proponent has taken several steps to make the Project Site and building more resilient to current and future flood risks to support the actions recommended, refer to Section 3.6.3 for full details.

3.6.2 Extreme Weather Events

Climate change is expected to result in more extreme weather events. The Climate Ready Boston projections for 2030 and 2070 indicate warming temperatures, more frequent extreme heat and increased precipitation. Refer to Graph 3-5 below for a summary of these predicted conditions.

Graph 3-5 Projected Extreme Weather Events

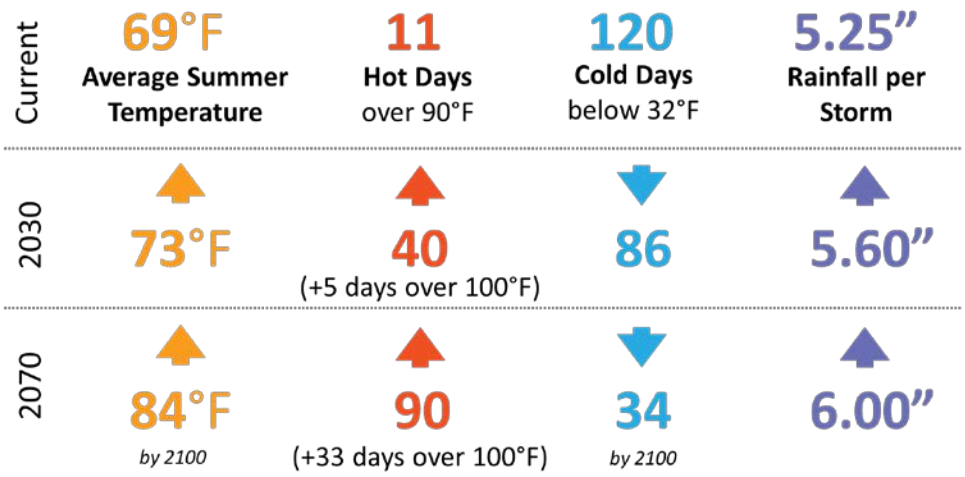


Image: Climate Ready Boston projections

The Project is developing appropriate strategies for a changing climate in the near term as well as planning for a long-term adaptation strategy over the course of the

Project life span. For example, the HVAC systems will be sized for a 95-degree peak day as part of the Core & Shell project, exceeding ASHRAE Fundamentals value of 90.6 degrees Fahrenheit peak day. This will make the building more resilient to extreme heat and heat waves once construction is complete.

3.6.3 Potential Resiliency Measures/Concepts

The Project is exploring the use of resilient design best practices, which requires planning today for the future risks of climate change. As previously identified, the project will protect against predicted flooding and sea level rise up to an elevation of 21.5 feet BCB. As noted in 3.6.1 above, the Project is also located along a significant part of Seaport Boulevard, which was identified as a near-term priority for the district as part of the City of Boston's *Coastal Resilience Solutions for South Boston* report. The following sections further describe how climate change has been considered in the early stages of the Project design. Refer to Figure 3.4 for an illustration of the proposed resiliency measures.

Site Resiliency Measures

The following resiliency strategies are being explored as part of the proposed site improvements:

- Structural enhancements will be implemented at both the apron and building to deal with rising sea levels and associated buoyancy. Structural tie-downs (i.e. mini piles) along the entire apron perimeter will be installed to mitigate buoyancy.
- For longer-term adaptation, the apron structure is also being studied to evaluate the ability to add a future crash barrier along the apron perimeter, should it be needed in the future.
- Entries to the building and at the Plaza and Niches around the apron will implement dry flood-proofing strategies to keep water out of the interior of the building. The entrances are at a higher elevation than the apron and are sloped away from the entry. Deployable barriers and/or flood gates as well as additional floor drains are being considered and will be refined as the design develops. The design includes planned storage locations for storing deployable flood barriers on-site.
- Incorporation of backflow preventers and duckbill check valves to ensure that storm drainage and sewage conveyance do not back up during storm surges.
- Size stormwater conveyance systems for increased peak rain events. Systems can accommodate 6" rainfall for the 2070 10-year, 24-hour design storm.
- Landscape planting and hardscape materials will be saltwater tolerant.
- The existing Viaduct level (el. 46.25 ft BCB) is being elevated a level above Seaport Boulevard. This provides an added level of resilience to the Project as it offers an elevated pedestrian and vehicular connection from the Project Site to

Summer Street. As such, the building isn't solely reliant on Seaport Boulevard for access.

Building Resiliency Measures

The following resiliency strategies are being explored for the proposed building renovations:

- Structural enhancements will also be implemented at the building to deal with rising sea levels and associated buoyancy. Additional structural tie-downs (i.e. mini piles) will be installed at the slabs on grade and low-density concrete fill to mitigate buoyancy.
- The façade design has incorporated a 3'-0" resilient, waterproofed concrete curb wall to elevation 21.5' BCB (i.e. the project DFE) around the perimeter of the building envelope to protect against flooding. This wall has also been designed to withstand wave impacts as an additional adaptation strategy.
- A waterproof membrane will be included between the pier and the apron and inside the 3' resilient curb.
- Raising critical mechanical, electrical, plumbing and fire protection equipment above the ground floor and SLR-DFE of 20.5 BCB. Major equipment is planned to be located on the mezzanine or roof levels. Critical equipment that needs to be on the ground floor level has been raised on platforms to an elevation of 23.5'. Therefore, all critical systems and equipment will be raised above the Massport-designated DFE of 23.46' BCB for New Facilities.
- Plumbing sewage ejector pits and exterior grease trap, sand/oil/gas interceptor are installed within the first-floor slab. Sewage ejectors are submersible pumps. Backflow valves have been included on the sanitary drain lines as they connect out to the street.
- An 8-inch raised access floor with suspended cable trays is planned at the ground floor to raise the interior floor level to 19'-2" BCB from 18'-6" BCB existing. A drainage mat between the layers of topping slab also extends to the line of the sheeting.
- Mold resilient materials will be explored in vulnerable areas to support a rapid recovery scenario.
- Optimize passive strategies such as building envelope design, daylight and mitigating heat island impacts through the use of shade, greenery, light-colored hardscape materials and a combination of an extensive green and white membrane roof.
- Design HVAC system capacity for higher temperatures (e.g., 95-degree peak day).
- Design includes planned locations for the provision of additional back-up generator capacity of optional standby loads from the Tenant, should it be desired.

- Design the building to be solar ready for a future solar PV installation by the Proponent and/or future tenant.
- Design the building to be energy storage ready for a future system by the Proponent and/or future tenant

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LEED v4 for BD+C: Core and Shell

Project Checklist

Project Name: Commonwealth Pier Revitalization

January 2019

Y	?	N			
1			Credit	Integrative Process	1

14	1	5	**Location and Transportation**		20
			Credit 1	LEED for Neighborhood Development Location	20
2			Credit 2	Sensitive Land Protection	2
		3	Credit 3	High Priority Site	3
6			Credit 4	Surrounding Density and Diverse Uses	6
6			Credit 5	Access to Quality Transit	6
		1	Credit 6	Bicycle Facilities	1
	1		Credit 7	Reduced Parking Footprint	1
		1	Credit 8	Green Vehicles	1

3	1	7	**Sustainable Sites**		11
Y			Prereq	Construction Activity Pollution Prevention	Required
		1	Credit 1	Site Assessment	1
		2	Credit 2	Site Development - Protect or Restore Habitat	2
		1	Credit 3	Open Space (30% Site Area incl. Bldg Footprint)	1
		3	Credit 4	Rainwater Management	3
2			Credit 5	Heat Island Reduction	2
	1		Credit 6	Light Pollution Reduction	1
1			Credit 7	Tenant Design and Construction Guidelines	1

6	2	3	**Water Efficiency**		11
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
1		1	Credit 1	Outdoor Water Use Reduction (50% reduction or no irrigation)	2
3	1	2	Credit 2	Indoor Water Use Reduction (3 pts = 35% reduction)	6
1	1		Credit 3	Cooling Tower Water Use	2
1			Credit 4	Water Metering	1

18	2	13	**Energy and Atmosphere**		33
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
5		1	Credit 1	Enhanced Commissioning	6
11	2	5	Credit 2	Optimize Energy Performance (11pts = 23% energy cost)	18
1			Credit 3	Advanced Energy Metering	1
		2	Credit 4	Demand Response	2
		3	Credit 5	Renewable Energy Production	3
1			Credit 6	Enhanced Refrigerant Management	1
		2	Credit 7	Green Power and Carbon Offsets	2

7	1	5	**Materials and Resources**		14
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
2	1	2	Credit 1	Building Life-Cycle Impact Reduction (25%, 50% or 75% = 2-5 pts)	6
1		1	Credit 2	Building Product Disclosure and Optimization - Environmental Product Declarations	2
1		1	Credit 3	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1		1	Credit 4	Building Product Disclosure and Optimization - Material Ingredients	2
2			Credit 5	Construction and Demolition Waste Management (75% + 4 streams)	2

6	0	4	**Indoor Environmental Quality**		10
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
2			Credit 1	Enhanced Indoor Air Quality Strategies	2
2		1	Credit 2	Low-Emitting Materials	3
1			Credit 3	Construction Indoor Air Quality Management Plan	1
		3	Credit 4	Daylight	3
1			Credit 5	Quality Views	1

4	2	0	**Innovation**		6
1			Credit 1	Innovation - Active Design	1
1			Credit 2	Innovation - Green Cleaning Policy	1
1			Credit 3	Innovation - Purchasing - lamps	1
	1		Credit 4	Innovation - Integrated Pest Management	1
	1		Credit 5	Innovation - Walkable Project Site	1
1			Credit 6	LEED Accredited Professional	1

2	1	1	**Regional Priority**		4
1			Credit 1	Regional Priority: Energy Performance (8 pts = 17%)	1
1			Credit 2	Regional Priority: Building life-cycle impact reduction (2 pts)	1
	1		Credit 3	Regional Priority: Indoor Water Use Reduction (4pts = 40%)	1
		1	Credit 4	Regional Priority: Renewable Energy (2 pts = 3%)	1

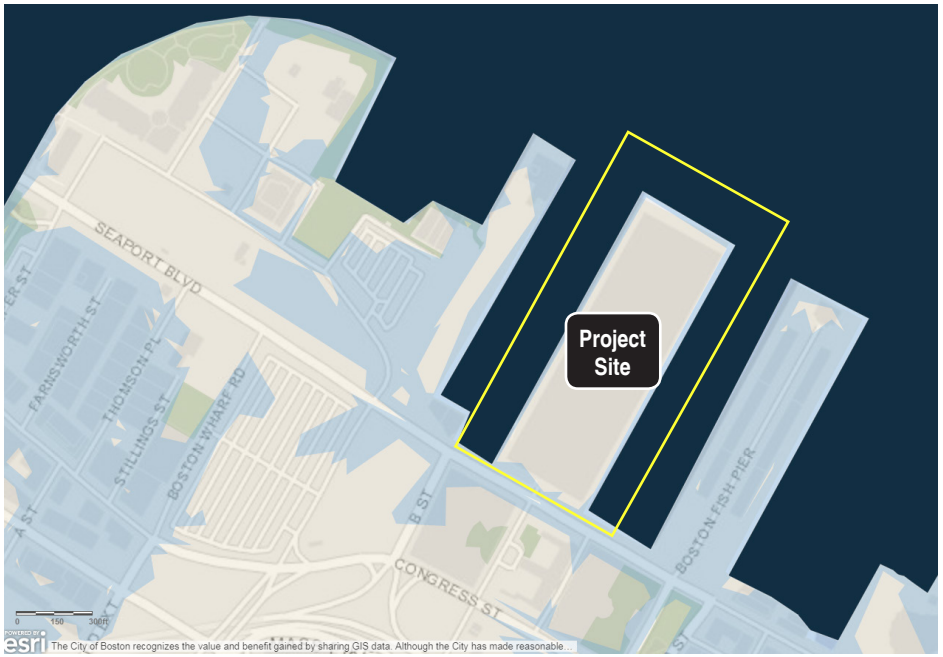
61	10	38	**TOTALS**	Possible Points:	110

Certified: 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110

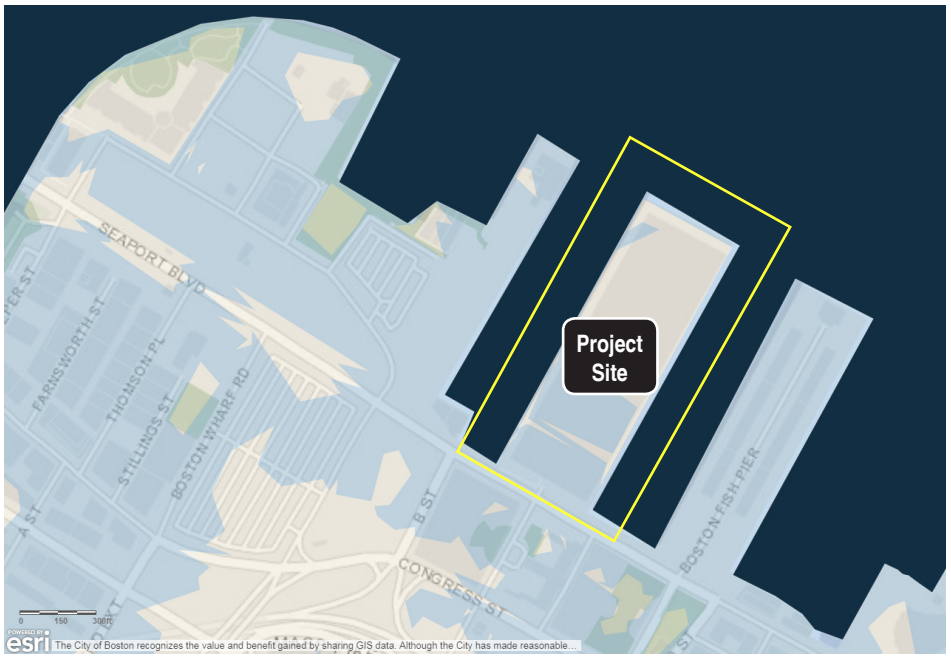
Figure 3.1

Preliminary LEED Scorecard

Commonwealth Pier Revitalization
Boston, Massachusetts



2030's (Climate Ready Boston)



2050's (Climate Ready Boston)

2070's (Climate Ready Boston)

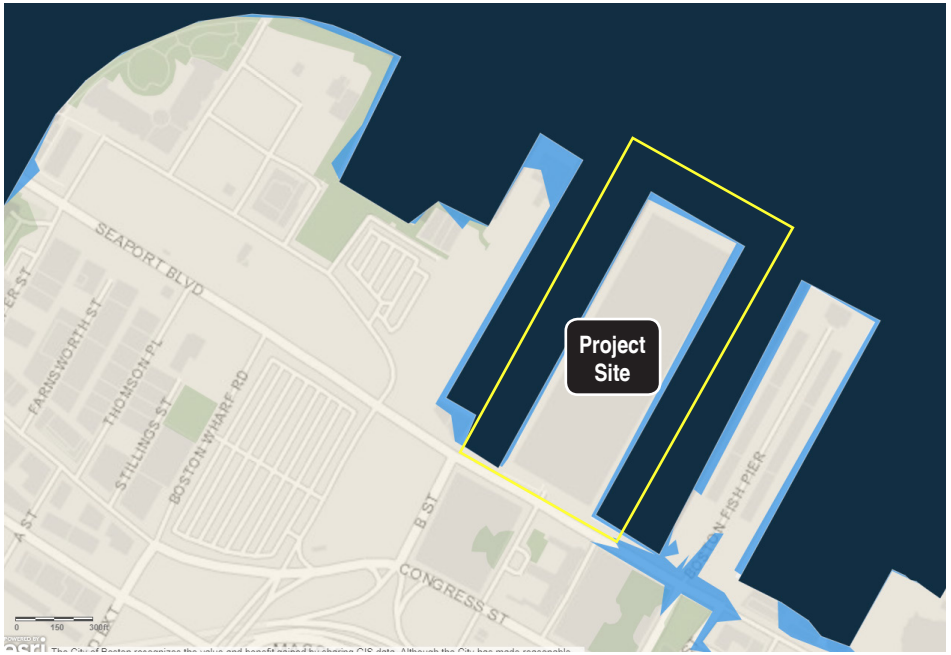
Figure 3.2

Climate Change Vulnerability
1% Annual Chance (100-Year Storm)

Commonwealth Pier Revitalization
Boston, Massachusetts

Source: Climate Ready Boston, 2018

2030's - 9" (Climate Ready Boston)



2050's - 21" (Climate Ready Boston)

2070's - 36" (Climate Ready Boston)

Figure 3.3

Climate Change Vulnerability
High Tide

Commonwealth Pier Revitalization
Boston, Massachusetts

Source: Climate Ready Boston, 2018

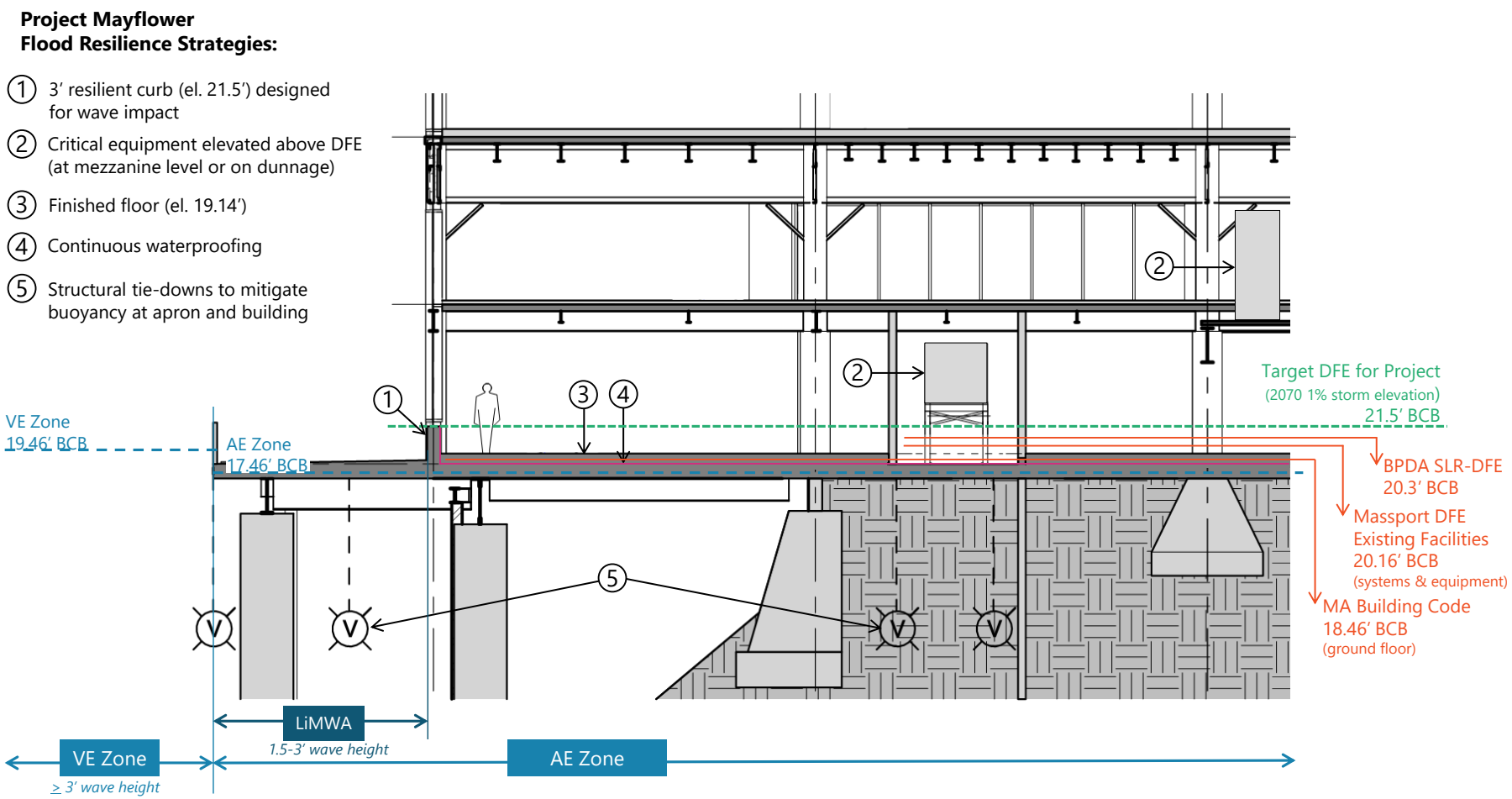


Figure 3.4

Proposed Resiliency Measures

Commonwealth Pier Revitalization
Boston, Massachusetts

4

Waterways and Wetlands

This chapter contains a summary of issues relating to the Project's impacts on waterways, as defined under M.G.L. Chapter 91, and wetland resource areas, as defined under the Wetlands Protection Act.

The Project Site is approximately 18.9 acres in size (comprising land and watersheet) located at 200 Seaport Boulevard in the South Boston Waterfront District. The entire Project Site is located within Chapter 91 jurisdiction. The Chapter 91 requirements and DEP's permitting process for the Project Site are governed by the Memorandum of Understanding (MOU) executed between Massport and DEP on March 15, 2001 (discussed further in Section 4.3).

Under the MOU, a Waterfront Development Plan ("WDP") may be developed for certain Special Planning Areas (refer to Figure 4.1), which provides a description of the proposed land uses, dimensional characteristics of buildings, and open space for a portion of the Special Planning Area, and describes the public benefits and offsets, if appropriate, that development projects will provide. When a specific development project subject to the MOU is proposed within an area covered by an approved WDP, the WDP shall be used as the framework for the approval of the project by DEP. DEP must find that the project is consistent with the use and dimensional characteristics in the approved WDP and that it provides public benefits and offsets consistent with those proposed in the WDP. A preliminary Waterfront Development Plan has been prepared by Massport and is being discussed with DEP. The WDP will be subject to a public review and comment period prior to DEP approval. Compliance with the applicable Chapter 91 regulations as modified by the preliminary WDP are described herein (Section 4.3).

4.1 Summary of Key Findings and Benefits

Key findings and benefits related to waterways (Chapter 91) and wetlands include:

- Maintain existing water-dependent industrial use of the pier and support maritime industrial uses elsewhere in the DPA through ground lease payments provided to Massport by the Project and improvements to traffic flow along Seaport Boulevard a major truck route serving the port;
- New public open space with improved access to tidelands and active programming;
- New and improved Facilities of Public Accommodation;
- Enhanced sustainability program;
- Improved flood and climate change resiliency;

- Adaptive reuse, mixed-use redevelopment supporting growing South Boston Waterfront District;
- Revamped streetscape and improved pedestrian safety and vehicular access; and
- Connections to the Silver Line MBTA station.

4.2 Regulatory Context

The Project is proposed on Massport property and is subject to the previously noted MOU, which sets out a process for planning and licensing of certain Projects on Massport property in South Boston, including the Project Site. The MOU established a two-stage planning and licensing procedure for non-water dependent use or mixed-use projects on Massport property within the Special Planning Area (the "SPA"), as shown on Figure 4.1. Within this area, Massport can develop a WDP which provides a description of proposed land use, dimensional characteristics of buildings, and open space for a portion of the SPA, and describes the public benefits and offsets, if appropriate, which development projects will be expected to provide. The preliminary WDP will be submitted by Massport to DEP for review and approval and shall be noticed in the Environmental Monitor for public comment.

When a specific development project subject to the MOU is proposed within an area covered by an approved WDP, DEP will determine in the licensing decision whether the Project is consistent with the uses and dimensional characteristics outlined in such WDP and provides public benefits and offsets consistent with those proposed in the WDP.

4.2.1 Chapter 91 Jurisdiction

The entire Project Site is located within Chapter 91 jurisdiction. Since the Project Site is seaward of the historic low water mark (HLWM) and is owned by a public entity, Massport, the Project Site is considered to be located on Commonwealth tidelands. Waterways jurisdiction was based DEP's Presumptive Lines. Refer to Figure 4.2 for Chapter 91 jurisdiction.

The Project Site is comprised of filled and flowed tidelands. Of the 18.9-acre Project Site, much of it is filled (approximately 8.0 acres) and contained within a granite seawall. All of this filled area is covered with the existing World Trade Center building. A narrow strip of the building along the apron and the apron itself, totaling approximately 3.5 acres, are located over the water on piles. The balance of the Project Site is open watersheet (approximately 7.4 acres).

Site History

The South Boston Waterfront was created on land filled in several phases over 100 years, beginning in the 1830s. Development in this portion of the South Boston Waterfront began in the late 1800s. The Legislature directed the Board of Harbor Commissioners to construct Commonwealth Pier in 1897 for the "economical and

speedy handling of cargo," according to recommendations by the Board on Docks and Terminal Facilities. The Commonwealth Pier platform was constructed in 1901 as a 400-foot wide and 1,200-foot long pier without any enclosed structures. The pier was constructed from harbor bottom backfilled inside a granite block quay wall. A head house building was located adjacent to the street.

Improvements were made to the pier beginning in 1912, including dredging of ship berths, covering the pier with three two-story sheds, laying railroad tracks on the pier, and the construction of highway connections, including a Viaduct over the railroad yard for passenger traffic from the second floor of the sheds to Summer Street. The Commonwealth Pier building was completed in 1914.

Commonwealth Pier was leased to the Old Colony Railroad Company in 1910 for a period of thirty years and, later, portions were leased by the US Navy during the World Wars. In the 1920s and 1930s, the Registry of Motor Vehicles occupied parts of the building. During this time, the Commonwealth used offices in the building for the Department of Public Works as well. In 1929, a restaurant was established and maintained. Commonwealth Pier was also used as an immigration port where immigrants were examined. Commonwealth Pier was used as a center of maritime cargo activity throughout the 1900s, including steamship lines, shipping firms, and the fishing industry.

Under Chapter 465 of the Acts of 1956, Massport was established and the "port properties", including Commonwealth Pier, were transferred to Massport. In 1969, Massport constructed a million-dollar dockside freezer for storage of meat and fish, to meet the needs of the container shipping industry and eliminate the need to truck products inland before ground shipping.

In the mid-1980s, Fidelity Investments and the John Drew Company converted Commonwealth Pier from cargo and warehouse operations into the mixed-use World Trade Center. The building uses included office space, Exhibition Hall, and retail space. In 1986, the Project Site was re-named the World Trade Center Boston. In 1998, the Seaport Hotel, a 428-room hotel, opened across Northern Avenue as a part of the Seaport World Trade Center, followed by the construction of the approximately 502,000 sf "Seaport East" and 575,000 sf "Seaport West" office buildings. Together, the World Trade Center, the Hotel, Seaport East and Seaport West comprise Seaport Place.

Table 4-1 below lists all of the existing legislative grants and licenses of record pertaining to Commonwealth Pier, including licenses for the Seaport East and West buildings south of Seaport Boulevard.

Table 4-1 Chapter 91 Authorizations

Authorization	Issuing Authority	Licensee	Date	Use
Ch. 513, Acts of 1897	Legislature	HLC	June 11, 1897	Construct a pier and dock.
License No. 6179	DEP	Commonwealth Flats Development	July 1998	(Seaport East) Construct and maintain a 16-story building, below grade parking garage, open space, pile supported pier, barrier free gangways, and four pile supported steel barges.
License No. 7759	DEP	Commonwealth Flats Development	May 9, 2000	(Seaport West) Construct and maintain an 18-story building, and adjacent two-story podium structure, below grade parking for approximately 350 vehicles, and publicly accessible open space, and a water transportation facility.

HLC – Board of Harbor and Land Commissioners
DEP – Massachusetts Department of Environmental Protection

4.2.2 Designated Port Area

The Project Site is mostly within the boundaries of the South Boston Designated Port Area (the "DPA"), as shown in Figure 4.2. Under the Chapter 91 regulations, DPAs are provided to preserve and protect areas for water dependent industrial use. There are several restrictions that apply to DPA sites. However, because the Project Site is owned and controlled by Massport and is subject to the MOU, there is flexibility in the overall mix of uses within the Massport-owned DPA areas.

Watersheet areas of the Project Site to the west of the westerly pier apron are not within the DPA.

4.2.3 Municipal Harbor Plan

Under DEP's Waterways Regulations, certain use and dimensional requirements outlined in the Chapter 91 regulations may be altered if a local municipality has developed and received state approval of a municipal harbor plan. Since the approved 1990 Harborpark Plan and the South Boston Waterfront District Municipal Harbor Plan did not include this geographic area in those plans, the requirements of these plans do not apply to the Project Site.

4.2.4 Coastal Zone Management

The Project's compliance with CZM policies is discussed below in Section 4.4.

4.2.5 Boston Conservation Commission

The Proponent anticipates filing a Notice of Intent with the Boston Conservation Commission after the Project undergoes initial City of Boston, state agency, and public review and comment. Section 4.6 provides a description of the Project Site's wetland resources and proposed compliance with applicable regulations.

4.3 Chapter 91 Licensing Review and Compliance

As described in Section 4.2, the Project is proposed on Massport property and is subject to the MOU, which sets out a process for planning and licensing of certain projects on Massport property in South Boston. Following the approval of a WDP, the Proponent may apply for a Chapter 91 license. Any such application would be subject to a public comment period. As part of the licensing process, DEP will determine whether the Project is consistent with the uses and dimensional characteristics outlined in the approved WDP, and provides public benefits and offsets consistent with those proposed in the WDP.

Table 4-2 Chapter 91 Use Summary

Use	Existing	Proposed	Note
Water Dependent Industrial Use (Passenger vessels)	2,800 lineal feet 59,160 sf apron	2,800 lineal feet 79,555 sf +/- apron	Expanded apron areas to provide more area for service and passenger waiting
Ground level Public Open Space (open to sky)	60,190 gsf	107,080 sf +/-	Expanded public open space through creation of the Plaza and apron expansions
Public Realm Space (unenclosed areas within building footprint)	17,300 sf	39,800 sf +/-	Public realm space created within building footprint but not enclosed
Facilities of Public Accommodation (retail, restaurant, co-working space, event space)	203,800 gsf	112,885 sf +/-	Reduced exhibition hall space replaced with public open space and higher quality Facility of Public Accommodation (FPA) space on ground level and Viaduct level.
Office Space	501,900 gsf	624,680 sf +/-	Expanded office space within existing building footprint

Note: gsf area excludes common space and back of house support areas

The WDP presents an overall vision for the area and establishes objectives for the redevelopment of the Seaport World Trade Center. The WDP will provide the legal framework for the approval of the uses and structures as part of this redevelopment project and the expansion of pier aprons.

4.3.1 Waterfront Development Plan

Massport has prepared a preliminary WDP and is discussing it with DEP. Once the preliminary WDP is formally transmitted to DEP, DEP will publish notice in the Environmental Monitor and accept comments for 30 days. The final version of the WDP is subject to revisions due to public comment and approval by DEP. Massport's objectives for the WDP include:

- Preserve and protect the interests of the Designated Port Area and its maritime industrial uses.
- Provide an enhanced Public Realm which will encourage public access and enliven the waterfront with active programming of public spaces.

- Provide expanded apron areas, docking facilities, and sheltered waiting areas to support existing and future water transportation services.
- Provide enhanced mobility through improvements to water transportation, pedestrian amenities, transit connections and vehicular circulation.
- Design for climate resiliency in anticipation of sea level rise.

The principal elements of the preliminary WDP will be to allow the redevelopment of the Seaport World Trade Center for the uses and structures as described in the Project to the extent a Chapter 91 license is required. These elements include:

- Enhancing the DPA truck route on Seaport Boulevard by maintaining 11-foot travel lanes, removal of on-street loading docks, provision of better pedestrian facilities and improved transit and passenger vehicle drop off areas.
- Provide for enhanced resiliency to climate change through the provision of energy efficient design, elevated critical utility functions, and flood proofing of building portals.
- Capitalize on the unique dual-level access through the Viaduct level to enhance facilities of public accommodation at the Viaduct level and to create a pedestrian friendly connection to the Silver Line World Trade Center Station.
- Create a more inviting public realm through the creation of new public open space, relocation of on-street loading docks, provision of pedestrian amenities, creation of pedestrian passageways into the building and providing active facilities of public accommodation.
- Maintain the existing apron principally for commercial passenger vessel activity, including potential water taxi and commuter boats and allow for expansion of aprons for improved public access and water transportation facilities.
- Create pedestrian destination points along the length of the apron to encourage public access around entire perimeter of the building.

4.3.2 Chapter 91 Licensing/Regulatory Standards Review

Chapter 91 regulations at 310 CMR 9.00 outline the requirements for a project to receive a license. A key requirement is that the Project must serve a proper public purpose that provides greater benefit than detriment to the rights of public tidelands and must be in compliance with Coastal Zone Management Program policies.

In accordance with 310 CMR 9.03(3), Massport and DEP entered into a Memorandum of Understanding in March 2001 which governs the licensing of certain Massport properties on the South Boston Waterfront, including the Project Site. The MOU modifies the existing Chapter 91 licensing standards and becomes the exclusive framework for determining compliance with Chapter 91. As noted above, the MOU provides for the approval of a WDP for certain areas within Massport ownership. The WDP sets forth the requirements for a qualifying project to receive a Chapter 91 license.

As modified by the preliminary WDP as authorized under the MOU, the Project will conform to the following provision of the regulations.

310 CMR 9.32: Categorical Restrictions on Fill and Structures

This section generally addresses the kinds of fill and structures allowed in various areas of Chapter 91 jurisdiction, which in this instance are addressed more specifically in the WDP. With respect to the Harborwalk, 310 CMR 9.32(1)(b) provides that public pedestrian access structures within DPA areas should be on land or within the footprint of existing pile fields, wherever feasible. In areas outside the DPA, 310 CMR 9.32(1)(a) provides that public pedestrian access structures are allowed over water only where it is not reasonable to locate them on land or within existing pile fields. To expand the Harborwalk width on land or within existing pile fields would require removal of portions of the existing building around the entire perimeter. Reducing the building width on both sides to allow increased Harborwalk width would severely compromise the existing historic Headhouse features and is not feasible. Thus, the WDP proposes a limited expansion of the apron over the existing watersheet to accommodate combined public pedestrian access and commercial passenger vessel activities. It is anticipated that the existing apron, which is located on piles, will continue to provide public access, as well as support for commercial passenger vessel access and servicing and to support security patrols. The expansion of the pier apron (within and outside of the DPA) proposed within the WDP would enhance public pedestrian access, provide needed larger areas for public congregation to serve commercial passenger vessels including water transportation vessels, and provide better segregation of vehicular and pedestrian uses on the most active portions of the pier apron.

310 CMR 9.33: Environmental Protection Standards

The Project will comply with all requirements of this section of the regulations and will obtain all required environmental regulatory approvals. This section provides that the Project must satisfy the requirements of specific state environmental regulatory programs, of which the Wetlands Protection Act is the primary applicable program. An Order of Conditions will be obtained for the Project.

310 CMR 9.35: Standards to Preserve Water-related Public Rights

This section of the regulations requires the DEP to preserve any rights held by the Commonwealth in trust for the public to use tidelands and to preserve associated public rights of access. The Project conforms to this standard by providing full public access to the perimeter of the site, and extensive indoor Facilities of Public Accommodation on the ground floor and Viaduct levels following completion of the Project. Public access will be available along the Harborwalk 24 hours a day, seven days a week. Due to the nature of the existing uses and dimensions of the building, Facilities of Public Accommodation are to be located close to Seaport Boulevard.

Further, the water dependent uses proposed as part of the Project create opportunities for public access to and from the water and do not restrict existing water dependent industrial uses in the area.

310 CMR 9.36: Standards to Protect Water-Dependent Uses

The Project will not adversely affect existing navigation by vessels in the area and will maintain active use of the apron by commercial passenger vessels. The Project will not displace any existing water dependent use and may in fact enhance the utilization of the pier areas by expanding them to be more suitable for public congregation of waiting passengers and providing improved segregation of vehicular servicing and pedestrian access. Removal of on-street loading docks and redesign of Seaport Boulevard curb areas while maintaining 11-foot travel lane widths will enhance the use of this important truck route by maritime industrial uses.

310 CMR 9.37: Engineering and Construction Standards

The Project will conform to all of the engineering and construction standards in this section. The Project will be designed to be responsive to its location over the water, including potential flood hazards, and license plans will be stamped by a registered professional engineer. Projected sea level rise and climate resiliency measures will be incorporated into the design of the Project, as discussed in detail in Section 3.6 of Chapter 3, *Sustainability/Green Building and Climate Change Resiliency*.

310 CMR 9.51: Conservation of Capacity of Water-dependent Use

The Project will conform to the standards of this section relating to the rehabilitation of an existing building, as modified by the MOU. The Project will provide Facilities of Public Accommodation, including space on the ground level and Viaduct level as provided in the WDP. As noted above, the apron expansions for water-dependent use are proposed in the WDP. No parking will be provided on the Project Site other than short-term pick-up and drop-off spaces at the Project's entrance along Seaport Boulevard. Additional public open space is not required for the reuse and rehabilitation of existing buildings; however, additional open space is proposed as part of the Project through the removal of a portion of the building and creation of the Plaza area. Building height will not exceed the existing building height of the Headhouse.

310 CMR 9.52: Utilization of the Shoreline for Water-dependent Uses

The Project will provide the entire perimeter of the pier for both water-dependent uses and for public access. Much as it is used today, the entire pier will be open to public access 24/7. The use of the pier by commercial passenger vessels and occasional visiting ships will be maintained and enhanced. The proposed apron expansions, docking facilities, and sheltered waiting areas will support existing and future water transportation services.

310 CMR 9.53: Activation of Commonwealth Tidelands for Public Use

The Project will provide increased activation of the Project Site compared to the existing condition by enhancing and expanding the public pedestrian facilities, providing newly programmed public open space, and providing higher quality public amenities in the form of retail, restaurant, and event space use. The amount of Facilities of Public Accommodation will be as specified in the WDP. The entire Project shoreline will be activated with public water dependent uses.

The Project will create a waterfront destination that serves as a year-round locus of public activity and that draws visitors into the building and to the proposed public spaces through the provision of destination uses, including retail, restaurant, and event space. The Proponent will develop a management plan for the use of all public amenities on the Project Site.

4.4 Consistency with CZM Policies

The Project will comply with the applicable policies of CZM as updated in 2011. Through the maintenance of commercial passenger vessel activities, provision of an improved pier and Harborwalk for greater public access and recreation, expanded open space, and the installation of an abundance of amenities, the CZM policies and goals will be thoroughly served by the Project.

4.5 Public Benefits Determination

In accordance with the requirements of 301 CMR 13.00, the Secretary of the Executive Office of Energy and Environmental Affairs has the discretion whether or not to issue a public benefit determination for the Project in connection with any Chapter 91 license. The Secretary may require a public benefit determination based on circumstances relating to the nature of the project, the nature of the tidelands in question, the project location, or other similar factors where a public benefit review is necessary to protect public trust rights in tidelands.

4.6 Massachusetts Wetlands Protection Act

This section will address how the Project will comply with the Wetlands Protection Act and its implementing regulations.

4.6.1 Existing Wetland Resource Areas

As identified on Figure 4.3, the Project Site contains several wetland resource areas, including: Land Under Ocean; Coastal Bank; Designated Port Area; and Land Subject to Coastal Storm Flowage.

Land Under the Ocean

Land Under the Ocean is defined in the WPA regulations at 310 CMR 10.25 (2) as "land extending from the mean low water line seaward to the boundary of the municipality's jurisdiction and includes land under estuaries."

The mean low water (MLW) at the Project Site is at approximately elevation 1.3 Boston City Base (BCB). All land seaward of this elevation on the Project Site is regulated as Land Under the Ocean and consists of approximately 10.5 acres. Portions of this area are covered with a pile-supported building perimeter and pier apron.

Coastal Bank

Coastal Bank is defined in the WPA regulations at 310 CMR 10.30 (2) as the seaward face or side of any elevated landform, other than a coastal dune, which lies at the landward edge of a coastal beach, land subject to tidal action, or other wetland. Coastal Banks are likely to be significant to storm damage prevention and flood control. Coastal Bank makes up approximately 2,660 lineal feet (18,200 sf) of the Project Site and is comprised of the granite block seawall and sloping riprap bounding the filled area of the Project Site underneath the existing building.

Land Subject to Coastal Storm Flowage

Land Subject to Coastal Storm Flowage is defined in the Wetlands Protection Act at 310 CMR 10.04 as "land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge of record, whichever is greater."

The Flood Insurance Rate Maps (FIRM) produced by the Federal Emergency Management Agency (FEMA) are used to determine the one percent probability or 100-year flood elevation, which for the Project Site is elevation 17.5 feet BCB. Based on FEMA Map 25025C0081J (dated March 16, 2016), the entire Project Site is in the floodplain, as shown on Figure 4.4. Based on this mapping, approximately 347,630 sf of Land Subject to Coastal Storm Flowage is present on the Project Site (Figure 4.3). However, the actual building floor elevations show that the much of the Project Site is elevated above the floodplain.

A FEMA Velocity Zone at elevation 19.5 feet BCB exists on a portion of the Project Site including the watersheet surrounding the pier apron. (Figure 4.4). The apron area is designated as an area of Moderate Wave Action or "Coastal A Zone". Refer to Section 3.6 of Chapter 3, *Sustainability/Green Building and Climate Change Resiliency*, for a description of the Project Site vulnerability to projected sea level rise conditions.

Designated Port Area

Land Under Ocean within a mapped DPA is a wetland resource area (Figure 4.2). The entire pier, pier apron, and the watersheet on the north and east sides of Commonwealth Pier are located within the South Boston DPA, but only the area under the pile supported portion of the building and pier apron, and the surrounding watersheet is a wetland resource area.

4.6.2 Wetlands Protection Act Compliance

As illustrated on Figure 4.5, the Project includes work within Land Under Ocean, Designated Port Area, and Land Subject to Coastal Storm Flowage, and has been designed to fully comply with the performance standards of each impacted resource area in the Wetland Protection Act (WPA). The Project does not affect Coastal Bank. The Project includes erosion and sedimentation controls and complies with DEP's stormwater management policy.

The following sections identify the performance standards and demonstrate how the Project complies with each standard.

Land Under Ocean

Land Under Ocean (area below mean low water line) is likely to be significant to marine fisheries, storm damage prevention, flood control and protection of wildlife habitat.

The Project will impact approximately1,271 sf of Nearshore LUO in connection with installation of new piles supporting the east and west pier apron expansions, the replacement of deteriorated fender pilings on the north and east face of the pier apron, new fender piles on the west apron, installation of mini piles under the existing pile supported building and apron, reconstruction and replacement of the existing apron and the repair of approximately 345 lineal feet of sheet pile adjacent to both sides of the Headhouse.

The relevant performance standards for this site are that the Project in LUO should be designed to avoid adverse effects to bottom topography so as to increase storm damage and should minimize adverse effects on marine fisheries habitat caused by changes in water circulation or water quality.

The Project does not alter bottom topography and minimizes adverse effects on marine fisheries. The Project has been designed to minimize impacts to marine fisheries and changes in water circulation by the use of small diameter piles throughout. Temporary water quality impacts during construction will be mitigated using silt curtains during pile driving and marine construction. Demolition of the apron and construction of a new apron deck will take place above staging or floats put in place to prevent construction debris or materials from entering the harbor. Water quality post-construction will be improved by new storm water control measures in compliance with the DEP Stormwater Guidelines. The Project will

significantly reduce the potential for storm damage though structural repairs, elevation of the building floor level and other resiliency measures described in Section 3.6 of Chapter 3, *Sustainability/Green Building and Climate Change Resiliency*.

Coastal Bank

The Project is not anticipated to impact Coastal Bank. Demolition of the apron and construction of a new apron deck will take place on staging or floats put in place to prevent construction debris or materials from entering the harbor.

Land Subject to Coastal Storm Flowage

There will be no permanent impact or change to the area of LSCSF as a result of the Project. The Project is anticipated to result in approximately 347,630 sf of temporary construction impacts to LSCSF during construction. These impacts will be mitigated.

There are no performance standards for LSCSF; however, although much of the Project Site, including the pier and building, is elevated above the floodplain elevation, the Project will significantly enhance the resiliency of the existing structure. The Project has been designed to account for future sea level rise through 2070. Refer to Section 3.6 of Chapter 3, *Sustainability/Green Building and Climate Change Resiliency*, for additional information.

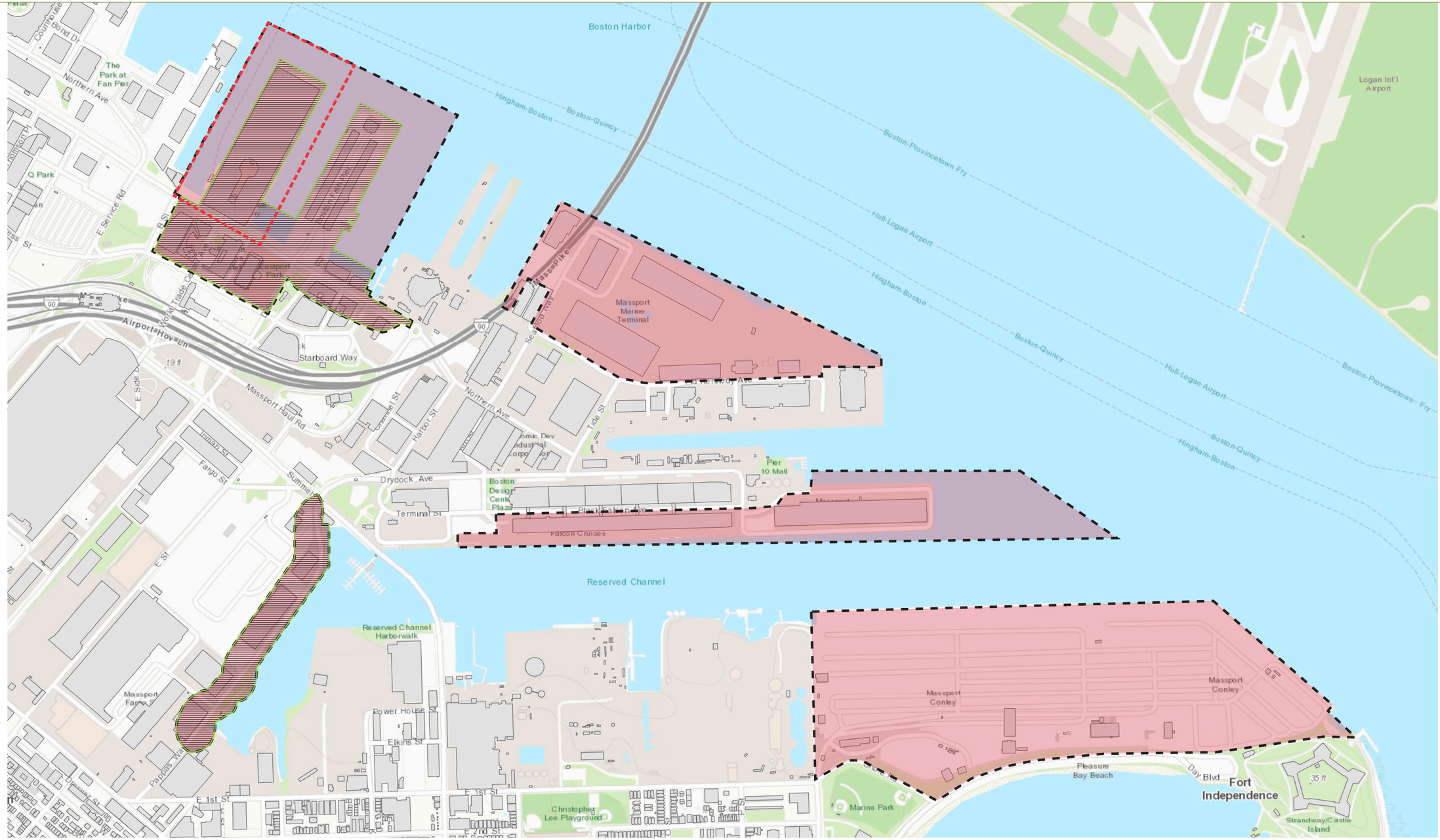
Designated Port Area

The watersheet on the north and east sides of Commonwealth Pier, Commonwealth Pier, and the existing pier aprons around it are all are located within the South Boston DPA. The work proposed within this area is limited to the replacement of 153 sf of fender piles, placement of 49 sf of floating dock piles, repair of sheet piling on the east and west sides of the Headhouse affecting 690 sf, installation of mini piles under the existing pile supported building and apron area with an impact of 161 sf and 64 sf of apron expansion piles. The total area of impact from the Project is 1,116 sf.

The Project also includes the demolition and reconstruction of the pier apron, construction of apron expansions and installation of new docks and ramps to support commercial passenger vessel operations within the DPA. These activities do not directly impact Land Under Ocean within the DPA, other than through the supporting piles which are described above.

Land under the ocean in designated port areas is likely to be significant to marine fisheries, storm damage prevention and flood control. Wetlands regulations at 310 CMR require that projects be designed to minimize adverse effects on marine fisheries caused by changes in water circulation and water quality. Also, projects should be designed to minimize adverse effects on storm damage prevention or flood control.

The Project has been designed to minimize impacts to changes in water circulation by the use of small diameter piles throughout. Water quality during construction will be mitigated using silt curtains during pile driving and marine construction. Demolition of the apron and construction of a new apron deck will take place above staging or floats put in place to prevent construction debris or materials from entering the harbor. Water quality post-construction will be improved by new storm water control measures in compliance with the DEP Stormwater Guidelines. The Project will significantly reduce the potential for storm damage though structural repairs, elevation of the building floor level and other resiliency measures described in Section 3.6 of Chapter 3, *Sustainability/Green Building and Climate Change Resiliency*.



Fort Point Associates, Inc., 2019

Project Site

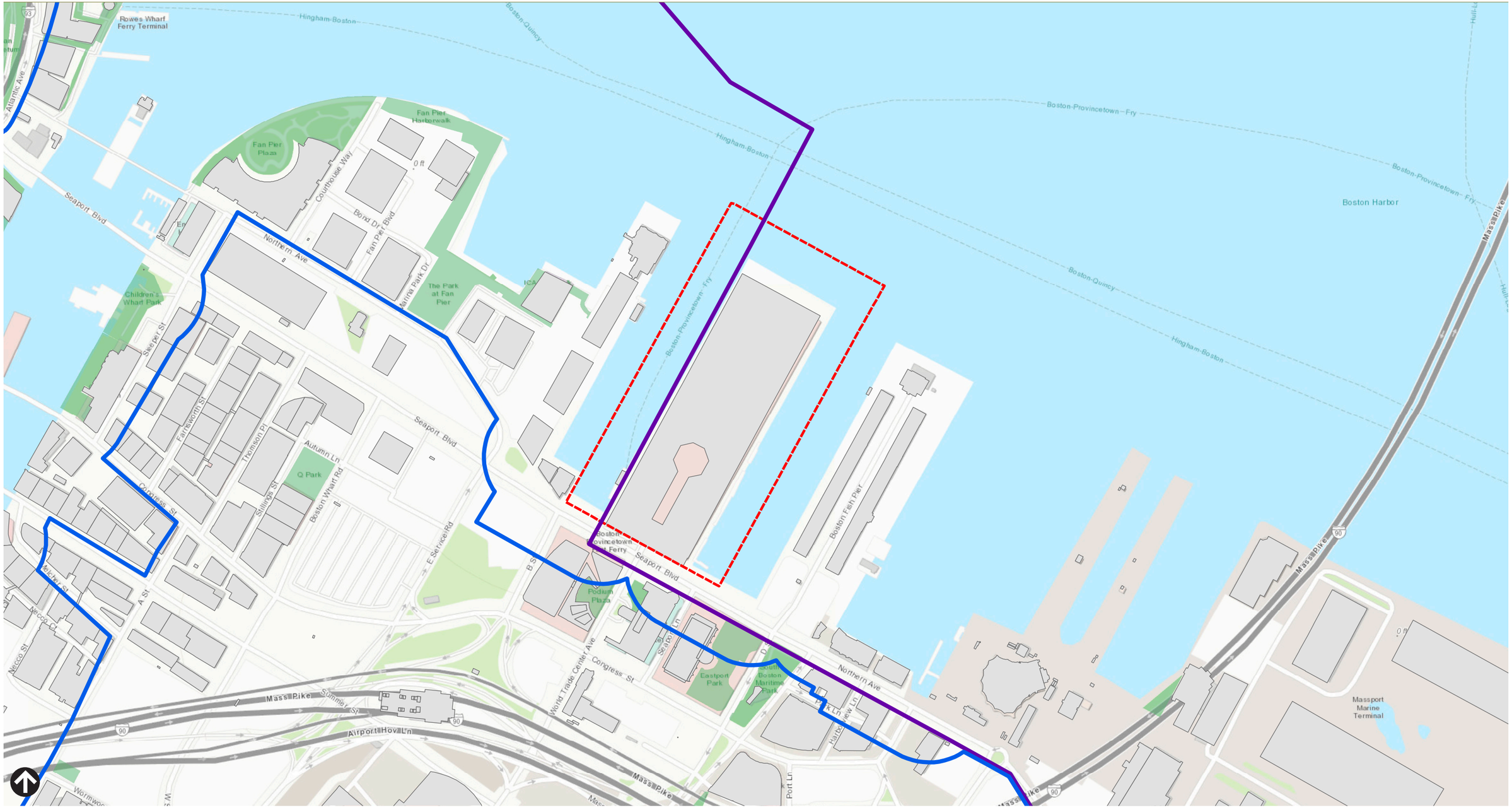
Massport Owned Properties Covered by the DEP-MPA MOU

Special Planning Areas

Figure 4.1

Special Planning Areas

Commonwealth Pier Revitalization
Boston, Massachusetts



Fort Point Associates, Inc., 2019

Project Site

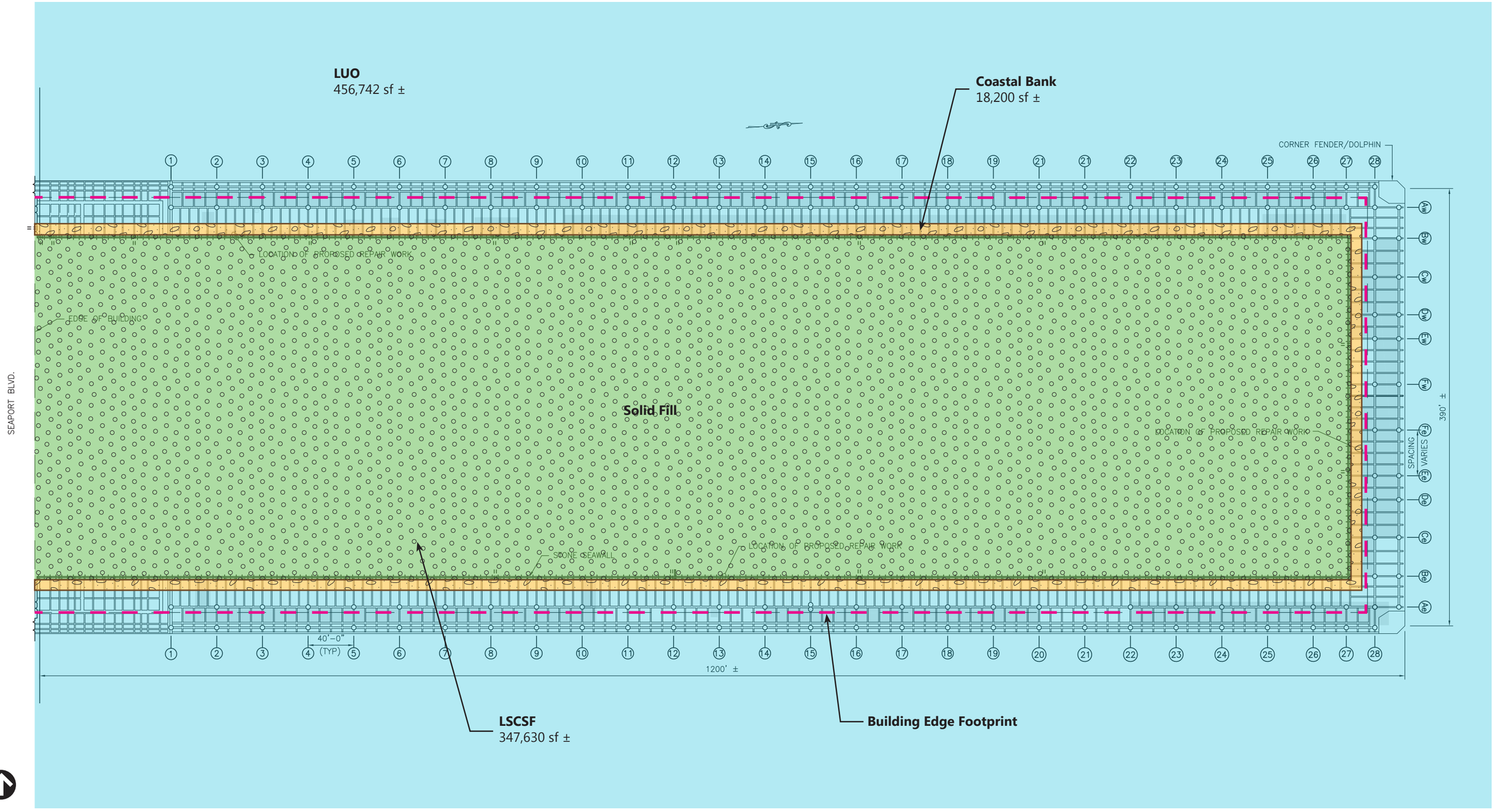
Waterways Jurisdiction

South Boston Designated Port Area

Figure 4.2

Waterways Jurisdiction

Commonwealth Pier Revitalization
Boston, Massachusetts



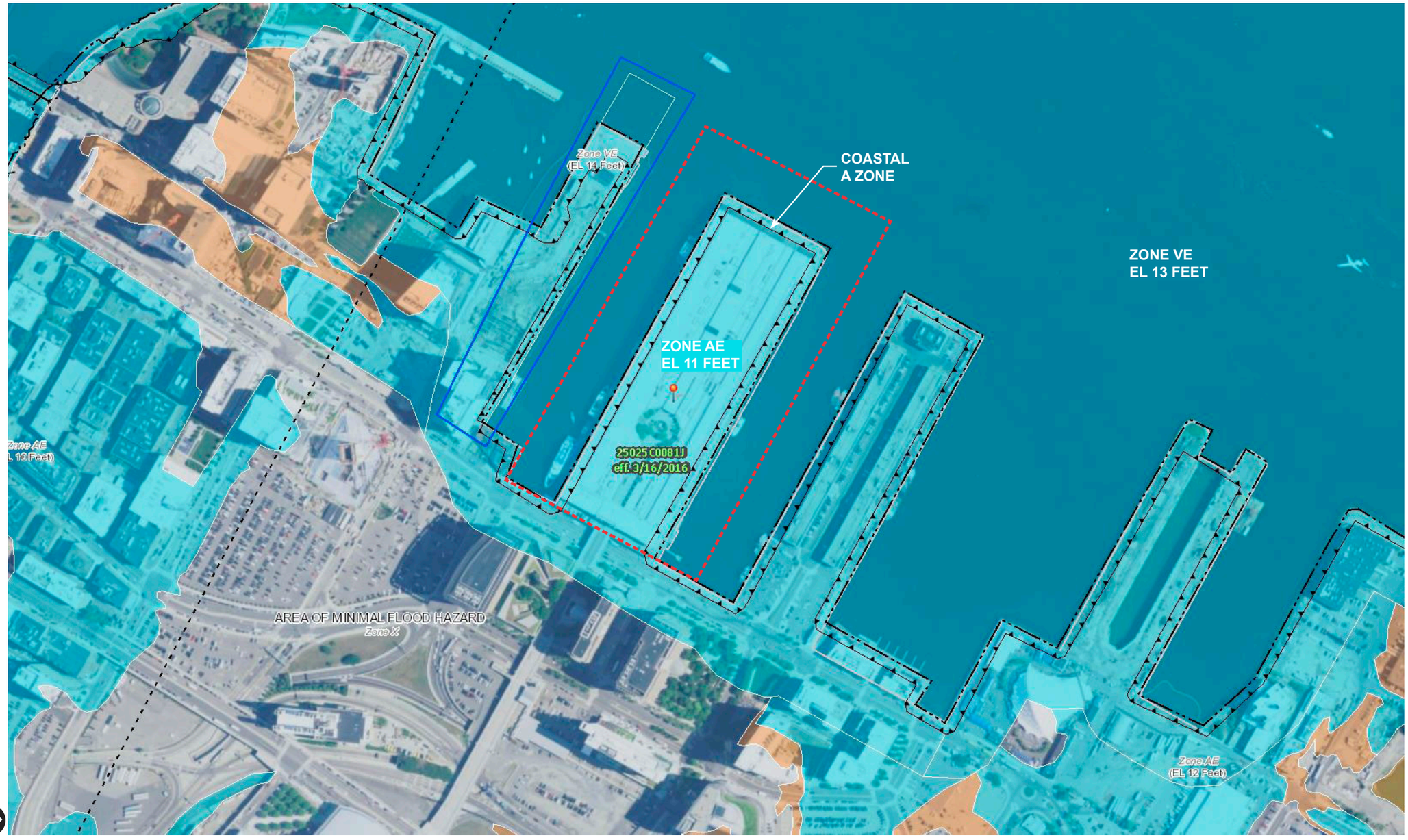
Fort Point Associates, Inc., 2019

- Land Under Ocean (LUO)
- Land Subject to Coastal Storm Flowage (LSCSF)
- Coastal Bank

Figure 4.3

Wetland Resource Areas

Commonwealth Pier Revitalization
Boston, Massachusetts



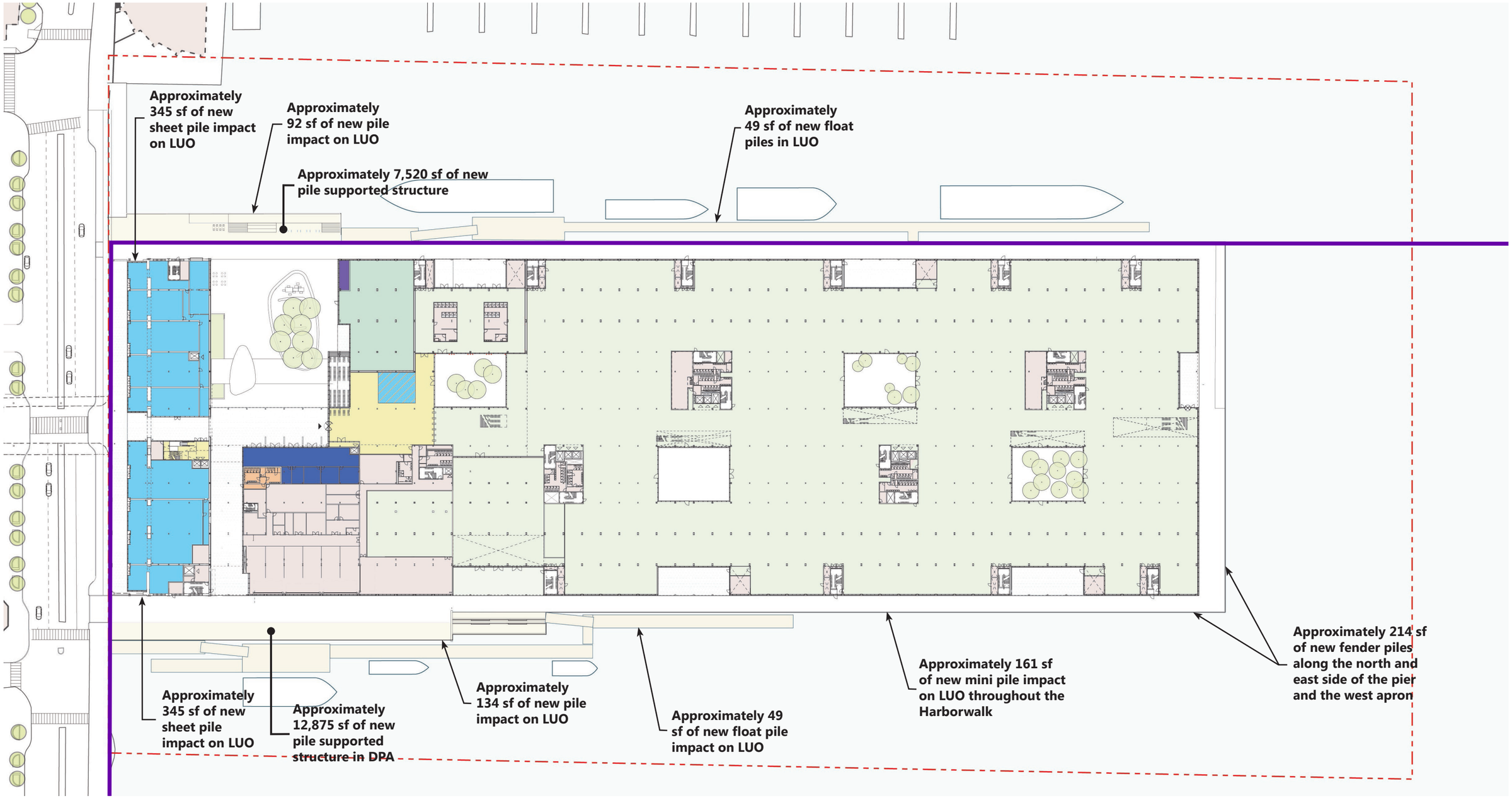
FEMA Flood Map Servce Center, 2018; Fort Point Associates, Inc., 2018

Project Site

Figure 4.4

FEMA Flood Insurance Rate Map

Commonwealth Pier Revitalization
Boston, Massachusetts



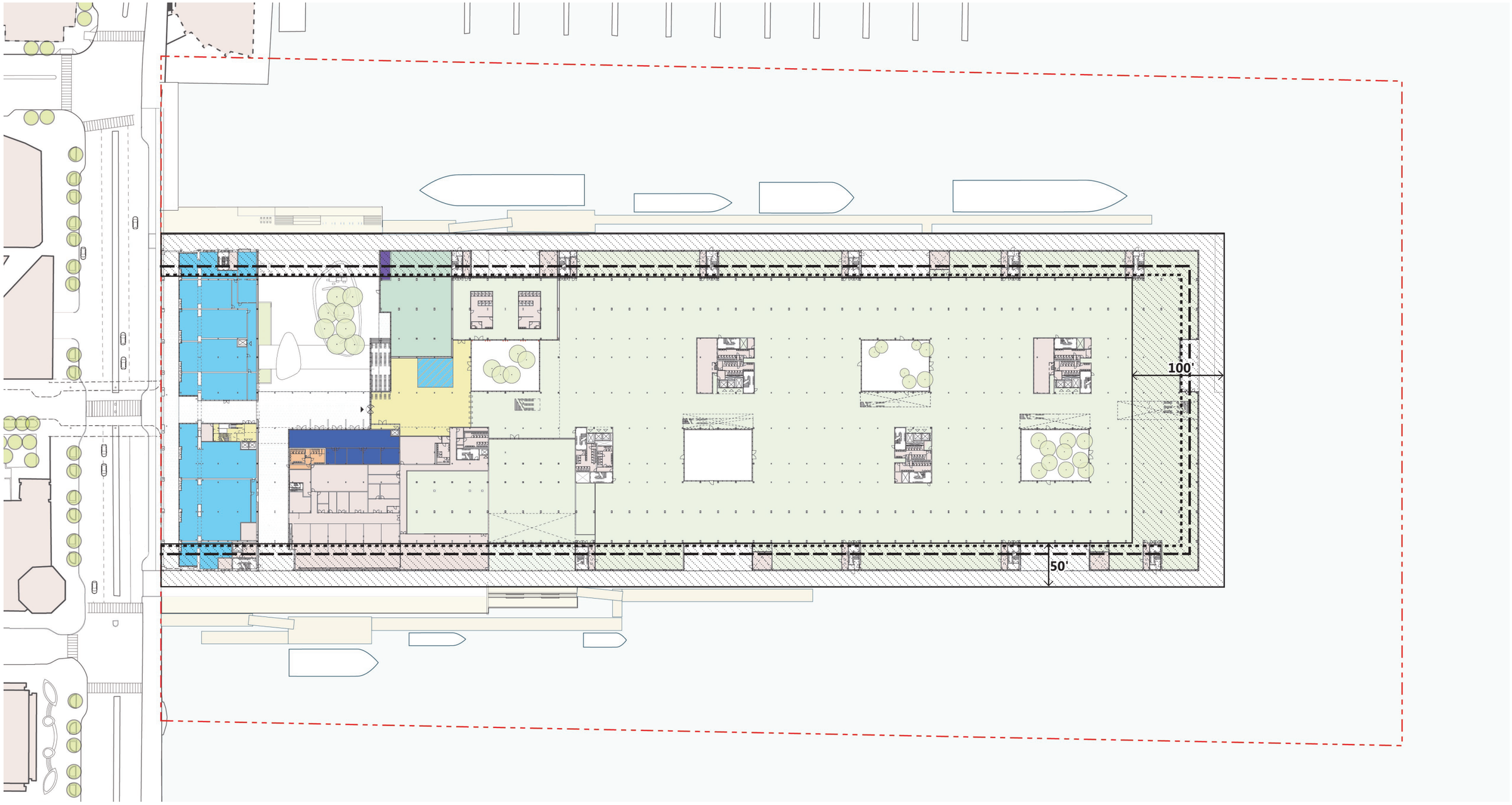
Fort Point Associates, Inc., 2018

Designated Port Area Boundary

Figure 4.5

Wetland Resource Area Impacts

Commonwealth Pier Revitalization
Boston, Massachusetts



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Mean Low Water

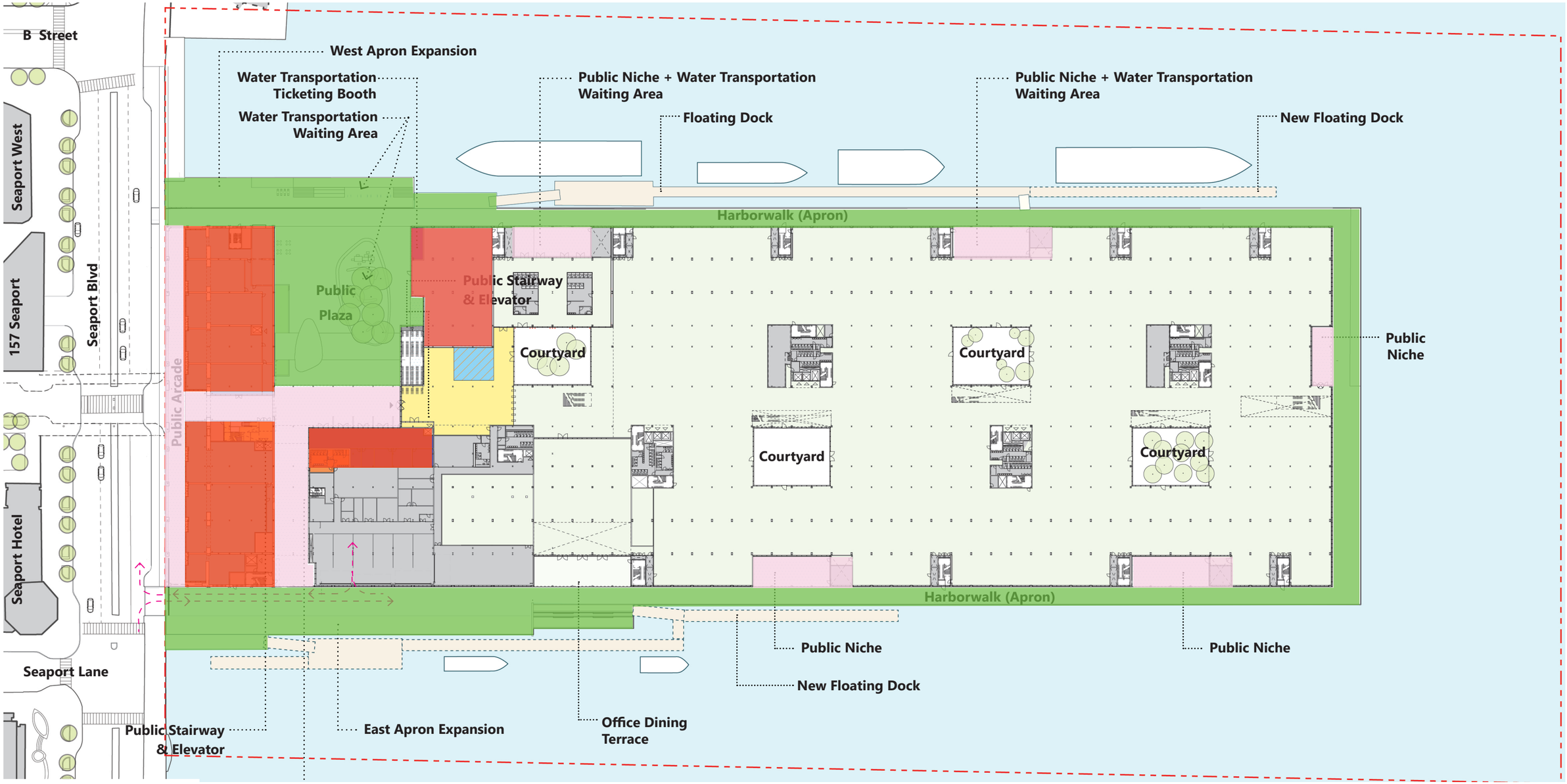
Mean High Water

Water Dependent Use Zone

Figure 4.6

Water Dependent Use Zone

Commonwealth Pier Revitalization
Boston, Massachusetts



Fort Point Associates, Inc., 2018

Open Space
Facilities of Public Accomodation
Public Realm

Figure 4.7

First Floor Facilities of Public Accomodation and Open Space

Commonwealth Pier Revitalization
Boston, Massachusetts

5

Transportation

This chapter provides an overview of the Project's transportation characteristics and potential impacts, based upon an evaluation of the development program and the transportation infrastructure serving the Project Site.

The following sections provide an overview of the Project's transportation context, including site access, transportation infrastructure, travel characteristics, trip generation by mode, and parking.

5.1 Summary of Key Findings and Benefits

The key findings related to transportation include:

- Given the Project's minimal shift in uses and small increase in the building square footage, average peak hour vehicle trip generation by the Project is projected to be relatively limited.
- Increased trip generation by the office and retail components of the Project will be off-set significantly by the elimination of the existing Exhibition Hall and reduction in Event/Ballroom space.
- The Project Site is well located in relation to the local and regional highway network, proximate to the I-90 and I-93 ramps, enabling convenient access for auto trips.
- The relocation of the service area within the building will reduce the extent of the Harborwalk and sidewalks along Seaport Boulevard currently used by trucks and service vehicles.
- The Project Site is transit-oriented, being well served by multiple public transportation services, including the MBTA Silver Line and Express and Local bus routes, as well as water transportation options.
- The Project will continue to accommodate water taxi service without compromising potential for planned future water shuttle service by the Proponent or others.
- Because a wide range of non-auto travel modes are available near the Project Site, including MBTA Silver Line and bus service, no new parking is needed to support the Project, consistent with the goal of minimizing auto-trips and encouraging alternative travel modes.
- The current informal parking and associated vehicle trips at the Viaduct level will be eliminated. Only occasional truck access for events on the Terrace in front of the headhouse will be permitted.
- A detailed curb regulation and management plan for Seaport Boulevard will be developed in coordination with Massport to allocate appropriate zones to

accommodate a variety of uses, including shuttles, buses, TNC services (e.g. Uber, Lyft), short-term parking and limited loading.

- The improvements on Seaport Boulevard will be designed to protect the integrity of Massport's existing Truck Route.
- Approximately 100 long- and short-term bicycle parking spaces will be provided.
- The Project will be supported by a robust Transportation Demand Management (TDM) program.

5.2 Existing Conditions

5.2.1 Site Access, Loading and Circulation

As shown in Figure 5.1, the Project Site is located on the northern side of Seaport Boulevard between its intersections with B Street to the west and Seaport Lane to the east. As a pier, the Project Site is bounded by Boston Harbor on three sides, and has an approximately 380-foot frontage on Seaport Boulevard. In addition, World Trade Center Avenue provides a vehicle access to the upper level of the building on the Viaduct over Seaport Boulevard. This access penetrates the building footprint as a driveway through the Headhouse with a turnaround at the main lobby, but access is controlled by a security booth so it has restricted vehicular use. Refer to Figures 1.3a and 1.3b for the existing site access and circulation plan.

As shown in Figure 5.1, the Project Site and the Seaport Parking Garage have excellent regional and local highway access, with ramps to and from Interstates 90 and 93 located within a block or so of the Project Site.

An apron around the waterfront sides of the existing building is part of the Harborwalk, but also provides vehicle access (subject to certain weight restrictions) to a through-building loading dock close to the mid-point of the pier. Also, there are four large service doors, accessed via curb-cuts on Seaport Boulevard, providing access to the floor of the existing exhibition space within the building. Although there is a fence in the median on this block of Seaport Boulevard, there are sliding gates, which can be opened to facilitate large trucks entering and exiting the exhibition space.

At the upper level, the main pedestrian access for the existing building is via the lobby at the end of the driveway through the Headhouse from World Trade Center Avenue. Access to the Headhouse of the World Trade Center MBTA Silver Line station is also provided on World Trade Center Avenue. At the lower level, there is a lobby entrance at the center of the site frontage on Seaport Boulevard, providing access to the exhibition space and vertical circulation to the upper level. A signalized crosswalk on Seaport Boulevard aligns with this lobby, connecting the Project Site to the MBTA World Trade Center Station and the remainder of the Seaport Place development.

5.2.2 Transit Service

As shown in Figure 5.2, the Project Site is well served by multiple public transportation services, with nearby stations and bus stops for the following MBTA services, including the following:

- Silver Line SL1 and SL2 routes;
- Express Bus Routes 448, 449 and 459; and
- Local Bus Routes 4 and 7.

Red Line and Commuter Rail service are available at South Station, which is within an approximately 15-minute walk from the Project Site. There is also a water taxi stop located on the east side of the Project Site at Seaport Boulevard.

Transit service information, including headways and hours of operation, are summarized in Table 5-1.

Table 5-1 Transit Service Summary

Transit Service	Origin-Destination	Major Stops	Nearest Stop to Project Site	Peak Hour Headway (minutes)[1]	Hours of Service[1]
MBTA Subway Services					
Silver Line 1	South Station – Logan Airport via Waterfront	Airport Terminals World Trade Center Station South Station Court House Station	World Trade Center	8 – 10	Weekday: 5:38 AM – 2:30 AM Saturday: 5:33 AM – 2:30 AM Sunday: 5:50 AM – 2:30 AM
Silver Line 2	Design Center – South Station via Waterfront	Dry Dock Avenue South Station World Trade Center Station Court House Station	World Trade Center	5	Weekday: 5:45 AM – 12:50 AM Saturday: 5:50 AM – 12:49 AM Sunday: 6:35 AM – 12:48 AM
Red Line	Alewife Station – Ashmont Station/ Braintree Station	South Station Park Street Station Charles/MGH Station Central Square	Broadway South Station	9	Weekday: 5:05 AM – 1:05 AM Saturday: 5:05 AM o 1:05 AM Sunday: 5:51 AM – 1:05 AM
MBTA Bus Services					
Route 4	North Station – Tide Street	North Station State Street Station Haymarket Station South Station	Seaport Blvd at Seaport Hotel	8 – 26	Weekday: 6:25 AM – 6:52 PM Saturday: No Service Sunday: No Service
Route 7	City Point – Otis and Summer Streets	South Station	Summer Street at WTC Ave	2 – 10	Weekday: 5:15 AM – 10:30 PM Saturday: 5:15 AM – 10:31 PM Sunday: No Service
MBTA Express Bus Service					
Route 448 Express	Marblehead – Downtown Crossing	South Station Wonderland Station Logan Airport	Seaport Blvd at Seaport Hotel	17 – 49	Weekday: 6:00 AM – 7:54 PM Saturday: No Service Sunday: No Service
Route 449 Express	Marblehead – Downtown Crossing	South Station Wonderland Station Logan Airport	Seaport Blvd at Seaport Hotel	17 – 49	Weekday: 6:00 AM – 7:54 PM Saturday: No Service Sunday: No Service

Route 449 Express	Salem Depot – Downtown Crossing	South Station Airport Terminals South Station	Seaport Blvd at Seaport Hotel B Street at Seaport Blvd	70 – 90	Weekday: 5:50 AM – 8:27 PM Saturday: No Service Sunday: No Service

1 Based on the most recent schedule provided on the MBTA website as of January 2019

5.2.3 Parking

With the exception of a limited number of informal parking spaces at the Headhouse area accessed via the Viaduct (which will be eliminated by the Project), there are no on-site parking spaces. However, a total of up to 890 parking spaces is allocated to the Seaport World Trade Center in the Seaport Parking Garage located on the south side of Seaport Boulevard.

As shown in Figure 5.3, car-sharing spaces (e.g., Zipcar) and bike-sharing (Bluebike) stations are available within easy walking distance of the Project Site.

5.3 Proposed Project

The Project is described in detail in Chapter 1, *Project Description*, and the proposed site plan is illustrated in Figures 1.5a and 1.5b. The following sections describe the transportation-related components of the Project.

5.3.1 Site Access, Loading, and Circulation

As shown in the site plan, no additional vehicle access will be provided for the Project Site on the ground level, although some on-site improvements will be made to accommodate loading and servicing.

The existing through-building service area will be eliminated and replaced by a service area within the building footprint on the east side of the building closer to Seaport Boulevard. The service area will provide six (6) loading docks accommodating 30' box trucks, the largest size truck currently used to service the existing building. In addition, access to the trash room by trash pick-up trucks will be accommodated through the service area (Figure 1.5a).

The service area will continue to be accessed via the building apron, but service vehicle access will be limited to a short length of the apron on the east side of the building. The apron will be widened between Seaport Boulevard to a point approximately 80 feet beyond the loading docks to provide a clear width of 25 feet to accommodate two-way service vehicle access. In addition to accommodating trucks reversing into the last loading docks, the 80-foot-wide area beyond the loading docks will provide additional space for truck staging. This new servicing plan will significantly reduce the total length of Harborwalk used by service vehicles compared to existing conditions, thereby significantly reducing pedestrian and vehicle conflicts.

In addition to access to the service area on the east side of the building, food trucks will access the Plaza via the apron on the west side. Also, access by pick-up trucks to service boat activity along the apron will be maintained around the entire perimeter.

Truck turn analyses for all elements of servicing as described above are included in Appendix E.

Because the commercial space on the Viaduct level will be serviced internally from the main loading docks/service area on the Seaport Boulevard level, vehicle access at the Viaduct level will be eliminated. However, the Viaduct will be designed to allow occasional truck access for events on the Terrace in front of the Headhouse from World Trade Center Avenue and make a 3-point turn to exit the Terrace. The drop-off circle at the existing hotel lobby on World Trade Avenue will be maintained (refer to Figure 2.6b). This circle accommodates fire trucks and may also provide a location for valet service for the Project's Viaduct level, using the existing valet ramp connection to the garage below.

Pedestrian access will be provided at the lower level along Seaport Boulevard and at the upper level from WTC Avenue, as shown in Figures 2.7a and 2.7b, respectively. There will be new opportunities for pedestrian access along the Harborwalk on both sides of the building and via a public walkway through the building itself at both levels, including the Seaport Parking Garage, as shown in Figures 2.8a, 2.9a, and 2.9b.

The Project will continue to accommodate water taxi service without compromising potential for planned future water shuttle service by the Proponent or others.

5.3.2 Seaport Boulevard Curb Regulation

As shown in Figure 2.6a, vehicle drop-off/pick-up will be accommodated on the westbound curbside along the site frontage on Seaport Boulevard. Because Seaport Boulevard has a median, drop-off/pick-up on the eastbound curbside will also support the Project. Currently the curbside allocations include a total of 16 parking meter spaces, shuttle drop-off/pick-up and, on the westbound side, a MBTA bus stop.

The length of curb frontage available under existing conditions will be maintained. However, a detailed curb regulation and management plan will be developed in coordination with Massport to allocate appropriate zones to accommodate a variety of uses, including shuttles, buses, TNC services (e.g. Uber, Lyft), short-term parking and limited loading. A primary objective of the curbside management plan will be to maintain and improve traffic flow on Seaport Boulevard which is a designated Massport truck route.

5.3.3 Parking

As noted previously, there is currently no on-site parking on the Project Site, other than a limited number of parking spaces at the upper Viaduct level. The existing

building is supported by an allocation of up to 890 parking spaces in the Seaport Parking Garage, located immediately across the street on Seaport Boulevard.

Due to the wide range of available non-auto travel modes immediately proximate to the Project Site, including MBTA Silver Line and Express and Local bus routes, no additional parking is proposed for the Project, either on-site or in the allocation of spaces in the Seaport Parking Garage. The existing parking spaces at the Viaduct level will be eliminated. This approach is consistent with the goal of minimizing auto-trips and encouraging alternative travel modes. Parking is available within the allocation of spaces in the Seaport Parking Garage, and the 1,541-space parking garage at SBWTC, which opened in May 2018. Currently there are 2 Zip Car spaces and 2 Fidelity employee car pool spaces designated in the Seaport Parking Garage.

5.4 Trip Generation Estimate

5.4.1 Development Program

Existing building uses on the Project Site comprise approximately 501,900 SF of office space, along with approximately 12,100 SF of retail/restaurant, approximately 132,050 SF of exhibition space and approximately 59,650 SF of event space/ballrooms. Table 1-1 of Chapter 1, *Project Description*, summarizes the existing building uses and proposed uses for the Project, which are analyzed herein.

The approximately 132,050 SF of existing exhibition space will be eliminated and the event/ballrooms will be reduced by approximately 3,250 SF, yielding approximately 56,000 SF of event/ballroom space. The Project will add approximately 122,780 SF of office space and approximately 11,240 SF co-working space, yielding an overall total of approximately 624,680 SF office use and 11,240 SF co-working space for a total of 635,920 SF for the Project. Approximately 33,140 SF retail/restaurant space will be added, yielding a total of approximately 45,240 SF of retail/restaurant space.

5.4.2 Unadjusted ITE Vehicle Trips

With some exceptions, most traffic impacts of a development occur when there is a combination of the peak prevailing traffic conditions on the roadway network and the addition of high levels of Project traffic – invariably for office development, this occurs during the weekday morning and evening peak hours. By contrast, daily trip generation numbers are less relevant to actual impacts as they are spread over the course of a 24-hour period and have no meaning expressed as an average hourly volume. However, it is important to consider daily trips for the purpose of this filing in which they serve as a proxy for potential level of traffic impact relative to the established review thresholds under MEPA guidelines.

The Institute of Transportation Engineers (ITE) Trip Generation manual provides trip rates for each type of land use. However, it is important to bear in mind that the ITE trip rates are based on nation-wide data from locations which largely do not reflect significant alternative travel modes, and transit service in particular. The trips are

presented initially with no adjustments for local transit and other non-auto modes, and are referred to as Unadjusted ITE trips. The applicable ITE Land Use Code (LUC) have been applied to the proposed Program uses, as follows:

- Office – LUC 710 General Office
- Retail – LUC 826 Specialty Retail
- Exhibition Hall and Event/Ballrooms (based on site-specific attendance data)

It should be noted that because the use of exhibition or event space, such as the Boston Convention and Conference Center (BCEC) or at Commonwealth Pier itself, varies significantly from location to location, there is no "standard" ITE category for that type of land use. Therefore, trip rates for the Project Event/Exhibition space are based on site-specific attendance data for the current Exhibition Hall and Event/Ballrooms facilities over a three-year period from 2015 to 2017. Exhibition and events take place over the course of the entire day, while use of the Exhibition Hall commences later in the morning. Therefore, it is assumed that approximately 5 and 10 percent of Exhibition Hall trip generation occurs in the morning and evening peak hours, respectively, whereas 10 percent of Event/Ballroom activity occurs during both morning and evening peak hours.

Table 5-2 presents the projected Unadjusted ITE Project trips for an average day (ADT) and for the weekday morning (AM) and evening (PM) peak hours.

Table 5-2 Unadjusted ITE Project Vehicle Trips[1]

	Existing	Proposed	Net Increase
Daily			
Office	4,474	5,355	881
Retail	536	2,005	1,469
Exhibition Hall[2]	1,762	0	-1,762
Event/Ballrooms[2]	991	937	-54
Total	7,763	8,297	534
Morning Peak Hour			
Office	696	841	145
Retail	45	167	122
ExhibitionHall[2]	88	0	-88
Event/Ballrooms[2]	99	94	-5
Total	927	1,101	174
Evening Peak Hour			
Office	641	791	150
Retail	33	123	90
Exhibit Hall[2]	176	0	-176
Ballrooms[2]	99	94	-5
Total	949	1,007	58

1 Total trips, arrive, and depart
2 Based on attendance data - not ITE trip rates

As shown in Table 5-2, the Project is projected to generate approximately 534 new

unadjusted vehicle trips (total trips, arrive and depart) on an average day. During the weekday morning and evening peak hours, the Project is projected to generate approximately 174 and 58 new unadjusted vehicle trips (total trips, arrive and depart), respectively. These changes reflect the fact that additional trips associated with the office and retail uses are significantly off-set by the elimination of the Exhibition Hall.

As previously mentioned, unadjusted ITE trip rates do not reflect availability of alternative travel modes, and transit service, whereas the Project Site is well-served by transit service and enjoys good walking and bicycle accessibility. Therefore, the unadjusted ITE vehicle trips for each land-use component are not representative of the actual number of vehicle trips expected to be generated by the Project. To identify the expected number of Project trips by each mode, it is necessary to first adjust the unadjusted ITE vehicle trips to person trips by applying the average vehicle occupancy (AVO). For the ITE based trips, the nation AVO of 1.13 from the US Census National Household Survey was applied. For the Exhibit Hall and Event/Ballroom trips, an AVO of 1.52 was derived from the Notice of Project Change (NPC) for the Summer Street/BCEC Headquarters Hotel.

Person trips were then adjusted to reflect the following local travel characteristics:

- Mode share by each available mode of transportation; and
- Average Vehicle Occupancy (AVO) – the number of persons per vehicle.

5.4.3 Mode Share

To estimate Project-related trips, mode shares for Fidelity employees currently working at the Project Site were obtained from Seaport TMA rideshare data. These mode shares were applied to the Project's office person trips as follows:

- Vehicle: 44% Daily, 44% Peak Hour
- Transit: 45% Daily, 47% Peak Hour
- Walk/Bike/Other: 11% Daily, 9% Peak Hour

For the retail and restaurant trips, mode shares were derived from the NPC for the Summer Street/BCEC headquarters Hotel, as follows:

- Vehicle: 39% Daily, 39% Peak Hour
- Transit: 34% Daily, 34%/38% (AM/PM) Peak Hour
- Walk/Bike/Other: 27% Daily, 27%/23% (AM/PM) Peak Hour

For the event and ballroom trips, mode shares were based on the NPC for the Summer Street/BCEC headquarters Hotel, as follows:

- Vehicle: 37% Daily, 37% Peak Hour
- Transit: 22% Daily, 18% Peak Hour
- Walk/Bike/Other: 41% Daily, 45% Peak Hour

It should be noted that the retail component of the Project will generally not be "destination-oriented", although restaurants are expected to attract destination trips primarily during the afternoon peak and evening periods. Although it is expected that the retail component will attract a significant number of pedestrian trips, most of these trips will be drawn from employees, residents and visitors already in the area. These pedestrian trips will be pass-by trips or diverted/shared trips and as such they are not new trips generated by the Project.

5.4.4 Local Average Vehicle Occupancy

As there will be more than one person travelling in many vehicles, the number of trips by vehicle are adjusted by applying the average vehicle occupancy (AVO) ratio to the number of person trips by vehicle to determine the number of vehicle trips. The local AVOs reflect the characteristics of the South Boston Waterfront where the Project is located rather than the national AVOs used to convert unadjusted ITE vehicle trips to person trips in Section 5.4.2. For the estimate of office vehicle trips, the AVO was based on Seaport TMA data for Fidelity employees. For the retail/restaurant and event/ballroom trips, AVOs were derived from the NPC for the Summer Street/BCEC headquarters Hotel. The peak hour AVOs for each program component were as follows:

- Office: 1.07
- Retail/Restaurant: 1.49
- Event/Ballroom: 1.52

5.4.5 Adjusted Project Vehicle Trips

Based on the previously described adjustments for local travel characteristics for the Project Site location, the net new Project-generated trips are presented in Table 5-3.

Table 5-3 Trip Generation Summary

		Vehicle			Transit			Walk/Bike		
		Daily	AM Peak	PM Peak	Daily	AM Peak	PM Peak	Daily	AM Peak	PM Peak
Office	Entering	205	60	12	244	68	14	55	13	3
	Exiting	205	8	58	244	9	66	55	2	13
	Total	410	68	70	488	77	80	110	15	26
Retail	Entering	202	17	12	282	23	17	224	18	10
	Exiting	202	19	15	282	24	22	224	19	13
	Total	404	36	27	564	47	39	448	37	23
Exhibition Hall	Entering	-326	-16	-33	-295	-12	-23	-549	-30	-61
	Exiting	-326	-16	-33	-295	-12	-23	-549	-30	-61
	Total	-652	-32	-66	-590	-24	-46	-1098	-60	-122
Event/Ballrooms	Entering	-10	-1	-1	-9	-1	-1	-17	-2	-2
	Exiting	-10	-1	-1	-9	-1	-1	-17	-2	-2

	Total	-20	-2	-2	-18	-2	-2	-34	-4	-4
Total	Entering	71	60	-9	203	78	7	-287	-1	-50
	Exiting	71	10	39	20	21	64	-287	-11	-37
	Total	142	70	30	406	99	71	-574	-12	-87

In total, the Project is expected to generate approximately 142 new daily vehicle trips, with 70 occurring in the morning peak hour and 30 in the evening peak hour (total trips, arrive and depart). The Project is also expected to generate approximately 406 new daily transit trips, with 99 occurring in the morning peak hour and 71 in the evening peak hour (total trips, arrive and depart).

The trip generation analysis summary spreadsheet in included in Appendix E.

5.5 Transportation Demand Management and Improvements

A robust Transportation Demand Management (TDM) plan will be developed to include management strategies and improvements to reduce single-occupant vehicle (SOV) trips and encourage travel by alternative modes such as transit, shuttle service, car-sharing and bike-sharing, as well as the Proponent's participation in the Seaport TMA and their efforts to consolidate shuttles. The plan will be developed in coordination with Massport and BTD/BPDA, and may include strategies such as:

1. Ongoing membership and participation in the Seaport TMA and its programs.
2. Make available transit maps, schedules and other information relevant to commuting options.
3. Provide information on travel alternatives for employees and visitors via the Internet.
4. Provide information package on travel alternatives to new employees.
5. The Project will continue to accommodate water taxi service without compromising potential for planned future water shuttle service by the Proponent or others.
6. Provide Car Sharing spaces (e.g. Zipcar) in Seaport Parking Garage, subject to demand.
7. Provide long-term covered secure bicycle parking, and short-term bicycle parking for visitors. The current plans include storage for approximately 100 bicycles.
8. End of trip facilities for cyclists such as showers and changing facilitates will be provided by future tenants.
9. Provide additional bike parking in response to demand.
10. Provide on-site "Fix-it" bike station(s).
11. Provide consolidated off-street service, delivery and loading facilities for all tenants.

12. Provide service/loading dock manager to manage and coordinate service area and any curbside loading on Seaport Boulevard.
13. Develop a detailed curb regulation and management plan in coordination with Massport to allocate appropriate zones to accommodate a variety of uses, including shuttles, buses, TNC services (e.g. Uber, Lyft), short-term parking and limited loading. A primary objective of the curbside management plan will be to maintain and improve traffic flow on Seaport Boulevard which is a designated Massport truck route.
14. Coordinate preparation of a Transportation Access Plan (TAP) with Massport and execute a Transportation Access Plan Agreement (TAPA) with the Boston Transportation Department to formalize and document all transportation improvements and TDM commitments.
15. Develop a Construction Management Plan in coordination with Massport and the Boston Transportation Department to address potential short-term construction-related transportation impacts, including construction vehicle traffic, parking supply and demand, and pedestrian access.

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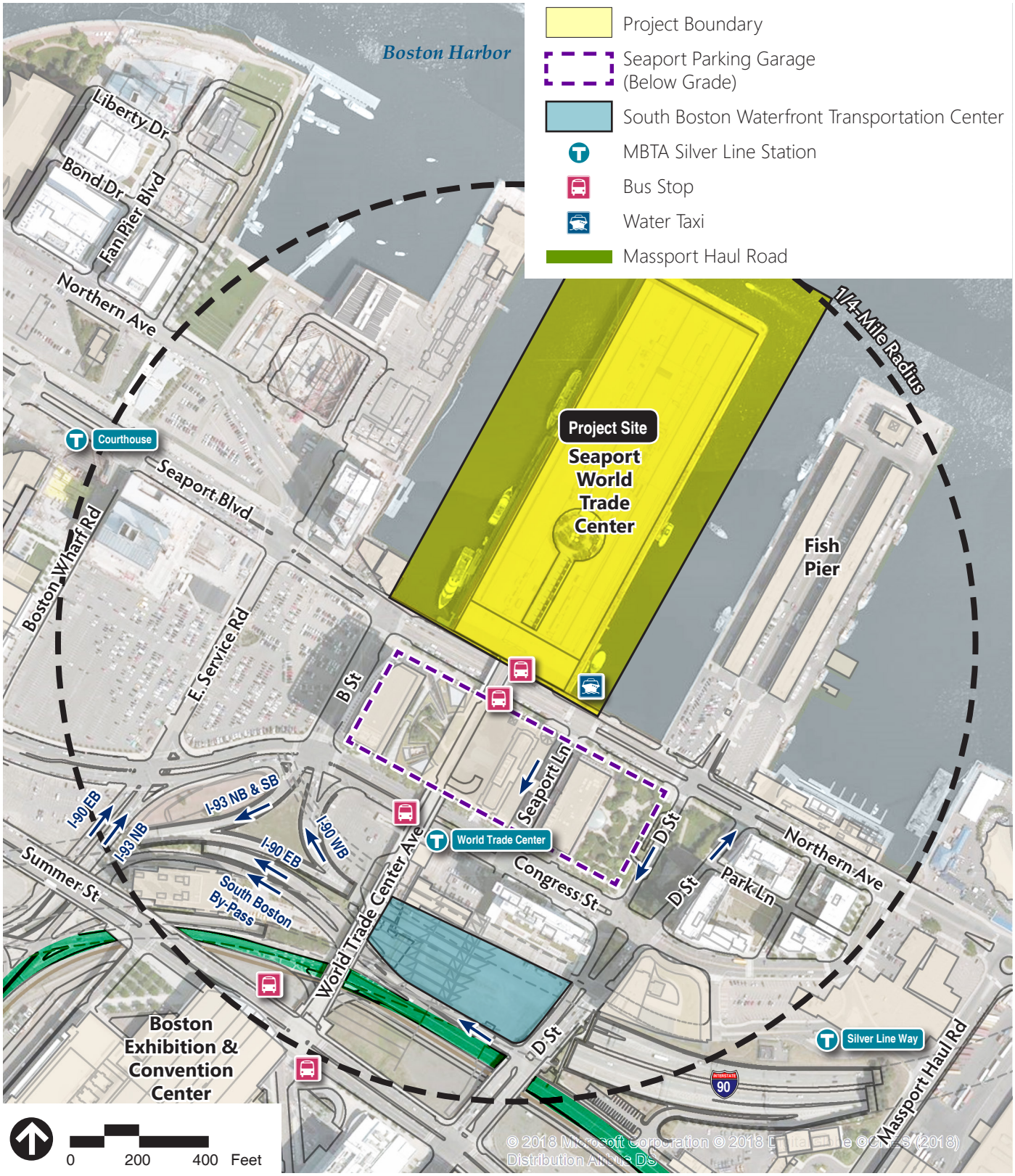


Source: City of Boston, Bing

Figure 5.1

Transportation Context

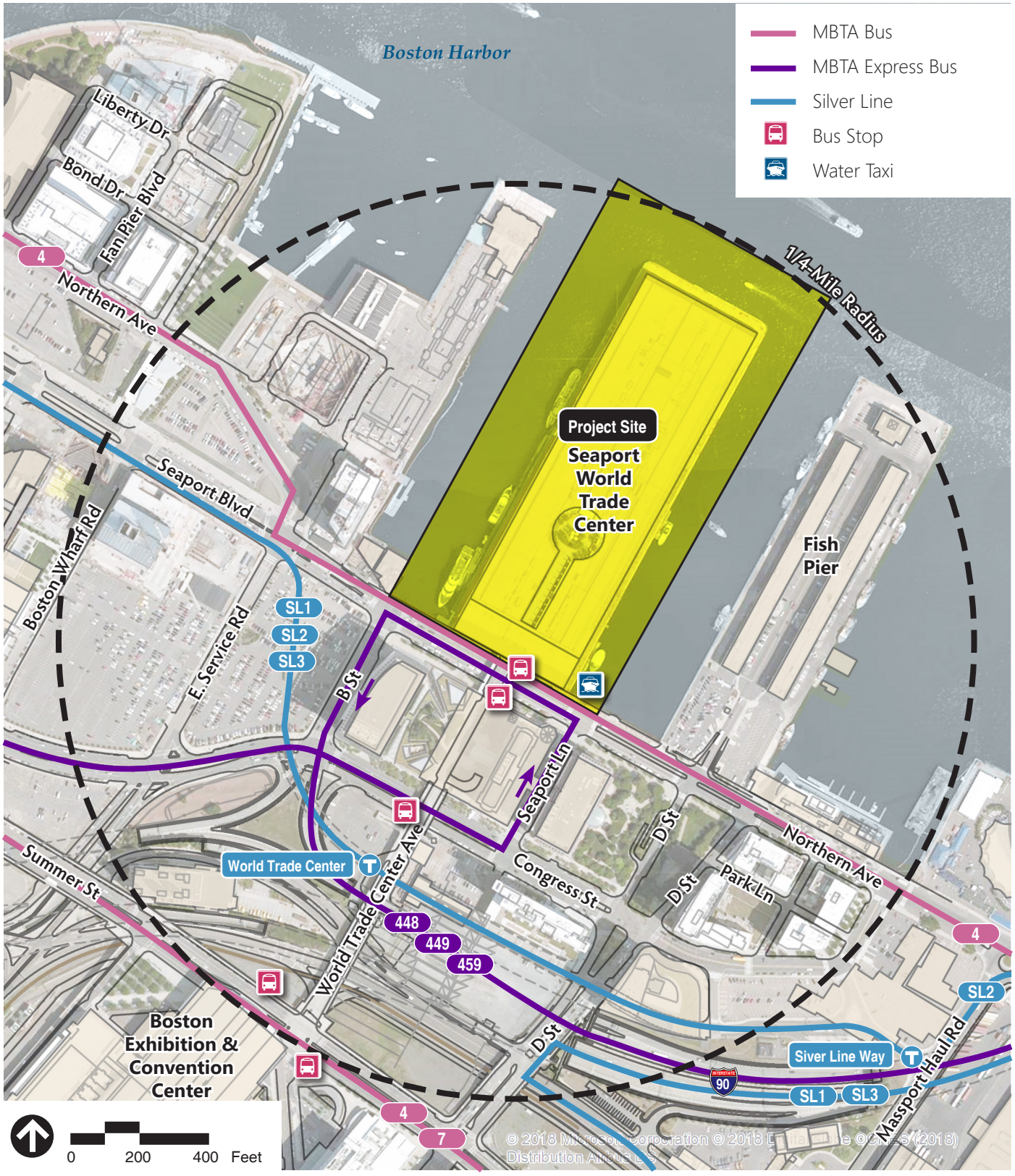
Commonwealth Pier Revitalization
Boston, Massachusetts

Source: City of Boston, Bing

Figure 5.2

Existing Bike and Car Sharing Locations

Commonwealth Pier Revitalization
Boston, Massachusetts



Source: City of Boston, Bing

Figure 5.3

Public Transportation

Commonwealth Pier Revitalization
Boston, Massachusetts

6

Environmental Protection

This chapter describes the existing environmental conditions on and near the Project Site and includes a discussion of the potential changes that may occur as a result of the Project. A goal of the Project is to better utilize the Project Site and complement adjacent uses while avoiding, minimizing, and/or mitigating potential adverse environmental impacts to the surrounding area to the greatest extent feasible.

Consistent with the Article 80B, Large Project Review guidelines of the Code, the Project will address potential environmental impacts in the following categories:

- Solar Glare
- Air Quality
- Water Quality
- Flood Hazard
- Noise
- Groundwater
- Geotechnical
- Solid & Hazardous Waste
- Construction

Wind, shadow, and daylight studies are not required for the Project as it does not introduce new height that would change these conditions. Where the current design allows, this chapter provides an assessment of Project-related impacts.

6.1 Summary of Key Findings and Benefits

The key findings and benefits related to environmental protection include:

- **Solar Glare** – The Project will be designed to minimize the potential for solar glare that could adversely impact traffic safety along nearby roadways and solar heat gain in nearby buildings through the consideration of low/non-reflecting exterior building materials as design progresses. Any solar glare that may result from the Project will not pose an aircraft hazard.
- **Air Quality –** Given the limited traffic generation associated with the Project, it is expected to satisfy applicable regulatory requirements, and comply with the 1990 Clean Air Act Amendments ("CAAA") following the local and the EPA policies and procedures.
- **Water Quality** – The Project represents an opportunity to improve the quality and reduce the quantity of site stormwater runoff compared to existing conditions through the implementation of improved stormwater management practices.
- **Flood Hazard** – The Project is currently within the 100-year FEMA AE flood zone and has integrated resilient design best practices to plan for predicted sea level rise and flooding.

- **Noise** – The sound levels associated with the Project's mechanical equipment are expected to have no adverse noise impacts at nearby sensitive receptor locations because the ambient conditions exceed the City of Boston's standards.
- **Groundwater** – The Project Site is located outside the limits of the Groundwater Conservation Overlay District (GCOD) and therefore is not required to comply with Article 32.
- **Geotechnical** – The Project Site is constructed on a filled pier bounded by a granite block seawall constructed between 1897 and 1901. Redevelopment of the existing building will require new foundations to be installed at select locations where additional loads cannot be accommodated by existing foundations.
- **Solid and Hazardous Waste** – Management of soil will be in accordance with applicable local, state, and federal laws and regulations.
- **Construction** – The Project will develop a detailed Construction Management Plans (CMP) for each phase of work for approval by Boston Transportation Department (BTD) prior to construction.

6.2 Solar Glare

The City of Boston BPDA Development Review Guidelines require projects undergoing Large Project Review to analyze the potential impacts from solar glare if there is a potential for visual impairment or discomfort due to reflective spot glare on:

- Potentially affected streets;
- Public open spaces; and
- Pedestrian areas.

Projects must also consider the potential for solar heat buildup in any nearby buildings receiving reflective sunlight from the building, if applicable.

The exterior building materials have not yet been finalized for the Project, however, it is not anticipated that highly reflective glass will be employed in any of the building facades. The Project will be designed to minimize the potential for solar glare that could adversely impact traffic safety along nearby roadways and solar heat gain in nearby buildings through the consideration of low/non-reflecting exterior building materials as design progresses. The absence of solar glare impacts will be confirmed during the design review process in connection with the selection of façade materials. Since the building is adjacent to a Logan Airport flight path, the Proponent will coordinate closely with Massport through its design review process to ensure that the chosen building materials will not result in adverse impacts to aviation safety.

6.3 Air Quality

The air quality assessment demonstrates that the Project satisfies applicable regulatory requirements, and that it complies with the 1990 CAAA following the local and the EPA policies and procedures. Air quality is considered for both local impacts ("microscale") and regional impacts ("mesoscale").

6.3.1 Background

The CAAA resulted in states being divided into attainment and non-attainment areas, with classifications based upon the severity of their air quality problems. Air quality control regions are classified and divided into one of three categories: attainment, non-attainment and maintenance areas depending upon air quality data and ambient concentrations of pollutants. Attainment areas are regions where ambient concentrations of a pollutant are below the respective NAAQS; non-attainment areas are those where concentrations exceed the NAAQS. A maintenance area is an area that used to be non-attainment, but has demonstrated that the air quality has improved to attainment. After 20 years of clean air quality, maintenance areas can be re-designated to attainment.

The Project is located in Boston, which is a CO Maintenance area (although not officially designated on the Greenbook[1], the area is beyond the 20-year maintenance timeframe and therefore could be designated as attainment). Projects located in CO maintenance areas are required to evaluate their CO concentrations with the NAAQS. As such, CO concentrations need to be considered for this Project. Suffolk County is in attainment for the remainder of the criteria pollutants.

6.3.2 Air Quality Standards

The EPA has established the NAAQS to protect the public health. Massachusetts has adopted similar standards as those set by the EPA for CO. Table 6-1 presents the NAAQS for CO.

Table 6-1 National Ambient Air Quality Standards

	Primary Standards		
Pollutant	**Level**	**Averaging Time**	**Form**
Carbon Monoxide	9 ppm (10 mg/m^3)	8-hour	Not to be exceeded more than once per year
	35 ppm (40 mg/m^3)	1-hour	

DEP maintains a network of air quality monitors to measure background CO concentrations. Background concentrations are ambient pollution levels from all

[1] *Nonattainment Areas for Criteria Pollutants*, Greenbook (as of September 30, 2017), https://www.epa.gov/green-book. Accessed February 20, 2018.

stationary, mobile, and area sources. Background CO concentrations are determined by choosing the maximum of the 2nd-highest annual values from the previous three years. Looking at the air quality monitor closest to and most representative of the Project Site (the Von Hillern), the CO background values are 1.7 ppm for the 1-hour averaging time and 0.9 ppm for the 8-hour averaging time. These values are much less than the 1-hour and 8-hour NAAQS. The background values are presented in Table 6-2.

Table 6-2 Air Quality Background Concentrations

	Background Concentrations		NAAQS	
Pollutant	**Level**	**Averaging Time**	**Level**	**Averaging Time**
Carbon Monoxide	0.9 ppm	8-hour	9 ppm	8-hour
	1.7 ppm	1-hour	35 ppm	1-hour

Monitoring Location: Von Hillern, Boston, MA. Years 2014-2016.

The potential CO concentrations from motor vehicle traffic related to the Project will be considered in conjunction with these background concentrations to demonstrate that the Project will comply with the NAAQS Standards in the DEIR/DPIR.

6.3.3 Traffic Data

An air quality assessments uses traffic data (volumes, delays, and speeds) developed for the analysis conditions based on the transportation analysis. Based on the preliminary trip generation presented in Chapter 5, *Transportation*, the Project is expected to generate 70 vehicle trips in the morning peak hour, 43 vehicle trips in the evening peak hour, and 368 vehicles daily.

6.3.4 Microscale Air Quality Analysis

The BPDA Development Review Guidelines require "a microscale analysis predicting localized carbon monoxide concentrations should be performed, including identification of any locations projected to exceed the National or Massachusetts Ambient Air Quality Standards, for projects in which:

- Project traffic would impact intersections or roadway links currently operating at Level of Service ("LOS") D, E, or F or would cause LOS to decline to D, E, or F; or
- Project traffic would increase traffic volumes on nearby roadways by 10 percent or more (unless the increase in traffic volume is less than 100 vehicles per hour); or
- The Project will generate 3,000 or more new average daily trips on roadways providing access to a single location."

6.4 Water Quality

The Project intends to improve the quality of stormwater runoff from the Project site and reduce its quantity to the local stormwater drainage system to the maximum extent practicable. The Project will be exploring stormwater measures such as new landscape areas, on-site stormwater reuse measures, and water quality units. Surface drain structures required by the Project will be developed to meet the latest city and state codes and standards. Compliance with the local stormwater standards for the Project will be reviewed as part of the technical permitting process.

6.5 Flood Hazard

The Project Site consists of a pier that extends over Boston Harbor. As discussed previously in Section 3.5.1 of Chapter 3, *Sustainability/Green Building and Climate Change Resiliency*, the Project Site is currently within the 100-year FEMA AE flood zone.

6.6 Noise

The noise assessment evaluated the potential noise impacts associated with the Project's activities, including potential mechanical equipment and service activities. This section discusses the fundamentals of noise, noise impact criteria, noise analysis methodology, and potential noise impacts. Noise measurements were conducted for determining existing ambient conditions near the Project Site. A qualitative analysis demonstrates that the Project will comply with City of Boston noise regulations.

6.6.1 Fundamentals of Noise

Noise is defined as unwanted or excessive sound. Sound becomes unwanted when it interferes with normal activities such as sleep, communication, work, or recreation. How people perceive sound depends on several measurable physical characteristics, which include the following:

- Intensity - Sound intensity is often equated to loudness.
- Frequency - Sounds are comprised of acoustic energy distributed over a variety of frequencies. Acoustic frequencies, commonly referred to as tone or pitch, are typically measured in Hertz. Pure tones have all their energy concentrated in a narrow frequency range.

Sound levels are most often measured on a logarithmic scale of decibels (dB). The decibel scale compresses the audible acoustic pressure levels which can vary from the threshold of hearing (zero dB) to the threshold of pain (120 dB). Because sound levels are measured in dB, the addition of two sound levels is not linear. Adding two equal sound levels creates a 3 dB increase in the overall level. Research indicates the following general relationships between sound level and human perception:

- A 3-dB increase is a doubling of acoustic energy and is the threshold of perceptibility to the average person.
- A 10-dB increase is a tenfold increase in acoustic energy but is perceived as a doubling in loudness to the average person.

The human ear does not perceive sound levels from each frequency as equally loud. To compensate for this phenomenon in perception, a frequency filter known as A-weighted [dB(A)] is used to evaluate environmental noise levels. Table 6-3 presents a list of common outdoor and indoor sound levels.

Table 6-3 Common Outdoor and Indoor Sound Levels

Outdoor Sound Levels	Sound Pressure (μPa) *		Sound Level dB(A)**	Indoor Sound Levels
	6,324,555	-	110	Rock Band at 5 m
Jet Over Flight at 300 m		-	105	
	2,000,000	-	100	Inside New York Subway Train
Gas Lawn Mower at 1 m		-	95	
	632,456	-	90	Food Blender at 1 m
Diesel Truck at 15 m		-	85	
Noisy Urban Area—Daytime	200,000	-	80	Garbage Disposal at 1 m
		-	75	Shouting at 1 m
Gas Lawn Mower at 30 m	63,246	-	70	Vacuum Cleaner at 3 m
Suburban Commercial Area		-	65	Normal Speech at 1 m
	20,000	-	60	
Quiet Urban Area—Daytime		-	55	Quiet Conversation at 1 m
	6,325	-	50	Dishwasher Next Room
Quiet Urban Area—Nighttime		-	45	
	2,000	-	40	Empty Theater or Library
Quiet Suburb—Nighttime		-	35	
	632	-	30	Quiet Bedroom at Night
Quiet Rural Area—Nighttime		-	25	Empty Concert Hall
Rustling Leaves	200	-	20	
		-	15	Broadcast and Recording Studios
	63	-	10	
		-	5	
Reference Pressure Level	20	-	0	Threshold of Hearing

Source: Highway Noise Fundamentals. Federal Highway Administration, September 1980.

* μPA – MicroPascals, which describe pressure. The pressure level is what sound level monitors measure.

** dB(A) – A-weighted decibels, which describe pressure logarithmically with respect to 20 μPa (the reference pressure level).

A variety of sound level indicators can be used for environmental noise analysis. These indicators describe the variations in intensity and temporal pattern of the sound levels. The following is a list of common sound level descriptors used for environmental noise analyses:

- L90 is the sound level which is exceeded for 90 percent of the time during the time period. The L90 is generally considered to be the ambient or background sound level.
- Leq is the A-weighted sound level, which averages the background sound levels with short-term transient sound levels and provides a uniform method for comparing sound levels that vary over time.

6.6.2 Methodology

The noise analysis evaluated the potential noise impacts associated with the Project's operations, which include mechanical equipment and service activities. The noise analysis included measurements of existing ambient background sound levels and a qualitative assessment of potential noise impacts associated with the proposed mechanical equipment (e.g., HVAC units, exhaust ventilation systems) and service activities. The study area was evaluated and sensitive receptor locations near the Project were identified and examined. The site layout and building design, as it relates to the service area and management of deliveries at the Project Site were also considered. The analysis considered sound level reductions due to distance, proposed building design, and obstructions from surrounding structures.

Receptor Locations

The noise assessment included an evaluation of the study area to identify nearby sensitive receptor locations, which typically include areas of sleep and areas of outdoor activities. The noise assessment identified five sensitive receptor locations near the Project. As shown on Figure 6.1, the sensitive receptor locations include the following:

- R1 – 150 Pier Four Boulevard;
- R2 – 100 Pier Four Boulevard;
- R3 – 152 Seaport Boulevard;
- R4 – 1 Seaport Lane;
- R5 – 225 Northern Avenue.

Receptors 1 and 5 are residential buildings that are currently occupied. Receptors 2 and 3 are residential buildings that are currently under construction. Receptor 4 is the Seaport Hotel, which is considered a residential use by the noise impact criteria described in Section 6.6.3. These receptor locations, selected based on land use considerations, represent the most sensitive locations near the Project Site.

6.6.3 City of Boston Noise Impact Criteria

The City of Boston has developed noise standards that establish noise thresholds deemed to result in adverse impacts. The noise analysis for the Project used these standards to evaluate whether the proposed development will generate sound levels that result in potential adverse impacts.

Under Chapter 40 Section 21 of the General Laws of the Commonwealth of Massachusetts and Title 7 Section 50 of the City of Boston Code, the Air Pollution Control Commission of the City of Boston has adopted Regulations for the Control of Noise in the City of Boston. These regulations establish maximum allowable sound levels based upon the land use affected by the proposed development. Table 6-4 summarizes the allowable sound levels that should not be exceeded.

Table 6-4 City of Boston Noise Standards by Zoning District, dB(A)

Land Use Zone District	Daytime (7:00 AM – 6:00 PM)	All Other Times (6:00 PM – 7:00 AM)
Residential	60	50
Residential/Industrial	65	55
Business	65	65
Industrial	70	70

Source: Regulations for the Control of Noise in the City of Boston, Air Pollution Control Commission.

For a residential zoning district, the maximum noise level affecting residential uses shall not exceed the Residential Noise Standard. The residential land use noise standard is 60 dB(A) for daytime periods (7:00 AM to 6:00 PM) and 50 dB(A) for nighttime conditions (6:00 PM to 7:00 AM). Note, hotels are treated as residential uses by the Noise Standards.

6.6.4 Existing Noise Conditions

Noise measurements were conducted to establish existing ambient sound levels in vicinity of the Project Site. The existing sound levels were measured using Type 1 sound analyzer (Larson Davis SoundExpert LxT). Measurements were conducted between February 14, 2018 and February 15, 2018 to capture sound levels representative of typical existing ambient conditions. Short-term measurements (20 minutes) during the daytime period were conducted between 1:30 PM to 3:30 PM, while the nighttime period measurements were conducted between 2:30 PM to 4:30 AM. The existing measured sound level data are summarized in Table 6-5.

Table 6-5 Existing Ambient Sound Levels, dB(A)

	City of Boston Residential District Noise Standard		Measured L90 Sound Levels	
Monitoring Location	**Daytime**	**Nighttime**	**Daytime**	**Nighttime**
M1 – 100 Pier Four Boulevard	60	50	**62**	**54**
M2a – Seaport Hotel (Ground Level)	60	50	**61**	**55**
M2b – Seaport Hotel (Upper Level)	60	50	**61**	**51**
M3 – 225 Northern Avenue	60	50	59	**51**

Source: VHB, Feb 14 & 15, 2018
Note: Refer to Figure 6.1 for monitoring locations.
Bold values exceed City of Boston noise standards.

The measured L90 sound levels ranged from approximately 59 to 62 dB(A) during the daytime period. During the nighttime period, the measured L90 sound levels ranged from approximately 51 to 55 dB(A). The results of the noise measurements indicate that the daytime sound levels at measurement locations M1 and M2 exceed the City of Boston's standards for a Residential District. Daytime sound levels at M3 are below the City of Boston standards by one decibel. During the daytime period, the measured sound level data were composed of noise primarily from vehicles travelling on Seaport Boulevard, planes, nearby building mechanical equipment and construction activity. During the nighttime period, existing sound levels exceed the City's nighttime standards at all measurement locations. The nighttime period sound levels were generally associated with traffic on Seaport Boulevard and nearby building mechanical equipment.

6.6.5 Future Noise Conditions

The noise analysis evaluated the potential noise impacts associated with the Project's proposed mechanical equipment and service activities. The analysis assessed the potential sound level impacts at the nearby sensitive receptor locations.

Mechanical Equipment

Since the Project is in the early stages of the design process, the specific details related to the final selection of the mechanical equipment are unknown at the time of this noise assessment. Based on preliminary plans, the anticipated mechanical equipment associated with the Project may potentially include:

- Chiller units;
- Cooling towers;
- Condensing natural gas boilers;
- Heat exchangers;
- Air handler units with energy recovery;
- Water heat pumps; and

› Emergency generator.

The mechanical equipment is expected to be located on the rooftop or within mechanical rooms. During the design and selection process, the appropriate low-noise mechanical equipment will be selected, including potential noise mitigation measures, such as acoustical enclosures and/or acoustical silencers. The Project will incorporate noise attenuation measures necessary to comply with City of Boston's noise criteria at the sensitive receptor locations.

The Project may require an emergency generator for life safety purposes, such as emergency exit lighting. The determination of specific generator parameters, such as the size and location will be made during the building design process. The Project will be required to adhere to DEP regulations that require such equipment to be certified and registered. As part of the air permitting process, the Project will be required to meet additional noise requirements described in DEP regulations under the Codes of Massachusetts Regulations (310 CMR 7.00). When the details of the emergency generator are developed, the Proponent will submit the appropriate permit application to DEP, which would include noise mitigation measures (such as acoustic enclosures and exhaust silencers) that are necessary to DEP's noise criteria.

Service Activities

A designated loading dock area will be provided at the southeastern corner of the building for loading and service activities, such as deliveries and garbage pickup. The loading docks would be enclosed by the building structure on three sides with the eastern side exposed for access from Seaport Boulevard. The loading activities will be managed so that service and loading operations will have a limited impact on traffic on Seaport Boulevard. Since loading activities will be enclosed and managed, potential noise impacts to nearby sensitive receptor locations are expected to be negligible.

6.6.6 Conclusion of Noise Impact Assessment

The noise analysis determined that the sensitive receptor locations in the vicinity of the Project Site currently experience exterior sound levels exceeding the City of Boston's nighttime noise standard. The dominant noise source contributing to the existing sound levels in the study area is traffic traveling along Seaport Boulevard, aircrafts, building mechanical systems and construction activity during the daytime.

With the mechanical equipment potentially located on the rooftop or within mechanical rooms, the sound levels associated with the Project's mechanical equipment are expected to have no adverse noise impacts at nearby sensitive receptor locations. While potential noise impacts associated with the emergency generators, if required, are also expected to be negligible, a separate DEP permitting process will allow for further review of this equipment at a later date. Service activities are expected to be conducted within the building and sheltered from the

nearby sensitive uses. As a result of the preliminary design, the Project's operations will have no adverse noise impacts at nearby sensitive receptor locations.

6.7 Solid and Hazardous Wastes

Characterization of the environmental soil and groundwater quality at the Project Site has not been conducted to date. Chemical testing of soil and groundwater to be generated as a result of construction activity will be conducted at the appropriate stage of the design process to further evaluate site environmental conditions. Management of soil and groundwater will be in accordance with applicable local, state, and federal laws and regulations.

6.8 Geotechnical/Groundwater

This section describes existing site conditions, subsurface soil and groundwater conditions, and planned geotechnical construction for the Project.

6.8.1 Existing Site Conditions

Project Site is constructed on a filled pier bounded by a granite block seawall. The pier filling and seawall construction occurred between 1897 and 1901. The existing complex is comprised of several original buildings constructed in 1912, subsequent additions, renovations, and other improvements, including remediation work to mitigate slab and building foundation settlements occurring since original construction. The building is supported on a combination of timber piles and caissons or steel pipe piles. Major repairs were conducted in 1936 when caissons were installed to support the perimeter apron, and in 1959 when columns were jacked and shimmed due to settlement. Remedial work was most recently undertaken in the mid 1980's to mitigate slab and column settlements.

6.8.2 Subsurface Soil and Bedrock Conditions

Site and subsurface conditions at the Project Site are based on historic explorations and generally consist of granular fill, dredged fill, organic soils, sand, clay, glacial till and bedrock. North of column line 15, the soil conditions generally consist of the following:

- 5-10 ft of granular fill
- 15 ft of cohesive fill
- 10-20 ft of organics
- Underlain by marine clay, glacial till and bedrock

And, south of column line 15, the soil conditions generally consist of the following:

- 5-20 ft of granular fill
- 0-10 ft of cohesive fill

- 5-15 ft of sand
- Underlain by marine clay, glacial till and bedrock

6.8.3 Groundwater

Groundwater levels at the Project Site will fluctuate and are influenced considerably by tidal changes in the adjacent harbor, and will be particularly dependent on proximity to the seawall, permeability of the fill materials, and the presence of a seepage cutoff wall in some locations. During lunar tide cycles, the harbor high water level can increase to El. 11 to 12 BCB, with higher levels resulting when lunar tides occur during major storm surge.

The Project Site is located outside the limits of the Groundwater Conservation Overlay District (GCOD). Accordingly, the Project is not required to comply with Article 32 of the Boston Code.

6.8.4 Proposed Foundation Construction

Redevelopment of the existing building will require new foundations to be installed at select locations where additional loads cannot be accommodated by existing foundations. The new foundations are anticipated to consist of deep foundations bearing in the bedrock, such as mini piles or H-piles. At some locations, such as new elevators and stairwells, lower capacity friction piles may be used.

6.9 Construction

Most construction activities will be accommodated within current Project Site boundaries. Impacts associated with the Project construction activities are temporary in nature and are typically related to truck traffic, air (dust), noise, stormwater runoff, solid waste, and vibration. If required, details of the overall construction schedule, work hours, number of construction workers, worker transportation and parking, number of construction vehicles and routes will be addressed in a Construction Management Plan ("CMP") to be filed with BTD in accordance with the City's transportation maintenance plan requirements. The CMP (if required) would also include more detail on:

- Construction sequencing and staging;
- Maintaining public access to the waterfront;
- Measures that ensure public safety;
- Temporary pedestrian and vehicular access routes;
- Stormwater Runoff/Erosion Control
- Air quality and dust;
- Construction noise;
- Construction traffic and parking;

- Construction waste management; and
- Odor and rodent control.

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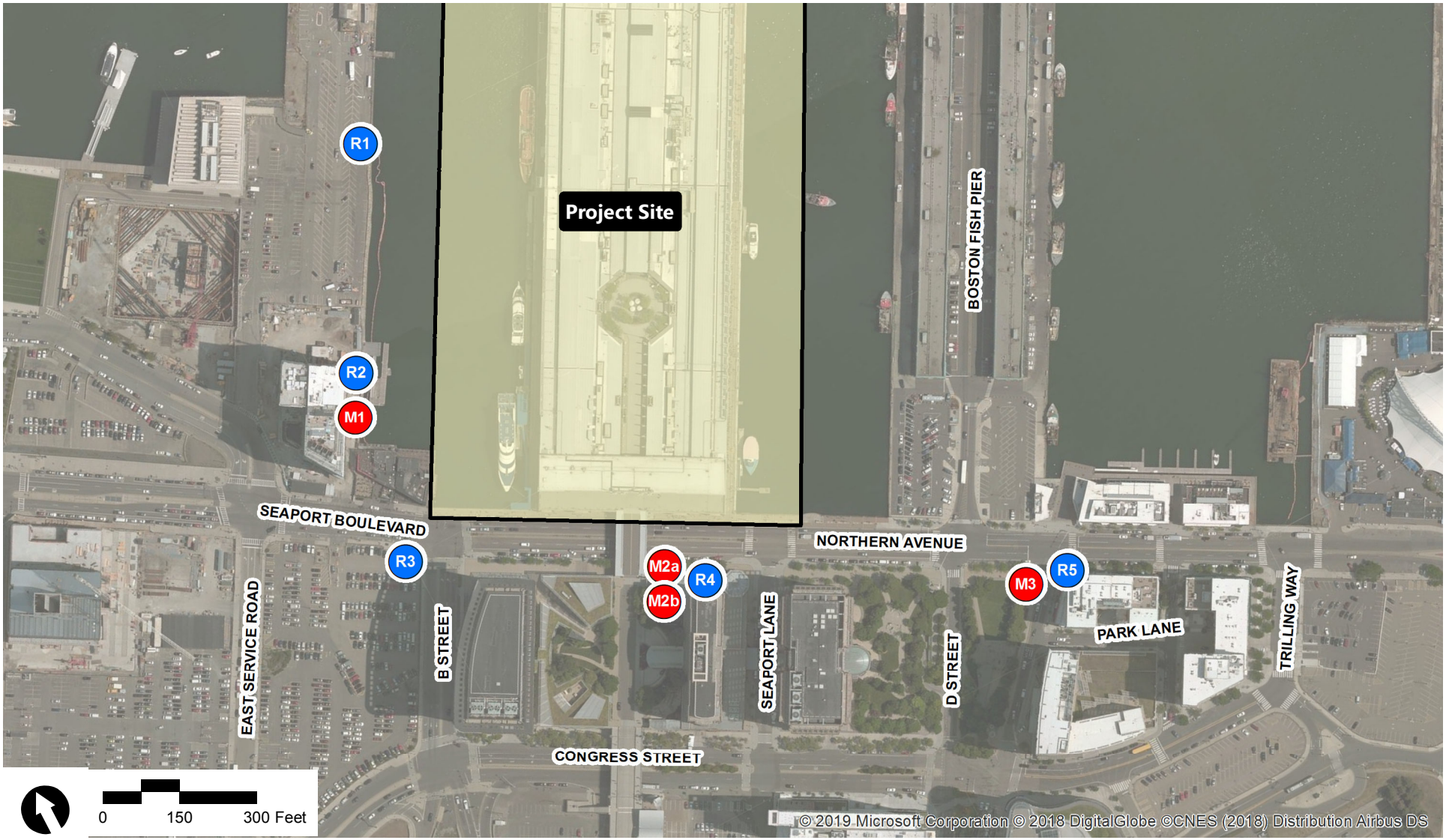
\\vhb\gbl\proj\Boston\13862.00\tech\Noise\GIS\Figure 6.1 Monitoring and Receptor Locations.mxd



Source: Bing Aerial

M# Noise Monitoring Locations

R# Noise Receptor Locations

Figure 6.1

Noise Monitoring and Receptor Locations

Commonwealth Pier Revitalization
Boston, Massachusetts

7

Historic Resources

This section identifies properties located within and in the vicinity of the Project Site that are listed in the National and State Registers of Historic Places and/or are included in the Inventory of Historic and Archaeological Assets of the Commonwealth (the "Inventory") and evaluates potential Project effects on those properties.

7.1 Summary of Key Findings and Benefits

The key findings and benefits related to historic and cultural resources include:

- There are two historic resources within and in the vicinity of the Project Site listed in National and State Registers of Historic Places: Commonwealth Pier (referred to as "Commonwealth Pier Five" in such Registers); and Boston Fish Pier Historic District, located to the east of the Project Site.
- The Project will preserve, rehabilitate, and revitalize the former Commonwealth Pier Five, a property individually listed in the National and State Registers of Historic Places.
- A portion of the Commonwealth Pier Five building will be removed to create a public pedestrian arcade in the Headhouse and the Plaza in the shed buildings.
- The Project does not propose any building additions or new construction that would significantly alter the height or mass of the building. The roof and parapet of the Headhouse will remain the highest points of the building.
- The proposed apron expansions will enhance and expand public realm and waterfront access; they will not introduce any visual elements that are out of character with, nor have any impact to significant historic resources.

7.2 Regulatory Context

7.2.1 Boston Landmarks Commission Article 80 Review

The submission of this ENF/PNF initiates review of the Project by the Boston Landmarks Commission (BLC) under the BPDA Article 80B, Large Project Review process, in association with the Boston Environment Department. The BLC's jurisdiction is focused on potential impacts to historic buildings and districts listed in the National and State Registers of Historic Places located within or in the vicinity of a project, and how those impacts will be mitigated or minimized. Impacts to be

considered by the BLC will include physical impacts to the historic building, as well as urban design and visual impacts.

7.2.2 Massachusetts Historical Commission

The MHC has review authority over projects requiring state or federal funding, licensing, permitting, and/or approvals, in order to evaluate potential direct or indirect impacts to properties listed or eligible for listing in the National and State Registers of Historic Places, in compliance with State Register Review requirements (M.G. L. Chapter 9, Sections 27-27c, as amended by Chapter 254 of the Acts of 1988) and Section 106 of the National Historic Preservation Act of 1966 (if necessary).

7.3 Historic Context

For most of South Boston's history, the waterfront has served the area's industrial and transportation needs. Framed by Fort Point Channel, Reserved Channel, and Boston Harbor, the waterfront hosted a number of warehouses, shipping piers, and massive rail facilities. Along the shoreline, South Boston changed dramatically in the 19th century as Boston struggled to compete in the world trade market. Beginning as marshland and tidal flats, it was filled during the 1830s and again in the 1890s, creating the current shoreline.

The advent of larger freight and passenger ships prompted the need to dredge the harbor and build larger facilities to serve the industry, creating pressure to improve the South Boston waterfront during the late 19th and early 20th centuries. Efforts to upgrade facilities at the waterfront improved Boston's standing as an Atlantic port, and the waterfront served as a major part of the Port of Boston into the mid-20th century. However, World War I heavily impacted transatlantic passenger traffic, while issues with the railroads serving South Boston, and the physical limitations of the harbor, created challenges for commercial trade. In the late 20th century, much of the industrial area of South Boston was cleared for future development, and in recent decades, the neighborhood has been transformed by the construction of office buildings, hotels, and multi-use developments.

7.4 Historic Resources

A survey was undertaken to identify historic resources within and in the vicinity of the Project Site. There is one historic resource within the Project Site, Commonwealth Pier Five, is individually listed in the National and State Registers of Historic Places. There is one additional historic resource within one-quarter-mile radius of the Project Site, the Boston Fish Pier Historic District, also listed in the National and State Registers of Historic Places. The properties are depicted in Figure 7.1. A brief description of the historic resources follows.

7.4.1 Commonwealth Pier Five

Commonwealth Pier Five consists of a Headhouse facing south on Seaport Boulevard, and three connected rear sheds. The four structures were connected by later additions to create a continuous structure that currently covers the majority of the 1,200-foot by 400-foot pier. The buildings were completed by Boston architect Henry F. Keyes (1879-1923) in 1914 to serve rail, marine, and vehicular traffic. The buildings form the superstructure for Pier Five, and the complex is historically referred to as "Commonwealth Pier Five," or "Commonwealth Pier." The poured concrete pier at the periphery of the building, which is unimproved, now serves as a continuation of the Harborwalk.

Construction of Commonwealth Pier and the neighboring Boston Fish Market in 1914 was part of the broader 20th-century resurgence of Boston's maritime interests and re-establishment of the city as a major commercial port. Throughout the 20th century, Commonwealth Pier has been adapted in response to changes in policy, commerce, and travel. Designed to serve major freight and passenger ships, following its completion it became the center of the American wool trade and served as a Port of Entry for immigrants to the United States. During World Wars I and II, it served as a Naval Supply Station. Commonwealth Pier was still used to service passenger and cargo ships into the early 1950s, but by the 1960s, the growth of air travel diminished the demand for passenger ships and rail service. By the mid-1960s, the pier could no longer accommodate the storage required by container shipping. In the early 1980s, the Pier was redeveloped into a mixed-use complex with 800,000 square feet of exhibition and office space, which it still serves today. Changes in use were accompanied by physical alterations to the building.

Constructed of steel and concrete, Commonwealth Pier's Beaux Arts-style, four-story Headhouse consists of a nine-by-six bay, two-story base, and a nine-by-three bay, two-story upper portion, which is set back from the building face of the base and is capped by a cornice. A Viaduct carries pedestrian and vehicular traffic from World Trade Center Avenue over Seaport Boulevard to the second story of the building; originally the Viaduct served vehicular traffic as well. The base of the lower level is faced with cast stone, intended to mimic ashlar, while the upper portion of the lower level is stuccoed. Nine arched openings define the south elevation of the lower level; the center arch is infilled with a modern building entrance, four of the adjacent arched openings have been infilled with overhead rolling doors, and four have been infilled with modern storefront window and door systems. The upper level of the Headhouse at the south elevation consists of six two-story arches, fronting a concourse, arranged around a center triumphal arch with paired Tuscan columns. Prominently located between the columns are decorative panels featuring the projecting bows of ships that serve as the base for flagpoles. Like the lower level, the upper level is faced in cast stone. The three-bay side (east and west) elevations of the Headhouse are faced with stucco and incorporate cast stone quoins and cornices. Each bay contains three replacement windows. Original material in the

Headhouse is limited to the cast stone structure. Windows, doors, and arched opening infill are all modern replacement materials.

Originally behind the Headhouse were three steel and concrete sheds. Once linked by covered walkways, the walkways have been enclosed and the combined sheds now function as a single two-story building. Exposed riveted steel piers separate each bay on the side (east and west) elevations and concrete slabs separate the upper and lower levels. All original multi-light windows and panels within each bay have been removed, and the majority of the bays have been partially or fully infilled with ribbon windows and upper and lower solid panels. Steel balconies with retractable awnings have been installed on the east and west elevations. At the roofline on the side elevations, running almost the full length of the pier, are steel gantries that were originally used for hoisting cargo. The north elevation facing the harbor comprises a stuccoed first story with replacement windows and a metal-and-glass addition at the second story. Original exterior material in the shed buildings is limited to the exposed riveted steel piers. All infill between the vertical steel piers is contemporary. Original interior material in the shed buildings is limited to the concrete slabs and riveted steel piers, the majority of which are enclosed in contemporary materials.

7.4.2 Boston Fish Pier Historic District

Constructed between 1910 and 1914, the Boston Fish Pier Historic District, located to the east of the Project Site, consists of four contributing resources – the pier, the New England Fish Exchange building, and two other buildings known as Fish Pier West and Fish Pier East. When it opened in 1914, the Boston Fish Pier was lauded as the most technically advanced and efficient facility for fresh fish processing in the world.

The rectangular, granite-block pier was completed in 1912 by Holbrook, Cabot & Rollins. It measures 1,200 feet long and 300 feet wide. Designed by the Boston architect Henry F. Keyes, the New England Fish Exchange building was constructed from 1912 to 1914. Located at the north end of the pier, the three-story Classical Revival-style building has load-bearing brick walls on the first story and stuccoed terra cotta tile walls on the upper two stories. Decorative features include a copper parapet, terra cotta cornice, bas-relief panels featuring marine iconography, and embossed lettering on the entablature. Fish Pier West and Fish Pier East are mirror images of one another and were constructed at the same time as the New England Fish Exchange Building. The buildings are three-story, Classical Revival-style, steel-framed structures that run parallel to the pier.

7.4.3 Archaeological Resources

No previously identified archaeological resources are located within the Project Site. No impacts to significant archaeological resources are anticipated as a result of the Project.

7.5 Evaluation of Potential Impacts to Historic Resources

The Project proposes revitalizing Commonwealth Pier Five for continued use as office space, first-class event spaces, retail, and public amenities. As discussed in Chapter 2, *Urban Design*, the Project includes improvements to the building exterior, including the Headhouse. As part of the Project's overall design approach, particular sensitivity will be given to the building's rich historic components. The stone arches and cornice of the Headhouse facing Seaport Boulevard will be retained and contemporary glazing will be introduced within the arches. Some existing contemporary glazing in the Headhouse at the ground floor will be removed to create a pedestrian arcade.

Along Seaport Boulevard the four existing loading dock overhead doors will be removed, and a recessed ground floor will be constructed to create a street-level arcade providing pedestrian access. This new arcade space will become a sheltered pedestrian connection with space for outdoor moveable seating and access to the new ground-level retail. The Viaduct over Seaport Boulevard will be retained and continue to serve as a primary pedestrian connection to the Project.

The height and massing of the building remain relatively unchanged with the proposed design. The roof and parapet of the Headhouse will remain the highest points of the building.

The design of the elevations of the three connected rear sheds along the pier will celebrate the building's unique structure by retaining exposed columns and column connections, staying authentic to the existing building's original design intent. Improvements to the shed buildings include the creation of the Plaza just north of the Headhouse along the west-facing building elevation (Figure 1.5a). Additionally, five Niches are proposed at selected locations along the east, south, and west elevations. The Plaza and Niches are proposed to introduce program spaces along the Harborwalk and provide seating areas, shelter from weather, open areas for artwork, and amenity zones for vendors.

The apron that runs the periphery of the World Trade Center building and includes a portion of the Harborwalk will be improved and expanded to provide public amenities, including new seating and lighting. Additionally, as shown in Figure 1.5a, the apron expansions on the east and west sides of the Headhouse extending north of the existing sea wall along Seaport Boulevard will provide improved pedestrian access to the public spaces proposed along the Harborwalk and to the Plaza.

7.5.1 Visual Impacts to Nearby Historic Resources

The proposed design of the Project will have no impact on nearby historic resources. The Project does not include any building additions or new construction that would significantly alter the height or mass of the building. The proposed apron expansions will enhance pedestrian access. This significant public realm

improvement is not expected to introduce any visual impacts to the Commonwealth Pier Five building or the adjacent Boston Fish Pier Historic District.

7.5.2 Geotechnical

Potential geotechnical impacts to Commonwealth Pier Five will be considered as Project plans are further developed. A geotechnical monitoring system will be developed as part of the Construction Management Plan.

Source: City of Boston, Bing

Project Boundary

Properties Listed in the National Register of Historic Places

1. Commonwealth Pier Five
2. Boston Fish Pier Historic District

Figure 7.1

Historic Resources

Commonwealth Pier Revitalization
Boston, Massachusetts

8

Infrastructure

This chapter describes the infrastructure systems that will support the Project. The following utilities are evaluated: stormwater, wastewater, domestic water and fire protection, natural gas, electricity and telecommunications. Chapter 3, *Sustainability/Green Building and Climate Change Resiliency,* discusses energy and water conservation measures being considered as part of the Project.

8.1 Summary of Key Findings and Benefits

The key impact assessment findings and benefits related to infrastructure systems include:

- The on-site drainage will be designed to the extent practicable to comply with Massport and Boston Water and Sewer Commission standards.
- The Project is not expected to result in the introduction of any peak flows, pollutants, or sediments that would potentially impact the receiving waters of the local Massport owned stormwater drainage system.
- The redevelopment Project will be designed to the extent practicable to comply with the 2008 DEP Stormwater Management Policy and Standards.
- The Project Site is currently serviced by the BWSC for domestic and fire protection water and sanitary sewage conveyance.
- The Project is estimated to generate approximately 149,086 gallons per day (GPD) of sanitary sewage representing a reduction of approximately 44,044 GPD and will require approximately 163,995 gallons of water per day.
- Appropriate low-flow and low-consumption plumbing fixtures will be considered to achieve a reduction in water usage of at least 30 percent over the baseline in order to comply with Article 37 of the Boston Zoning Code.

8.2 Regulatory Context

The following discusses the regulatory framework of utility connection reviews and standards. Any new connections will be designed and constructed in accordance with city, state, and federal standards. A complete list of the state and local permits associated with Project-related infrastructure is included in Chapter 1, *Project Description*. The following reviews and approvals are anticipated to be required for the Project:

- BWSC Site Plan approval for all water and sewer systems;
- Massport approval for proposed stormwater systems;

- Sewer connection permit self-certification to be filed with DEP;
- Massport Fire and Rescue review with respect to fire protection measures, such as siamese connections, hydrants, and standpipes;
- Coordination on design of the Project Site access, hydrant locations, and energy systems (gas and electric) with the respective system owners; and
- Where new utility connections are needed and existing connections are to be capped, the excavation will be authorized by Massport, as required.

All improvements, connection modifications and new connections to BWSC infrastructure will be reviewed by BWSC as part of the BWSC site plan review process. This process includes a comprehensive design review of the proposed service connections, assessment of system demands and capacity, and establishment of water service accounts. As design progresses, updated information on the proposed utility connections will be provided to the BPDA as requested during the design review process.

Additional information on the regulatory framework for each utility system is included in subsequent sections of this chapter.

8.3 Stormwater Management

The following sections describe the stormwater management and infrastructure around the Project Site in the existing conditions and describes how this infrastructure will service the Project in the future.

8.3.1 Existing Drainage Conditions

There are existing roof drains generally located at every other building column along one column line on the east side and one column line on the west side of the building. The roof drains typically connect into existing storm risers, located at the base of these columns, which discharge the roof runoff directly into the Boston Harbor. In addition to the existing roof drains that discharge directly into the Boston Harbor, the BWSC system maps indicate there is drainage infrastructure in Seaport Boulevard. These systems include several unlabeled drain lines that discharge into a 60-inch Massport drain. The 60-inch Massport drain eventually discharges into a 60-inch drain and 48-inch drain. These two drains separately discharge into the Boston Harbor via two existing unnumbered outfalls. While the BWSC system maps indicated an existing 60-inch drain discharging into a 60-inch drain and a 48-inch drain, the Proponent's existing condition survey indicated the drain line to be 36-inch discharging into a single 36-inch drain based on field conditions. Based on the Proponent's discussions with Massport, the drains in Seaport Boulevard are owned by Massport and the outfalls coming through the building are owned and maintained by the building.

The existing storm drains from the covered parking area on the Viaduct level of the existing building convey storm water into oil/water separators located inside the building. The runoff from the oil/water separators is eventually conveyed to the

existing 18-inch BWSC sanitary sewer line in Seaport Boulevard. Further information regarding the existing sanitary sewer line in Seaport Boulevard is included in Section 8.4.1.

The existing storm drains from the portion of World Trade Center Avenue Viaduct that is part of the Project discharges into drain leaders located along the existing bridge columns. The existing drain leaders connect directly into the existing unmarked storm drain lines in Seaport Boulevard. The runoff from the World Trade Center Avenue Viaduct eventually discharges into the 60-inch MPA drain in Seaport Boulevard.

The existing drainage infrastructure is shown on Figure 8.1.

8.3.2 Proposed Drainage Approach

As design progresses, stormwater management requirements and measures will be established to comply with the appropriate local standards to the extent practicable. The Project does not expect to introduce peak flows, pollutants, or sediments that would potentially impact the receiving water of the local stormwater drainage system. It is the Proponent's intention to reuse the existing outfalls from the World Trade Center building that discharge directly into Boston Harbor and not create new outfalls. This approach will be further evaluated as design progresses.

The Project is an existing building located on top of the existing Commonwealth Pier, a filled pier with a surrounding seawall. The Proponent is evaluating stormwater control measures to reduce flow and pollutants, such as new landscape areas and installation of new water quality units and sump catch basins (which are most fitting given the Project's location and site constraints). New water quality units and sump catch basins will improve the quality of the stormwater runoff. These potential stormwater control measures will be an improvement to the existing condition.

As part of the permitting process, the Project will review the proposed stormwater management plans with Massport.

8.4 Sanitary Sewage

The following sections describe the sanitary sewer infrastructure around the Project Site today and describes how this infrastructure will service the Project in the future.

8.4.1 Existing Sewer System

An 8-inch gravity line and 6-inch force main serve the existing building. The existing building is constructed over a filled pier and due to the length of the building, sewage ejector pumps were necessary to serve portions of the existing building. Sewage ejector pumps are located in the central portion of the building and pump sewage through the 6-inch force main toward Seaport Boulevard. Both the 8-inch gravity line and 6-inch force main discharge into an existing sewer manhole located in front of the existing building on Seaport Boulevard. From this sewer manhole, the

sanitary sewer line continues to the east to another existing sewer manhole on Seaport Boulevard. From the second sewer manhole, the sanitary sewer line continues to the existing BWSC-owned 18-inch sanitary sewer main along Seaport Boulevard. The existing sewer manholes and 18-inch sanitary sewer main along Seaport Boulevard are shown in Figure 8.1.

Table 8-1 presents the existing building wastewater generation based on the program and generation rates from the Massachusetts State Environmental Code (Title 5). In total, the existing building generates an average of 193,130 GPD of sewage.

Table 8-1 Estimated Existing Sewer Generation

Program Type	Unit	Generation Rate	Estimated Sewage Generation (GPD)
Office	501,900 sf	75 gallons/1,000 sf	37,643 GPD
Restaurant	49 seats (2,555 sf)[1]	20 gallons/seat[2]	980 GPD
Retail	9,545 sf	50 gallons/1,000sf	477 GPD
Event Space	10,000 seats[3] (191,700 sf)	15 gallons/seats	150,000 GPD
Boat	up to 1,550 people	2.6 gallons/person	4,030 GPD
TOTAL	**705,700 sf**		**193,130 GPD**

Note: Based on DEP 310 CMR 15.203 flow calculation factors
GPD = gallons per day; sf = square feet
1 Existing restaurant use is Dunkin Donuts and café.
2 Massachusetts State Environmental Code generation rate for Fast Food Restaurant use
3 Approximate existing peak occupancy per Operations Manager

8.4.2 Proposed Sewage Flow and Connection

The Project will consist of office, retail/restaurant, and event space uses. For the purpose of estimating the sewage flow rates, generation rates from the Massachusetts State Environmental Code (Title 5) were used. The Project's building program will generate approximately 149,086 GPD. Under the existing building program, approximately 193,130 GPD of wastewater is generated. The Project is expected to have a reduction in sewage generation from the existing building. It is anticipated the sewage reduction will be approximately 44,044 GPD.

The calculations for the estimated future wastewater generation are presented in Table 8-2. At this stage of the design, options for potential sewer connections are being evaluated and will be coordinated with BWSC. The existing sewer connections may be reused or modified for use for the new building program.

Table 8-2 Estimated Future Sewer Generation

Program Type	Units	Generation Rate	Sewer Generation (GPD)
Office	635,920[1] sf	75 gallons/1,000sf	47,694 GPD
Restaurant	Up to 600 seats (18,000 sf) [2]	35 gallons/seat[3]	21,000 GPD
Retail	27,240 sf	50 gallons/1,000sf	1,362 GPD
Event Space	Up to 5,000 seats[4] (56,400) sf	15 gallons/seats	75,000 GPD
Boat	up to 1,550 people	2.6 gallons/person	4,030 GPD
TOTAL	**737,560 sf**		**149,086 GPD**

Note: Based on DEP 310 CMR 15.203 flow calculation factors
GPD = gallons per day; sf = square feet
1 Includes lobby and amenity space and 11,240 sf of Co-working space
2 Assumes 1 seat/20 sf and seating area is 2/3 of overall Restaurant space.
3 Massachusetts State Environmental Code generation rate for Restaurant use
4 Number of seats based on maximum occupancy rate.

Inflow/Infiltration Mitigation

DEP and BWSC policy specifies projects that generate flows in excess of the 15,000-gallon threshold are responsible for mitigating inflow and infiltration (I/I) at a ratio of 4:1 relative to the net-new wastewater generated. I/I is the component of flows in sanitary sewer systems that does not come from wastewater generated by building. I/I includes groundwater infiltration from leaking/broken sewer infrastructure, as well as stormwater connections from roof leaders and drainage infrastructure. The Project is expected to have a reduction in sewage generation from the existing building. Since the Project is not expected to generate net new wastewater flows, there is no mitigation required to offset I/I.

8.5 Domestic Water and Fire Protection

The following sections describe the water infrastructure today and describes how this infrastructure will service the Project in the future.

8.5.1 Existing Water Supply System

There are four existing water services coming into the building. There are three 10-inch fire protection services and one 6-inch domestic water service. Two of the 10-inch fire protection services connect to the existing BWSC 16-inch Southern Low water main, and one of the 10-inch fire protection services connects into the existing BWSC 12-inch Southern High-water main. The 6-inch domestic water service connects into the existing BWSC 16-inch Southern Low water main. Both the 16-inch Southern Low and 12-inch Southern High-water mains are located in Seaport Boulevard as shown in Figure 8.1.

8.5.2 Proposed Water Demand and Connection

Domestic water demand is based on estimated sewage generation with an added factor of 10 percent for consumption, system losses, and other use. Based upon sewage generation rates outlined in the DEP Sewer Connection and Extension Regulations, 310 CMR 15.203.f, the proposed building program for the Project will require approximately 163,995 GPD. The Project will be designed to include low-flow and low-consumption plumbing fixtures to achieve a reduction in water usage compared to conventional plumbing fixtures to comply with Article 37 of the Boston Zoning Code (as LEED "certifiable"), as discussed in Section 3.3.2 of Chapter 3, *Sustainability/Green Building and Climate Change Resiliency*. The Proponent will continue to consider and evaluate further methods to conserve water as building design evolves.

At this stage of the design, options for potential water connections are being evaluated and will be coordinated with the BWSC. The existing water connections may be reused for the new building program.

8.6 Other Utilities

The following sections describe other utility infrastructure (natural gas, electrical, telephone, and telecommunications) around the Project Site and describe how this infrastructure will service the Project.

8.6.1 Natural Gas Service

The building is served by an existing 4-inch high pressure natural gas service that is connected into the existing National Grid gas main in Seaport Boulevard. Survey plans indicate the existing gas main in Seaport Boulevard is 8-inch. The Project's proposed building program is expected to require an estimated peak gas demand of approximately 105,500 cubic feet per hour (CFH). As the design progress, the Proponent will evaluate and coordinate with the utility company if the existing gas service will be sufficient or require modifications.

8.6.2 Electrical Service

The building's electrical service is supplied by Eversource. Survey plans indicate the electrical service is brought into the building from an existing electrical manhole in Seaport Boulevard. The Project's proposed building program is expected to require an estimated peak of 8.5 MW for electrical service. As the design progress, the Proponent will evaluate and coordinate with the utility company if the existing electrical service will be sufficient or require modifications.

8.6.3 Telephone and Telecommunications

The building's telephone and telecommunication services are currently provided by AT&T, Verizon FIOS, and Comcast. Survey plans indicate that there are two telecommunication duct banks and two manholes in Seaport Boulevard that support four building service connections. The configuration of any proposed service connections will be developed with the utility providers as design progresses.

8.6.4 Protection of Utilities During Construction

Existing public and private infrastructure located within the public right-of-way will be protected during construction. The installation of proposed utilities within the public way will be in accordance with BWSC, BPWD, MassDOT, Massport, the Dig-Safe Program and governing utility company requirements. All necessary permits will be obtained before the commencement of work. Specific methods for constructing proposed utilities which are near to, or connect with, existing water, sewer, and drain facilities will be reviewed by the BWSC, and Massport as applicable, as part of its Site Plan Review process.

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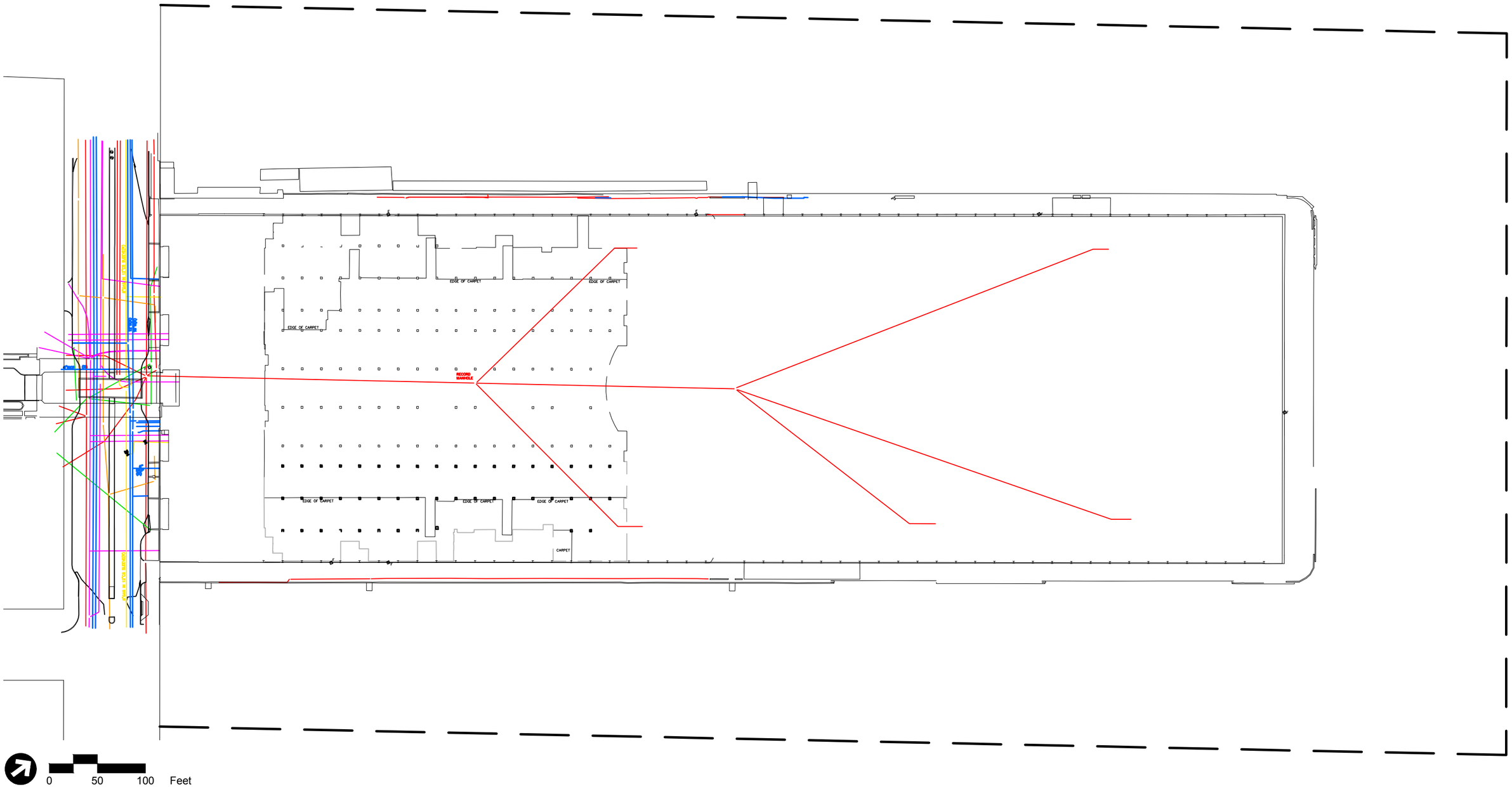


Figure 8.1
Existing Infrastructue

Commonwealth Pier Revitalization
Boston, Massachusetts

APPENDIX A: MEPA Distribution List

MEPA Distribution List

Commonwealth of Massachusetts

Secretary Matthew A. Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

Metropolitan Area Planning Council
60 Temple Place, 6th Floor
Boston, MA 02111

Department of Environmental Protection, Boston
Commissioner's Office
One Winter Street
Boston, MA 02108

Massachusetts Water Resource Authority
Attn: MEPA Coordinator
100 First Avenue, Building 39
Charlestown Navy Yard
Boston, MA 02129

DEP/Northeast Regional Office
Attn: MEPA Coordinator
205B Lowell Street
Wilmington, MA 01887

Massachusetts Department of Energy Resources
Attn: MEPA Coordinator
100 Cambridge Street, 10th Floor
Boston, MA 02114

Ben Lynch, Program Chief
Department of Environmental Protection, Waterways Program
One Winter Street
Boston, MA 02108

Coastal Zone Management
Attn: Project Review Coordinator
251 Causeway Street, Suite 800
Boston, MA 02114

Massachusetts Department of Transportation
Public/Private Development Unit
Attn: Lionel Lucien
10 Park Plaza
Boston, MA 02116

Massachusetts Historical Commission
The MA Archives Building
220 Morrissey Boulevard
Boston, MA 02125

Massachusetts Department of Transportation - District #6
Attn: MEPA Coordinator
185 Kneeland Street
Boston, MA 02111

Massachusetts Port Authority
Attn: Andrew Hargens
One Harborside Drive, Suite 200S
East Boston, MA 02128

Board of Underwater Archaeological Resources
Attn: Victor Mastone, Director
251 Causeway Street, Suite 800
Boston, MA 02114-2199

City of Boston

Boston Redevelopment Authority,
d/b/a Boston Planning & Development Agency
Attn: Brian P. Golden, Director
One City Hall Square, 9th Floor
Boston, MA 02201

Boston City Council
One City Hall Square, 5th Floor
Boston, MA 02201

Boston Conservation Commission
One City Hall Square, Room 805
Boston, MA 02201

Boston Public Health Commission
1010 Massachusetts Ave, 6th Floor
Boston, MA 02118.

Other Interested Parties

Boston Public Library South Boston Branch
646 East Broadway
South Boston, MA 02127

Congressman Stephen Lynch
One Harbor Street, Suite 304
Boston, MA 02210

State Senator Nick Collins
24 Beacon St., Room 410
Boston, MA, 02133

State Representative David Biele
State House, Room B1
Boston, MA 02133

City Councilor Michael Flaherty
1 City Hall Square, 5th Floor
Boston, MA 02201

City Councilor Edward Flynn
1 City Hall Square, Suite 550
Boston, MA 02201-2043
United States

APPENDIX B: BPDA Letter of Intent

PEMBROKE

December 7, 2018

BY HAND DELIVERY

Mr. Brian Golden, Director
Boston Planning and Development Agency
Boston City Hall, 9th Floor
One City Hall Square
Boston, MA 02201

'18 DEC 7 AM9:09:30

BRA

Re: Letter of Intent to File a Project Notification Form
Commonwealth Pier Revitalization Project

Dear Mr. Golden:

In anticipation of the voluntary submission of a Project Notification Form ("PNF") to commence the Article 80B, Large Project Review process, on behalf of Commonwealth Pier Trust II ("the Proponent"), we hereby submit this Letter of Intent for the adaptive reuse and revitalization of the Seaport World Trade Center (the "Project") located at 200 Seaport Boulevard in the Seaport District of Boston (the "Project Site").

The Proponent and its affiliates have owned and occupied the Seaport World Trade Center (the "SWTC") on the prominent Commonwealth Pier for over three decades. The proposed revitalization of the SWTC is a transformative project that will modernize and reposition the existing building and Commonwealth Pier for its next generation of use as a vibrant place for work, retail, events and active public waterfront experiences within the city's exciting Seaport District. While the existing building and Project Site require a significant infrastructure investment to enable the adaptive re-use and revitalization, the Project has tremendous potential to create an exciting, flexible, and creative workspace that attracts and retains talented employees and provides a unique waterfront experience for the public.

The Project will enhance its current uses by replacing the existing exhibition hall with new public realm spaces and improvements and expanded ground-floor retail space, as well as creating new flexible and innovative office space and first-class event spaces.

Through revitalization of the Project Site, the Proponent strives to:

- Enhance public access to the waterfront and create an active public realm through the introduction of new public spaces and retail, renovations to the Harborwalk, and improved connectivity and permeability of the Pier;
- Create a unique and flexible workplace with increased natural light and views;
- Improve the pedestrian experience along Seaport Boulevard;
- Employ resiliency measures to meet the challenges anticipated from forecasted rising tides and increased storm intensity;

255 State Street
Boston, MA 02109
+1 617 563 3100
pembroke.com

- Achieve city and state guidelines for diversity and inclusion in the procurement of construction services;
- Incorporate best practices for sustainability and wellness for occupants and visitors and provide modernized and energy-efficient building systems; and
- Provide a diverse mix of retailers and event facilities.

We anticipate submitting a Project Notification Form and look forward to working closely with the BPDA, the community, and various city agencies during the review of the Project.

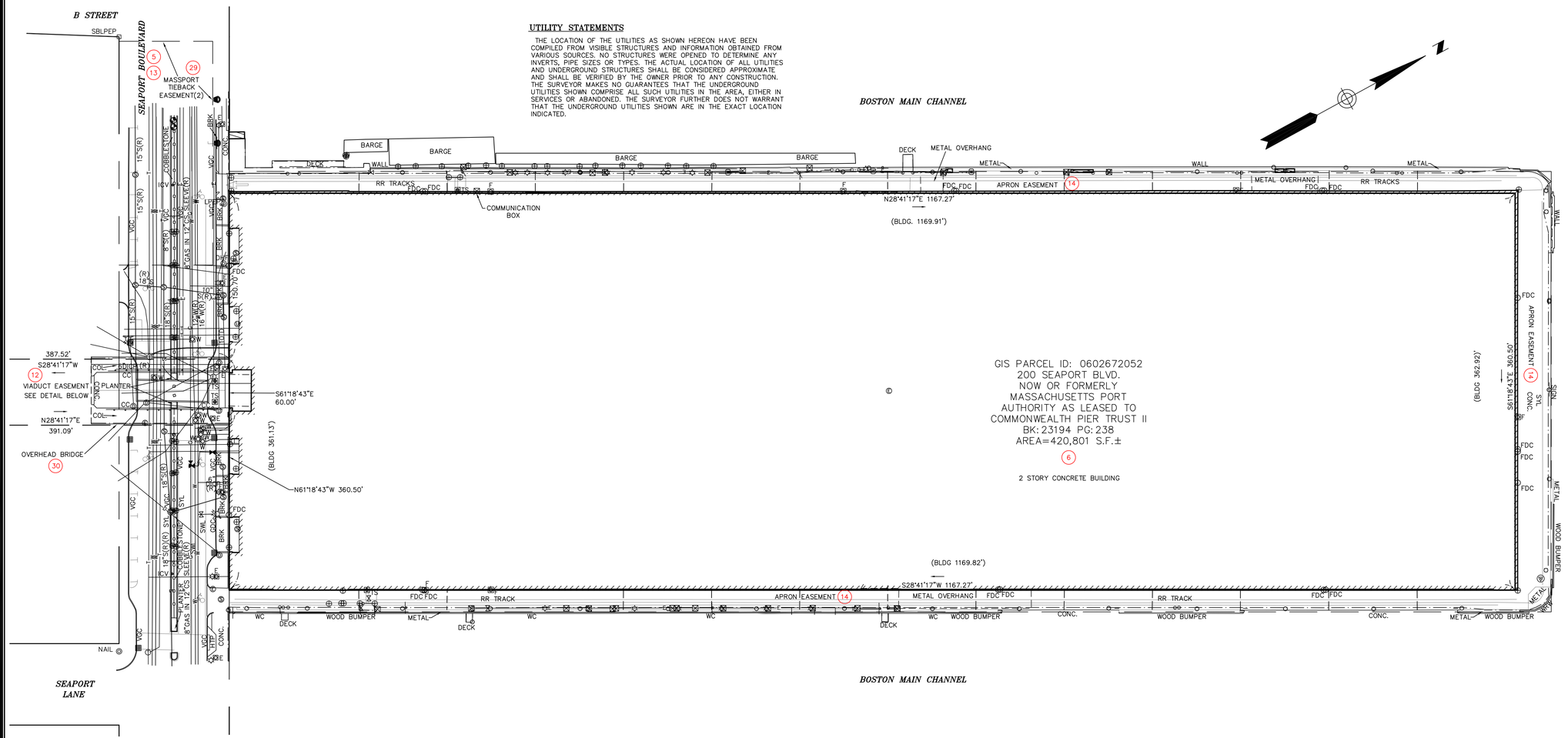
Thank you for your consideration of this letter.

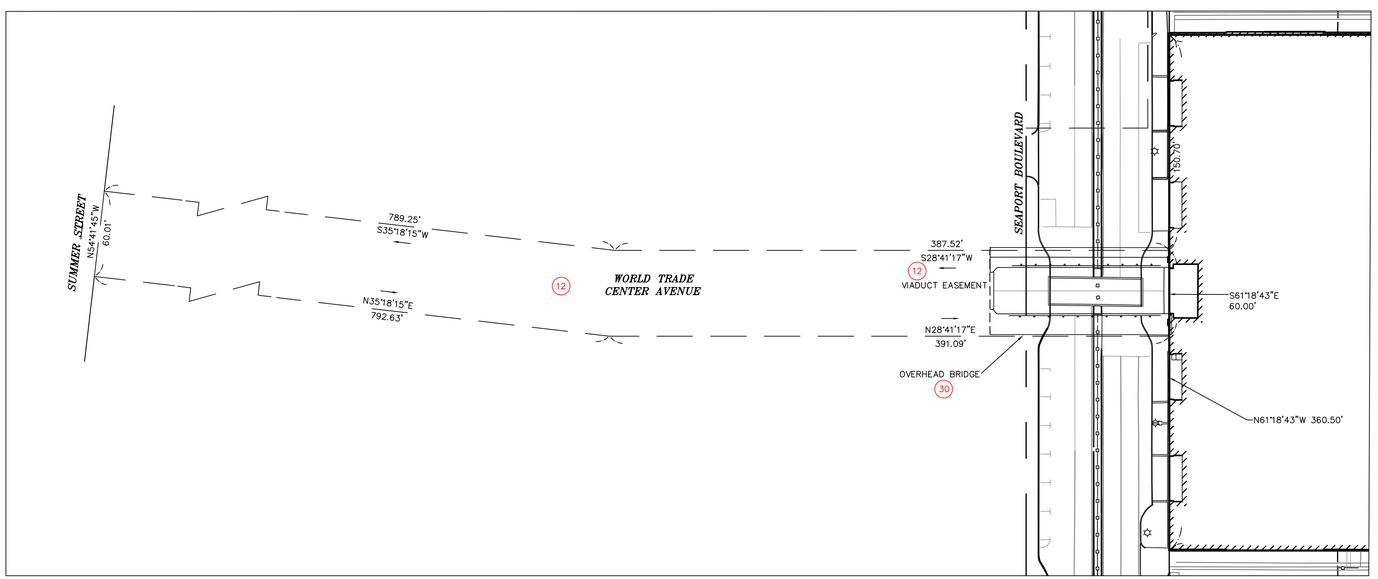
Very Truly Yours,

Andrew Dankwerth
Senior Vice President of Design & Development
Pembroke Real Estate LLC, Asset Manager for Proponent

cc: Jack Clark
Terrence Mcneil
Kevin Renna, Goulston & Storrs

APPENDIX C: Metes and Bounds





UTILITY STATEMENTS

THE LOCATION OF THE UTILITIES AS SHOWN HEREON HAVE BEEN COMPILED FROM VISIBLE STRUCTURES AND INFORMATION OBTAINED FROM VARIOUS SOURCES. NO STRUCTURES WERE OPENED TO DETERMINE ANY INVERTS, PIPE SIZES OR TYPES. THE ACTUAL LOCATION OF ALL UTILITIES AND UNDERGROUND STRUCTURES SHALL BE CONSIDERED APPROXIMATE AND SHALL BE VERIFIED BY THE OWNER PRIOR TO ANY CONSTRUCTION. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICES OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED.

SURVEYOR'S CERTIFICATION

TO: COMMONWEALTH PIER TRUST II
PEMBROKE REALTY
FIRST AMERICAN TITLE INSURANCE COMPANY
MASSACHUSETTS PORT AUTHORITY

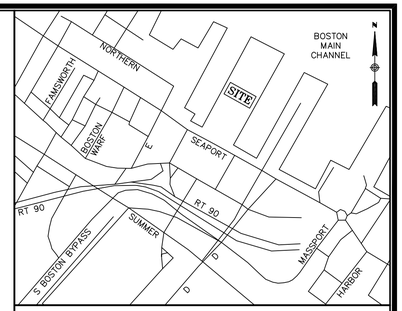
THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS, AND INCLUDES ITEMS 2., 3., 4., 6(a)., 7(a)., 8., 9., 11., 13., 16., and 18. OF TABLE A THEREOF. THE FIELDWORK WAS COMPLETED IN OCTOBER OF 2017.

PROGRESS PRINT
Nov 03, 2017 – 3:49pm

DAVID PRINCE, LLS — DATE:11/03/2017
REG. NO. 977
WSP USA, Inc.
155 MAIN DUNSTABLE ROAD
NASHUA, NEW HAMPSHIRE

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

190107A-2 ALTA.dwg



LOCUS MAP
(N.T.S.)

NOTES

1. THIS PLAN WAS PREPARED FROM AN ACTUAL ON THE GROUND FIELD SURVEY CONDUCTED BY WSP FROM OCTOBER 2, 2017 TO OCTOBER 19, 2017.
2. THE HORIZONTAL DATUM SHOWN HEREON REFERENCES THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM NAD83.
3. THE LOCUS PROPERTY IS LOCATED IN THE HARBORPARK ZONING DISTRICT IN THE WATERFRONT TRANSITION ZONE AS SHOWN ON ZONING DISTRICT CITY OF BOSTON MAP 4A/4B WITH AN EFFECTIVE DATE OF MARCH 10, 2017.
4. THE SUBJECT PROPERTY IS LOCATED IN ZONE AE (BASE FLOOD ELEVATIONS DETEMINED) AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP PANEL 81 OF 176, COMMUNITY PANEL NUMBER250286-0081-J WITH AN EFFECTIVE DATE OF MARCH 16, 2016. BASE FLOOD ELEVATION = 11'
5. THERE WAS NO EVIDENCE OF ANY EARTH MOVING WORK OR CONSTRUCTION AT THE TIME OF THE SURVEY.
6. THERE WAS NO DELINEATION OF WETLANDS OBSERVED AT THE TIME OF THE SURVEY.

LEGEND

E	ELECTRIC HANDHOLE	SBLPEP	STONE BOUND LEAD PLUG E-PIN
	GAS VALVE	NAIL	NAIL MONUMENT
T	TELEPHONE MANHOLE		DISK
W	WATER METER	W	WATER HANDHOLE
	WATER GATE		AREA DRAIN
ICV	IRRIGATION CONTROL VALVE		CATCH BASIN
	FIRE HYDRANT	D	DRAIN MANHOLE
	DECIDUOUS TREE		NO LABEL MANHOLE
	SIGN (SINGLE POSTED)	S	SEWER MANHOLE
	SIGN (DOUBLE POSTED)		ELECTRIC BOX
BOMO	BOLT OVER MAIN OUTLET	TS	TRAFFIC SIGNAL
BMK	BENCHMARK		POST
WC	WOOD CURB	CO	CLEANOUT
CC	CONCRETE CURB		MAILBOX
SGC	SLOPED GRANITE CURB		LIGHT POLE
VGC	VERTICAL GRANITE CURB		BOLLARD
LSA	LANDSCAPED AREA		HANDICAP PARKING
FFE	FINISHED FLOOR ELEVATION	FDC	FIRE DEPARTMENT CONNECTION
WRW	WOOD RETAINING WALL	F	FIRE ALARM
SWL	SOLID WHITE LINE		BENCHMARK
SYL	SINGLE YELLOW LINE		TEST PIT
DYL	DOUBLE YELLOW LINE		BIKE LANE
BRK	BRICK		GROUND LIGHT

PROPERTY LINE
RIGHT OF WAY LINE
EASMENT LINE
EXPANSION JOINT
METAL/WIRE FENCE
METAL GUARDRAIL
METAL HANDRAIL
SEWER LINE
DRAIN LINE
WATER LINE
GAS LINE
UNDERGROUND ELECTRIC
TELEPHONE LINE

REVISION	
DATE	DESCRIPTION
--/--/--	---

ALTA/NSPS LAND TITLE SURVEY
SEAPORT BOULEVARD
BOSTON, MASSACHUSETTS
PREPARED FOR
COMMONWEALTH PIER TRUST II

WSP USA Inc.
155 Main Dunstable Rd, Suites 120 & 125
Nashua, NH 03060
603.595.7900

Drawn By	LA	Date	Job No.
Surveyed By	TO, JT, JF	NOVEMBER 3, 2017	190107A
Checked By	DPP	Scale	Sheet No.
Book No.	N-286	1" = 50'	1 OF 2

SCHEDULE A – LEGAL DESCRIPTION

Real property in the City of Boston, County of Suffolk, Commonwealth of Massachusetts, described as follows:

PARCEL ONE:

That parcel of land, filled, submerged and otherwise, together with all improvements located thereon known as Commonwealth Pier 5 located at Northern Avenue, South Boston, Massachusetts, and together with all appurtenant rights and easements, all as described in detail below:

That certain parcel of land with the building and other improvements thereon located on Northern Avenue in the South Boston District of Boston, Suffolk County, Massachusetts shown as "Lease Area" on plan entitled "Leased Premises #1" dated February, 1893, drawn by Bryant Associates, Inc., and recorded with the Suffolk County Registry of Deeds in Book 10437, Page 19 ("Plan") and being bounded and described as follows:

Beginning at the intersection of the northerly street line of Northern Avenue, and the Northwesterly corner of said Leased Premises #1, said point being the point of beginning; thence running

N28° 41' 17" E a distance of 1,167.27 feet to a point; thence

S61° 18' 43" E a distance of 360.50 feet to a point; thence

S 28° 41' 17" W a distance of 1,167.27 feet to a point; thence

N61° 18' 43" W a distance of 360.50 feet to the point of beginning.

Containing about 420,801 ± square feet according to said Plan.

PARCEL TWO:
Together with the benefit of, in common with others entitled thereto, the following described easements:

1. Grant of Viaduct Easement by Massachusetts Port Authority in favor of G. Daniel Prigmore and Richard M. Reilly, Trustees of Commonwealth Pier Trust II, grant dated July 6, 1983 and recorded in Book 10437, Page 24, as amended by Amendment of Viaduct Easement dated November 6, 1995 and recorded in Book 20543, Page 256.

2. Grant of Northern Avenue Easement by Massachusetts Port Authority in favor of G. Daniel Prigmore and Richard M. Reilly, Trustees of Commonwealth Pier Trust II, grant dated July 6, 1983 and recorded in Book 10437, Page 28, as amended by Amendment to Easements dated December 1, 1998 and recorded in Book 23194, Page 246.

3. Grant of Apron Easement in favor of G. Daniel Prigmore and Richard M. Reilly, Trustees of Commonwealth Pier Trust II, grant dated July 6, 1983 and recorded in Book 10437, Page 36, as amended by Amendment to Easements dated December 1, 1998 and recorded in Book 23194, Page 246.

4. Unrecorded Pier Parking Agreement dated as of November 6, 1995 by and between Commonwealth Flats Development Limited Partnership and John E. Drew, Trustee of Commonwealth Pier Trust II, as affected by an Assignment and Assumption of Contracts Agreement dated as of December 31, 1997 between Commonwealth Flats Development Limited Partnership and Commonwealth Flats Development 121A Hotel Limited Partnership and a letter agreement dated as of December 1, 1998 between the Commonwealth Flats Development 121A Hotel Limited Partnership and John E. Drew, Trustee of Commonwealth Pier Trust II, insofar as still in force and effect and not terminated by its terms.

PLAN REFERENCES

SUFFOLK COUNTY REGISTRY OF DEEDS

1. PLAN BOOK 10437 PLAN 19 DATED FEBRUARY 1983. (2 SHEETS)
2. PLAN BOOK 10437 PLAN 24 DATED FEBRUARY 1983.
3. PLAN BOOK 10437 PLAN 28 DATED FEBRUARY 1983.
4. PLAN BOOK 10437 PLAN 32 DATED FEBRUARY 1983.
5. PLAN BOOK 10437 PLAN 36 DATED FEBRUARY 1983.
6. PLAN BOOK 17567 PLAN 342 DATED MAY 21, 1992.
7. PLAN BOOK 20543 PLAN 186 DATED DECEMBER 23, 1995. (6 SHEETS)
8. PLAN BOOK 28087 PLAN 111 DATED DECEMBER 20, 2001. (3 SHEETS)

SCHEDULE B – EXCEPTIONS

REFERENCE IS MADE TO FIRST AMERICAN TITLE INSURANCE COMPANY COMMITMENT NUMBER NCS–836670–BOS1 WITH AN EFFECTIVE DATE OF MARCH 3, 2017.

(FOR PLOTTED ITEMS REFER TO THE EXCEPTION NUMBER ONT THE PLAN (6))

1. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land. (NOT SURVEY RELATED)

2. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

3. Any Lien, or Right to a Lien, for Services, Labor or Material theretofore or hereafter furnished, imposed by law and not shown in the public records.
(NOT SURVEY RELATED)

4. Real Estate Taxes and Municipal Charges which may constitute liens.
(NOT SURVEY RELATED)

5. Title to and rights of the public and others entitled thereto in and to those portions of the insured premises lying within the bounds of adjacent streets, roads, and ways. (PLOTTED)

6. The exact acreage or square footage being other than as stated in Schedule A or the plan(s) therein referred to. (PLOTTED)

7. Terms and provisions of Lease #1 between Massachusetts Port Authority, as Lessor, and G. Daniel Prigmore and Richard M. Reilly, Trustees of Commonwealth Pier Trust II udt dated May 1, 1982 and recorded in Book 10006, Page 21, as amended of record, as Lessee, said Lease dated July 6, 1983, Notice of which Lease is recorded in Book 10437, Page 19, as amended by unrecorded amendments dated April 4, 1984, July 10, 1984, September 25, 1984, November 30, 1984, December 23, 1987, as affected by Notice of Amended Lease and Option to lease additional parcels dated as of January 28, 1993 and recorded in Book 18010, Page 4, as amended by unrecorded amendments dated April 29, 1993, June 29, 1993, October 29, 1993, as amended by Notice of Amended Lease dated as of March 15, 1996 and recorded in Book 20543, Page 293 (which Amendment terminated the option to lease additional property), as further amended and restated by Amended and Restated Master Lease dated as of December 1, 1998 and recorded in Book 23194, Page 238, as affected by Compliance Agreement dated September 30, 2002 and recorded in Book 29706, Page 27, and as affected by Consent and Agreement dated September 30, 2002 and recorded in Book 29706, Page 62. (NOT PLOTTABLE)

8. Terms and provisions of Sale/Mitigation Agreement by and between the Commonwealth of Massachusetts acting by and through its Department of Public Works and Massachusetts Port Authority, dated October 3, 1991 and recorded in Book 17133, Page 122, as affected by Waiver and Agreement by and between Massachusetts Highway Department (hereinafter "MHD") and Massport, dated May 20, 1992 and recorded in Book 17567, Page 268, as amended by First Amendment dated June 16, 1992 and recorded in Book 17567, Page 339, and as may be affected by Waiver and Agreement by and Between The Massachusetts Port Authority and The Massachusetts Department of Highways dated May 20, 1992 and recorded in Book 17567, Page 268. (NOT SURVEY RELATED)

9. Leasehold Mortgage, Assignment of Leases and Rents, and Security Agreement from John E. Drew and David C. Weinstein, Trustees of Commonwealth Pier Trust II, to New York Life Insurance Company, mortgage dated December 4, 1998 in the original principal amount of $63,000,000.00 and recorded in Book 23194, Page 257, as affected by Subordination, Non– Disturbance and Attornment Agreement by and among Fidelity Corporate Real Estate, LLC (tenant), New York Life Insurance Company (lender), and Boscom and John E. Drew and David C. Weinstein, Trustees of Commonwealth Pier Trust II (borrower), dated December 4, 1998 and recorded in Book 23194, Page 339, and as affected by Undertaking of Permitted Leasehold Mortgagee by and between New York Life Insurance Company and Massachusetts Port Authority dated December 4, 1998 and recorded in Book 23195, Page 1, and as affected by Recognition Agreement dated September 30, 2002 and recorded at Book 29706, Page 110.
(NOT SURVEY RELATED)

10. Assignment of Leases, Rents, Income and Cash Collateral from John E. Drew and David C. Weinstein, Trustees of Commonwealth Pier Trust II, to New York Life Insurance Company dated December 4, 1998 and recorded in Book 23194, Page 323. (NOT SURVEY RELATED)

11. a) UCC–1 Financing Statement naming John E. Drew and David C. Weinstein, Trustees of Commonwealth Pier Trust II, as Debtor, and New York Life Insurance Company, as Secured Party, UCC recorded on December 7, 1998 in Book 23195, Page 7, as continued by Continuation recorded on November 6, 2003 in Book 33202, Page 220, as continued by Continuation recorded on July 1, 2008 in Book 43758, Page 139, and as continued by Continuation recorded on June 25, 2013 in Book 51680, Page 286. (NOT SURVEY RELATED)

b) UCC–1 Financing Statement naming BOSCOM Partners, as Debtor, and New York Life Insurance Company, as Secured Party, UCC recorded on December 7, 1998 in Book 23195, Page 12, as continued by Continuation recorded on November 6, 2003 in Book 33202, Page 221, as continued by Continuation recorded on June 27, 2008 in Book 43739, Page 35, as continued by Continuation recorded on July 15, 2008 in Book 43798, Page 308 as affected by Subordination, Non–Disturbance and Attornment Agreement dated September 11, 2012 and recorded in Book 50488, Page 171, and as continued by Continuation recorded on June 25, 2013 in Book 51680 Page 84. (NOT SURVEY RELATED)

12. Terms and provisions of Grant of Viaduct Easement by Massachusetts Port Authority in favor of G. Daniel Prigmore and Richard M. Reilly, Trustees of Commonwealth Pier Trust II, grant dated July 6, 1983 and recorded in Book 10437, Page 24, as amended by Amendment of Viaduct Easement dated November 6, 1995 and recorded in Book 20543, Page 256, and as affected by Viaduct Expense Sharing Agreement, relating to a Hotel Garage Ground Lease, dated July 30, 1999, by and among Seaport Hotel Limited Partnership, Seaport Garage Limited Partnership, John E. Drew and David C. Weinstein, as Trustees of Commonwealth Pier Trust II, and recorded in Book 24079, Page 119. (PLOTTED)

13. Terms and provisions of Grant of Northern Avenue Easement by Massachusetts Port Authority in favor of G. Daniel Prigmore and Richard M. Reilly, Trustees of Commonwealth Pier Trust II, grant dated July 6, 1983 and recorded in Book 10437, Page 28, as amended by Amendment to Easements dated December 1, 1998 and recorded in Book 23194, Page 246. (PLOTTED)

14. Terms and provisions of Grant of Apron Easement in favor of G. Daniel Prigmore and Richard M. Reilly, Trustees of Commonwealth Pier Trust II, grant dated July 6, 1983 and recorded in Book 10437, Page 36, as amended by Amendment to Easements dated December 1, 1998 and recorded in Book 23194, Page 246, and as affected by Subordination Agreement dated October 31, 2000 and recorded at Book 25509, Page 258. (PLOTTED)

15. Possible applicability of terms and provisions of certain unrecorded WTC Settlement Agreement among the Commonwealth of Massachusetts by and through the Department of Highways, Commonwealth Pier Trust II, and Fidelity Properties Inc. dated January 28, 1993, as assigned to Commonwealth Flats Development 121A East Limited Partnership, and as affected by Estoppel Certificate, Release, Easement and Agreement dated January 19, 2000 by and among The Commonwealth of Massachusetts by and through the Department of Highways, and John E. Drew and David C. Weinstein, as Trustees of Commonwealth Pier Trust II, and Commonwealth Flats Development 121A East Limited Partnership, recorded in Book 24669, Page 36 (affects parking rights and temporary construction easements that apparently benefit Commonwealth Pier Trust II). (NOT PLOTTABLE)

16. Terms and provisions of Lease in which Trustees of Commonwealth Pier Trust II is named Landlord and Watermark Donut Company is Tenant, Notice of which is dated October 10, 2002 and recorded in Book 30357, Page 226, as affected by Subordination, Non–Disturbance and Attornment Agreement dated December 30, 2002 and recorded in Book 30357, Page 230, and as further affected by Subordination, Non–Disturbance and Attornment Agreement dated September 11, 2012 and recorded in Book 50488, Page 171 (lease encumbers 2,055 s.f. area on ground floor of World Trade Center and lease term would be in its extension option period). (NOT SURVEY RELATED)

17. Order of Conditions/Wetlands Protection Act, File No. 6–229, issued by the Boston Conservation Commission dated December 15, 1982 and recorded in Book 10262, Page 119, as extended by Extension Permit recorded on March 28, 1984 in Book 10840, Page 337, as further extended by Extension Permit recorded on May 21, 1987 in Book 13705, Page 267, and as affected by Certificate of Compliance dated October 25, 1989 and recorded on November 27, 1989 in Book 15969, Page 97. (NOT SURVEY RELATED)

18. Order of Conditions/Wetlands Protection Act, File No. 6–712, issued by the Boston Conservation Commission dated January 29, 1997 recorded in Book 21664, Page 261.
(NOT SURVEY RELATED)

19. Order of Conditions, issued by the Boston Conservation Commission, MassDEP File No. 006–0993, dated February 4, 2004 and recorded in Book 34190, Page 133. (NOT SURVEY RELATED)

20. Order of Conditions issued by the Boston Conservation Commission, MassDEP File No. 006–1218, dated January 29, 2010 and recorded in Book 46045, Page 152, as affected by Certificate of Compliance dated March 7, 2013 and recorded in Book 51232, Page 327.
(NOT SURVEY RELATED)

21. Order of Conditions issued by Boston Conservation Commission, MassDEP File No. 006–1326, dated January 11, 2013 and recorded in Book 50993, Page 221, as affected by Certificate of Compliance dated November 7, 2013 recorded in Book 52463, Page 306.
(NOT SURVEY RELATED)

22. Order of Conditions issued by Boston Conservation Commission, DEP File # 6–863 fled on July 28, 2000 and recorded in Book 25547, Page 290.
(NOT SURVEY RELATED)

23. Order of Conditions issued by Boston Conservation Commission, DEP File # 6–619 issued on July 21, 1999 and recorded in Book 24928, Page 56.
(NOT SURVEY RELATED)

24. Order of Conditions issued by Boston Conservation Commission, DEP File # 006–1428 issued April 27, 2015 and recorded in Book 55023, Page 35.
(NOT SURVEY RELATED)

25. Release and Agreement by and between the Massachusetts Port Authority and Consolidated Rail Corporation regarding railroad tracks in the area of Commonwealth Pier 5 and other areas dated January 4, 1984 and recorded in Book 10743, Page 9. (NOT PLOTTABLE)

26. Possible applicability of the following Orders of Conditions:
(NOT SURVEY RELATED)

a. Order of Conditions issued by Boston Conservation Commission issued February 7, 1985, DEQE File # 6–272 and recorded in Book 11825 Page 101 (affects Northern Avenue area).

b. Order of Conditions issued by Boston Conservation Commission, DEP File #6–579, acknowledged March 2, 1994 and recorded in Book 18986, Page 185 (Northern Avenue area).

c. Order of Conditions issued by Boston Conservation Commission, DEP File #6–578 acknowledged March 2, 1994 and recorded in Book 19023, Page 227.

d. Order of Conditions issued by Boston Conservation Commission, DEP File #006–0891 issued June 1, 2004 and recorded in Book 26465, Page 304.

27. License # 6719 to construct and maintain Dept. of Environmental Protection issued on July 20, 1998 and recorded in Book 22709, Page 206, as affected by Certificate of Compliance dated February 20, 2002 and recorded in Book 28215, Page 248.
(NOT SURVEY RELATED)

28. Grant of Easement and Easement Agreement by Massachusetts Port Authority to Boston Water and Sewer Commission dated March 11, 1984 and recorded in Book 11142, Page 256, as amended by Amendment #1 of Easement Agreement dated December 23, 2003 and recorded in Book 33545, Page 153 (affects Northern Avenue). (NOT PLOTTABLE)

29. "Tieback Easements" as shown on Plan dated June 9, 2000 and recorded in Book 28087, Page 111. (PLOTTED)

30. "Northern Avenue Bridge" extends across Northern Avenue to World Trade Center as shown on Plan dated December 20, 2001 and recorded in Book 28087, Page 111. (PLOTTED)

31. The following rights set forth in the Notice of Amended and Restated Master Lease recorded in Book 23194 Page 238. (NOT SURVEY RELATED)

a. Landlord reserves the right, for its own benefit and for the benefit of its employees, contractors, licensees and permittees, to use and occupy the Apron Support Space, identified as such, and shown on the Floor Plans attached to the Lease as Exhibit D, being the two areas located in the eastern and western ends of the ground level of the headhouse constituting those two headhouse spaces separated from the other areas in the headhouse by the easternmost and westernmost driveways as shown on Exhibit D, for use by Landlord or its agents or sub–tenants for office or maritime related purposes ancillary to the use of the Apron pursuant to reasonable occupancy agreements, but without any actual obligation on the part of Landlord, with respect to the Apron Support Space.

b. Landlord reserves the right, for its own benefit and for the benefit of its employees, contractors, licensees and permittees using the Apron, at Landlord's sole cost and expense, to have Tenant (i) install on the Premises separate utility systems (including without limitation, systems for the supply of heat, water, gas, fuel and electricity, and for the furnishing of the fire alarm, fire protection, sprinkler, sewage, drainage, telephone and telegraph service, including all lines, pipes, mains, wires, conduits and equipment connected with or appurtenant thereto) in locations approved by Tenant, such approval not to be unreasonably withheld, and (ii) make such repairs, replacements or alterations thereto as may, in the reasonable opinion of the Landlord, be deemed necessary or advisable, provided, however, that in exercising such rights, Landlord shall repair any damage to the Premises caused by the exercise of such rights, Landlord shall not materially interfere with Tenant's operation of the Premises or with the operations of any subtenant or any occupant or in any way abridge the rights conferred on Tenant, and subtenant or occupant by this lease. The Tenant shall have the right, at all times and from time to time, to relocate, at Tenant's expense, any such utility systems which in the Tenant's reasonable judgment do or will materially interfere with such operations or abridge such rights; provided any interruption in the service provided by such utility systems shall not materially interfere with Landlord's operation of the Apron. Landlord shall be solely responsible for the payment of any utilities provided to Landlord, its employees, contractors, licensees and permittees by such systems.

32. Avigational Easement prescribed by 49 U.S.C.A. §1301(29). (NOT PLOTTABLE)

33. Terms and provisions of M.G.L. c.91, as amended. (NOT SURVEY RELATED)

34. Possible public trust or public purpose obligations on any portion of the premises.
(NOT SURVEY RELATED)

35. Rights of the United States of America in the nature of a federal navigational servitude.
(NOT SURVEY RELATED)

SURVEYOR'S CERTIFICATION

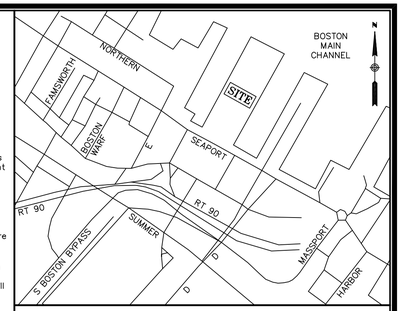
TO: COMMONWEALTH PIER TRUST II
PEMBROKE REALTY
FIRST AMERICAN TITLE INSURANCE COMPANY
MASSACHUSETTS PORT AUTHORITY

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS, AND INCLUDES ITEMS 2., 3., 4., 6(a)., 7(a)., 8., 9., 11., 13., 16., and 18. OF TABLE A THEREOF. THE FIELDWORK WAS COMPLETED IN OCTOBER OF 2017.

PROGRESS PRINT
Nov 03, 2017 – 3:50pm

DAVID PRINCE, LLS DATE:11/03/2017
REG. NO. 977
WSP USA, Inc.
155 MAIN DUNSTABLE ROAD
NASHUA, NEW HAMPSHIRE

190107A–2 ALTA.dwg



LOCUS MAP

NOTES

1. THIS PLAN WAS PREPARED FROM AN ACTUAL ON THE GROUND FIELD SURVEY CONDUCTED BY WSP FROM OCTOBER 2, 2017 TO OCTOBER 19, 2017.

2. THE HORIZONTAL DATUM SHOWN HEREON REFERENCES THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM NAD83.

3. THE LOCUS PROPERTY IS LOCATED IN THE HARBORPARK ZONING DISTRICT IN THE WATERFRONT TRANSITION ZONE AS SHOWN ON ZONING DISTRICT CITY OF BOSTON MAP 4A/4B WITH AN EFFECTIVE DATE OF MARCH 10, 2017.

4. THE SUBJECT PROPERTY IS LOCATED IN ZONE AE (BASE FLOOD ELEVATIONS DETEMINED) AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP PANEL 81 OF 176, COMMUNITY PANEL NUMBER250286–0081–J WITH AN EFFECTIVE DATE OF MARCH 16, 2016. BASE FLOOD ELEVATION = 11'

5. THERE WAS NO EVIDENCE OF ANY EARTH MOVING WORK OR CONSTRUCTION AT THE TIME OF THE SURVEY.

6. THERE WAS NO DELINEATION OF WETLANDS OBSERVED AT THE TIME OF THE SURVEY.

LEGEND

E	ELECTRIC HANDHOLE	SBLPEP	STONE BOUND LEAD PLUG E–PIN
GV	GAS VALVE	NAIL	NAIL
T	TELEPHONE MANHOLE	MON	NAIL MONUMENT
WM	WATER METER	DISK	DISK
WG	WATER GATE	WH	WATER HANDHOLE
ICV	IRRIGATION CONTROL VALVE	AD	AREA DRAIN
FH	FIRE HYDRANT	CB	CATCH BASIN
DT	DECIDUOUS TREE	DMH	DRAIN MANHOLE
SP	SIGN (SINGLE POSTED)	NL	NO LABEL MANHOLE
SD	SIGN (DOUBLE POSTED)	S	SEWER MANHOLE
BOMO	BOLT OVER MAIN OUTLET	EB	ELECTRIC BOX
BMK	BENCHMARK	TS	TRAFFIC SIGNAL
WC	WOOD CURB		POST
CC	CONCRETE CURB	CO	CLEANOUT
SGC	SLOPED GRANITE CURB		MAILBOX
VGC	VERTICAL GRANITE CURB		LIGHT POLE
LSA	LANDSCAPED AREA		BOLLARD
FFE	FINISHED FLOOR ELEVATION		HANDICAP PARKING
WRW	WOOD RETAINING WALL	FDC	FIRE DEPARTMENT CONNECTION
SWL	SOLID WHITE LINE	FA	FIRE ALARM
SYL	SINGLE YELLOW LINE		BENCHMARK
DYL	DOUBLE YELLOW LINE	TP	TEST PIT
BRK	BRICK		BIKE LANE
			GROUND LIGHT

PROPERTY LINE
RIGHT OF WAY LINE
EASMENT LINE
EXPANSION JOINT
METAL/WIRE FENCE
METAL GUARDRAIL
METAL HANDRAIL
SEWER LINE
DRAIN LINE
WATER LINE
GAS LINE
UNDERGROUND ELECTRIC
TELEPHONE LINE

REVISION	
DATE	DESCRIPTION
--/--/--	---

ALTA/NSPS LAND TITLE SURVEY
SEAPORT BOULEVARD
BOSTON, MASSACHUSETTS
PREPARED FOR
COMMONWEALTH PIER TRUST II

WSP USA Inc.
155 Main Dunstable Rd, Suites 120 & 125
Nashua, NH 03060
603.595.7900

Drawn By LA	Date NOVEMBER 1, 2017	Job No. 190107A
Surveyed By TO, JT, JF		
Checked By DPP	Scale 1" = 50'	Sheet No. 2 OF 2
Book No. N–286		

APPENDIX D: BPDA Checklists

Accessibility Checklist

Climate Change Preparedness and Resilience Checklist

Article 80 – Accessibility Checklist

A requirement of the Boston Planning & Development Agency (BPDA)
Article 80 Development Review Process

The Mayor's Commission for Persons with Disabilities strives to reduce architectural, procedural, attitudinal, and communication barriers that affect persons with disabilities in the City of Boston. In 2009, a Disability Advisory Board was appointed by the Mayor to work alongside the Commission in creating universal access throughout the city's built environment. The Disability Advisory Board is made up of 13 volunteer Boston residents with disabilities who have been tasked with representing the accessibility needs of their neighborhoods and increasing inclusion of people with disabilities.

In conformance with this directive, the BDPA has instituted this Accessibility Checklist as a tool to encourage developers to begin thinking about access and inclusion at the beginning of development projects, and strive to go beyond meeting only minimum MAAB / ADAAG compliance requirements. Instead, our goal is for developers to create ideal design for accessibility which will ensure that the built environment provides equitable experiences for all people, regardless of their abilities. As such, any project subject to Boston Zoning Article 80 Small or Large Project Review, including Institutional Master Plan modifications and updates, must complete this Accessibility Checklist thoroughly to provide specific detail about accessibility and inclusion, including descriptions, diagrams, and data.

For more information on compliance requirements, advancing best practices, and learning about progressive approaches to expand accessibility throughout Boston's built environment. Proponents are highly encouraged to meet with Commission staff, prior to filing.

Accessibility Analysis Information Sources:

1. Americans with Disabilities Act – 2010 ADA Standards for Accessible Design
   http://www.ada.gov/2010ADAstandards_index.htm
2. Massachusetts Architectural Access Board 521 CMR
   http://www.mass.gov/eopss/consumer-prot-and-bus-lic/license-type/aab/aab-rules-and-regulations-pdf.html
3. Massachusetts State Building Code 780 CMR
   http://www.mass.gov/eopss/consumer-prot-and-bus-lic/license-type/csl/building-codebbrs.html
4. Massachusetts Office of Disability – Disabled Parking Regulations
   http://www.mass.gov/anf/docs/mod/hp-parking-regulations-summary-mod.pdf
5. MBTA Fixed Route Accessible Transit Stations
   http://www.mbta.com/riding_the_t/accessible_services/
6. City of Boston – Complete Street Guidelines
   http://bostoncompletestreets.org/
7. City of Boston – Mayor's Commission for Persons with Disabilities Advisory Board
   www.boston.gov/disability
8. City of Boston – Public Works Sidewalk Reconstruction Policy
   http://www.cityofboston.gov/images_documents/sidewalk%20policy%200114_tcm3-41668.pdf
9. City of Boston – Public Improvement Commission Sidewalk Café Policy
   http://www.cityofboston.gov/images_documents/Sidewalk_cafes_tcm3-1845.pdf

Glossary of Terms:

1. ***Accessible Route*** – A continuous and unobstructed path of travel that meets or exceeds the dimensional and inclusionary requirements set forth by MAAB 521 CMR: Section 20
2. ***Accessible Group 2 Units*** – Residential units with additional floor space that meet or exceed the dimensional and inclusionary requirements set forth by MAAB 521 CMR: Section 9.4
3. ***Accessible Guestrooms*** – Guestrooms with additional floor space, that meet or exceed the dimensional and inclusionary requirements set forth by MAAB 521 CMR: Section 8.4
4. ***Inclusionary Development Policy (IDP)*** – Program run by the BPDA that preserves access to affordable housing opportunities, in the City. For more information visit: http://www.bostonplans.org/housing/overview
5. ***Public Improvement Commission (PIC)*** – The regulatory body in charge of managing the public right of way. For more information visit: https://www.boston.gov/pic
6. ***Visitability*** – A place's ability to be accessed and visited by persons with disabilities that cause functional limitations; where architectural barriers do not inhibit access to entrances/doors and bathrooms.

1. Project Information:

If this is a multi-phased or multi-building project, fill out a separate Checklist for each phase/building.

Project Name:	**Seaport World Trade Center**
Primary Project Address:	**200 Seaport Boulevard**
Total Number of Phases/Buildings:	**1 building**
Primary Contact (Name / Title / Company / Email / Phone):	**Andrew Dankwerth, Senior Vice President, Design & Development Pembroke** Andrew.Dankwerth@pembroke.com, **617 563 2658**
Owner / Developer:	**Commonwealth Pier Trust II c/o Pembroke Real Estate**
Architect:	**CBT Architects (AOR) and SHL**
Civil Engineer:	**VHB**
Landscape Architect:	**Sasaki**
Permitting:	**VHB, Fort Point Associates (Chapter 91 Licensing)**
Construction Management:	**General Contractor not selected yet**

At what stage is the project at time of this questionnaire? Select below:

	PNF / Expanded PNF Submitted	Draft / Final Project Impact Report Submitted	BPDA Board Approved
	BPDA Design Approved	Under Construction	Construction Completed:

Do you anticipate filing for any variances with the Massachusetts Architectural Access Board (MAAB)? ***If yes,*** identify and explain.	**Unknown at this time**

2. Building Classification and Description:

This section identifies preliminary construction information about the project including size and uses.

What are the dimensions of the project?

Site Area:	**420,801 SF**	Building Area:	**759,250 GFA**
Building Height:	**77'-0" BCB FT.**	Number of Stories:	**2 Stories**
First Floor Elevation:	**18.75 ft BCB**	Is there below grade space:	*Yes* / **No**

What is the Construction Type? (Select most appropriate type)				
	Wood Frame	Masonry	**Steel Frame**	Concrete
What are the principal building uses? (IBC definitions are below – select all appropriate that apply)				
	Residential – One - Three Unit	Residential - Multi-unit, Four +	Institutional	Educational
	Business	**Mercantile**	Factory	**Hospitality**
	Laboratory / Medical	Storage, Utility and Other		
List street-level uses of the building:	**Office, Retail, and Building Support**			

3. Assessment of Existing Infrastructure for Accessibility:

This section explores the proximity to accessible transit lines and institutions, such as (but not limited to) hospitals, elderly & disabled housing, and general neighborhood resources. Identify how the area surrounding the development is accessible for people with mobility impairments and analyze the existing condition of the accessible routes through sidewalk and pedestrian ramp reports.

Provide a description of the neighborhood where this development is located and its identifying topographical characteristics:	**The Seaport neighborhood is a rapidly developing mixed-use area with many different resources and building types. As a waterfront area, it is generally fairly flat topographically.**
List the surrounding accessible MBTA transit lines and their proximity to development site: commuter rail / subway stations, bus stops:	**MBTA Silver Line is immediately adjacent to the Project Site. The MBTA Red Line and Commuter Rail are 1 mile away at South Station. There are numerous bus lines located in the area, as well as water transportation.**
List the surrounding institutions: hospitals, public housing, elderly and disabled housing developments, educational facilities, others:	**Hospitals are at Tufts, MGH or Boston Medical Center. Public Housing and schools are in South Boston.**
List the surrounding government buildings: libraries, community centers, recreational facilities, and other related facilities:	**Closest library is in the South End.**

4. Surrounding Site Conditions – Existing:

This section identifies current condition of the sidewalks and pedestrian ramps at the development site.

Is the development site within a historic district? ***If yes,*** identify which district:	**The Project Site is not within a historic district, but there is a historic resource within the Project Site: Commonwealth Pier Five. This on-site resource is individually listed in the National and State Registers of Historic Places. There is one additional historic resource within one quarter-mile**

	radius of the Project Site: the Boston Fish Pier Historic District. This district is listed in the National and State Registers of Historic Places. Refer to Chapter 7, *Historic Resources*, of the ENF/PNF for a brief description of the historic resources.
Are there sidewalks and pedestrian ramps existing at the development site? ***If yes***, list the existing sidewalk and pedestrian ramp dimensions, slopes, materials, and physical condition at the development site:	There is an existing sidewalk on Seaport Boulevard. The sidewalk includes curb cuts at the apron on the east and west sides of the building. These curb cuts are approximately 16' wide at the west side and 22' wide at the east side. There are also depressed sidewalks at each of the 4 loading bays facing Seaport Boulevard. The depressed sections of the sidewalk are each about 34' wide. There is a flush curb condition at the crosswalk under the Viaduct across Seaport Boulevard at the middle of the building. This crosswalk is approximately 20' wide. There are wheelchair ramps on either side of the crosswalk across the south end of the Viaduct.
Are the sidewalks and pedestrian ramps existing-to-remain? ***If yes,*** have they been verified as ADA / MAAB compliant (with yellow composite detectable warning surfaces, cast in concrete)? ***If yes,*** provide description and photos:	The sidewalk on Seaport Boulevard will be reconstructed. A mountable curb will be install across the access to the Harborwalk on the western side of the building so no ramp or detectable warning surfaces will be required. The curb cut at the Harborwalk on the east side of the building will be replaced with a dropped curb. Mountable curbs will also be added for controlled access drop off area under the arcade. This area will be restricted to use during special events. The flush curb condition will remain as is at the existing crosswalk. The existing detectable warning pavers will be replaced with a new ADA/MAAB compliant warning surface. The crosswalk and wheelchair ramps on the south end of the Viaduct are outside of the project limits and will remain as is.
5. Surrounding Site Conditions – Proposed *This section identifies the proposed condition of the walkways and pedestrian ramps around the development site. Sidewalk width contributes to the degree of comfort walking along a street. Narrow sidewalks do not support lively pedestrian activity, and may create dangerous conditions that force people to walk in the street. Wider sidewalks allow people to walk side by side and pass each other comfortably walking alone, walking in pairs, or using a wheelchair.*	
Are the proposed sidewalks consistent with the Boston Complete Street Guidelines? ***If yes***, choose which Street Type was applied: Downtown Commercial, Downtown Mixed-use, Neighborhood Main, Connector, Residential, Industrial, Shared Street, Parkway, or Boulevard.	The sidewalk is most similar to the Downtown Mixed Use condition although the unique conditions of the Project Site (and Viaduct) do not allow for direct correlation to any one street type.

What are the total dimensions and slopes of the proposed sidewalks? List the widths of the proposed zones: Frontage, Pedestrian and Furnishing Zone:	Harborwalk (private area/public way): 12' min width Frontage (at street/right-of-way): 9' - 17' Frontage (under arcade/private way): 39' Sidewalk cross-slopes throughout the site never exceed 1.8%. Sidewalk slopes along the path of travel are generally 1.8%, but never exceed 20% in the path of travel.
List the proposed materials for each Zone. Will the proposed materials be on private property or will the proposed materials be on the City of Boston pedestrian right-of-way?	Harborwalk (private area/public way) – Concrete Pavement + Hardwood decking (in specialty zones) Frontage (at street/right-of-way) - Unit Pavers Frontage (under arcade/private way) - Unit Pavers + Concrete Pavement
Will sidewalk cafes or other furnishings be programmed for the pedestrian right-of-way? ***If yes,*** what are the proposed dimensions of the sidewalk café or furnishings and what will the remaining right-of-way clearance be?	The Project provides various outdoor cafe dining areas, but none of these sidewalk cafes will be programmed within the public right-of-way.
If the pedestrian right-of-way is on private property, will the proponent seek a pedestrian easement with the Public Improvement Commission (PIC)?	The pedestrian right-of-way on Seaport Boulevard is on public property. The pedestrian area under the arcade and the Harborwalk around the apron is on private property. The Proponent may seek a pedestrian easement for these areas.
Will any portion of the Project be going through the PIC? ***If yes,*** identify PIC actions and provide details.	Yes, for approval of street repairs and/or signs and awnings (as required)
6. Accessible Parking: *See Massachusetts Architectural Access Board Rules and Regulations 521 CMR Section 23.00 regarding accessible parking requirement counts and the Massachusetts Office of Disability – Disabled Parking Regulations*.	
What is the total number of parking spaces provided at the development site? Will these be in a parking lot or garage?	No parking is proposed as part of the Project. The Project will be served by the approximately 890 parking spaces currently allocated to the World Trade Center in the Seaport Parking Garage located immediately across the street on Seaport Boulevard.
What is the total number of accessible spaces provided at the development site? How many of these are "Van Accessible" spaces with an 8 foot access aisle?	The existing Seaport Garage, which will support the Project, provides accessible spaces.

Will any on-street accessible parking spaces be required? ***If yes,*** has the proponent contacted the Commission for Persons with Disabilities regarding this need?	**There are existing on-street accessible parking spaces within the vicinity of the Project Site.**
Where is the accessible visitor parking located?	**Accessible parking is provided at the Seaport Parking Garage located immediately across the street on Seaport Boulevard, which will serve the Project.**
Has a drop-off area been identified? ***If yes,*** will it be accessible?	**Yes. Refer to Figure 2.6b.**
7. Circulation and Accessible Routes: *The primary objective in designing smooth and continuous paths of travel is to create universal access to entryways and common spaces, which accommodates persons of all abilities and allows for visitability with neighbors.*	
Describe accessibility at each entryway: Example: Flush Condition, Stairs, Ramp, Lift or Elevator:	**All building entrances will be flush or will have ramps to provide an accessible route.**
Are the accessible entrances and standard entrance integrated? ***If yes,*** *describe.* ***If no,*** what is the reason?	**Yes, in all cases for building entrances, accessible and standard are the same entrance.**
If project is subject to Large Project Review/Institutional Master Plan, describe the accessible routes way-finding / signage package.	**Due to the extent of the renovations Project is subject to Large Project Review. There will be an accessible route around the building apron on the improved Harborwalk. There will also be an accessible route provided across the Viaduct from World Trade Center Avenue to the upper level of the building. An accessible route will be provided from the east and west on Seaport Boulevard as well as across Seaport Boulevard. Signage will be provided at any location where an alternative route is needed to avoid non-accessible areas. It is not anticipated that this condition will exist on the project site.**
8. Accessible Units (Group 2) and Guestrooms: (If applicable) *In order to facilitate access to housing and hospitality, this section addresses the number of accessible units that are proposed for the development site that remove barriers to housing and hotel rooms.*	

What is the total number of proposed housing units or hotel rooms for the development?	**No residential units are proposed as part of the Project.**
If a residential development, how many units are for sale? How many are for rent? What is the breakdown of market value units vs. IDP (Inclusionary Development Policy) units?	
If a residential development, how many accessible Group 2 units are being proposed?	
If a residential development, how many accessible Group 2 units will also be IDP units? ***If none***, describe reason.	
If a hospitality development, how many accessible units will feature a wheel-in shower? Will accessible equipment be provided as well? ***If yes,*** provide amount and location of equipment.	
Do standard units have architectural barriers that would prevent entry or use of common space for persons with mobility impairments? Example: stairs / thresholds at entry, step to balcony, others. ***If yes,*** provide reason.	
Are there interior elevators, ramps or lifts located in the development for access around architectural barriers and/or to separate floors? ***If yes,*** describe:	

9. Community Impact:

Accessibility and inclusion extend past required compliance with building codes. Providing an overall scheme that allows full and equal participation of persons with disabilities makes the development an asset to the surrounding community.

Is this project providing any funding or improvements to the surrounding neighborhood? Examples: adding extra street trees, building or refurbishing a local park, or supporting other community-based initiatives?	**Several new public realm improvements are proposed as part of the Project, as described in Chapter 1, *Project Description* and Chapter 2, *Urban Design* of the ENF/PNF.**
What inclusion elements does this development provide for persons with disabilities in common social and open spaces? Example: Indoor seating and TVs in common rooms; outdoor seating and barbeque grills in yard. Will all of these spaces and features provide accessibility?	**All such elements will be designed to be accessible.**
Are any restrooms planned in common public spaces? ***If yes,*** will any be single-stall, ADA compliant and designated as "Family"/ "Companion" restrooms? ***If no***, explain why not.	**Public restrooms will be provided at the Plaza. ADA and family bathrooms will be provided.**
Has the proponent reviewed the proposed plan with the City of Boston Disability Commissioner or with their Architectural Access staff? ***If yes,*** did they approve? ***If no,*** what were their comments?	**No, the Proponent has not reviewed the proposed plan with the Boston Disability Commissioner or Architectural Access staff prior to this filing.**
Has the proponent presented the proposed plan to the Disability Advisory Board at one of their monthly meetings? Did the Advisory Board vote to support this project? ***If no,*** what recommendations did the Advisory Board give to make this project more accessible?	**No.**

10. Attachments

Include a list of all documents you are submitting with this Checklist. This may include drawings, diagrams, photos, or any other material that describes the accessible and inclusive elements of this project.

Provide a diagram of the accessible routes to and from the accessible parking lot/garage and drop-off areas to the development entry locations, including route distances. **Refer to Figures 2.8a through 2.8c.**

Provide a diagram of the accessible route connections through the site, including distances. **Refer to Figures 2.7a and 2.7b.**
Provide a diagram the accessible route to any roof decks or outdoor courtyard space? (if applicable) **Refer to Figure 2.7a.**
Provide a plan and diagram of the accessible Group 2 units, including locations and route from accessible entry. **Not applicable**
Provide any additional drawings, diagrams, photos, or any other material that describes the inclusive and accessible elements of this project. • • • •

This completes the Article 80 Accessibility Checklist required for your project. Prior to and during the review process, Commission staff are able to provide technical assistance and design review, in order to help achieve ideal accessibility and to ensure that all buildings, sidewalks, parks, and open spaces are usable and welcoming to Boston's diverse residents and visitors, including those with physical, sensory, and other disabilities.

For questions or comments about this checklist, or for more information on best practices for improving accessibility and inclusion, visit www.boston.gov/disability, or our office:

The Mayor's Commission for Persons with Disabilities
1 City Hall Square, Room 967,
Boston MA 02201.

Architectural Access staff can be reached at:

accessibility@boston.gov | patricia.mendez@boston.gov | sarah.leung@boston.gov | 617-635-3682

boston planning & development agency

Climate Resiliency Checklist

NOTE: Project filings should be prepared and submitted using the online Climate Resiliency Checklist.

A.1 - Project Information

Project Name:	**Seaport World Trade Center**			
Project Address:	**200 Seaport Boulevard**			
Project Address Additional:	**N/A**			
Filing Type (*select*)	*Initial (**PNF**, EPNF, NPC or other substantial filing)* *Design / Building Permit (prior to final design approval), or* *Construction / Certificate of Occupancy (post construction completion)*			
Filing Contact	*Name* **Andrew Dankwerth**	*Company* **Pembroke**	*Email* **Andrew.Dankwerth@pembroke.com**	*Phone* **617 563 2658**
Is MEPA approval required	**Yes**/*no*		*Date* **Under Review**	

A.3 - Project Team

Owner / Developer:	**Commonwealth Pier Trust II c/o Pembroke Real Estate**
Architect:	**CBT Architects (AOR) and SHL**
Engineer:	**VHB**
Sustainability / LEED:	**Arup**
Permitting:	**VHB, Fort Point Associates (Chapter 91 Licensing)**
Construction Management:	**General Contractor not selected yet**

A.3 - Project Description and Design Conditions

List the principal Building Uses:	**Office, Event, Retail, and Associated Support**
List the First Floor Uses:	**Office, Retail, and Building Support**
List any Critical Site Infrastructure and or Building Uses:	**N/A**

Site and Building:

Site Area:	**420,801 SF**	Building Area:	**759,250 GFA**
Building Height:	**77'-0" BCB FT.**	Building Height:	**2 Stories**
Existing Site Elevation – Low:	**17.37 Ft BCB**	Existing Site Elevation – High:	**18.09 Ft BCB**
Proposed Site Elevation – Low:	**17.37 Ft BCB**	Proposed Site Elevation – High:	**18.09 Ft BCB**
Proposed First Floor Elevation:	**Slab: 18'-6" Ft BCB** **Ground Floor: 19'-2" Ft BCB**	Below grade levels:	**None**

Article 37 Green Building:

LEED Version - Rating System:	**LEED-CS v4**	LEED Certification:	**Yes**
Proposed LEED rating:	**Gold**	Proposed LEED point score:	**61 Pts.**

Building Envelope

When reporting R values, differentiate between R discontinuous and R continuous. For example, use "R13" to show R13 discontinuous and use R10c.i. to show R10 continuous. When reporting U value, report total assembly U value including supports and structural elements.

Roof:	**R-40**	Exposed Floor:	**R-30**
Foundation Wall:	**N/A**	Slab Edge (at or below grade):	**On-grade is existing – no proposed change R30-40 being studied for apron slab below pier**

Vertical Above-grade Assemblies (%'s are of total vertical area and together should total 100%):

Area of Opaque Curtain Wall & Spandrel Assembly:	**10-15(%)**	Wall & Spandrel Assembly Value:	**Wall U-0.055 Spandrel U-0.200**
Area of Framed & Insulated / Standard Wall:	**20-35(%)**	Wall Value	**R-18**
Area of Vision Window:	**55-65%**	Window Glazing Assembly Value:	**U-0.35**
		Window Glazing SHGC:	**SHGC 0.3**
Area of Doors:	**3-5 %**	Door Assembly Value:	**U-0.500**

Energy Loads and Performance

For this filing – describe how energy loads & performance were determined	**Preliminary parametric energy modeling for envelope and IES-VE energy modeling for HVAC systems options.**		
Annual Electric:	**7,631,260 (kWh)**	Peak Electric:	**2,904 (kW)**
Annual Heating:	**10,302 (MMbtu)**	Peak Heating:	**9,097 (kBtu/hr)**
Annual Cooling:	**3,336 (MMbtu)**	Peak Cooling:	**248 (Tons/hr)**
Energy Use - Below ASHRAE 90.1 - 2013:	**Target 25%**	Have the local utilities reviewed the building energy performance?:	*Yes / **No, not at this early stage of design***
Energy Use - Below Mass. Code:	**Target 25%**	Energy Use Intensity:	**44 (kBtu/SF)**

Back-up / Emergency Power System

Electrical Generation Output:	**800 (kW)**	Number of Power Units:	**1**
System Type:	**800 (kW)**	Fuel Source:	**Gas**

Emergency and Critical System Loads (in the event of a service interruption)
There are no critical systems on this project.

Electric:	N/A (kW)	Heating:	N/A (MMbtu/hr)
		Cooling:	N/A (Tons/hr)

B – Greenhouse Gas Reduction and Net Zero /Net Positive Carbon Building Performance

Reducing GHG emissions is critical to avoiding more extreme climate change conditions. To achieve the City's goal of carbon neutrality by 2050 new buildings performance will need to progressively improve to net carbon zero and positive.

B.1 – GHG Emissions - Design Conditions

For this Filing - Annual Building GHG Emissions: N/A

For this filing - describe how building energy performance has been integrated into project planning, design, and engineering and any supporting analysis or modeling:

Preliminary parametric energy modeling has been completed to determine the energy impacts of different energy conservation measures for the building envelope and HVAC systems. The parametric energy model utilizes Energy Plus as the energy modeling engine and the modeling interface uses via Rhino with Grasshopper providing the scripting for the iterative scenarios. It allows multiple iterations to be run quickly across a range of design scenarios. This allows a design team to explore many more options than a traditional energy model and establishes relative improvement against each other to determine an optimal design scenario. Each scenario is compared to a baseline case, which is defined as ASHRAE 90.1-2010 compliant.

With the building envelope and HVAC base building systems identified through the parametric modeling, a preliminary LEED energy model was prepared to set a target for EAc2 Optimize Energy Performance. IES-VE version 2018.0.1.0 software was used to develop an ASHRAE 90.1-2010 compliant model and the proposed design model considering the full building and program.

Describe building specific passive energy efficiency measures including orientation, massing, envelop, and systems:

The Project has focused attention on first principals of an energy efficient design to reduce loads (and energy demand) for the building by optimizing the building envelope thermal performance and daylight design. Several options have been analyzed including window to wall ratios, roof and slab insulation, glazing thermal performance and external shading. Refer to section 3.4.1 of Chapter 3 of the PNF for full details of the results.

A combination of sustainable strategies is under consideration for the sizable roof area including a white membrane roof with the potential for increased insulation above code, and green roof areas.

Daylight will be provided within the building through several strategies. First, the envelope walls will introduce vision glass for views as well as daylight into the perimeter spaces. The Plaza and four (4) courtyards will be cut into the existing massing to bring daylight to the interior of the floor plate. Additionally, clerestory lighting at the high roof further daylights the interior of the Viaduct level.

Describe building specific active energy efficiency measures including equipment, controls, fixtures, and systems:

Energy efficient HVAC systems are being considered for the Project and include a highly efficient water-cooled chiller plant with condensing natural gas boilers. The office spaces are designed for dedicated outdoor air systems (DOAS) with fan coil units (FCUs) and variable air volume (VAV) systems with energy recovery will serve the ballrooms and function spaces. Fans and pumps will have variable speed/frequency drives. This combination of systems balance space use, energy efficiency, flexibility and resilience.

Incorporation of highly efficient LED lighting with daylight and occupancy/vacancy controls to reduce energy consumption associated with electric lighting.

Describe building specific load reduction strategies including on-site renewable, clean, and energy storage systems:

Structural analysis has concluded there are limitations in available structural capacity at large portions of the roof such that the available area for a solar PV system is limited to the high roof areas only. The Project will be solar-ready meaning the conduit to the roof and interconnection breakers will be provided in the main electrical switchgear. This allows for a solar photovoltaic system to be more easily installed in the future by either a future tenant or Proponent.

The building will also be energy-storage-ready meaning a space has been identified for a future system, structural capacity has been provided in the slab and spare breakers will be provided in the main electrical switchgear.

Describe any area or district scale emission reduction strategies including renewable energy, central energy plants, distributed energy systems, and smart grid infrastructure:

See above for narrative. As noted below, demand response will be discussed with the utilities for its feasibility.

Describe any energy efficiency assistance or support provided or to be provided to the project:

The Project will reach out to the private utility companies to discuss opportunities for energy efficiency incentives as well as demand response once the HVAC system and lighting design have been further developed.

B.2 - GHG Reduction - Adaptation Strategies

Describe how the building and its systems will evolve to further reduce GHG emissions and achieve annual carbon net zero and net positive performance (e.g. added efficiency measures, renewable energy, energy storage, etc.) and the timeline for meeting that goal (by 2050):

The Proponent is committed to constructing a building that exceeds minimum energy code and will not preclude the advancement toward net zero, as technology becomes available over the life span of the project. The project is currently being designed and constructed towards this goal by reducing energy demand through incorporation of an efficient building envelope and systems, and extensive daylight design.

The Project is also working toward the goal of net zero by evaluating an on-site solar PV system and has committed to being “solar ready” in the high roof areas as well as energy storage ready.

In addition, the Project will incorporate best practices by developing tenant design guidelines to explain the sustainable design strategies in the base building design that can contribute to the tenant fit out energy efficiency as well as make recommendations for an energy efficient fit out.

As technology becomes available, and operational processes are refined, the Project will evaluate opportunities for improving efficiency during equipment and system life cycles and upgrades with favorable ROIs for energy efficiency retrofits.

C - Extreme Heat Events

Annual average temperature in Boston increased by about 2˚F in the past hundred years and will continue to rise due to climate change. By the end of the century, the average annual temperature could be 56° (compared to 46° now) and the number of days above 90° (currently about 10 a year) could rise to 90.

C.1 – Extreme Heat - Design Conditions

Temperature Range - Low:	0 Deg.	Temperature Range - High:	95 Deg.
Annual Heating Degree Days:	5596	Annual Cooling Degree Days	750

What Extreme Heat Event characteristics will be / have been used for project planning

Days - Above 90°:	30	Days – Above 100°:	2
Number of Heatwaves / Year:	3 to 5	Average Duration of Heatwave (Days):	3

Describe all building and site measures to reduce heat-island effect at the site and in the surrounding area:

The Project will reduce heat island impacts through the use of hardscape materials with low solar reflectance, introduction of green space to the courtyards and Plaza and use of a combination of a white membrane and green roof.

C.2 - Extreme Heat – Adaptation Strategies

Describe how the building and its systems will be adapted to efficiently manage future higher average temperatures, higher extreme temperatures, additional annual heatwaves, and longer heatwaves:

The Project is utilizing first principles of an energy efficient design to reduce loads (energy demands) through passive design strategies of a high-performance building envelope, daylighting and reduction in heat island effects.
Active systems will be designed to be energy efficient in excess of minimum code requirements. The HVAC system capacity will be designed for higher temperatures, e.g. 95-degree peak day.

At equipment end of life, the opportunity to increase cooling capacity can be considered to further adapt to increased temperatures.

Describe all mechanical and non-mechanical strategies that will support building functionality and use during extended interruptions of utility services and infrastructure including proposed and future adaptations:

Mechanical, electrical, plumbing and fire protection equipment has predominantly been raised above the ground floor and SLR-DFE of 20.5 BCB. Major equipment is planned to be located on the mezzanine or roof levels. Equipment that needs to be on the ground floor level has been raised on platforms to an elevation of 23.5'. Therefore, all critical systems and equipment will be raised above the Massport-designated DFE of 23.46' BCB for *New Facilities*

The building is also being designed to be solar ready and energy storage ready.

D - Extreme Precipitation Events

From 1958 to 2010, there was a 70 percent increase in the amount of precipitation that fell on the days with the heaviest precipitation. Currently, the 10-Year, 24-Hour Design Storm precipitation level is 5.25". There is a significant probability that this will increase to at least 6" by the end of the century. Additionally, fewer, larger storms are likely to be accompanied by more frequent droughts.

D.1 – Extreme Precipitation - Design Conditions

10 Year, 24 Hour Design Storm: **6.0 in.**

Describe all building and site measures for reducing storm water run-off:

The Project has included approximately 20,000 SF of roof area to be a green roof. Green space, planting and pervious surfaces are also being introduced at the Plaza and four (4) courtyard spaces. These strategies not only reduce stormwater generation but also reduce peak flow during events.

D.2 - Extreme Precipitation - Adaptation Strategies

Describe how site and building systems will be adapted to efficiently accommodate future more significant rain events (e.g. rainwater harvesting, on-site storm water retention, bio swales, green roofs):

The stormwater system will be sized for 6" 24-hour rainfall event thereby future-proofing the system to handle increased rainfall. Approximately 20,000 SF of green roof will be provided and the landscape design at the apron, Plaza, and courtyards will look for opportunities to further reduce stormwater.

E – Sea Level Rise and Storms

Under any plausible greenhouse gas emissions scenario, sea levels in Boston will continue to rise throughout the century. This will increase the number of buildings in Boston susceptible to coastal flooding and the likely frequency of flooding for those already in the floodplain.

Is any portion of the site in a FEMA SFHA? **Yes** / *No*

What Zone: A, **AE**, AH, AO, AR, A99, V, VE

Current FEMA SFHA Zone Base Flood Elevation: **17.46 Ft BCB**

Is any portion of the site in a BPDA Sea Level Rise - Flood Hazard Area? Use the online BPDA SLR-FHA Mapping Tool to assess the susceptibility of the project site. **Yes** / *No*

If you answered YES to either of the above questions, please complete the following questions.
Otherwise you have completed the questionnaire; thank you!

E.1 – Sea Level Rise and Storms – Design Conditions

Proposed projects should identify immediate and future adaptation strategies for managing the flooding scenario represented on the BPDA Sea Level Rise - Flood Hazard Area (SLR-FHA) map, which depicts a modeled 1% annual chance

coastal flood event with 40 inches of sea level rise (SLR). Use the online BPDA SLR-FHA Mapping Tool to identify the highest Sea Level Rise - Base Flood Elevation for the site. The Sea Level Rise - Design Flood Elevation is determined by adding either 24" of freeboard for critical facilities and infrastructure and any ground floor residential units OR 12" of freeboard for other buildings and uses.

Sea Level Rise - Base Flood Elevation:	19.3 Ft BCB		
Sea Level Rise - Design Flood Elevation:	20.3 Ft BCB	First Floor Elevation:	First Floor: 19'-2" Ft BCB
Site Elevations at Building:	18.0 Ft BCB (average existing site elevation)	Accessible Route Elevation:	46.25 Ft BCB (Represents the Viaduct, which provides an elevated pedestrian and vehicular connection from the Project Site to Summer Street.)

Describe site design strategies for adapting to sea level rise including building access during flood events, elevated site areas, hard and soft barriers, wave / velocity breaks, storm water systems, utility services, etc.:

Several site strategies are being implemented including;

- Structural enhancements will be implemented at both the apron and building to deal with rising sea levels and associated buoyancy. Structural tie-downs (i.e. mini piles) along the entire apron perimeter will be installed to mitigate buoyancy.
- For longer-term adaptation, the apron structure is also being studied to evaluate the ability to add a future crash barrier along the apron perimeter, should it be needed in the future
- Entries to the building and at the Plaza and niches around the apron will implement dry flood-proofing strategies to keep water out of the interior of the building. The entrances are at a higher elevation than the apron and are sloped away from the entry. Deployable barriers and/or flood gates as well as additional floor drains are being considered and will be refined as the design develops. The design includes planned storage locations for storing deployable flood barriers on-site.
- Incorporation of backflow preventers and duckbill check valves to ensure that storm drainage and sewage conveyance do not back up during storm surges.
- Stormwater conveyance systems are capable of handling increased peak rain events. Systems can accommodate 6" rainfall for the 2070 10-year, 24-hour design storm.
- Landscape planting and hardscape materials will be saltwater tolerant.

Describe how the proposed Building Design Flood Elevation will be achieved including dry / wet flood proofing, critical systems protection, utility service protection, temporary flood barriers, waste and drain water back flow prevention, etc.:

Several building strategies are being implemented including;

- Structural enhancements will also be implemented at the building to deal with rising sea levels and associated buoyancy. Additional structural tie-downs (i.e. mini piles) will be installed at the slabs on grade and low-density concrete fill to mitigate buoyancy.
- The façade design has incorporated a 3'-0" resilient, waterproofed concrete curb wall to elevation 21.5' BCB (i.e. the project DFE) around the perimeter of the building envelope to protect against flooding. This wall has also been designed to withstand wave impacts as an additional adaptation strategy.

- A waterproof membrane will be included between the pier and the apron and inside the 3' resilient curb.
- Raising critical mechanical, electrical, plumbing and fire protection equipment above the ground floor and SLR-DFE of 20.5 BCB
- An 8" raised access floor with suspended cable trays is planned at the ground floor to raise the interior floor level to 19'-2" BCB from 18'-6" BCB existing. A drainage mat between the layers of topping slab also extends to the line of the sheeting.
- Mold resilient materials will be explored in vulnerable areas to support a rapid recovery scenario
- Plumbing sewage ejector pits and exterior grease trap, sand/oil/gas interceptor are installed within the first-floor slab. Sewage ejectors are submersible pumps. Backflow valves have been included on the sanitary drain lines as they connect out to the street.

Describe how occupants might shelter in place during a flooding event including any emergency power, water, and waste water provisions and the expected availability of any such measures:

The ability to have occupants shelter in place is not anticipated at the Project Site.

Describe any strategies that would support rapid recovery after a weather event:

Elevating critical mechanical, electrical, plumbing and fire protection equipment above the ground floor and SLR-DFE. Mold resilient materials will be explored in vulnerable areas to support a rapid recovery scenario. The building will also use supplemental deployable flood barriers during a flood event for additional floor protection. The Viaduct (el. 46.25 ft. BCB), as previously stated provides an added level of resilience for both pedestrian and vehicular access to the Project Site.

E.2 – Sea Level Rise and Storms – Adaptation Strategies

Describe future site design and or infrastructure adaptation strategies for responding to sea level rise including future elevating of site areas and access routes, barriers, wave / velocity breaks, storm water systems, utility services, etc.:

These are discussed in E.1 above and include strategies such as;

- An elevated access route on the Viaduct level
- A 3-ft. resilient curb at the building envelope
- Use of backflow preventers and duckbill check valves on the drainage systems,
- The apron structure is also being studied to evaluate the ability to add a future crash barrier along the apron perimeter, should it be needed in the future

Describe future building adaptation strategies for raising the Sea Level Rise Design Flood Elevation and further protecting critical systems, including permanent and temporary measures:

These are discussed in E.1 above. The majority of building critical systems will be elevated significantly above the SLR-DFE to the mezzanine or roof levels. Critical equipment that needs to be on the ground floor level has been raised on platforms to an elevation of 23.5'. Therefore, all critical systems and equipment will be raised above the Massport-designated DFE of 23.46' BCB for New Facilities. These are unlikely to require additional elevation or further protection in the future.

A pdf and word version of the Climate Resiliency Checklist is provided for informational use and off-line preparation of a project submission. NOTE: Project filings should be prepared and submitted using the online Climate Resiliency Checklist.

For questions or comments about this checklist or Climate Change best practices, please contact: John.Dalzell@boston.gov

APPENDIX E: Transportation Supporting Documentation

A Truck Turn Analysis

B Project Trip Generation Analysis

Appendix E

Seaport World Trade Center

A Truck Turning Analyses

Figure 1: SU 30 Loading Dock A (IN)

Figure 2: SU 30 Loading Dock A (OUT)

Figure 3: SU 30 Loading Dock B (IN)

Figure 4: SU 30 Loading Dock B (OUT)

Figure 5: SU 30 Loading Dock C (IN)

Figure 6: SU 30 Loading Dock C (OUT)

Figure 7: SU 30 Loading Dock D (IN)

Figure 8: SU 30 Loading Dock D (OUT)

Figure 9: SU 30 Loading Dock E (IN)

Figure 10: SU 30 Loading Dock E (OUT)

Figure 11: SU 30 Loading Dock F (IN)

Figure 12: SU 30 Loading Dock F (OUT)

Figure 13: Garbage Truck (IN)

Figure 14: Garbage Truck (OUT)

Figure 15: SU-30 2 Trucks Passing on East Side Pier Apron

Figure 16: Pick-up Truck Around Pier Apron

Figure 17: Pick-up Truck 3-Point Turn (West Side Pier Apron)

Figure 18: Food Truck Access to West Side Pier Apron Plaza

B Project Trip Generation Analysis

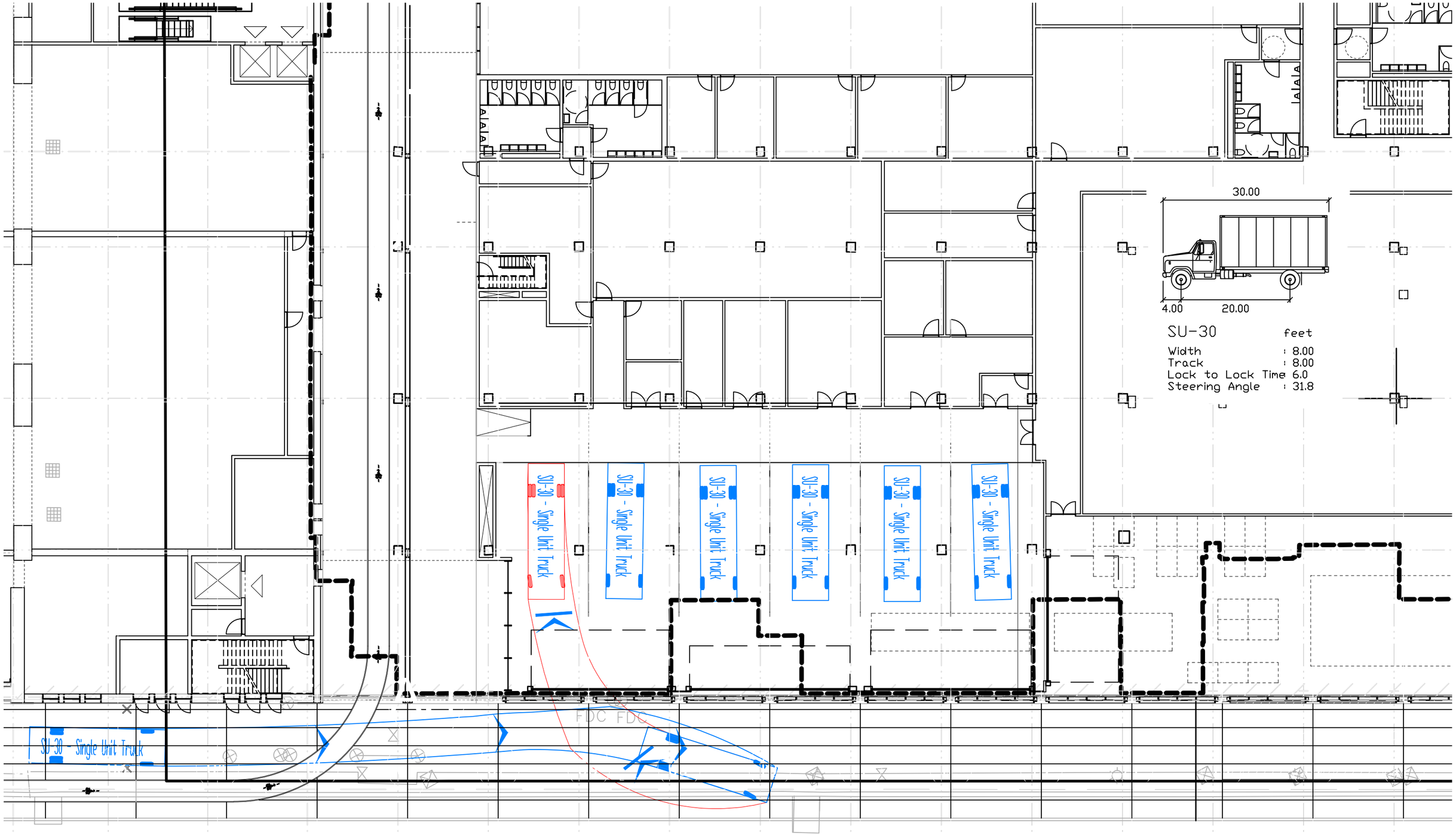
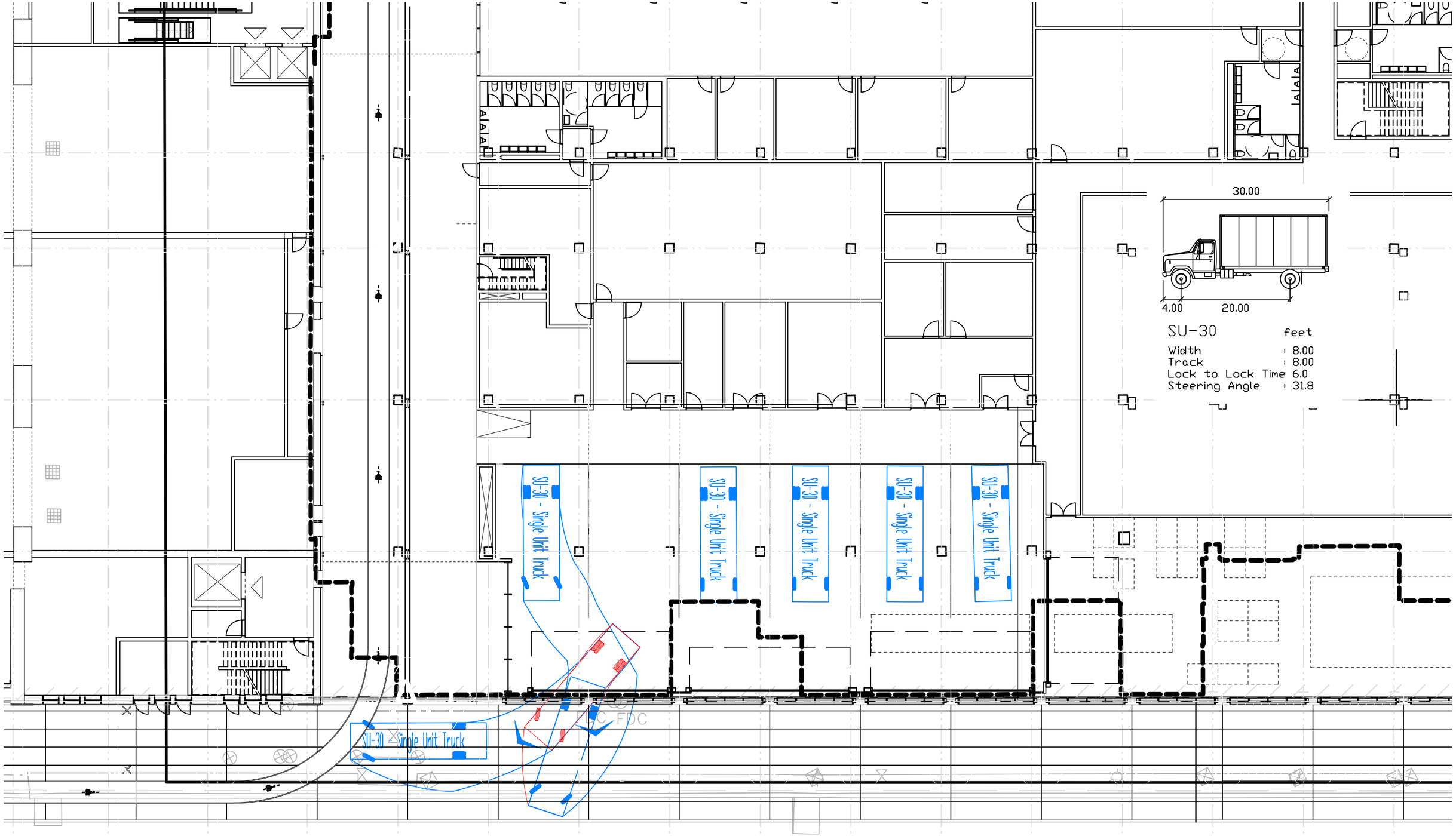


Figure 1
Turn Analysis (SU-30) Loading Dock A - IN

Project Mayflower
Boston, MA

December 2018



0 10 20 Feet

Figure 2
Turn Analysis (SU-30) Loading Dock A - OUT

Project Mayflower
Boston, MA

December 2018

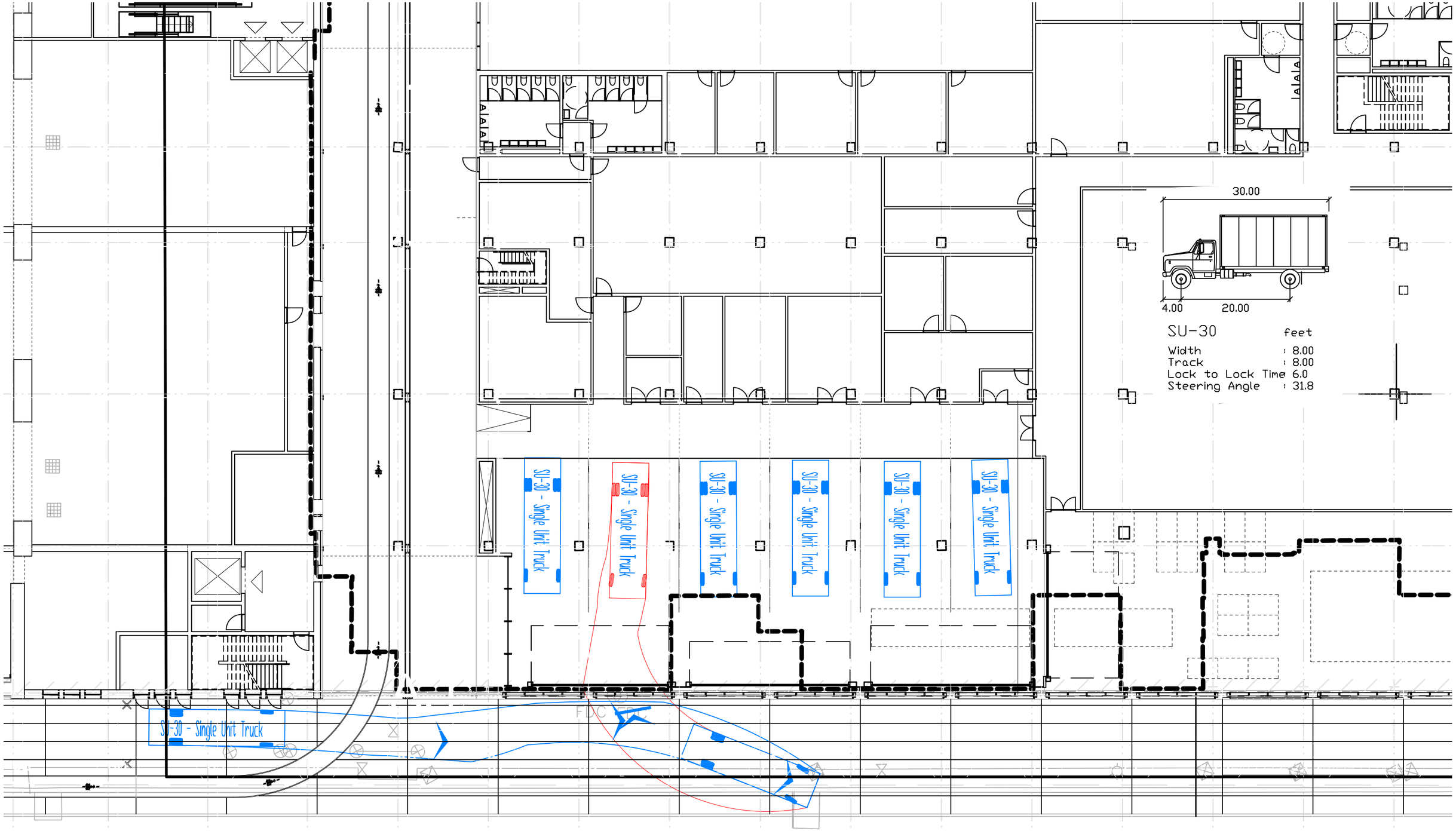


Figure 3
Turn Analysis (SU-30) Loading Dock B - IN

Project Mayflower
Boston, MA

December 2018

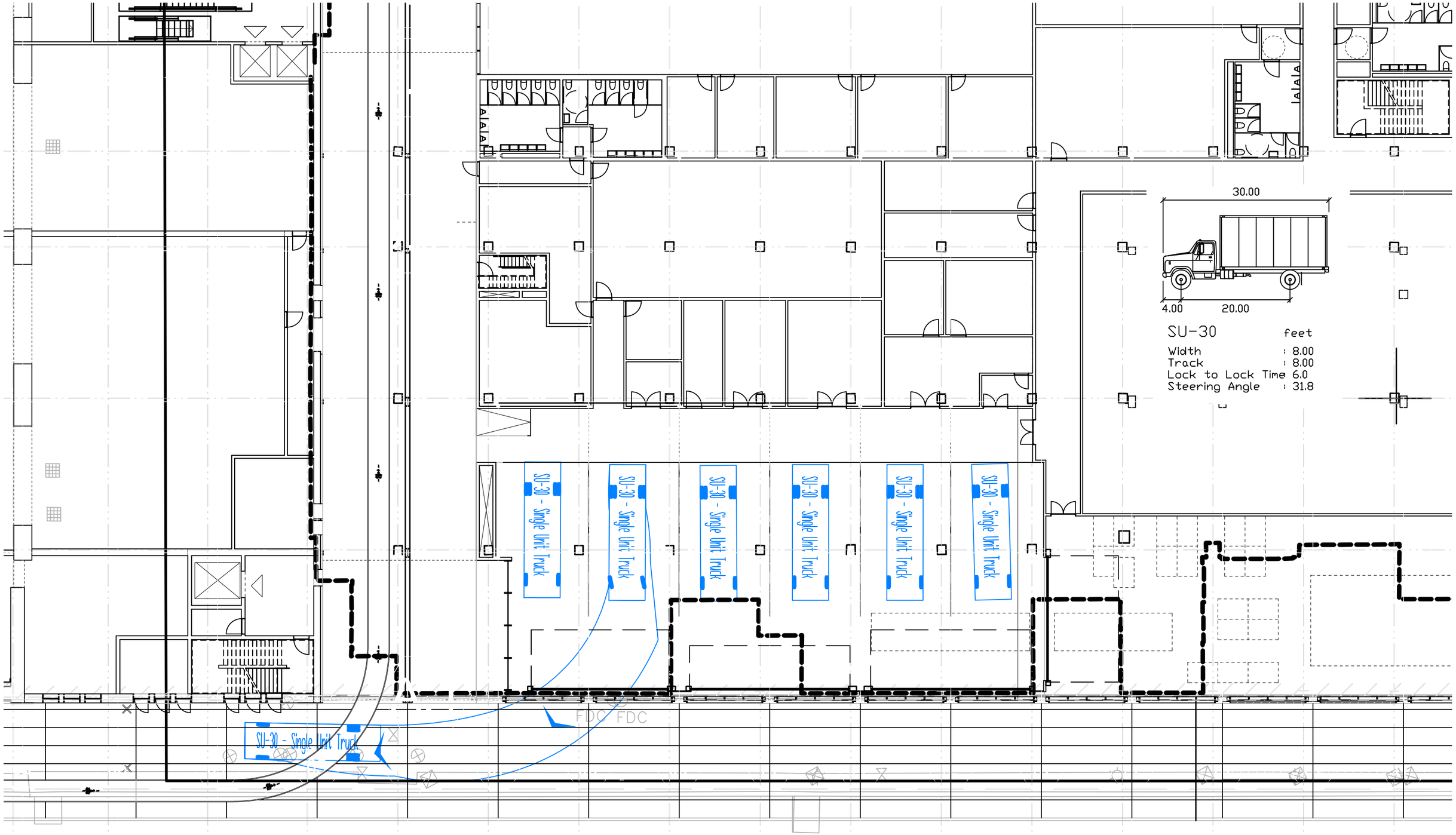
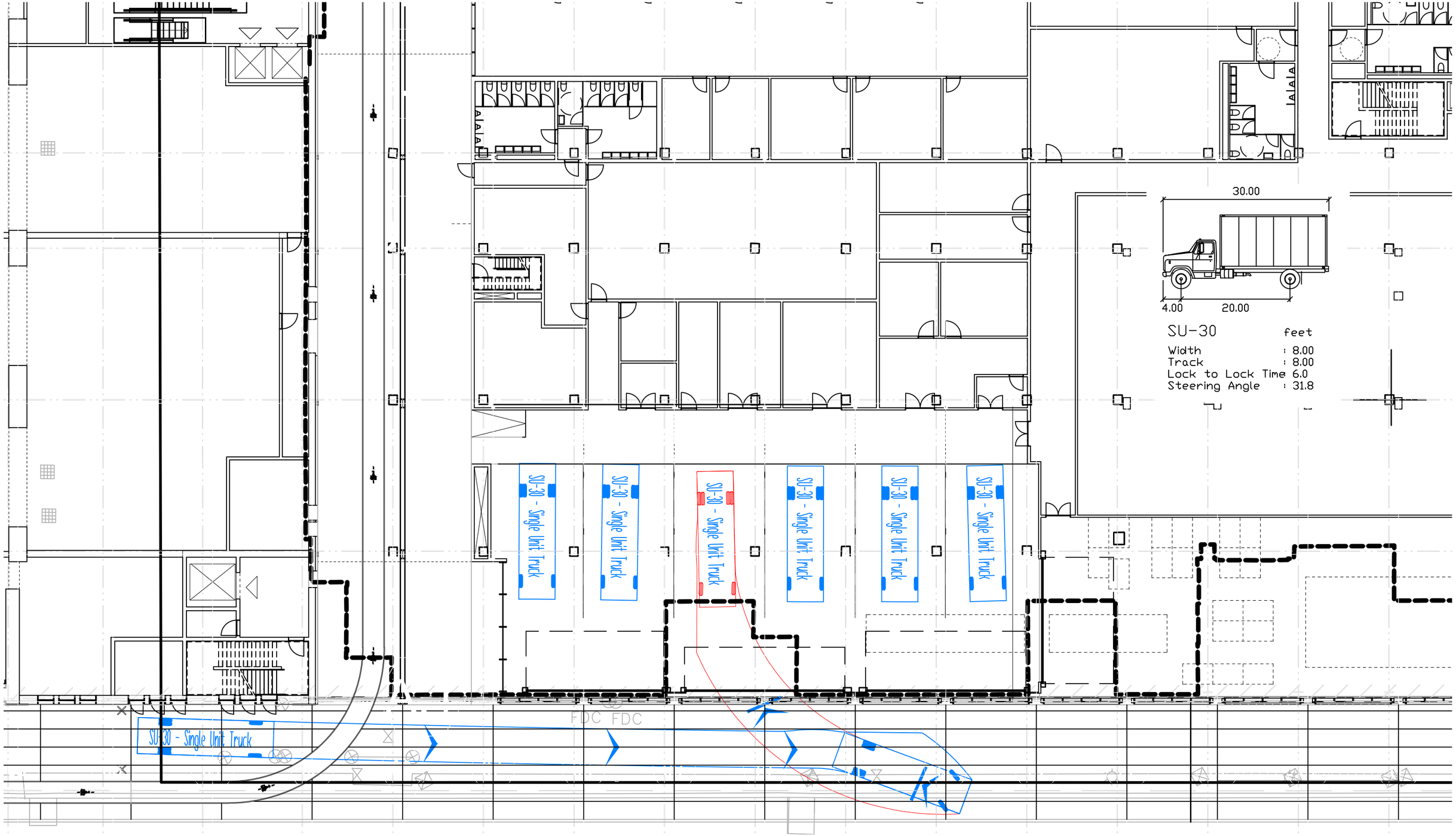


Figure 4
Turn Analysis (SU-30) Loading Dock B - OUT

Project Mayflower
Boston, MA

December 2018

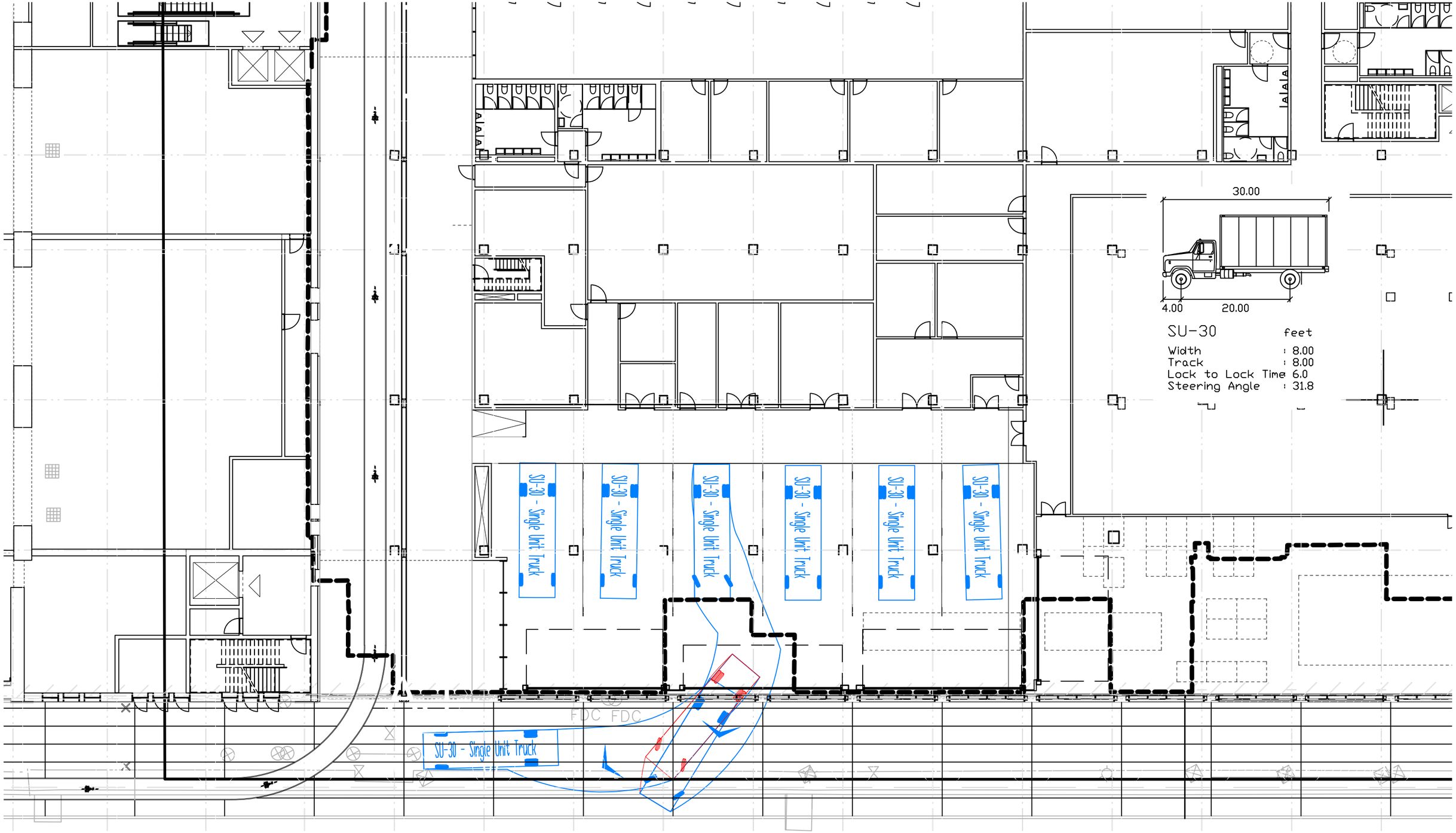


0 10 20 Feet

Figure 5
Turn Analysis (SU-30) Loading Dock C - IN

Project Mayflower
Boston, MA

December 2018

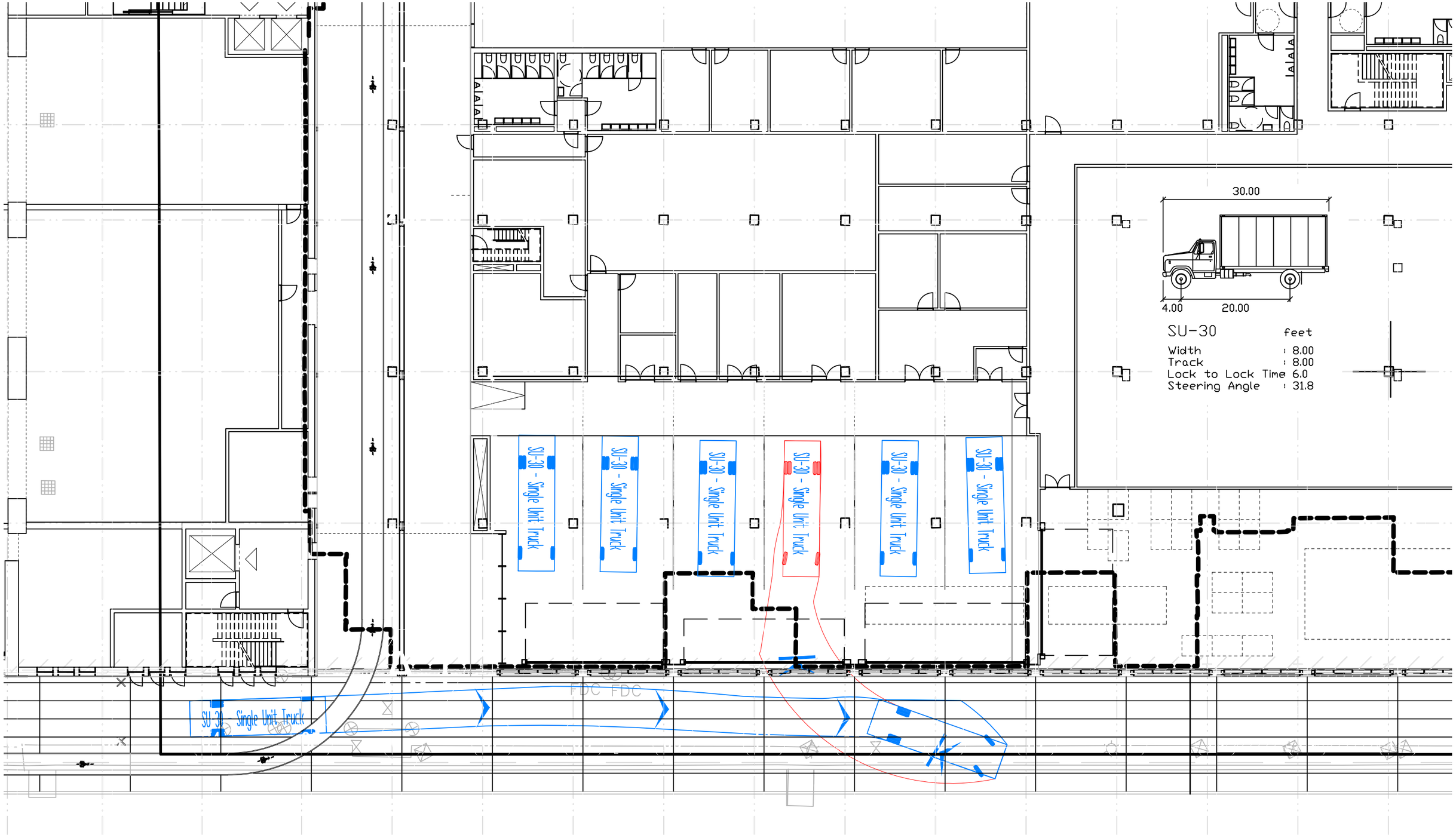


0 10 20 Feet

Figure 6
Turn Analysis (SU-30) Loading Dock C - OUT

Project Mayflower
Boston, MA

December 2018

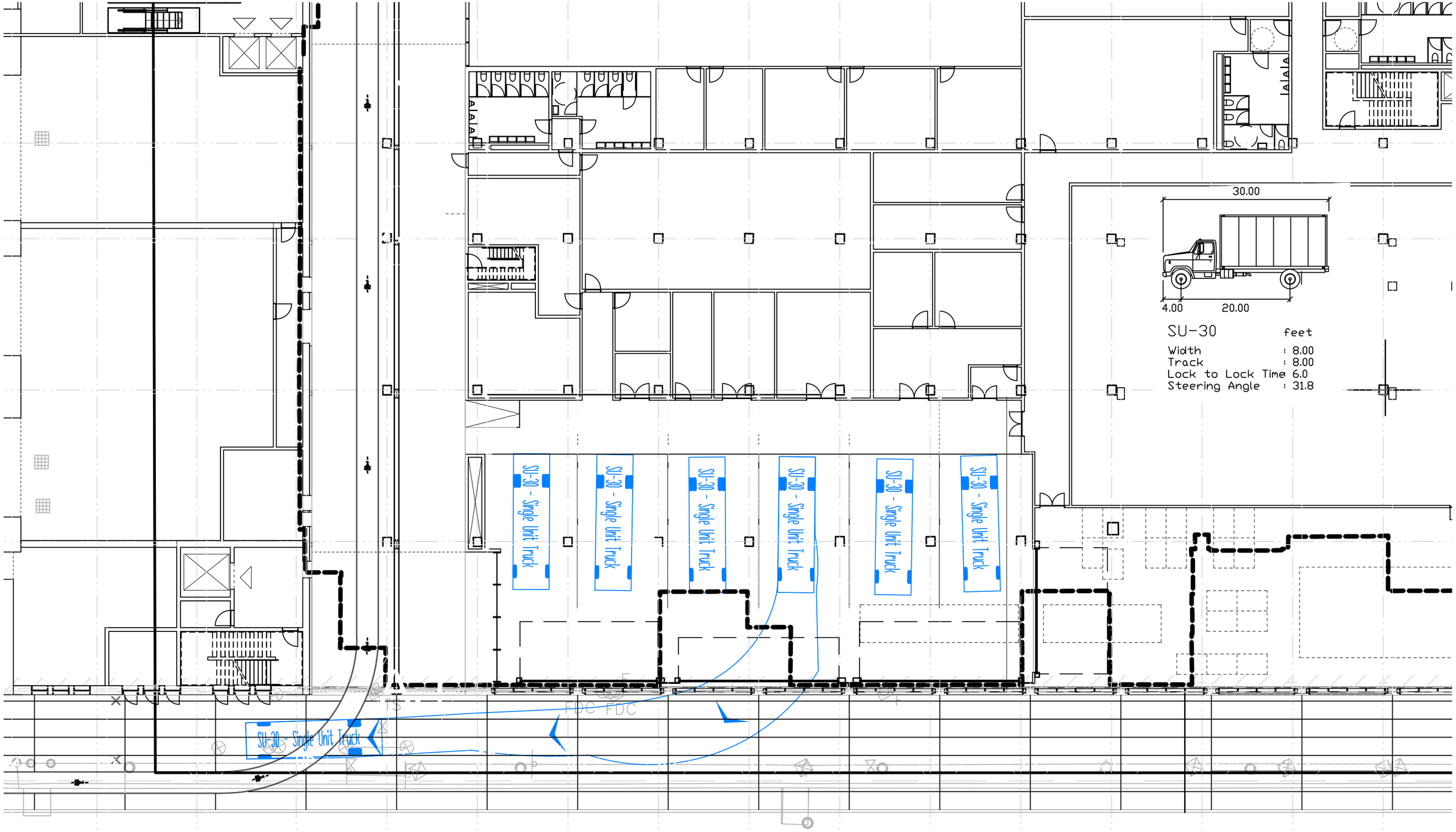


0 10 20 Feet

Figure 7
Turn Analysis (SU-30) Loading Dock D - IN

Project Mayflower
Boston, MA

December 2018



0 10 20 Feet

Figure 8
Turn Analysis (SU-30) Loading Dock D - OUT

Project Mayflower
Boston, MA

December 2018

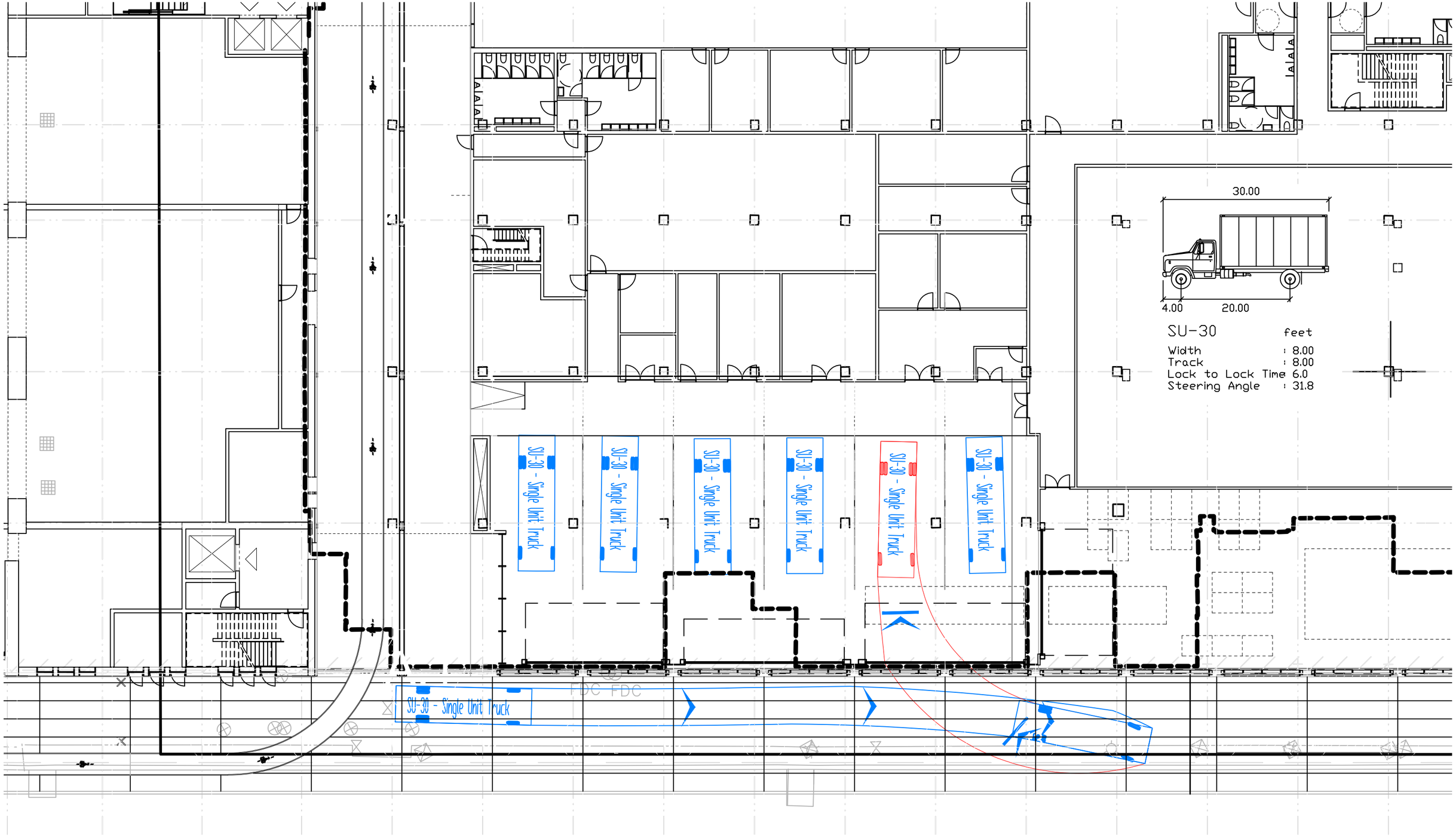


Figure 9
Turn Analysis (SU-30) Loading Dock E - IN

Project Mayflower
Boston, MA

December 2018

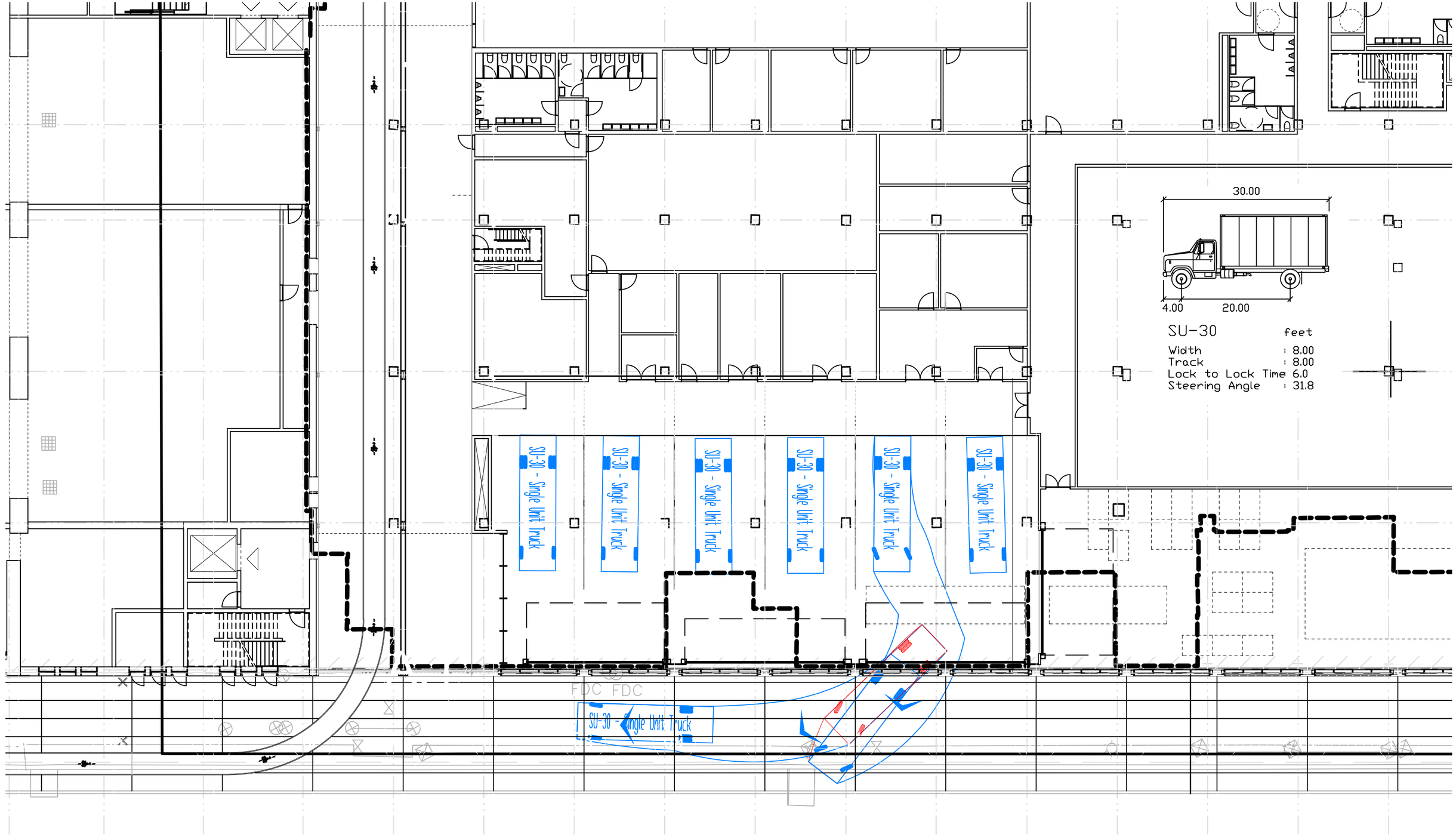


Figure 10
Turn Analysis (SU-30) Loading Dock E - OUT

Project Mayflower
Boston, MA

December 2018

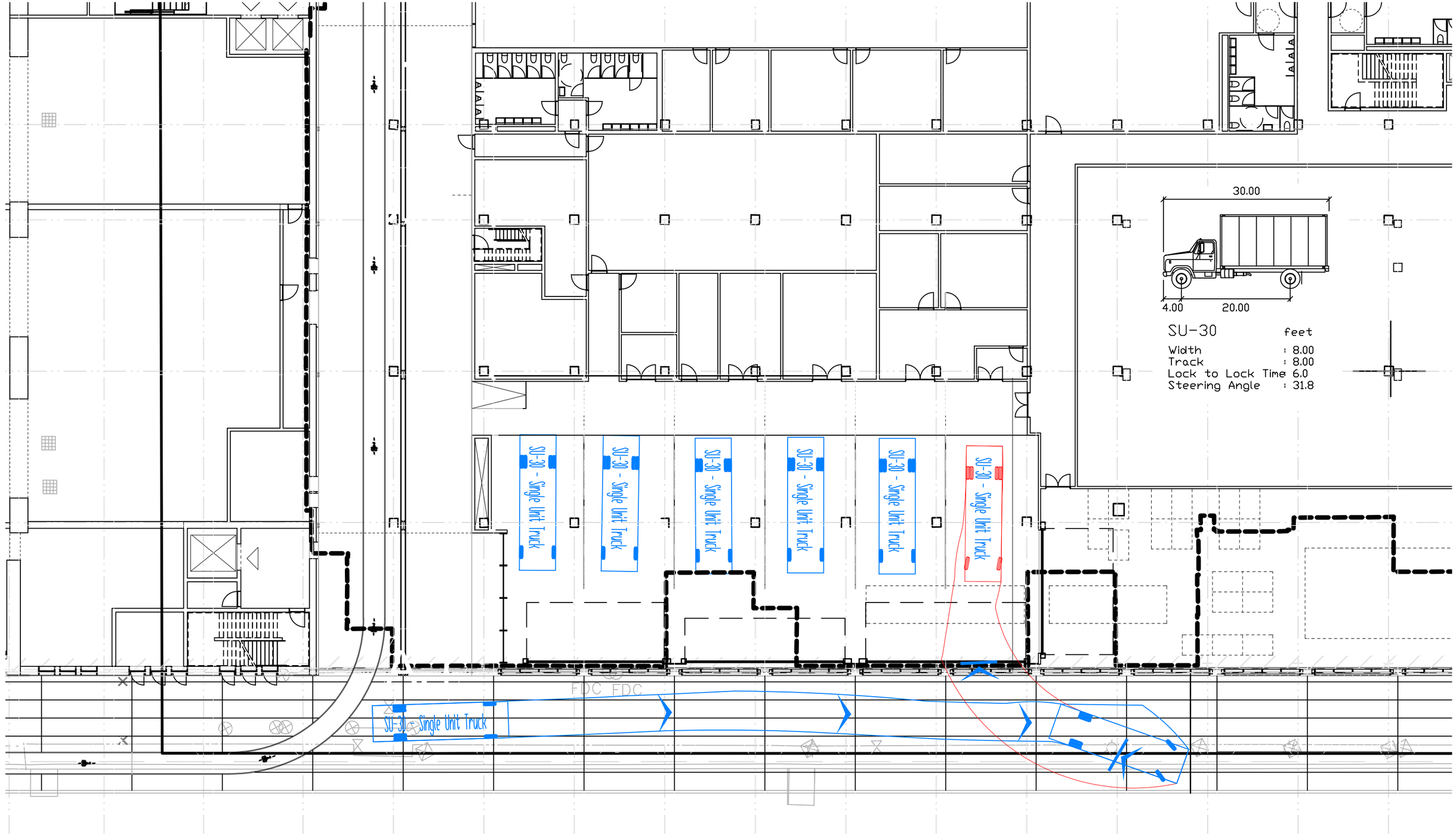


Figure 11
Turn Analysis (SU-30) Loading Dock F - IN

Project Mayflower
Boston, MA

December 2018

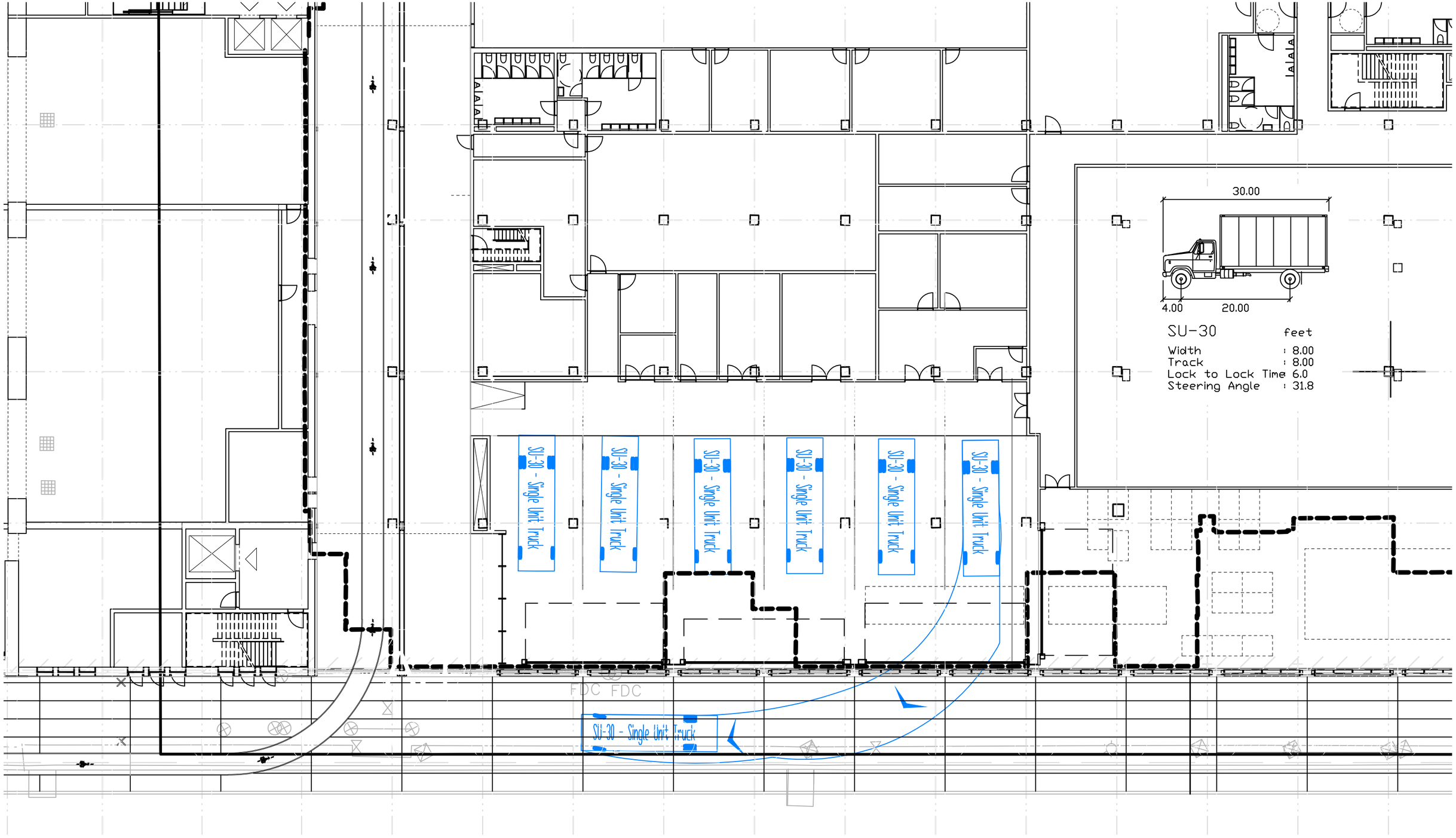


Figure 12
Turn Analysis (SU-30) Loading Dock F - OUT

Project Mayflower
Boston, MA

December 2018

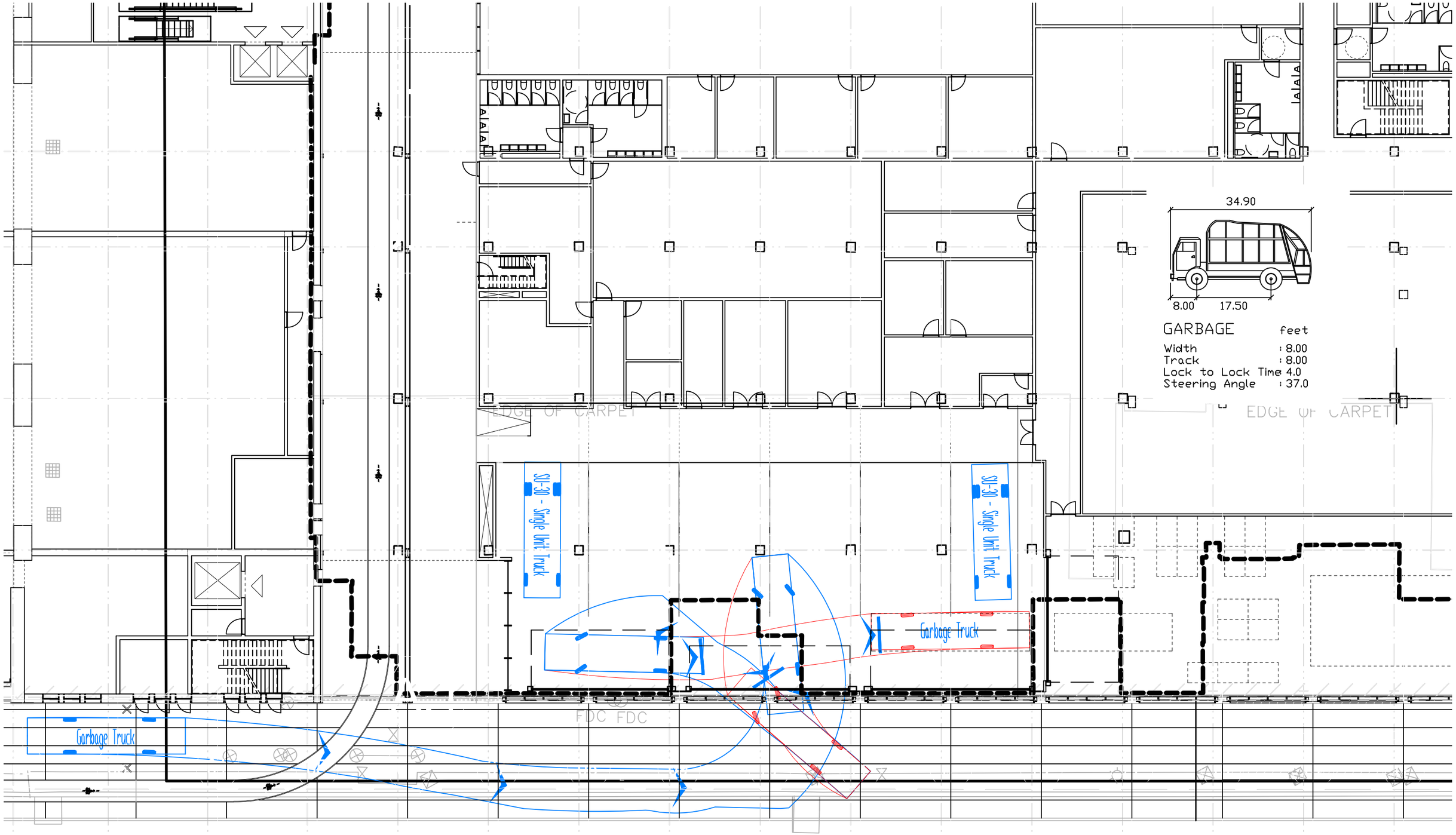


Figure 13
Turn Analysis - Garbage Truck - IN

Project Mayflower
Boston, MA

December 2018

\\vhb\gbl\proj\Boston\13862.00\cad\ld\Traffic\Loading Dock Analysis_12-20-2018.dwg

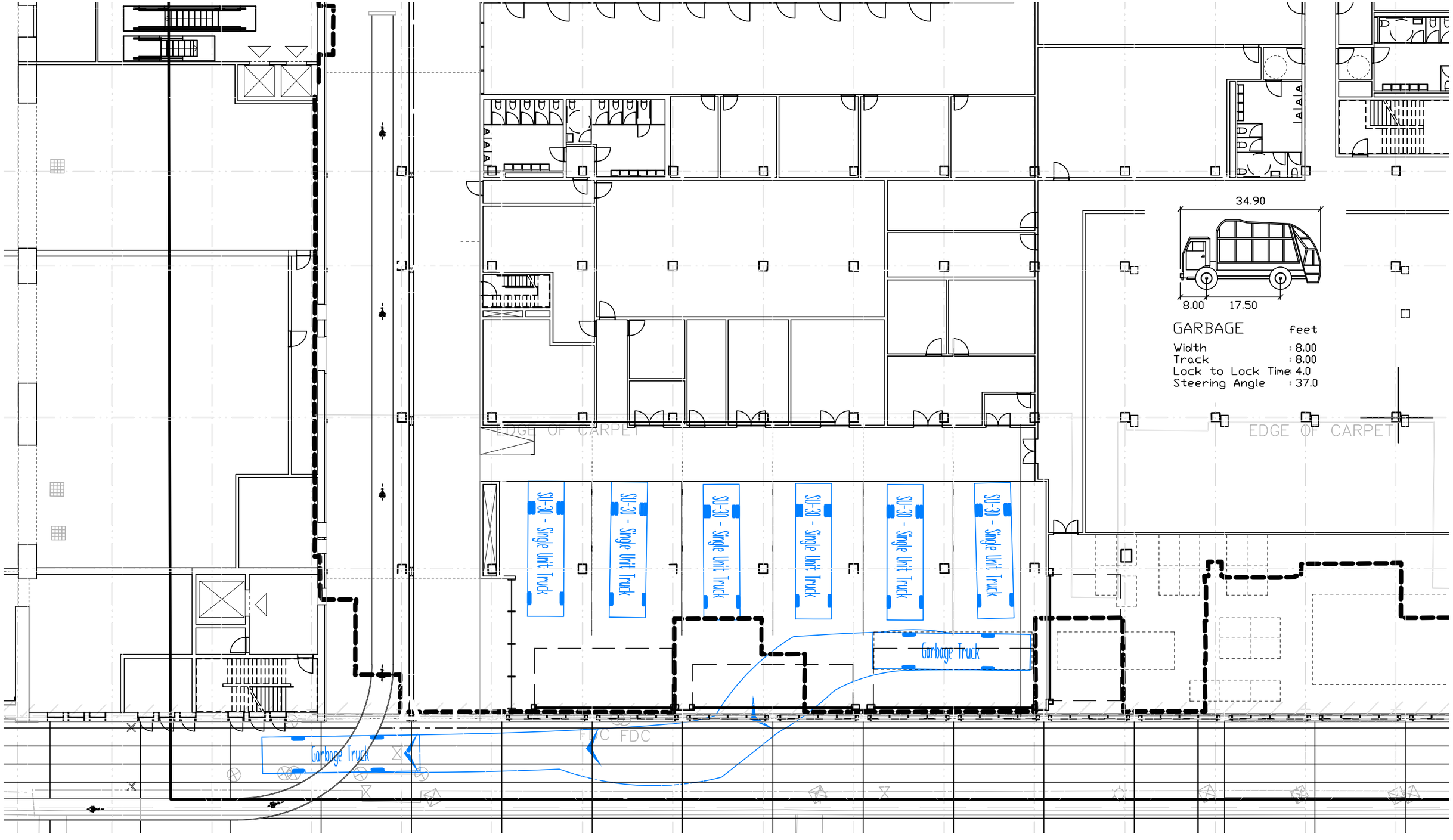


Figure 14
Turn Analysis - Garbage Truck - OUT

Project Mayflower
Boston, MA

December 2018

SEAPORT BOULEVARD

TRUCK STAGING SPACE

TRUCK TURNING SPACE

30.00

4.00 20.00

SU-30 feet

Width : 8.00
Track : 8.00
Lock to Lock Time 6.0
Steering Angle : 31.8

SU-30 - Single Unit Truck

SU-30 - Single Unit Truck

SU-30 - Single Unit Truck

SU-30 - Single Unit Truck

CARPET

CONC.

FDC FDC

METAL

DECK

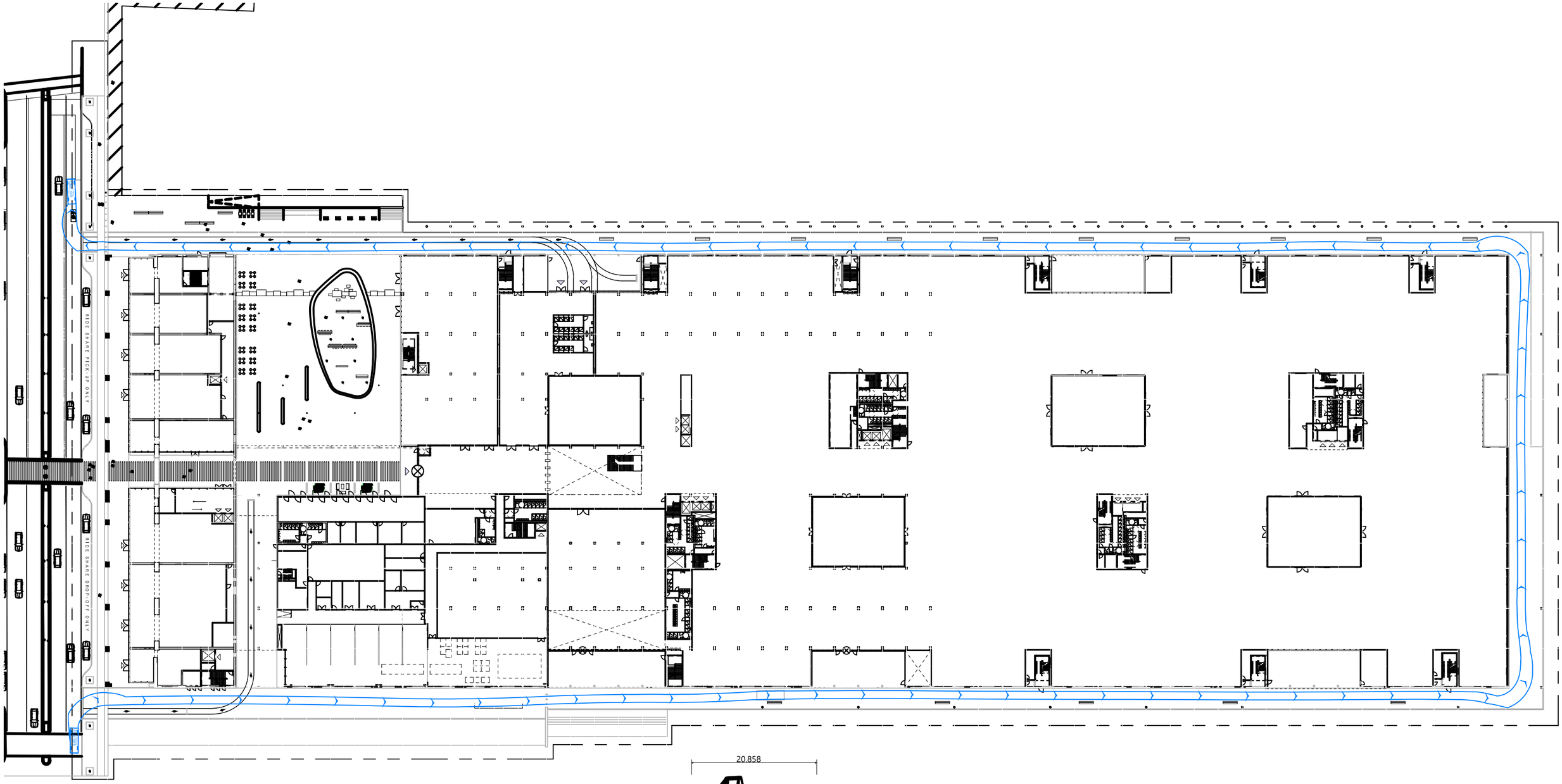
0 10 20 Feet

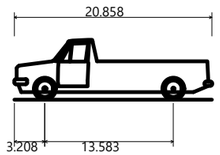
Figure 15
2 Trucks Passing

Project Mayflower
Boston, MA

December 2018

\\vhb\gbl\proj\Boston\13862.00\cad\ld\Traffic\Mayflower Turns (on Pier).dwg





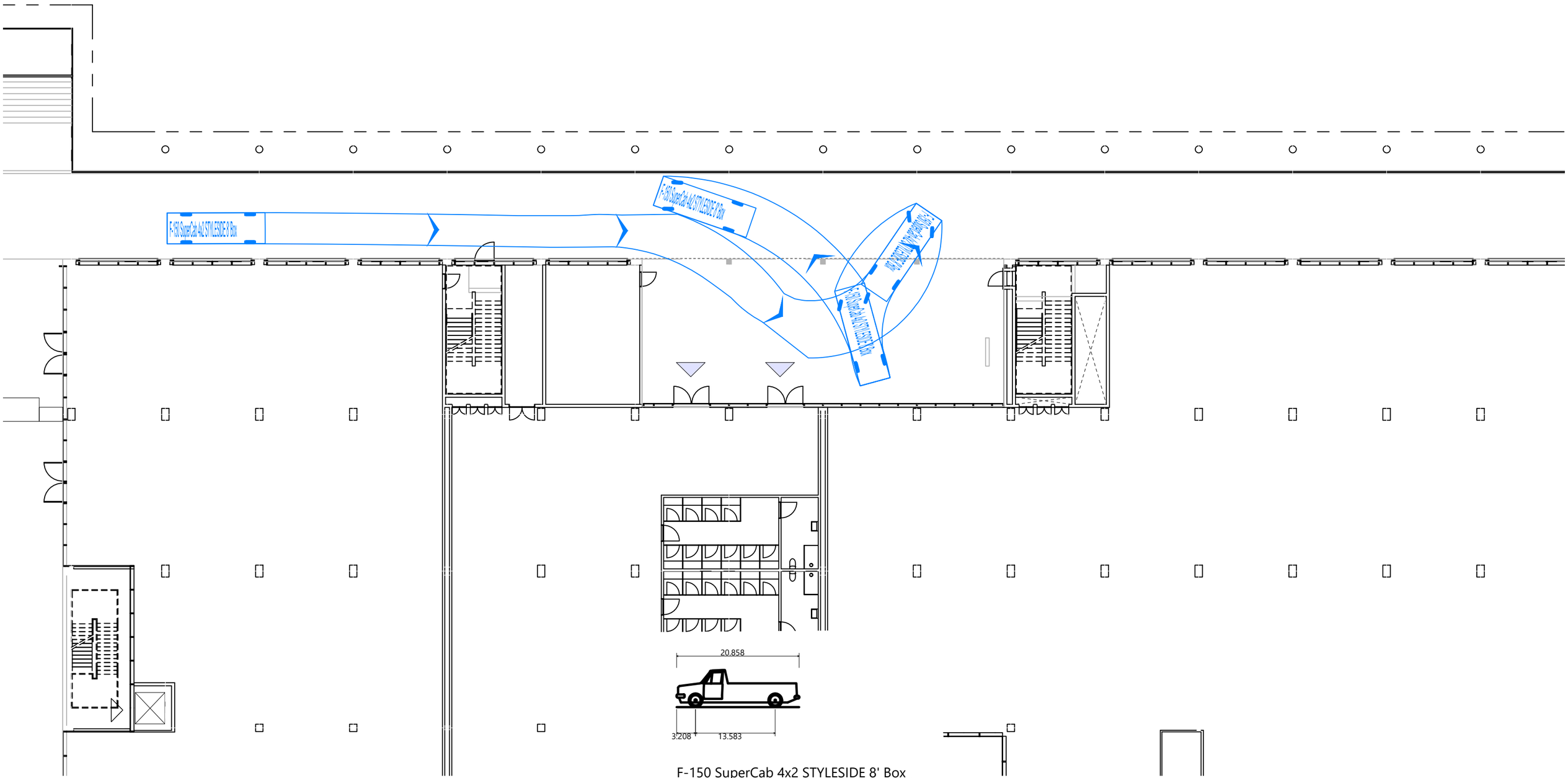
F-150 SuperCab 4x2 STYLESIDE 8' Box	
Overall Length	20.858ft
Overall Width	6.575ft
Overall Body Height	6.325ft
Min Body Ground Clearance	0.783ft
Track Width	6.575ft
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	26.150ft

0 40 80 Feet

Figure 16
Pick-up Truck Around Pier

Project Mayflower
Boston, MA

December 2018



F-150 SuperCab 4x2 STYLESIDE 8' Box	
Overall Length	20.858ft
Overall Width	6.575ft
Overall Body Height	6.325ft
Min Body Ground Clearance	0.783ft
Track Width	6.575ft
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	26.150ft

0 10 20 Feet

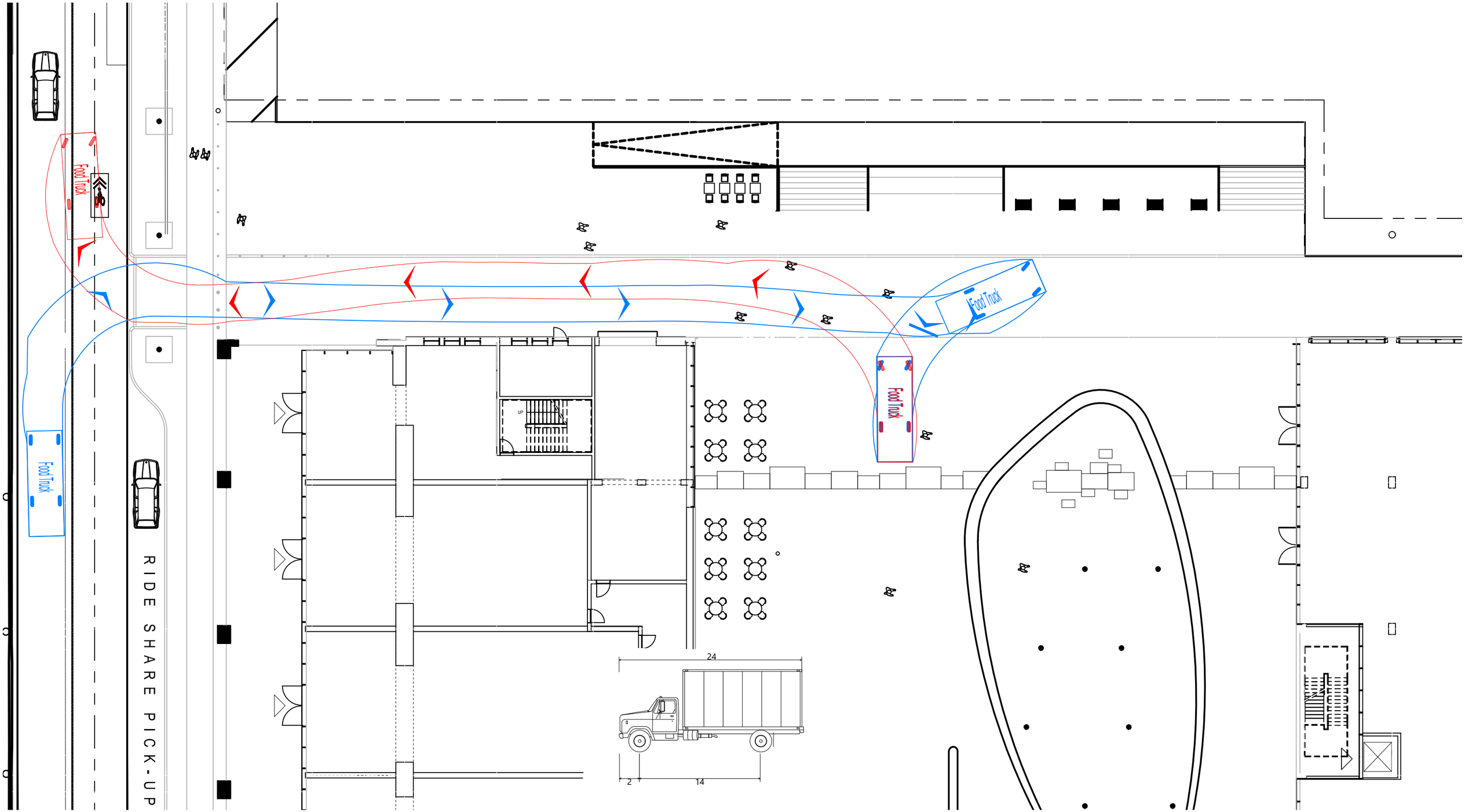
Figure 17

3-point Turn

Project Mayflower
Boston, MA

December 2018

\\vhb\gbl\proj\Boston\13862.00\cad\ld\Traffic\Mayflower Turns (on Pier).dwg



Food Truck	
Overall Length	24.000ft
Overall Width	8.000ft
Min Body Ground Clearance	1.115ft
Track Width	7.000ft
Lock-to-lock time	4.00s
Max Steering Angle (Virtual)	31.60°

0 10 20 Feet

Figure 18
Food Truck

Project Mayflower
Boston, MA

December 2018

Appendix E: (B) Proposed Program Trip Generation Analysis Summary

	Existing Size	Proposed Size	Net New Size	EXISTING Unadjusted Vehicle Trips	PROPOSED Unadjusted Vehicle Trips	NET-NEW Unadjusted Vehicle Trips	VOR *	Person trips	Transit	Walk/Bike	Vehicle Share	Local VOR (Source)	Transit	Walk/Bike	Vehicle
Daily Office				4,474	5,355	882		996				Fidelity TMA Data			
In	502 ksf -	636 ksf =	**134**	2,237	2,678	441	1.13	498	45%	11%	44%	1.07	224	55	205
Out			**ksf**	2,237	2,678	441	1.13	498	45%	11%	44%	1.07	224	55	205
Daily Retail/Restaurant				536	2,005	1,469		1,660				SSH NPC			
In	12.1 ksf -	45.2 ksf =	**33**	268	1,002	734	1.13	830	34%	27%	39%	1.6	282	224	202
Out			**ksf**	268	1,002	734	1.13	830	34%	27%	39%	1.6	282	224	202
Daily Event Space (Hall)				1,762	0	-1,762	1.52	-2,678				SSH NPC			
In	132 ksf -	0 ksf	**-132**	Based on Exhibit Hall Attendance Data				-1,339	22%	41%	37%	1.52	-295	-549	-326
Out			**ksf**	Trip Rate = 13.34 Unadjusted Person Trips Per KSF				-1,339	22%	41%	37%	1.52	-295	-549	-326
Daily Event Space (Ballroom)				991	937	-54	1.52	-82				SSH NPC			
In	59.7 ksf -	56.4 ksf	**-3**	Based on Event/Ballroom Attendance Data				-41	22%	41%	37%	1.52	-9	-17	-10
Out			**ksf**	Trip Rate = 16.61 Unadjusted Person Trips Per KSF				-41	22%	41%	37%	1.52	-9	-17	-10
Total Daily				**7,763**	**8,297**	**534**		**-104**					**405**	**-574**	**142**
In								**-52**					**203**	**-287**	**71**
Out								**-52**					**203**	**-287**	**71**
AM Office				696	841	145		164				Fidelity TMA Data			
In			**134**	612	740	128	1.13	145	47%	9%	44%	1.07	68	13	60
Out			**ksf**	83	101	17	1.13	20	47%	9%	44%	1.07	9	2	8
AM Retail/Restaurant				45	167	122		138				SSH NPC			
In			**33**	21	80	59	1.13	66	34%	27%	39%	1.49	23	18	17
Out			**ksf**	23	87	64	1.13	72	34%	27%	39%	1.49	24	19	19
AM Event Space (Hall)				88	0	-88	1.52	-134				SSH NPC			
In			**-132**	Based on Exhibit Hall Attendance Data				-67	18%	45%	37%	1.52	-12	-30	-16
Out			**ksf**	Trip Rate = 0.667 Unadjusted Person Trips Per KSF				-67	18%	45%	37%	1.52	-12	-30	-16
AM Event Space (Ballroom)				99	94	-5	1.52	-8				SSH NPC			
In			**-3**	Based on Event/Ballroom Attendance Data				-4	18%	45%	37%	1.52	-1	-2	-1
Out			**ksf**	Trip Rate = 1.334 Unadjusted Person Trips Per KSF				-4	18%	45%	37%	1.52	-1	-2	-1
Total AM Peak Hour				**927**	**1,101**	**174**		**160**					**99**	**-12**	**69.4**
In								**140**					**78**	**-1**	**59.8**
Out								**21**					**21**	**-11**	**9.6**
PM Office				641	791	150		170				Fidelity TMA Data			
In			**134**	109	134	26	1.13	30	47%	9%	44%	1.07	14	3	12
Out			**ksf**	532	656	125	1.13	141	47%	9%	44%	1.07	66	13	58
PM Retail				33	123	90		101				SSH NPC			
In			**33**	14	54	40	1.13	45	38%	23%	39%	1.49	17	10	12
Out			**ksf**	18	69	50	1.13	57	38%	23%	39%	1.49	22	13	15
PM Event Space (Hall)				176	0	-176	1.52	-268				SSH NPC			
In			**-132**	Based on Exhibit Hall Attendance Data				-134	18%	45%	37%	1.52	-24	-60	-33
Out			**ksf**	Trip Rate = 1.66 Unadjusted Person Trips Per KSF				-134	18%	45%	37%	1.52	-24	-60	-33
PM Event Space (Ballroom)				99	94	-5	1.52	-8				SSH NPC			
In			**-3**	Based on Event/Ballroom Attendance Data				-4	18%	45%	37%	1.52	-1	-2	-1
Out			**ksf**	Trip Rate = 1.66 Unadjusted Person Trips Per KSF				-4	18%	45%	37%	1.52	-1	-2	-1
Total PM Peak Hour				**949**	**1,007**	**58**		**-5**					**69**	**-85**	**29.5**
In								**-64**					**6**	**-49**	**-9.6**
Out								**60**					**63**	**-36**	**39.2**

Source: Institute of Transporation Engineers, Trip Generation 9th Edition

[1] LUC 710: General Office Building

[2] LUC 826: Specialty Retail

* Source: National Household Travel Survey for Office and Retail; Summer Street Headquarters Hotel (SSH) NPC for event space