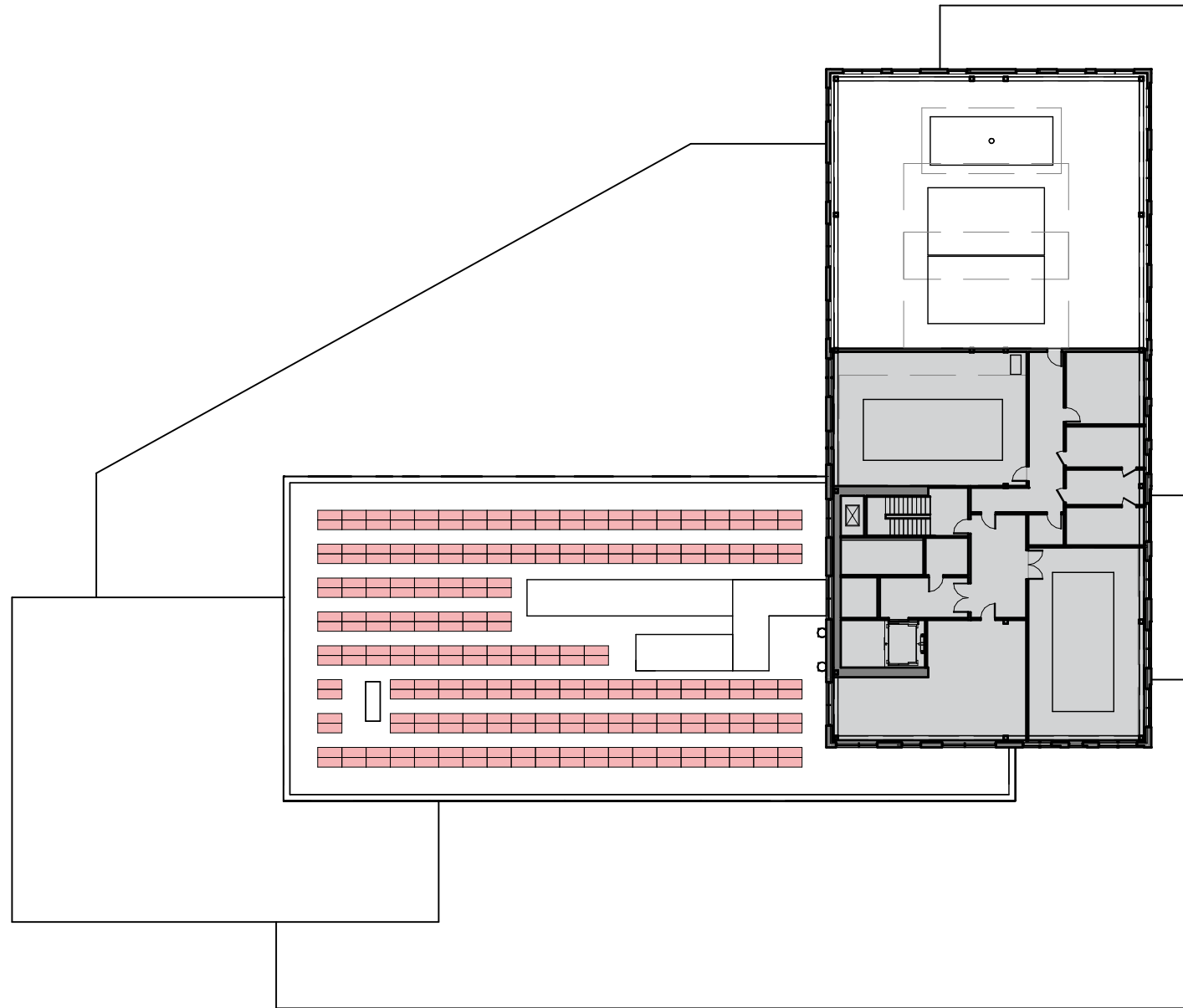


# SOLAR READY ROOF STUDY

QUANTITY OF RED PANELS	248	PANELS
AREA PER PANEL	10	FT <sup>2</sup>
AREA OF USEABLE PANELS	2480	FT <sup>2</sup>
ENERGY OUTPUT	17.5	W/FT <sup>2</sup>
OUTPUT CAPACITY	43,400	Watt-hr
OUTPUT CAPACITY	43	kWh
ANNUAL PRODUCTION	47	MWh/year
ESTIMATED BUILDING ANNUAL ELECTRICAL CONSUMPTION	7,350	MWh/year
PV PANELS (% OF ANNUAL CONSUMPTION)	0.64	%

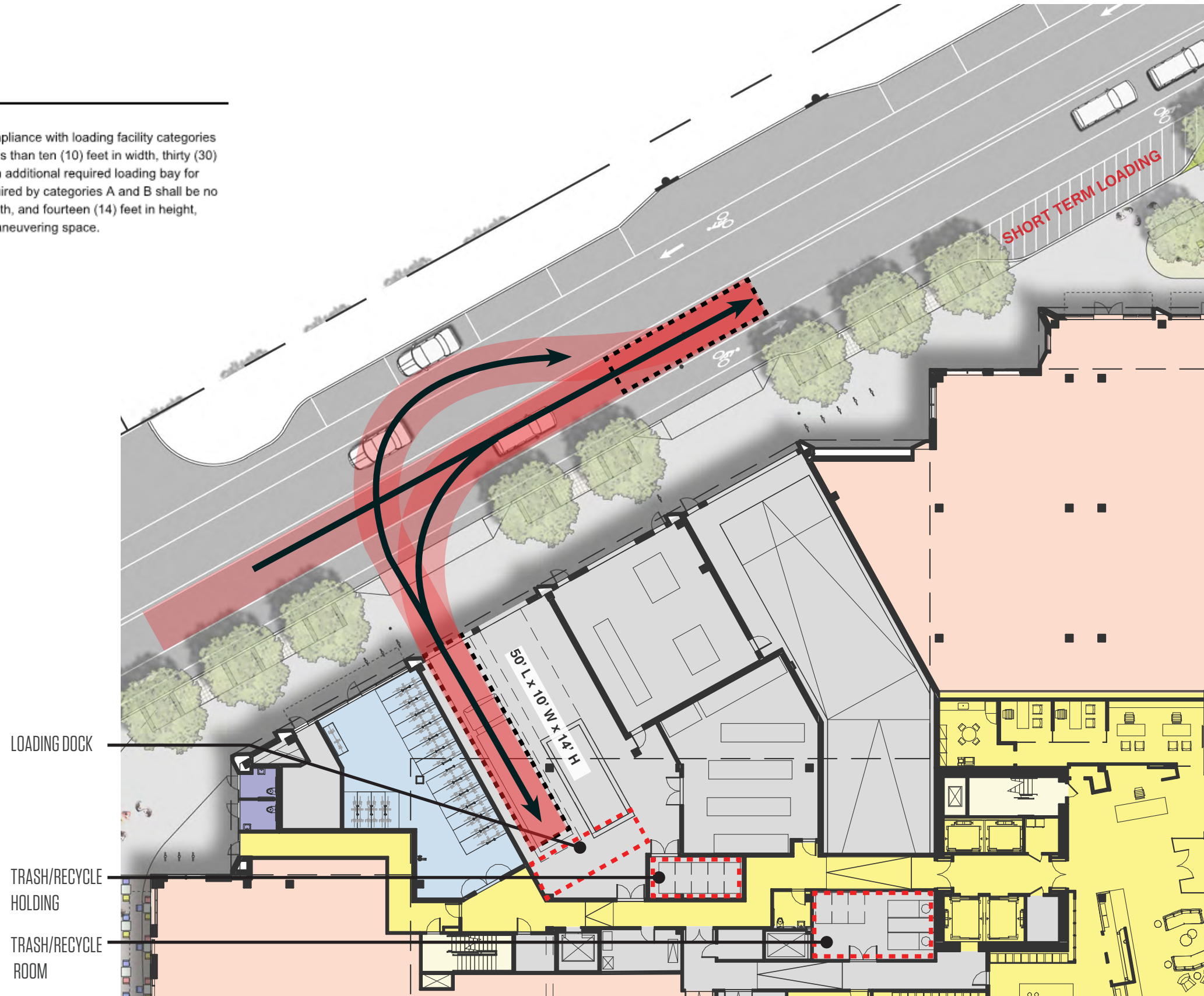


CAMBRIDGE CROSSING - PARCEL I  
**LOADING DIAGRAM**

CAMBRIDGE ZONING REGULATIONS:

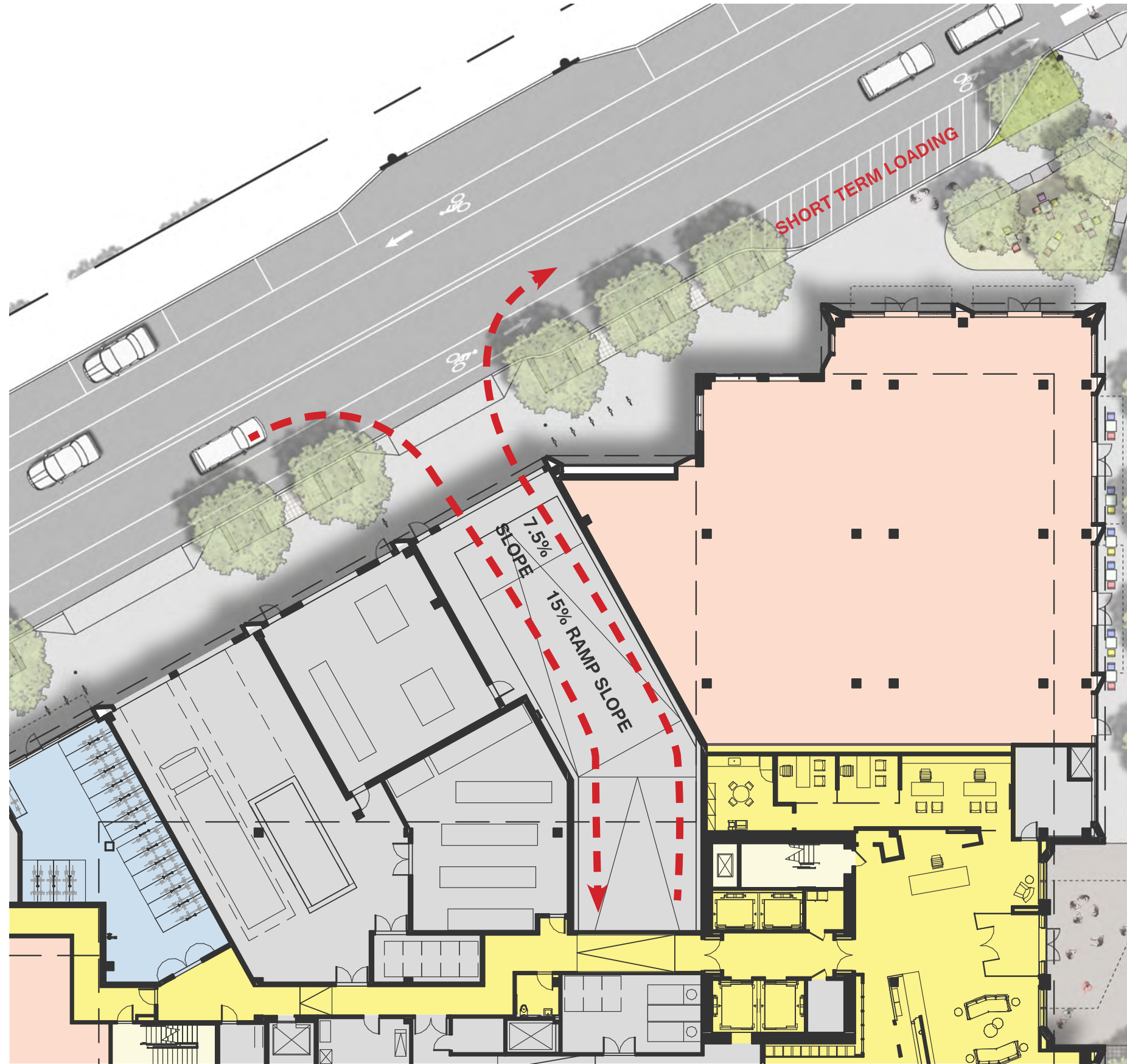
6-30

**6.91** Where a building or lot contains uses requiring compliance with loading facility categories C, D, E, and F, the first required bay shall be no less than ten (10) feet in width, thirty (30) feet in length and fourteen (14) feet in height. Each additional required loading bay for categories C, D, E, and F and any loading bay required by categories A and B shall be no less than ten (10) feet in width, fifty (50) feet in length, and fourteen (14) feet in height, such requirements to be exclusive of drives and maneuvering space.



- RESIDENTIAL
- RES. CIRCULATION
- BOH / LOADING
- BIKE PARKING
- RETAIL

CAMBRIDGE CROSSING - PARCEL 1  
**PARKING ENTRY DIAGRAM**



- RESIDENTIAL
- RES. CIRCULATION
- BOH / LOADING
- BIKE PARKING
- RETAIL



DIVCOWEST

cbt

MICHAEL VAN VALKENBURGH ASSOCIATES INC

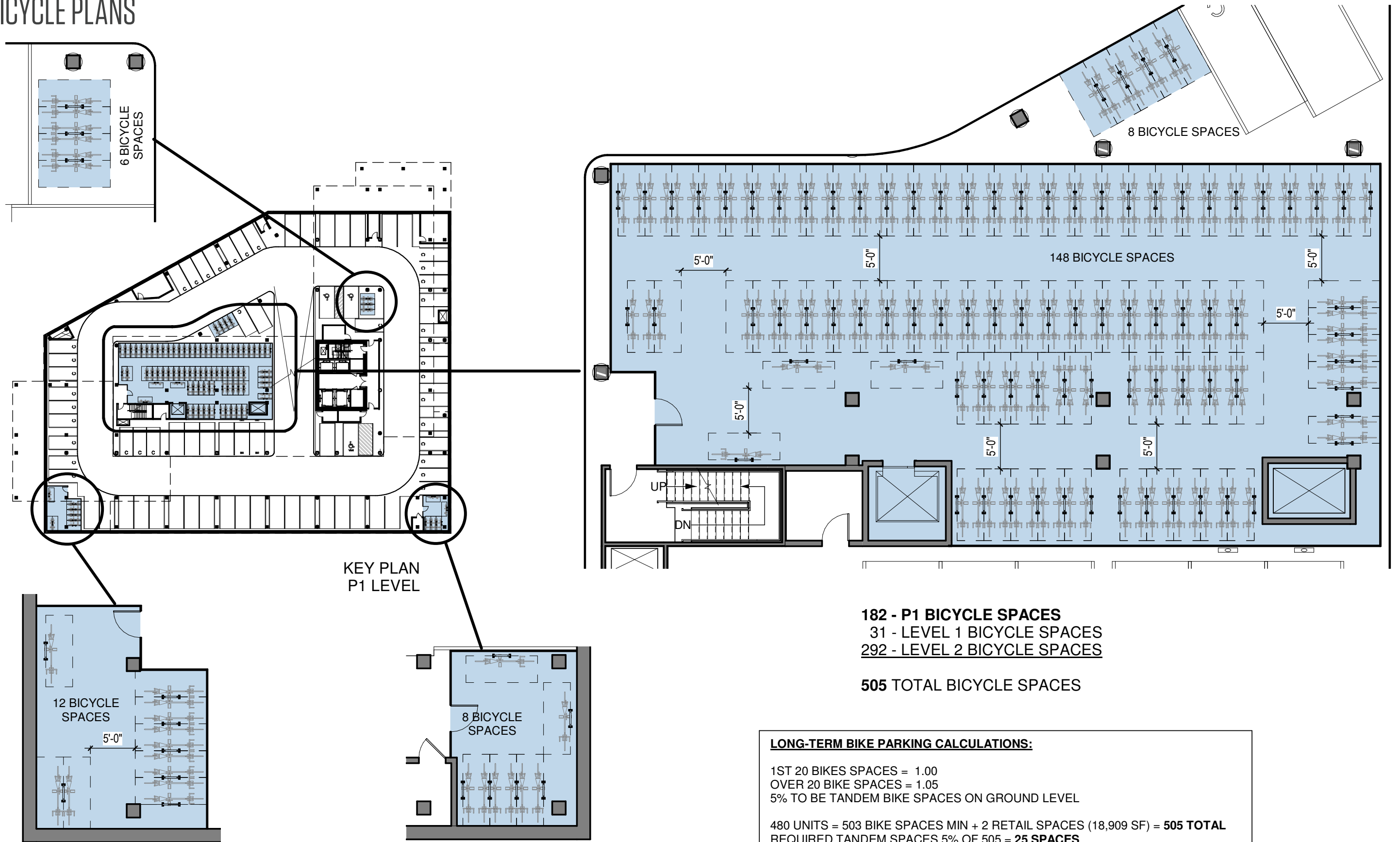
BEALS + THOMAS

McNAMARA - SALVIA

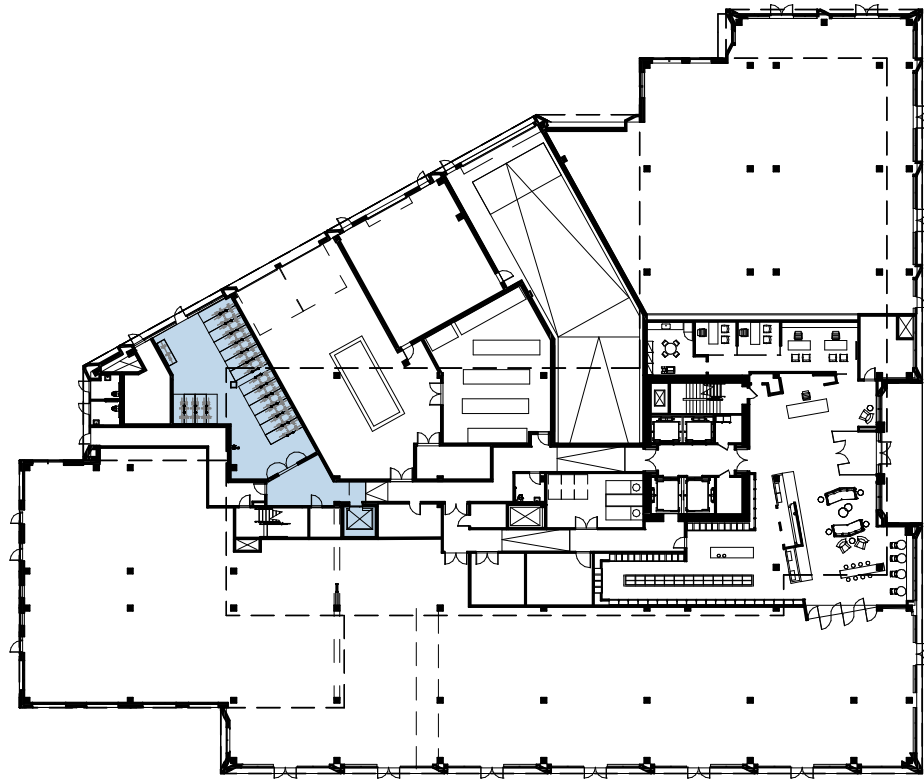
HALEY ALDRICH

BALA | TMP

CAMBRIDGE CROSSING - PARCEL 1  
**P1 BICYCLE PLANS**



# GROUND FLOOR BICYCLE PLANS

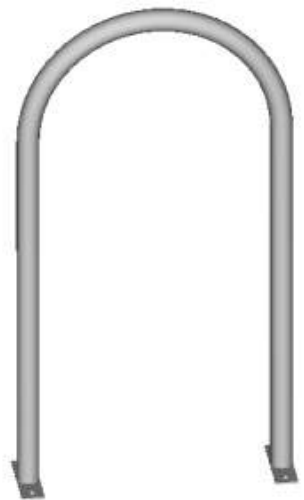


KEY PLAN  
GROUND LEVEL

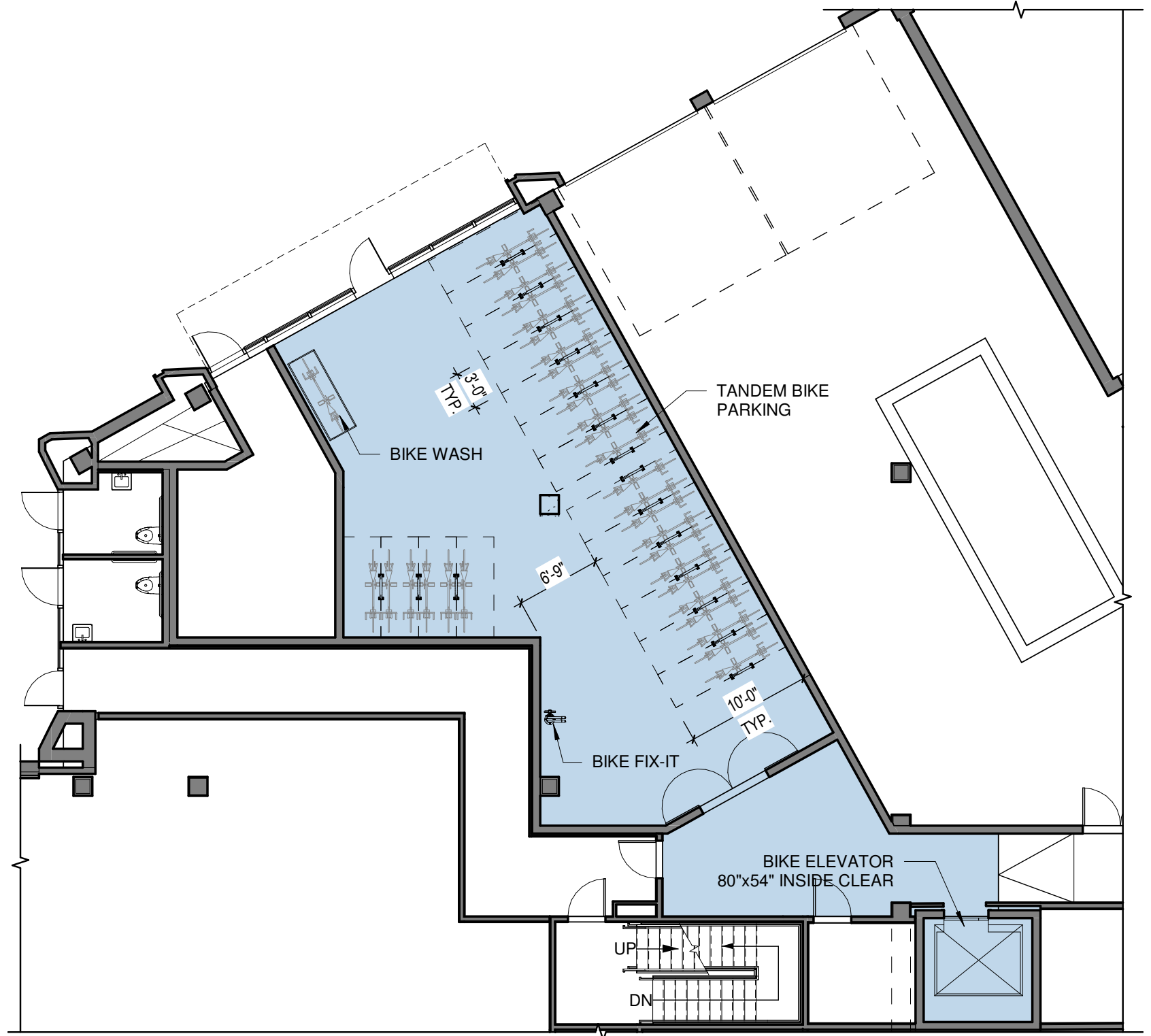
TANDEM SPACES: 24  
BIKE SPACES: 7  
TOTAL: 31

182 - P1 BICYCLE SPACES  
**31 - LEVEL 1 BICYCLE SPACES**  
292 - LEVEL 2 BICYCLE SPACES

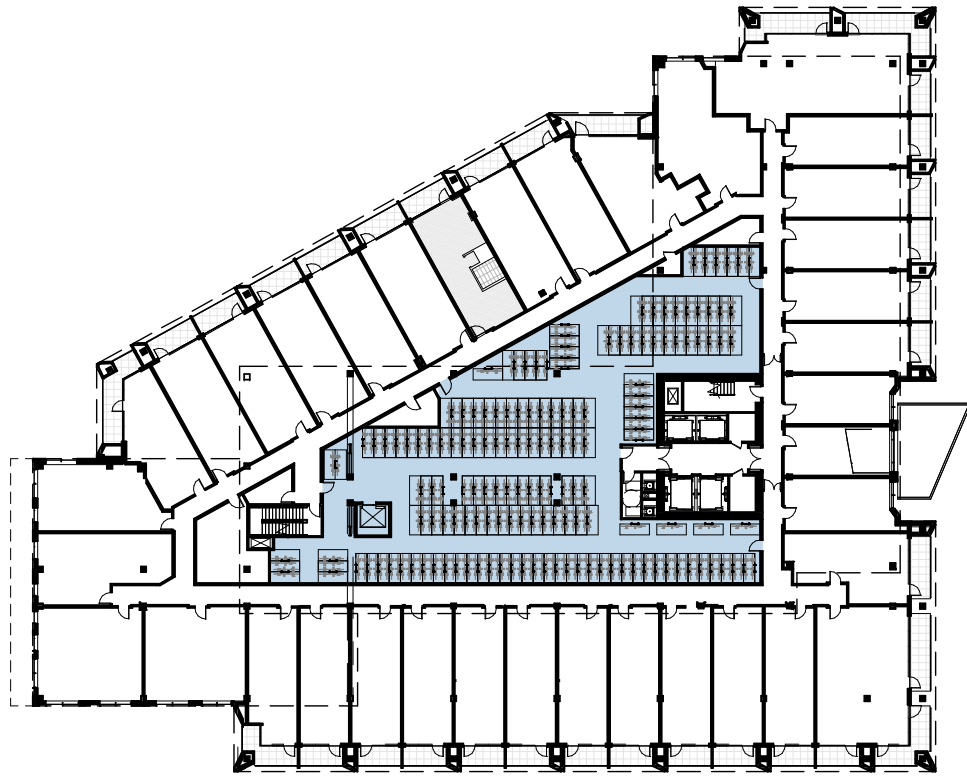
**505 TOTAL BICYCLE SPACES**



BIKE RACK BASIS OF  
DESIGN

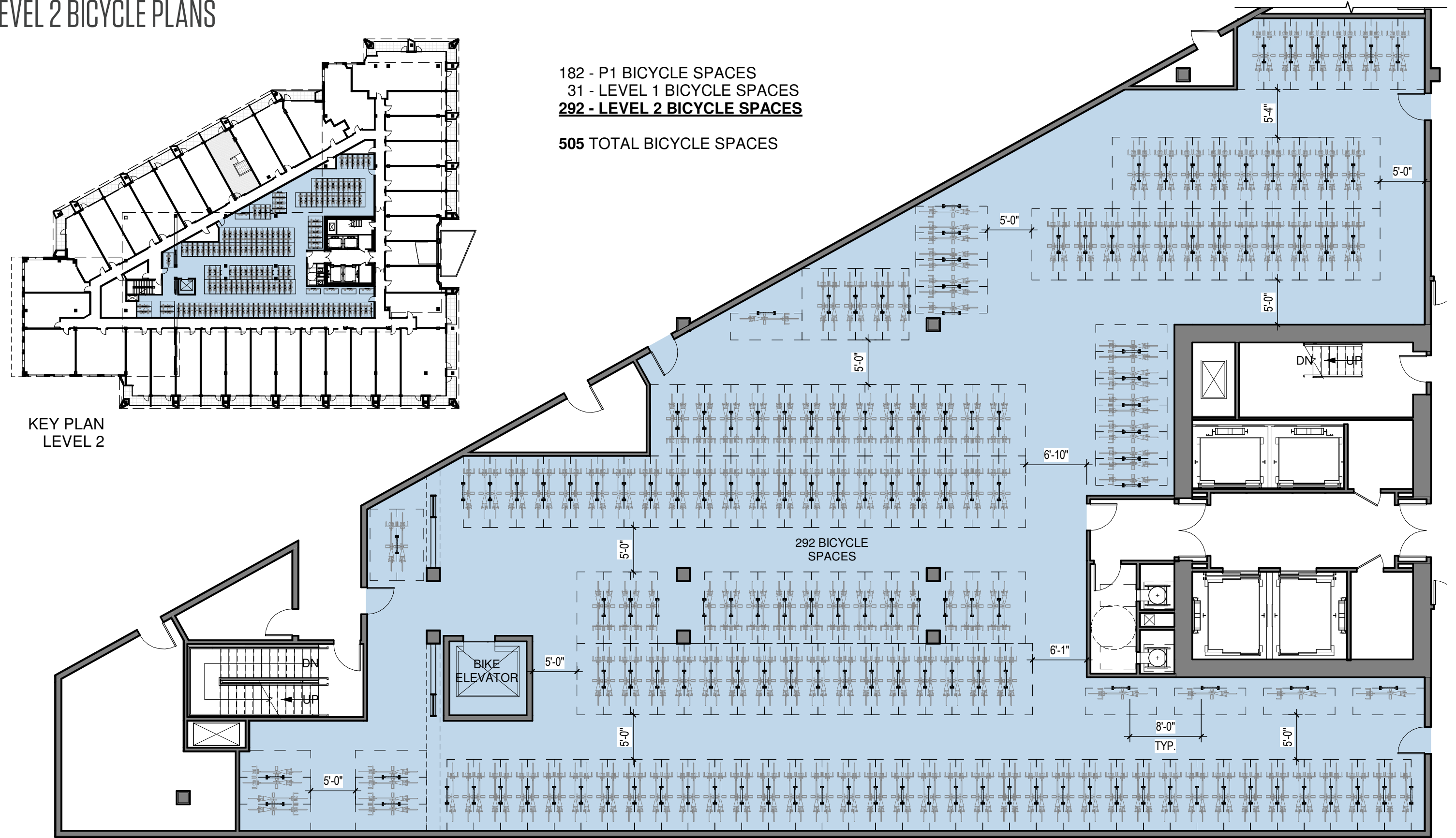


# LEVEL 2 BICYCLE PLANS



182 - P1 BICYCLE SPACES  
 31 - LEVEL 1 BICYCLE SPACES  
**292 - LEVEL 2 BICYCLE SPACES**

**505 TOTAL BICYCLE SPACES**



MICHAEL VAN VALKENBURGH ASSOCIATES INC



CAMBRIDGE CROSSING - PARCEL 1  
BUILDING LIGHTING PLAN



● BUILDING MOUNTED  
PEDESTRIAN DOWNLIGHTING



DIVCOWEST

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MICHAEL  
VAN  
VALKENBURGH  
ASSOCIATES  
INC

BEALS + THOMAS

McNAMARA · SALVIA

HALEY  
ALDRICH

BALA | TMP

CAMBRIDGE CROSSING - PARCEL I  
SHADOW STUDY



FALL & SPRING EQUINOX  
09:00 AM



FALL & SPRING EQUINOX  
12:00 NOON



FALL & SPRING EQUINOX  
3:00 PM



SUMMER SOLSTICE  
9:00 AM



SUMMER SOLSTICE  
12:00 NOON



SUMMER SOLSTICE  
3:00 PM



WINTER SOLSTICE  
9:00 AM



WINTER SOLSTICE  
12:00 NOON



WINTER SOLSTICE  
3:00 PM

 = NET NEW SHADOW







33 Moulton Street  
Cambridge MA 02138  
617 499 8000  
acentech.com

May 22, 2018

Jim Burke  
CBT Architects  
110 Canal Street  
Boston, MA 02114

**Subject** Community Noise Criteria and Control  
Cambridge Crossing Parcel I  
Cambridge, MA  
Acentech Project No. 628587

Dear Jim:

This letter describes the environmental noise criteria applicable to the Cambridge Crossing Parcel I residential project that you are designing, along with the noise mitigation strategies that the project will utilize in order to comply with those criteria.

#### ENVIRONMENTAL NOISE CRITERIA

##### MassDEP Noise Regulation

MassDEP has a noise policy that prohibits building mechanical equipment from increasing the existing ambient noise levels by more than 10 dBA (A-weighted decibels); it also prohibits tonal noise. Measurements in the Cambridge Crossing (formerly Northpoint) area, including at Parcel J/K by Cavanaugh Tocci, and at both Parcel N and at the Zinc Apartments site by Acentech, indicate that the existing ambient noise levels on site are approximately 53 dBA, suggesting that allowable noise levels under the MassDEP regulation could be as high as 63 dBA at abutting properties. A design that complies with the Cambridge noise ordinance (discussed below) will also meet this regulation. Further, the Cambridge Crossing Parcel I noise emissions will be designed to avoid the tonal characteristic prohibited by the MassDEP regulation.

##### Cambridge Noise Ordinance

Parcel I is located adjacent to Parcel JK, an office/lab building. The Cambridge noise requirement for commercial areas is 65 dBA as measured at the property line of the abutting commercial property. Parcels C, D, and R are the nearest residential parcels to the project site, and we understand that they are protected by the Cambridge noise control ordinance. The residential limits of the Cambridge regulation require that the building emissions not exceed 60 dBA during the daytime and 50 dBA at other times, as measured at the property lines of the abutting residential properties.

The Cambridge Crossing Parcel I building will be designed to meet the noise limits of the Cambridge regulation. As discussed below, our calculations indicate that the current design meets this standard.

#### NOISE MITIGATION MEASURES

The project's mechanical and architectural design takes a number of steps to limit noise emissions, as needed to meet applicable noise regulations including the residential limits of the Cambridge noise ordinance described above. These noise mitigation measures include the following, organized according to the major mechanical equipment planned for the project:

[acoustics](#) | [av/it/security](#) | [vibration](#)

##### Cooling Towers, at Upper Level Roof

- Low-noise equipment selection
- Variable speed drives, arranged so that the cooling towers will operate at slower/quieter speeds when cooling load is reduced, including at night
- Equipment location, upper mechanical screening, and building massing, arranged to create a comprehensive acoustical barrier such that the upper floors the residential buildings at Parcels C and D will not have line-of-sight to the cooling tower equipment

##### Energy Recovery Units, at Mechanical Penthouse

- Intake and discharge louvers sized to minimize velocities/sound
- Louver locations oriented to minimize residential exposure
- Sound attenuators at intake and/or discharge as necessary to comply with the Cambridge noise regulation

##### Emergency Generator (Approx. 800 KW, Diesel Fired)

- Located inside the mechanical penthouse
- Sound attenuators at both intake and discharge, specified in coordination with the generator selection in order to comply with the Cambridge noise regulation
- Critical grade muffler at generator exhaust, which will rise up through the roof
- Administrative control over testing schedule, to avoid times when residences are most likely to be occupied

#### SUMMARY

In summary, we are working with the project team to design the building to help ensure reasonable and appropriate sound level emissions that comply with the applicable environmental noise regulations. Based on our current calculations, the current design meets those criteria.

\*\*\*\*\*

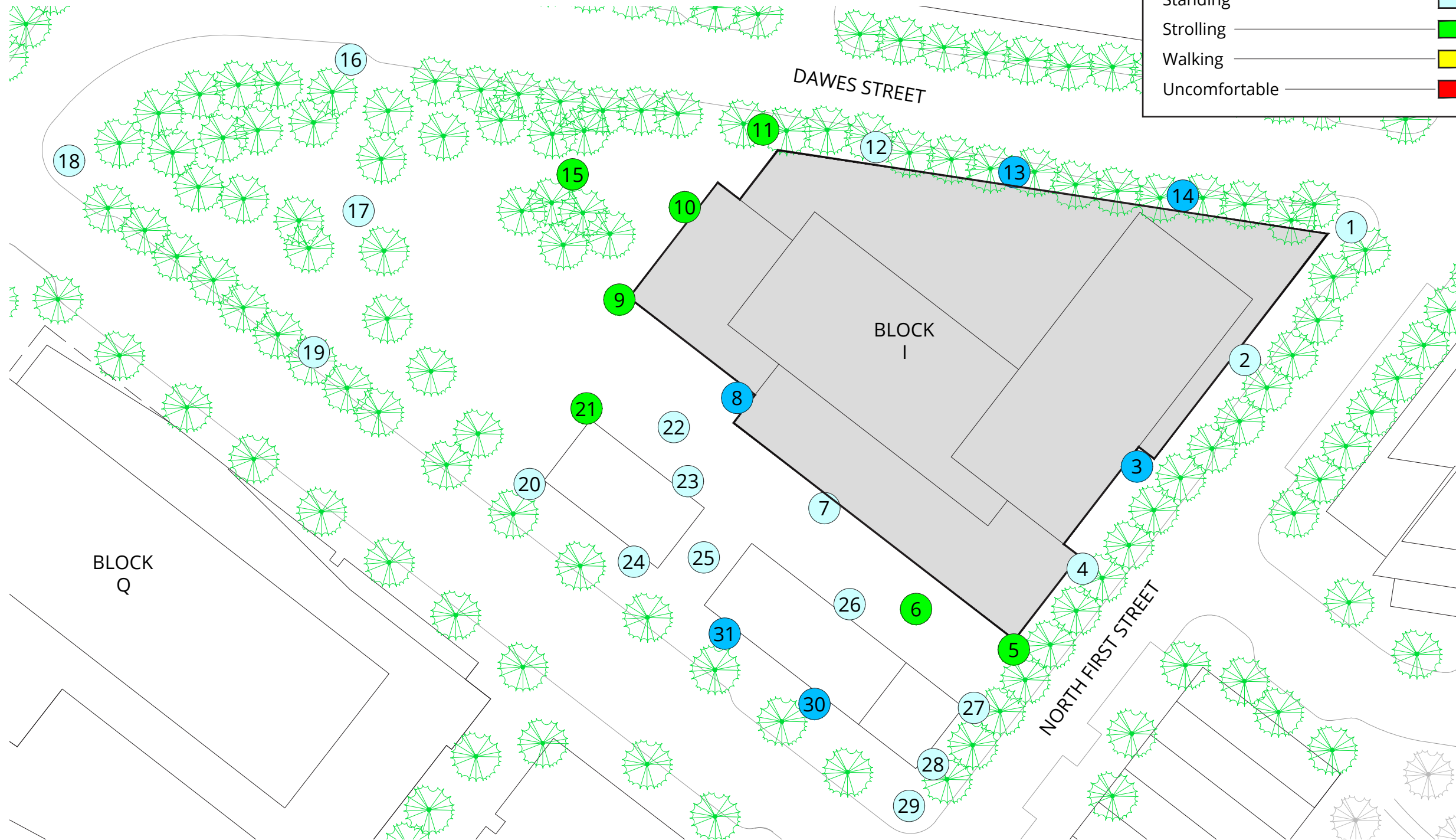
Please let me know if you have any questions about the information in this report; my direct telephone number is 617.499.8086.

Sincerely,

Benjamin E. Markham, LEED AP  
Director, Architectural Acoustics



# WIND STUDY



**LEGEND:**

MEAN SPEED CATEGORIES:

- Sitting
- Standing
- Strolling
- Walking
- Uncomfortable

SENSOR LOCATION:

- Grade Level

LANDSCAPING:

- Existing Trees
- Proposed Trees

**PEDESTRIAN WIND COMFORT CONDITIONS**

FULL BUILD WITH LANDSCAPING  
 SUMMER (MAY TO OCTOBER, 6:00 TO 23:00)

\* REFER TO FULL WIND STUDY FOR ADDITIONAL INFORMATION



CAMBRIDGE CROSSING - PARCEL I  
LEED PROJECT CHECKLIST



**LEED v4 for BD+C: New Construction and Major Renovation**  
Project Checklist

Project Name: Cambridge Crossing

Y ? N  
1 0 0

Credit Integrative Process | 1

13	3	0	Location and Transportation	16
			Credit LEED for Neighborhood Development Location	16
1			Credit 1 Sensitive Land Protection	1
	2		Credit 2 High Priority Site	2
5			Credit 3 Surrounding Density and Diverse Uses	5
5			Credit 4 Access to Quality Transit	5
1			Credit 5 Bicycle Facilities	1
	1		Credit 6 Reduced Parking Footprint	1
1			Credit 7 Green Vehicles	1

9	1	0	Sustainable Sites	10
Y			Prereq Construction Activity Pollution Prevention	Required
1			Credit 1 Site Assessment	1
1	1		Credit 2 Site Development - Protect or Restore Habitat	2
1			Credit 3 Open Space	1
3			Credit 4 Rainwater Management	3
2			Credit 5 Heat Island Reduction	2
1			Credit 6 Light Pollution Reduction	1

6	3	2	Water Efficiency	11
Y			Prereq 1 Outdoor Water Use Reduction	Required
Y			Prereq 2 Indoor Water Use Reduction	Required
Y			Prereq 3 Building-Level Water Metering	Required
2			Credit 1 Outdoor Water Use Reduction	2
2	2	2	Credit 2 Indoor Water Use Reduction	6
1	1		Credit 3 Cooling Tower Water Use	2
1			Credit 4 Water Metering	1

13	4	16	Energy and Atmosphere	33
Y			Prereq 1 Fundamental Commissioning and Verification	Required
Y			Prereq 2 Minimum Energy Performance	Required
Y			Prereq 3 Building-Level Energy Metering	Required
Y			Prereq 4 Fundamental Refrigerant Management	Required
6			Credit 1 Enhanced Commissioning	6
5	3	10	Credit 2 Optimize Energy Performance	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

2	6	6	Materials and Resources	13
Y			Prereq 1 Storage and Collection of Recyclables	Required
Y			Prereq 2 Construction and Demolition Waste Management Planning	Required
		6	Credit 1 Building Life-Cycle Impact Reduction	5
	2		Credit 2 Building Product Disclosure and Optimization - Environmental Product Declarations	2
	2		Credit 3 Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
	2		Credit 4 Building Product Disclosure and Optimization - Material Ingredients	2
2			Credit 5 Construction and Demolition Waste Management	2

6	7	3	Indoor Environmental Quality	16
Y			Prereq 1 Minimum Indoor Air Quality Performance	Required
Y			Prereq 2 Environmental Tobacco Smoke Control	Required
1	1		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
	2		Credit 4 Indoor Air Quality Assessment	2
1			Credit 5 Thermal Comfort	1
	2		Credit 6 Interior Lighting	2
		3	Credit 7 Daylight	3
	1		Credit 8 Quality Views	1
1			Credit 9 Acoustic Performance	1

6	0	0	Innovation	6
5			Credit 1-5 Innovation	5
1			Credit 6 LEED Accredited Professional	1

1	2	2	Regional Priority	4
	1		Credit 1 Regional Priority: Renewable Energy Production (2 point threshold)	1
		1	Credit 2 Regional Priority: Optimize Energy Performance (8 point threshold)	1
	1		Credit 3 Regional Priority: High Priority Site (2 point threshold)	1
		1	Credit 4 Regional Priority: Building Life-Cycle Impact Reduction (2 point threshold)	1
1			Credit 5 Regional Priority: Rainwater Management (2 point threshold)	
	1		Credit 6 Regional Priority: Indoor Water Use Reduction (4 point threshold)	

**57 26 29 TOTALS** Possible Points: **110**  
 Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110

**LEED CERTIFICATION TARGET - SILVER**  
**(57 POINTS)**



# SUSTAINABILITY NARRATIVE & PATHWAY TO NET ZERO

The residential project located on Parcel I at Cambridge Crossing is challenging itself to consider how to be a resilient and sustainable building. The proposed design utilizes updated approaches to heating, cooling, and ventilation, and technology to ensure dynamic modes of use. The design team is evaluating options that reduce carbon impact, optimize heat and energy recovery, and create a building that satisfies its initial and future tenants.

The team is considering ways in which it can further reduce its overall environmental impact. The current and on-going studies evaluate HVAC with electrical load profiles that can be met with a “greener” grid, opportunities for shading and glare control to increase thermal comfort, and envelope options that include higher window-to-wall ratios to mitigate energy loss.

The building designers are cognizant that upcoming approaches for the grid and for technological adoptions will be available for the building within its lifetime. To this end, the building designers are looking to ensure the roof can be optimized for solar PV and that new occupational controls can be incorporated as they are made available.

The design team has been thoroughly investigating how the building will function as a low-carbon consumer, but also how its occupants can be accommodated in low-carbon end-use decisions. The bicycle storage, the potential for additional electric vehicle infrastructure, and the use of occupant and use-based HVAC will be a large part of the low-carbon solutions. The team anticipates that its electric-based HVAC will be able to draw from the increasingly green grid, which has improved its carbon impact by over 16% in the past five years - and the team anticipates that the grid will be continuing its path toward low carbon.



# LEED DESCRIPTION

## I. PROJECT DESCRIPTION

The Cambridge Crossing project is meeting the Special Permit application requirement with a minimum LEED v4 Silver Certification for New Construction. The project is currently tracking 57 points and an additional 26 “potential” points. The “potential” points may be achieved over the course of the design development and will be included in the Building Permit application.

## II. AFFIDAVIT

## III. LEED VERSION 4 FOR NEW CONSTRUCTION CHECKLIST

A. Please see above LEED v4 checklist.

## IV. NARRATIVE FOR LEED CREDITS

The Cambridge Crossing Project fulfills all the prerequisites for all categories.

### A. INTEGRATIVE PROCESS

#### IPC1: Integrative Process [1 point]

Cambridge Crossing created additional opportunities for innovation and collaboration by integrating all teams early in the design process. The project conducted an initial sustainability site, and climate analysis and conducted a charrette to bring all team members together to discuss pertinent options for the project. The team has also hosted several early LEED meetings to address key goals that address sustainability and human health.

### B. LOCATION AND TRANSPORTATION

#### LTC1: Sensitive Land Protection [1 point]

The project site is located on land that has been previously developed and does not currently qualify as sensitive land.

#### LTC2: High Priority Site [3 points]

The site has accrued a high level of sediment contamination over the decades of industry that developed in East Cambridge. Given the level of contamination, it is likely that the project will qualify as a brownfield site and the project team will include remediation to build on the site.

#### LTC3: Surrounding Density and Diverse Uses [5 points]

The location is accessible to most of Kendall Square and East Cambridge, which each include a variety of necessary amenities, such as grocery, drug store, places of worship among many others.

#### LTC4: Access to Quality Transit [5 points]

The site is located within 1/4 mile of the Lechmere green line Massachusetts Bay Transit Authority subway stop. It also sits within a close walk of several bus lines running into Boston downtown, as well as Cambridge center.

#### LTC5: Bicycle Facilities [1 point]

Cambridge Crossing will provide approximately 500 covered, secure bicycle spaces for its tenants. The number of bike spaces exceeds the minimum requirement of 5% of building occupants.

#### LTC6: Reduced Parking Footprint [1 point]

The project will provide parking spaces, which does not exceed the local zoning limit.

#### LTC7: Green Vehicles [1 point]

The project will provide electric vehicle charging stations on site to accommodate for 2% of all parking in order to encourage the use and purchase of green vehicles.

### C. SUSTAINABLE SITES

#### SSP1: Construction Activity Pollution Prevention [Required]

Cambridge Crossing design documents will include an erosion and sedimentation plan that complies with both local code and the EPA Construction General Permit that addresses all construction activities associated with the project.

#### SSC1: Site Assessment [1 point]

The project will conduct a site assessment that focuses on environmental features of the site to help the identify opportunities for sustainable site development.

#### SSC2: Site Development – Protect or Restore Habitat [2 points]

The project will restore 30% of the site that has been previously disturbed with native or adapted vegetation to provide habitat and increase biodiversity in the area.



# LEED DESCRIPTION

## SSC3: Open Space [1 point]

With the inclusion of the Parcel I park in the LEED Project Boundary of Cambridge Crossing, the project will commit 20% of the site area to pedestrian oriented open space.

## SSC4: Rainwater Management [3 points]

Beals and Thomas will develop a rainwater management strategy that accounts for the stormwater runoff from 98% of the average annual rainfall.

## SSC5: Heat Island Reduction [2 points]

The project will reduce its contribution to the heat island effect by utilizing paving materials with an initial SRI of at least 28 and roofing materials with initial SRI of at least 82.

## SSC6: Light Pollution Reduction [1 point]

The project will ensure that all exterior lighting complies with the limitations of the uplight-backlight-glare method to reduce the amount of disrupting, ambient light in the area.

## D. WATER EFFICIENCY

### WEC1: Outdoor Water Use Reduction [Required]

Cambridge Crossing will implement an irrigation system that utilizes efficient technology and planting strategy to reduce the amount of outdoor, potable water use by a minimum of 30%.

### WEP2: Indoor Water Use Reduction [Required]

Cambridge Crossing will utilize high efficiency fixtures to reduce indoor water by at least 20%.

### WEP3: Building-Level Water Metering [Required]

Permanent, building-level water meters will be installed in the project to encourage more sustainable water management strategies. DivCo will commit to sharing usage data collected from the water meters to USGBC to be tracked and analyzed.

### WEC1: Outdoor Water Use Reduction [2 points]

In addition to the required minimum of a 30% reduction, Cambridge Crossing will utilize native, tolerant planting species alongside a rainwater reclaim system to reduce the need for potable irrigation all together.

### WEC2: Indoor Water Use Reduction [6 points]

The project will pursue a 35% reduction in indoor water use from the calculated baseline by utilizing low flow showers, water closets, and faucets in all resident spaces.

### WEC3: Cooling Tower Water Use [1 point]

The project will perform a potable water analysis and achieve the maximum number of cycles allowed without exceeding any filtration levels or affecting operation of condenser water systems.

### WEC4: Advanced Water Metering [1 point]

Cambridge Crossing will install at least two permanent water meters on the domestic hot water and cooling tower subsystems to further improve indoor water use management on-site.

## E. ENERGY AND ATMOSPHERE

### EAP1: Fundamental Commissioning and Verification [Required]

The project team will hire a commissioning agent to review and oversee the commissioning process activities including HVAC systems, refrigeration systems and controls, lighting, and domestic hot water systems.

### EAP2: Minimum Energy Performance [Required]

Bala Engineering will be modeling the energy systems in order to evaluate the project's energy performance. The project will meet the minimum requirements of ASHRAE 90.1-2010.

### EAP3: Building-Level Energy Metering [Required]

Cambridge Crossing will install building-level energy meters to measure total energy use of the project and encourage the project to monitor and improve on energy saving strategies. DivCo will commit to sharing usage data with USGBC for at least 5 years.

### EAP4: Fundamental Refrigerant Management [Required]

The project will ensure that no Chlorofluorocarbon based refrigerants will be used.



# LEED DESCRIPTION

## EAC1: Enhanced Commissioning [6 points]

A commissioning authority will be designated to oversee the compliant completion of all process activities. The CxA will conduct design review, review contractor submittals, develop a system manual, verify the requirements for training operating personnel and review the operation of the building with operations and maintenance staff and occupants.

## EAC2: Optimize Energy Performance [18 points]

The energy model being developed by Bala will be used to estimate the total % in energy use by cost. The project has set a goal to achieve 5 points by reducing energy use by cost by 15%.

## EAC3: Advanced Energy Metering [1 point]

The project will install energy meters for any subsystems that account for at least 10% of total energy use in order to further improve on energy saving strategies and management.

## EAC4: Demand Response [2 points]

## EAC5: Renewable Energy Production [3 points]

## EAC6: Enhanced Refrigerant Management [1 point]

The project will ensure that all equipment purchased will have zero use of refrigerants.

## F. MATERIALS AND RESOURCES

### MRP1: Storage and Collection of Recyclables [Required]

Cambridge Crossing will provide a designated location for the storage and collection on recyclables on-site. Recyclable materials will include at least mixed paper, corrugated cardboard, glass, plastics, and metals. The project will also provide a location for building users to recycle batteries and electronic waste.

### MRP2: Construction and Demolition Waste Management Planning [Required]

The project will develop a Construction and Demolition Waste Management plan that works to reduce waste disposed of in landfills. The plan will identify at least 5 materials to be diverted and provide details on storage, collection, and processing of these materials.

## MRC2: BPDO– Environmental Product Declarations [2 points]

Cambridge Crossing will utilize products with environmental product declarations for 50% by cost of total value of permanently installed products in order to reduce the environmental life-cycle impact of building materials.

## MRC5: Construction and Demolition Waste Management [2 points]

The project will develop a construction and demolition waste management plan that will divert at least 75% by weight or volume of total material from at least 4 waste streams.

## G. INDOOR ENVIRONMENTAL QUALITY

### IEQP1: Minimum Indoor Air Quality Performance [Required]

The project's mechanical ventilation systems will meet the requirements of ASHRAE 62.1-2010 sections 4-7 in order to provide a comfortable and healthy environment for all building occupants.

### IEQP2: Environmental Tobacco Smoke Control [Required]

Cambridge Crossing will prohibit smoking inside and within 25 feet of building entrances to minimize the negative impacts of tobacco smoke on occupants' health, indoor surfaces, and ventilation systems.

### IEQC1: Enhanced Indoor Air Quality Strategies [2 points]

The project will design ventilation systems to incorporate advanced IAQ strategies in mechanically ventilated spaces, naturally ventilated spaces, and mixed-mode systems. This will promote a healthy, comfortable, and productive indoor environment for building occupants.

### IEQC2: Low-Emitting Materials [3 points]

Cambridge Crossing will achieve 2 points for this credit by utilizing at least 4 materials of different categories that comply with emissions and content standards. Utilizing low-emitting materials will create a healthier, lower impact indoor space, as Volatile Organic Compounds can be harmful to air quality, human health and the environment.

### IEQC3: Construction Indoor Air Quality Management Plan [1 point]

The project will develop an IAQ management plan to be implemented during the construction phase of the project. The plan will address compliance with SMACNA guidelines, protection of materials, and operation of permanent filtration systems.



# LEED DESCRIPTION

## IEQC4: Indoor Air Quality Assessment [2 points]

After construction and before occupancy of Cambridge Crossing, the project will conduct baseline IAQ testing to provide higher quality indoor air for building users at the time of occupancy.

## IEQC5: Thermal Comfort [1 point]

The project will comply with standards of ASHRAE 55-2010 for all HVAC systems and the building envelope to provide an efficient and comfortable thermal environment for occupants.

## IEQC8: Quality Views [1 point]

## IEQC9: Acoustic Performance [1 point]

Cambridge Crossing will follow all requirements for HVAC background noise, sound isolation, reverberation time, and sound reinforcement and masking to maximize acoustic design and provide a productive work environment.

## H. INNOVATION IN DESIGN

IDC1: Purchasing – Lamps

IDC2: Housing Types and Affordability

IDC3: Occupant Comfort Survey

IDC4: Walkable Project Site

IDC5: PBT Source Reduction

## I. REGIONAL PRIORITY

Renewable Energy Production (point threshold: 2)

Optimize Energy Performance (point threshold: 8)

High Priority Site (point threshold: 2)

Rainwater Management (point threshold: 2)

Indoor Water Use Reduction (point threshold: 4)





# NORTHPOINT DESIGN GUIDELINES CHECKLIST

SECTION	GUIDELINE DESCRIPTION	COMPLIANCE	CHECK
Preface	The layout of the new NorthPoint neighborhood is driven in large part by the desire to structure a contiguous public realm that is well integrated into the surrounding neighborhoods. The streets, sidewalks, central park, and green fingers are designed to hold together as a single network, while providing formal and functional variety. The city block structure sets up an urban streetscape to create a hierarchy of uses, clarity of circulation, human scale and an animated public and pedestrian realm. Buildings exhibiting a diversity of architectural expressions, establish a comfortable pedestrian scale common to all building types, framing streets and enlivening the sidewalks with entrances, life, and activity.	The design for Parcel I is consistent with the goals and objectives of the urban plan for Northpoint. The individual design criterion below demonstrate how Parcel I responds to specific design objectives for this site, as well as the larger urban context.	✓
Preface	Design principles used to create the NorthPoint Master Plan emphasize the importance of a variety of scales and forms to support a diversity of experiences throughout the 45-acre site. Each parcel is intended to relate to its immediate surroundings as well as the larger context. The larger context is defined by overall image, legibility, cohesiveness, scale, character, connections, and movement. Local context determinants include orientation, solar exposure, parking, views to the surroundings and the central park, definition of un-built open spaces, public-private hierarchy, strategic location/program/opportunity, the integration of multiple uses and interfaces with transit. This urban design framework builds on the Eastern Cambridge Design Guidelines and sets out the basic parameters that will shape the built form.	Parcel I responds to its surrounding context, in addition to the larger master plan, through a series of massing moves as discussed in the points below.	✓
<b>1.0 Urban Structures</b>			
1.3 Green Connections	Provide a clear, public, and legible and green connection between the NorthPoint Common and Parcel I Park through the retail plaza area.	Refer to MVVA presentation for description of the Green Connection/Retail Plaza Area that links The Common and Parcel I Open Space.	✓
1.5 Master Plan - Exhibit 06 - Conceptual Land Use	Parcel I is to be developed as a Residential, Commercial or Mixed Use Parcel.	Parcel I will be a Mixed-Use Building consisting of Residential and Retail Uses	✓
1.5 Master Plan 0 Exhibit 08 - Zoning Envelope 1.5 Master Plan - Exhibit 09 - Location of 220' Towers	Parcel I sits within 2 zoning height restrictions: 120' and 150'-220'. Parcel I is designated as a site for a 220' Tower.	Parcel I is to be designed to be in compliance with the 220' maximum allowable building height per Exhibit 08 Zoning Envelope, and Exhibit 09 Location of 220' Towers	✓
1.5 Master Plan - Exhibit 10 - Conceptual Retail Plan	Parcel I is designated to have both Proposed and Potential Retail Programming	Parcel I is proposing retail programming at Grade Level which will front North First Street, the Retail Plaza, Parcel I Open Space, and Dawes Street.	✓
<b>2.0 Built Forms</b>			
2.1 Scale and Massing	Building orientation should take advantage of exposure to sun and views to both the green spaces and surrounding attractions.	Refer to Massing Diagrams from North First Street and Parcel I Park for descriptions of view opportunities.	✓
2.1 Scale and Massing	Buildings should avoid continuous massing longer than 100 feet facing residential streets and 200 feet facing mixed-use and retail streets. If massing extends beyond this length, it should be made permeable and visually articulated as several smaller masses using different materials or colors, vertical breaks, bays, or other architectural elements	Parcel I uses massing moves to break the facade along Dawes Street and North First Street, with no massing forms longer than 200'. This provides visual interest and an appropriate urban scale.	✓



# NORTHPOINT DESIGN GUIDELINES CHECKLIST

SECTION	GUIDELINE DESCRIPTION	COMPLIANCE	CHECK
2.1 Scale and Massing	In addition to the above limits, buildings should reflect a rhythm and variation appropriate to the urban context. For example, this can be achieved by expressing bay widths of sixteen to twenty five feet for residential buildings and twenty-five to fifty feet for mixed-use and retail buildings	At an urban scale, the use of color on the facades helps define a hierarchy to the massing, and also creates variation on the skyline. Dimensionally, the facades are based on a 28 foot grid, appropriate for residential units. Within this grid, additional scaling items such as inset frames, extended caps, and subtle material differentiation helps create depth and interest to the façade. The addition of balconies at the lower levels adds residential scaling to the building.	✓
2.1 Scale and Massing	Buildings should have a clearly expressed base, middle, and top. This may be achieved through a variety of materials, fenestration, architectural detailing, massing, or other elements. In order to achieve this, the following guidelines should be considered:  Buildings should have a carefully articulated base of one or two floors with a high level of transparency, lightness, and detail at the ground floors allowing views inward and outward	Parcel I massing has a clearly expressed base, middle, and top. The base of the building holds the street edge around the perimeter of the site, with some sculpting & articulation to promote retail identity and intuitive building entries. The materiality of the base is primarily warm wood tones and dark metal, consistent with the surrounding retail structures. The building form consists of three intersecting masses, which step down towards Parcel I Park. The tallest mass is located along North First Street, maintaining the urban edge, and defining views back to the site. The smallest mass touches down at Parcel I Park, anchoring the building and creating opportunities for an indoor/outdoor retail experience.	✓
2.1 Scale and Massing	A line of expression at the second floor is encouraged to humanize the scale of the buildings and create an intimate pedestrian experience (this should be achieved by means of material articulation or architectural detailing)	A human scale at the second floor is achieved by locating inset balconies along the perimeter of the building. This creates visual depth on the façade while promoting a residential character visible from the street.	✓
2.1 Scale and Massing	The mid-section of buildings should consider light penetration, continuity, and consistency of built mass while allowing for individual architectural detailing	The mid-section of the building employs vertically oriented openings to maximize daylight penetration into the units, while creating a consistent residential character on the façade. Inset frames and horizontal detailing create visual depth and a crafted aesthetic.	✓
2.1 Scale and Massing	The base and middle of buildings should be built to the street line with courtyard openings and setbacks for cafés where appropriate	Parcel I's base defines the street edge, and the "middle" mass is positioned to reinforce the master plan guidelines. This includes holding an urban edge along North First Street, and stepping away from Parcel I open space. The massing has been positioned to minimize shadowing on Dawes Street and the Open space.	✓
2.1 Scale and Massing	Use variations in height and architectural elements such as parapets, cornices and other details to create interesting and varied roof lines and to clearly express the tops of buildings.  Taller buildings should be articulated to avoid a monolithic appearance and should emphasize vertically-oriented proportions  Vertically-oriented proportions should be achieved by setting back the taller portions from the base and middle	Refer to Massing Diagrams from North First Street and Parcel I Park for descriptions of the massing approach.	✓
2.1 Scale and Massing	In the design of tall buildings, the variety of vantage points from which they may be seen should be considered	Refer to Massing Diagrams from North First Street and Parcel I Park for a series of views of Parcel I from a number of points within the master plan.	✓
2.1 Scale and Massing	Consider legibility of the building top both by day and night, while demonstrating responsible use of lighting and energy consistent with sustainability and city requirements	The project is pursuing LEED V4 for BD+C Credit "Light Pollution Reduction"	✓



# NORTHPOINT DESIGN GUIDELINES CHECKLIST

SECTION	GUIDELINE DESCRIPTION	COMPLIANCE	CHECK
2.1.1 Build-To Line	The build-to line is a line that runs parallel to the property line at which construction of a building facade is to occur at NorthPoint. It is a suggested setback from the property line and varies from street to street and parcel by parcel with the intention of providing a generous sidewalk and public realm design along all NorthPoint streets. While no structural elements can be placed beyond the build-to line, certain architectural elements and projections that maintain the spirit of the setback can be considered as a part of the design review. See "EXHIBIT: 13 BUILD-TO LINE DIAGRAM"	The Parcel I building falls within the Build-To line as shown in Exhibit 13. An additional setback is used to break up massing as well as accommodating potential café seating at the west side of the building, adjacent to Parcel I Park.	✓
2.1.2 Public Streets	Set back portions of the building above sixty-five feet by at least ten feet from the principal facade where possible.	The setback above the Parcel I podium occurs at approximately 33'-2" above the finished grade.	✓
2.1.2 Public Streets	Where appropriate, design setbacks to include balconies and rooftop terraces See "EXHIBIT: 14 SETBACK DIAGRAM"  Buildings should have a clearly expressed base, middle, and top. This may be achieved through changes in material, fenestration, architectural detailing, or other elements  Setbacks may be allowed to accommodate street furniture, street trees, or generous sidewalks  For retail and office uses, build to the build to line or provide small setbacks (5 to 15 feet) for café seating, benches, or small open spaces.	Parcel I utilizes setbacks and roof terraces throughout the building. Insets and massing articulation at the podium serve to create retail identity, café seating, and intuitive building entries. Above the podium, the massing is set back to create a southern facing amenity terrace with access to daylight. The building steps away from Parcel I Park, and the tallest portion of the building is located to minimize shadows and visual impacts to neighboring parcels.	✓
2.1.2 Public Streets	Locate loading docks on side streets or service alleys away from residential areas and open spaces whenever possible	A 2 Bay Loading Dock for Parcel I is located along Dawes Street	✓
2.1.3 Park Edges	Height greater than one-third the width of the park without setbacks may be appropriate at corners or in specific locations to create architectural variety	The west mass of Parcel I touches down at Parcel I Park and adds architectural variety and perceived height.	✓
2.1.3 Park Edges	The buildings must conform to overall district height limits as per the zoning requirements	Parcel I is to be designed to be in compliance with the 220' maximum allowable building height per Exhibit 08 Zoning Envelope, and Exhibit 09 Location of 220' Towers	✓
2.1.3 Park Edges	Locate buildings to minimize shadows on NorthPoint Common (especially in the afternoon) and, where feasible, on other open spaces	Refer to Shadow Studies.	✓
2.1.3 Park Edges	Shops, cafés and other public uses that enliven the parks are encouraged adjacent to open spaces  For retail and office uses, build to the lot line or provide small setbacks (5 to 15 feet) from the right-of-way for café seating, benches, or small open spaces	Parcel I utilizes setbacks and roof terraces throughout the building. Insets and massing articulation at the podium serve to create retail identity, café seating, and intuitive building entries. Above the podium, the massing is set back to create a southern facing amenity terrace with access to daylight. The building is terraced away from Parcel I Park, and the top of the building is set back to create a light reading on the skyline, while minimizing shadow and visual impacts to neighboring parcels.	✓



# NORTHPOINT DESIGN GUIDELINES CHECKLIST

SECTION	GUIDELINE DESCRIPTION	COMPLIANCE	CHECK
2.1.4 Roof Tops	Screening is encouraged to conceal rooftop mechanicals and should be in the same language as the rest of the architecture	Exterior rooftop and interior penthouse mechanical systems will be concealed with a continuous façade language to the main body of the building.	✓
2.1.4 Roof Tops	To the extent possible, provisions should be made so that future cellular installations may be placed upon the building without detriment to the architecture, e.g. a blank wall of a mechanical screen may be conceived as such a location	Parcel I will be furnishing infrastructure for the required four roof top fire department antennas as indicated on the elevations. The building will also have areas located for future cellular installations.	✓
2.1.4 Roof Tops	Rooftop mechanical equipment should be designed in accordance with the Cambridge Noise Ordinance and attention should be given to the placement and shielding of mechanical equipment so as to reduce the noise experienced by receptors on other parcels	Refer to the "Community Noise Criteria and Control" letter from Acentech.	✓
2.2.1 Residential Blocks	Electrical transformers should be located either inside buildings or with appropriate landscape screening if outside	The transformer is located within the Parcel I Building along Dawes Street.	✓
2.2.2 Mixed-Use Blocks	Mixed-use blocks or commercial blocks are blocks that include housing and/or commercial uses, with a mix of active uses strongly encouraged on the ground floor. Mixed-use blocks may include C, I, JK, R and Q1 or as otherwise permitted pursuant to the Special Permit. Commercial blocks are EF, G, H, Q2, and U or as otherwise permitted pursuant to the Special Permit.	The Parcel I building will include a varying mix of retail uses listed in the guidelines including Retail Shops, Restaurants, and Cafes	✓
2.2.3 Retail Blocks - Ground Floor Retail	At least seventy-five percent of the street frontage of the proposed retail in "EXHIBIT: 10 CONCEPTUAL RETAIL PLAN" should be occupied by retail uses, including cafés and restaurants  Retail entrances should be located on public streets or primary pedestrian areas and on corners wherever possible  Retail entrances should relate to crosswalks and pathways that lead to bus stops and transit stations	Refer to Ground Floor Plan for extent and location of the retail/restaurant program	✓
2.2.3 Retail Blocks - Ground Floor Retail	Retail within NorthPoint should be as transparent as possible to maximize visibility of street-level uses  Ground floor facades should permit a clear view from the sidewalk to the interior space of the building (seventy-five percent transparent surface is encouraged, and reflective glass is discouraged)	Refer to the rendering on for the typical retail bay at grade. Glazing to be transparent and greater than 75% of the retail facade.	✓
2.2.3 Retail Blocks - Ground Floor Retail	Plan for tenant awnings or canopies that create a sense of enclosure over sidewalks and provide identity for tenants	Refer to the rendering for the typical awning/canopy treatment.	✓



# NORTHPOINT DESIGN GUIDELINES CHECKLIST

SECTION	GUIDELINE DESCRIPTION	COMPLIANCE	CHECK
2.2.3 Retail Blocks - Ground Floor Retail	<p>Design the building to accommodate changes in retailers and retail store size over time. This may entail making the ground floor retail facade bay structure flexible, so that in the future retail spaces can be demised to include multiple bays or portions of a single bay</p> <p>Where appropriate, provide a facade bay structure that relates to the architecture of the building while allowing for signage, storefront and architecture within each bay that offers an opportunity for the individual expression of each retail storefront</p>	Refer to Building Elevations elevations and Facade Materiality - Podium for the proposed areas of retail signage, awnings, and canopies.	✓
2.3.1 Architectural Character - Residential	<p>Create varied architecture and avoid fat facades by using bays, balconies, porches, and other projecting elements</p> <p>Where buildings are set back at upper stories, lower roofs may be used as balconies, balustrades, and gardens</p> <p>Utilize architectural articulation such as: varied facade planes, changes in material, fenestration, architectural detailing, or other elements to break down the scale of large buildings</p>	Parcel I utilizes setbacks and roof terraces throughout the building. Insets and massing articulation at the podium serve to create retail identity, café seating, and intuitive building entries. Above the podium, the massing is set back to create a southern facing amenity terrace with access to daylight. The building is terraced away from Parcel I Park, and the top of the building is set back to create a light reading on the skyline, while minimizing shadow and visual impacts to neighboring parcels.	✓
2.3.3 Lighting	<p>Public realm, multi-use path and exterior building lighting is an important consideration for the identity of the project. Lighting should enhance the retail and pedestrian experience, bicycle nighttime safety and neighborhood connectivity of NorthPoint.</p> <p>However, lighting design shall be respectful of its impact on the surrounding context including the other residential buildings in NorthPoint, surrounding neighborhoods including East Cambridge.</p>	The project is pursuing LEED V4 for BD+C Credit "Light Pollution Reduction"	✓
2.4 Environmental Guidelines - LEED Principles	Energy efficient building envelope and system design Compliance with LEED certification standards is required. Investigation of other evolving energy efficiency standards is encouraged. Consider building designs with a view to future proofing to allow for additional energy efficiency measures at a later date, should there not be an opportunity to achieve those measures at the time of construction. For example, buildings should be designed with a "solar ready" roof structure where possible, so that when photovoltaic technology has evolved it can be installed more easily.	<p>The Parcel I building will be designed to achieve a minimum certification of LEED v4 Silver - see the LEED checklist and narrative on.</p> <p>Refer to "Solar Ready" roof diagram..</p>	✓
2.4 Environmental Guidelines - LEED Principles	Rooftop mechanical equipment should be sited and shielded to protect neighboring uses from excessive noise. Mechanical penthouses and vertical roof projections should be designed as part of each building composition.	All rooftop equipment on the Parcel I building will be located behind extended parapet screen walls . Refer to the "Community Noise Criteria and Control" letter from Acentech.	✓



# NORTHPOINT DESIGN GUIDELINES CHECKLIST

SECTION	GUIDELINE DESCRIPTION	COMPLIANCE	CHECK
2.4 Environmental Guidelines - Wind	<p>The massing, articulation and orientation of the buildings in the NorthPoint Master Plan considers best practice passive design approach to wind comfort. Detailed wind studies will be conducted with each building design review to meet the pedestrian wind comfort standards. Building designs should follow these wind guidelines:</p> <p>Design new buildings and open spaces to mitigate negative wind impacts on streets and public spaces.</p>	Refer to the Wind Study by RWDI showing Pedestrian Wind Comfort Conditions.	✓
2.4 Environmental Guidelines - Climate Resiliency	The NorthPoint Master Plan has taken into account the need for climate resiliency by raising grade across the entire site approximately ten to twelve feet, so that much of NorthPoint will be above currently projected storm surge food levels. Nonetheless, individual building designs should also take climate resilience into account.	The design for Parcel I locates the transformer vault above grade at the north side of the site along Dawes street. This is the highest portion of the Parcel I site. In addition, the emergency generator and other crititcal infrasturcture have been located on the roof where possible.	✓
2.5 Parking/Service	While underground parking is preferable everywhere, if above ground parking is to be built it should be designed so as not to be visible from public streets or pathways, to the extent feasible. Above ground structured parking should be lined with active uses (shops, cafés, etc.) along major public streets, or with housing units along residential buildings.	Parking for Parcel I to be located in a 3 level underground parking garage.	✓
2.5 Parking/Service	<p>Locate vehicular parking entrances and loading docks on side streets or alleys and provide safe pedestrian access from public streets. Where it is necessary to locate parking entrances on major streets, the building design shall try to make these entrances unobtrusive to the pedestrian movement and shall maintain the quality of public realm</p> <p>Parking and loading access are to be designed to provide safe sightlines and/or visual/audible warning systems for exiting vehicles in order to avoid conflicts between those vehicles and pedestrians on sidewalks</p>	The loading dock and garage entrance have been located along Dawes Street and are arranged to mimic the typical retail bays which wrap the corner from North First Stret. The activation of a storefront entrance at the bike parking garage, and unit balconies above, futher help to enliven this facade. The consolidation of loading functions to Dawes street has allowed for retail spaces wrapping from North First Street, down the retail plaza, and up to Parcel I Park.	✓



# CAMBRIDGE ZONING ORDINANCE CHECKLIST

ARTICLE	SUB SECTION		ZONING ORDINANCE REGULATION	COMPLIANCE	CHECK
3.000	3.10	Division of the City into Zoning Districts	(49) North Point Residence, Office, and Business District Various uses governed buy the requirements of Article 16.000	This project includes Retail and Residential uses which are allowable under Article 16.000	✓
4.000	4.30	Use Regulations -Table of Use Regulations			
4.000	4.31	Use Regulations -Residential Uses	(G) Multi-Family dwellings	This project includes 390,000 GSF of Multi-Family Dwellings	✓
4.000	4.35	Use Regulations -Retail Business and Consumer Services Establishments	(A-S)	This project includes 18,909 GSF of Retail Uses	✓
5.000		Development Standards		Development standards as listed in the Northpoint Design Guidelines are followed	✓
6.000		Off Street Parking and Loading Requirements and Nighttime Curfew on Large Commercial Through Trucks.			
6.00	6.12	Applicability: The off street parking and loading provisions of this Article 6.000 shall apply as follows:	(a) For new structures erected and new uses of land established or authorized after the effective date of this Article 6.000 or any amendment thereto, as well as for external additions of Gross Floor Area to existing structures for any use, accessory off street parking and loading facilities shall be provided as required by the regulations for the districts in which such structures or uses are located.	This project follows the regulations as listed in Cambridge Zoning Ordinance Article 16.000	✓
6.00	6.30	Parking Quantity Requirements			
6.00	6.31	Required Amount of Parking	Required Amount of Parking. Off street parking facilities shall be provided for each use of a lot or structure in the amount specified in the schedule of parking requirements contained in Subsection 6.36. Said schedule specifies the amount of accessory off street parking required for each type of land use listed in "Table of Use Regulations" in this Ordinance. The amount of required parking is also based on the intensity of development permitted in the district in which the use is located.	Parcel I provides required off street parking in three levels of underground parking. See use-based parking requirements below.	✓



# CAMBRIDGE ZONING ORDINANCE CHECKLIST

ARTICLE	SUB SECTION	ZONING ORDINANCE REGULATION	COMPLIANCE	CHECK	
6.00	6.34	Parking Space Size Allocation	No more than 50% shall be designed for compact cars	Parcel I has approximately 45% compact car spaces.	✓
6.00	6.36	Schedule of Parking and Loading Requirements	See Table 6.36	Parking has been provided per the referenced table, see below.	✓
6.00	6.36.1	Residential Uses			
		(g) Multifamily Dwelling	1 space per dwelling unit, Long Term Bicycle Parking (6.107.2) - R2 (6.107.3) - R2	.5 spaces per dwelling unit      1 Loading Dock Space for Move In/Out	✓
6.00	6.36.5	Retail Business and Consumer Service Establishments	No Retail parking required per 16.51	No retail parking has been provided.	✓
6.00	6.40	Design and Maintenance of Off Street Parking Facilities			
6.00	6.42	Dimensions of Off-Street Parking Spaces (minimum)	Regular Space: 90 deg - 8'-6"w x 18'-0"d x 7'-6"h - 22'-0" Width of Aisle Compact Space: 90 deg- 7'-6"w x 16'-0"d x 7'-6"h - 20'-0" Width of Aisle Accessible Space: 90 deg- 12'-0"w x 18'-0"d x 7'-6"h - 22'-0" Width of Aisle	Parking spaces and drive aisles meet required dimensions. Refer to floor plans for parking garage layouts.	✓
6.00	6.80	Required Amount of Loading Facilities			
6.00	6.83	Minimum Number of Off Street Loading Bays	Land Use Category:  6.36.5 Retail Business and Consumer Service Establishment a. Store for Retail Sale of Merchandise - Loading Facility Category B e. and/or f. Restaurant - Loading Facility Category C Category C 0,000 GFA - 10,000 GFA - No Loading Bays Required 0,000 GFA - 24,999 GFA - 1 Loading Bay Required 25,000 GFA - 64,999 GFA - 2 Loading Bays Required	Loading Facility Category C is used in determining number of loading docks. The project includes 18,909 GFA of Retail, so 1 Loading Bay is required. The project currently accommodates 2 Loading Bays.	✓
ARTICLE	SUB SECTION	ZONING ORDINANCE REGULATION	COMPLIANCE	CHECK	
6.000	6.91	Location and Layout of Loading Facilities	Where a building or lot contains uses requiring compliance with loading facility categories C, D, E, and F, the first required bay shall be no less than ten (10) feet in width, thirty (30) feet in length and fourteen (14) feet in height. Each additional required loading bay for such requirements to be exclusive of drives and maneuvering space.	The project contains loading facility category C. The designed loading bay dimension is 50' L x 10' W x 14' H.	✓





# CAMBRIDGE ZONING ORDINANCE CHECKLIST

ARTICLE	SUB SECTION	ZONING ORDINANCE REGULATION	COMPLIANCE	CHECK	
6.000	6.104.1	Long Term Bicycle Parking	Long-Term Bicycle Parking shall be provided within the building containing the use or uses that it is intended to serve, or within a structure whose pedestrian entrance is no more than two hundred feet (200') from a pedestrian entrance to such building. Long-Term Bicycle Parking serving multiple uses or buildings may be pooled into a single area, enclosure or facility. Where Long-Term Bicycle Parking is located adjacent to motor vehicle parking or loading facilities, a physical barrier shall be provided to prevent damage to bicycles by other vehicles.	Long Term Bicycle Parking is located in enclosed spaces within the building. Dedicated Bicycle Rooms are placed on Level 1, Level 2, and P1 Parking Level.	✓
6.000	6.104.2	Short Term Bicycle Parking	Private Lot. Short-Term Bicycle Parking on a private lot shall be located within fifty feet (50') feet of a pedestrian entrance to the building or buildings containing the use or uses it serves. For buildings or uses requiring more than eight (8) Short-Term Bicycle Parking Spaces, some of the required spaces may be located at a greater distance from the entrances, so long as eight (8) Short-Term Bicycle Parking Spaces are available within fifty feet (50') of any entrance.	See Diagram Below.	✓



# CAMBRIDGE ZONING ORDINANCE CHECKLIST

ARTICLE	SUB SECTION	ZONING ORDINANCE REGULATION	COMPLIANCE	CHECK
6.000	6.105.1	<p>Bicycle Racks</p> <p>Long-Term Bicycle Parking or Short-Term Bicycle Parking requirements may be satisfied by the installation of Bicycle Racks which meet the design and layout standards set forth in this Subsection. Installers of Bicycle Racks may consult the City of Cambridge Bicycle Parking Guide, 2008 or later version, for illustrations of acceptable Bicycle Rack design and layout.</p> <p>(d) To provide adequate space to store and remove a standard bicycle, there shall be at least three feet (3') clear horizontal distance from the center point of the Bicycle Rack in a direction perpendicular to the length of the bicycle, and at least four feet (4') clear horizontal distance from the center point of the Bicycle Rack in each direction parallel to the length of the bicycle.</p> <p>Where twenty (20) or more Bicycle Parking Spaces are required, at least five percent (5%) of the required spaces must provide an additional two feet (2') of space parallel to the length of the bicycle to accommodate tandem bicycles or bicycles with trailers.</p>	<p>Long and Short Term Bicycle Parking Racks will comply with the recommendations put forth in the "City of Cambridge Bicycle Parking Guide" (version 2008 or Later).</p> <p>The project requires 505 Long-Term Bicycle Spaces. Of those, 25 Spaces (5%) will accommodate tandem bicycles or bicycles with trailers</p>	✓
6.000	6.106.1	<p>Access Standards for Bicycle Parking - Primary Access</p> <p>All Bicycle Parking Spaces must be accessible by way of at least one clear, stabilized-surface access route. Such access route shall connect to the Bicycle Parking Spaces from any point or points along the public right of way from which bicyclists would be reasonably expected to approach the site, and shall meet the following additional requirements:</p> <p>a. The primary access route must be at least five (5) feet in width.</p> <p>b. If there is a change in grade from the public right-of-way to the Bicycle Parking Spaces, then the primary access route must have a slope no greater than five percent (5%), or may have a slope of no greater than eight percent (8%) if level landings are provided at every thirty (30) feet of linear distance; or access may be provided by means of an elevator with minimum interior dimensions of eighty (80) inches by fifty-four (54) inches.</p> <p>c. The primary access route must not require lifting bicycles over any steps or stairs.</p> <p>d. All access routes must be clear of obstructions, which shall include Bicycle Parking Spaces, motor vehicle parking spaces and loading spaces; however, doors or gates that must be opened to access the Bicycle Parking Spaces shall not be considered obstructions so long as they may be conveniently opened and closed by bicycle users.</p>	<p>a. The primary route is a minimum of 5'-0" Clear</p> <p>b. The project will have a dedicated bicycle elevator to access Bicycle Rooms on multiple levels. Dimensions will meet the minimum dimensions of 80"x54".</p> <p>c. There are no steps or stairs along the primary route.</p>	✓



# CAMBRIDGE ZONING ORDINANCE CHECKLIST

ARTICLE	SUB SECTION		ZONING ORDINANCE REGULATION	COMPLIANCE	CHECK
6.000	6.107	Required Quantities of Bicycle Parking	Schedule of Long-Term Bicycle Parking Requirements		
6.000	6.107	Long Term Bicycle Parking	Minimum rates of Long-Term Bicycle Parking shall apply to specified categories of land use as set forth below. For specific land uses, the following categories are cross-referenced in the Schedule of Parking and Loading Requirements set forth in Section 6.36 of this Zoning Ordinance. In the case of any inconsistency between the list of included uses as set forth below and the categorization set forth in Section 6.36, the categorization in Section 6.36 shall control.	Long term bicycle parking has been provided per the calculations below.	✓
6.000	6.107	Long Term Bicycle Parking	Category R2 - Townhouse Dwellings, Multifamily Dwellings, Trailer Park or Mobile Home Park:		
6.000	6.107	Long Term Bicycle Parking	1.00 Space per Dwelling unit for the first twenty (20) units in a building	First 20 units = 20 Spaces	✓
6.000	6.107	Long Term Bicycle Parking	1.05 Spaces per Dwelling unit for all units over twenty (20) in a building	Remaining 460 Units = 483 Spaces	✓
6.000	6.107	Long Term Bicycle Parking	Total Long Term Bicycle Parking Spaces Required For R2	Long Term Bicycle Parking 503 Spaces	✓
6.000	6.107	Long Term Bicycle Parking	Category N4 - Retail Stores, Consumer Service Uses, Commercial Recreation and Entertainment		
6.000	6.107	Long Term Bicycle Parking	0.10 space per 1,000 square feet	18,909 GSF = 2 Spaces	✓
6.000	6.107	Long Term Bicycle Parking	Total Long Term Bicycle Parking Spaces Required For N4	Long Term Bicycle Parking 2 Spaces	✓
6.000	6.107	Short Term Bicycle Parking	Minimum rates of Short-Term Bicycle Parking shall apply to specified categories of land use as set forth below. For specific land uses, the following categories are cross-referenced in the Schedule of Parking and Loading Requirements set forth in Section 6.36 of this Zoning Ordinance. In the case of any inconsistency between the list of included uses as set forth below and the categorization set forth in Section 6.36, the categorization in Section 6.36 shall control.	Short term bicycle parking has been provided per the calculations below.	✓
6.000	6.107	Short Term Bicycle Parking	Category R2 - Townhouse Dwellings, Multifamily Dwellings, Trailer Park or Mobile Home Park:		
6.000	6.107	Short Term Bicycle Parking	0.10 Spaces per Dwelling Unit on a Lot	480 Units = 48 Spaces	✓
6.000	6.107	Short Term Bicycle Parking	Total Short Term Bicycle Parking Spaces Required For R2	Short Term Bicycle Parking 48 Spaces	✓



# CAMBRIDGE ZONING ORDINANCE CHECKLIST

ARTICLE	SUB SECTION		ZONING ORDINANCE REGULATION	COMPLIANCE	CHECK
6.000	6.107	Short Term Bicycle Parking	Category N2 - Retail Stores, Consumer Service Establishments		
6.000	6.107	Short Term Bicycle Parking	0.60 space per 1,000 square feet	18,909 GSF = 12 Spaces	✓
6.000	6.107	Short Term Bicycle Parking	Total Long Term Bicycle Parking Spaces Required For N2	Short Term Bicycle Parking 12 Spaces	✓
16.000	16.51	Parking and Loading Requirements	Off-street parking and loading requirements shall be the same as currently specified in Article 6.000 and in the Schedule of Parking and Loading Requirements applicable to the Residence C-3, Office 3, Business B and Industry B districts, except as modified below.	Required parking per category has been provided, see calculations below.	✓
16.000	16.51	Minimum and Maximum Parking Requirements	Accessory off street parking shall be provided as follows:		
16.000	16.51	Residential Uses:	1 space per unit minimum and 1.5 spaces per unit maximum	.5 spaces per dwelling unit have been provided	✓
16.000	16.51	Retail and Consumer Service Uses:	No accessory parking shall be required if the retail and consumer service uses are located on the ground floor and front on and have a public entry directly onto a publicly accessible street.	No retail parking has been provided	✓

MAAB	SECTION		ZONING ORDINANCE REGULATION	COMPLIANCE	CHECK
	23.1	General	Any person who has lawful control of improved or enclosed private property used as off-street parking for businesses, auditoriums, sporting or recreational facilities, cultural centers, or general public use where the public has the right of access as invitees or licensees, shall cause such parking areas, including temporary parking areas to comply with 521 CMR. For parking related to residential and transient lodging facilities, See 521 CMR 8.00: TRANSIENT LODGING FACILITIES and 521 CMR 10.3, Parking Spaces.	All provided parking to comply with 521 CMR.	✓
	23.2.1	Number	Accessible spaces shall be provided as follows:  Total Parking in Lot: 201-300  Required Minimum Number of Accessible Spaces: 7	Total Parking in Garage: 240  Accessible Spaces: 7	✓
	23.2.2		One in every eight accessible spaces, but not less than one, shall be van accessible, See 521 CMR 23.4.7.	Van Spaces : 1	✓

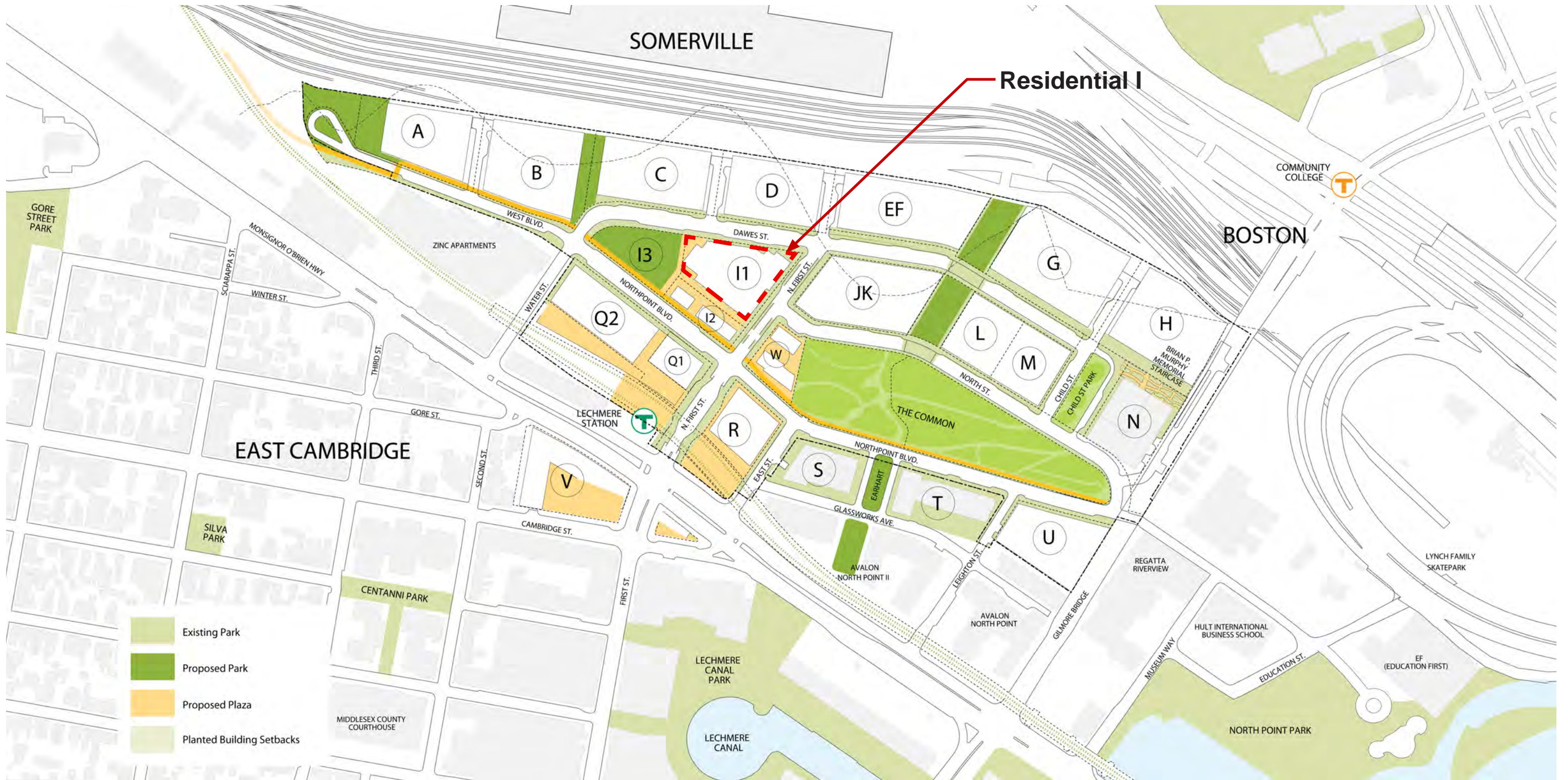


# CAMBRIDGE ZONING ORDINANCE CHECKLIST

MAAB	SECTION		ZONING ORDINANCE REGULATION	COMPLIANCE	CHECK
	23.3.4	Location	<p>Accessible parking spaces shall be located as follows:</p> <p>Garages: In multi-level garages where no elevator is provided, such spaces shall all be located near the accessible entrance. See special van requirement in 521 CMR 23.4.7.</p>	See 521 CMR 23.4.7	✓
	23.4.1	Parking Spaces	<p>Shall Comply with the Following:</p> <p>Width: Accessible parking spaces shall be at least eight feet (8' = 2438mm) wide, plus the access aisle.</p>	See Cambridge Zoning Ordinance 16.6.42 for parking space dimensions	✓
	23.4.2		<p>Length: The length of accessible parking spaces shall be at least the same as for parking spaces generally in accordance with 780 CMR: The State Building Code or local zoning requirements. Parked vehicles shall not reduce the clear width of an accessible route by overhanging or protruding into it.</p>	See Cambridge Zoning Ordinance 16.6.42 for parking space dimensions	✓
	23.4.7		<p>Van Accessible spaces shall comply with the following:</p> <ul style="list-style-type: none"> <li>a. Provide minimum vertical clearance of eight feet, two inches (8'2" = 2489mm) at the parking space and along at least one vehicle access route to such spaces from site entrance(s) and exit(s).</li> <li>b. Each space shall have a sign designating it "Van Accessible" as required by 521 CMR 23.6,</li> <li>c. All such spaces may be grouped on one level of a parking structure.</li> <li>d. Eight foot minimum (8' = 2438mm) wide space.</li> </ul>	The Van access route and Van accessible Space has been accommodated on Parking Level P1	✓

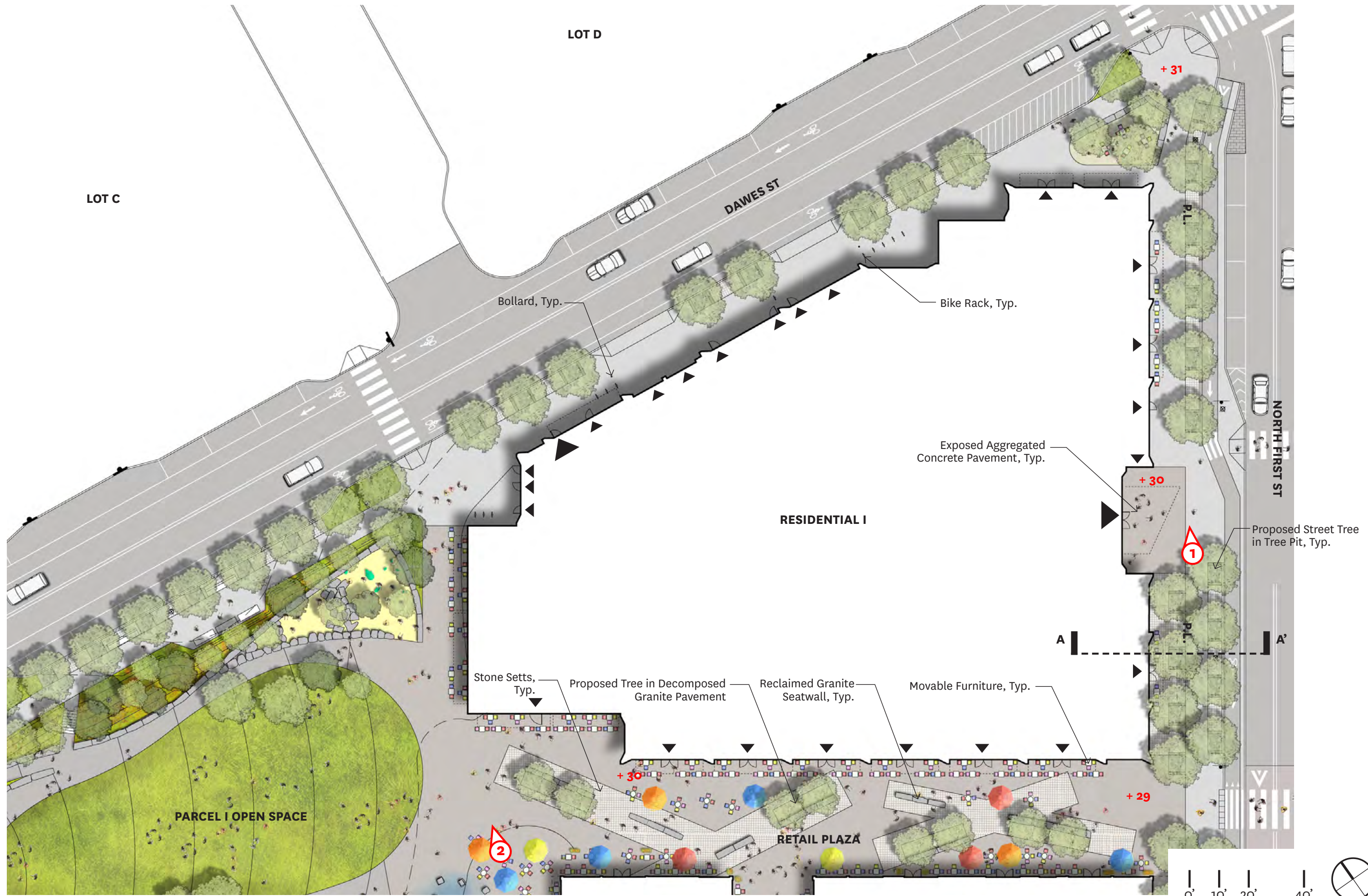


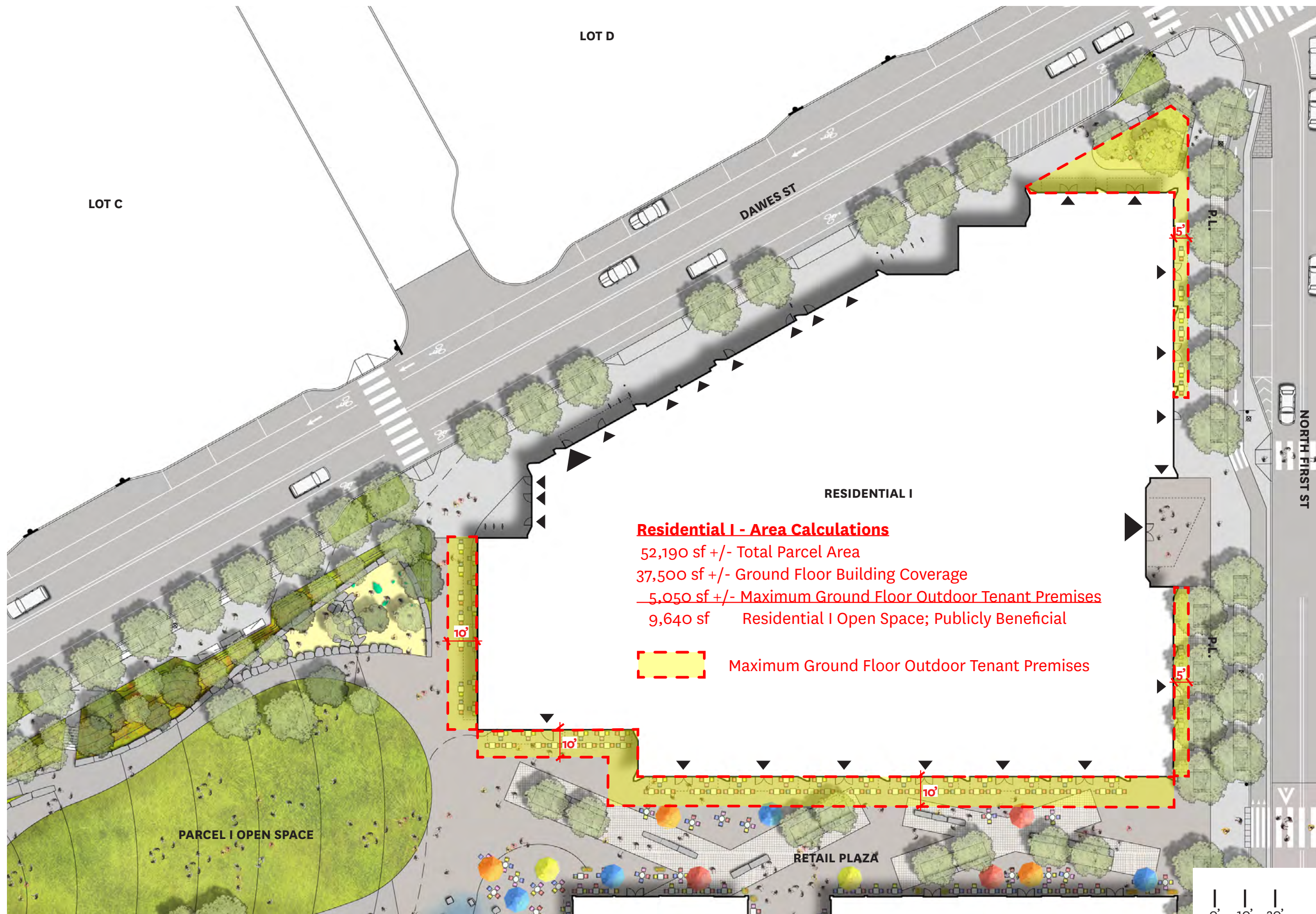


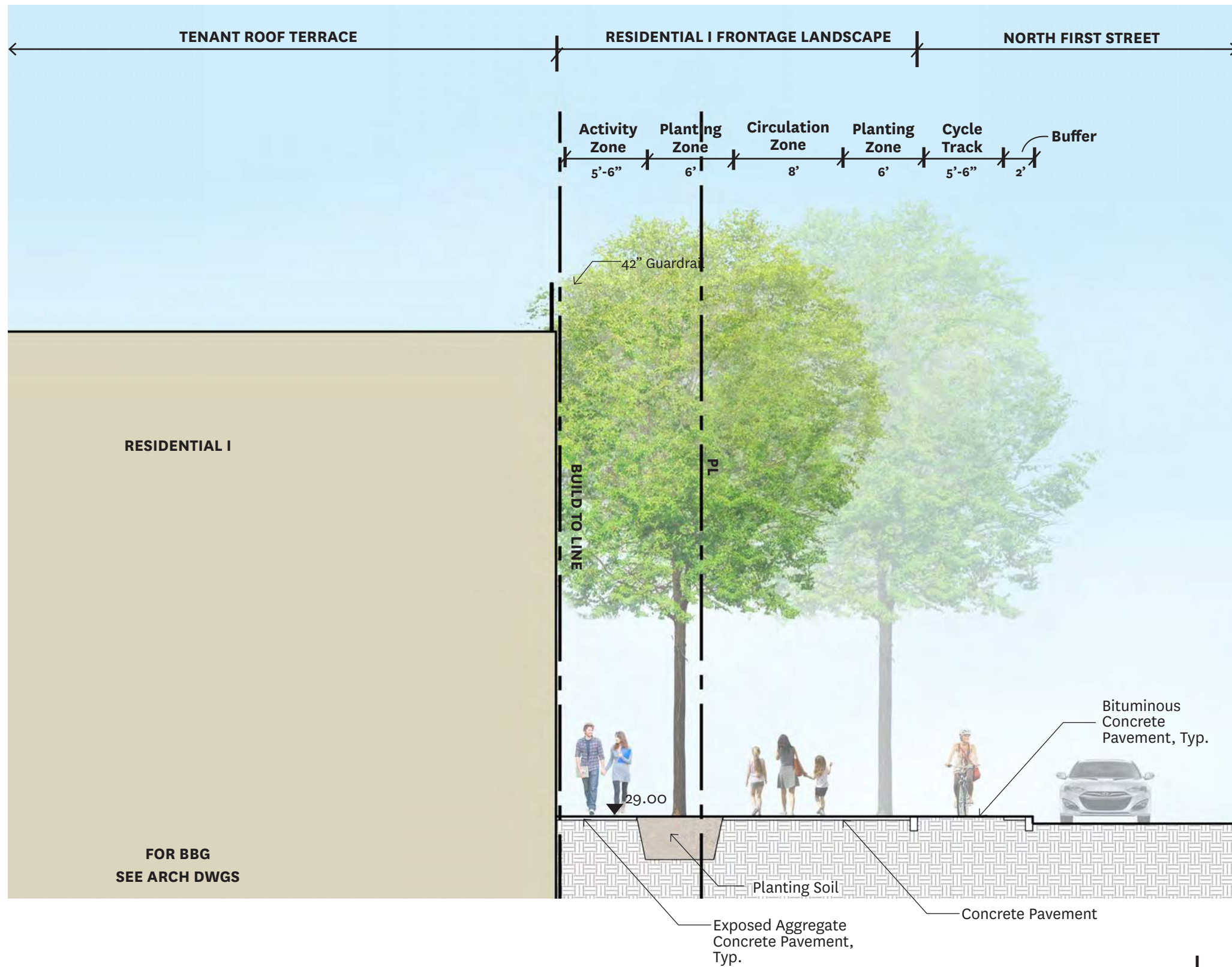












SECTION A-A'





Rendered image is intended for landscape and plaza design review. As a result of the proposed landscape density, views of the building design may be obscured.



Rendered image is intended for landscape and plaza design review. As a result of the proposed landscape density, views of the building design may be obscured.



Stone Setts Pavement



Exposed Aggregate Concrete Pavement



Decomposed Granite Pavement



Concrete Pavement



Reclaimed Granite Block Seatwalls



Planter, Clustered



Planter, Linear



Bike Rack



Trash Receptacle



Bench



Backless Bench



Movable Tables and Chairs



Movable Umbrella



*Platanus x acerifolia* 'Bloodgood'  
Bloodgood Plane Tree



*Ginkgo biloba*  
Ginkgo



*Gleditsia triacanthos* var. *inermis*  
Skyline Honeylocust



*Gymnocladus dioica* 'Espresso'  
Espresso Coffee Tree

All trees are included in the City of Cambridge recommended species list.



*Liquidambar styraciflua*  
Sweet Gum



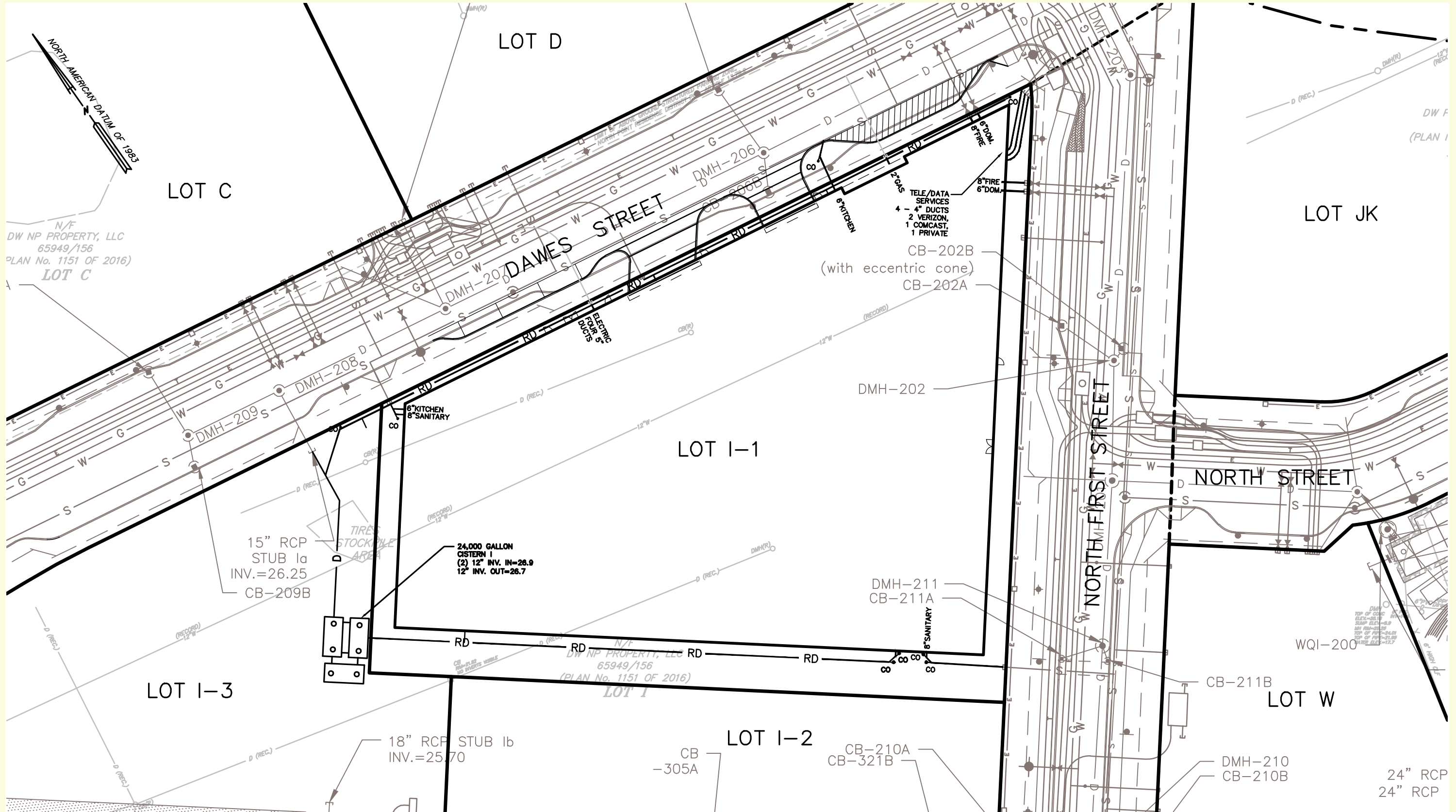
*Styphnolobium japonicum*  
Scholar Tree

Page	Section	Guideline Description	Compliance	Check
47	3.2A Character	Use streetscape elements such as trees, benches, signage, and lighting to support active pedestrian uses and to reinforce the character and identity of each area.	The streetscapes of Parcel I are planted with high canopy trees with furniture consistent with the rest of Cambridge Crossing, including fixed benches, movable tables and chairs, bike racks, trash receptacles, street and pedestrian scale lighting to support a lively and comfortable pedestrian environment.	✓
47	3.2A Character	Design Streets to encourage pedestrian and cycle activity, and to control vehicle speed in residential areas.	The streetscapes of Parcel I are designed to consider vehicular, pedestrian and cycle activity. Raised and protected bike lanes protect cyclists from vehicles. Street trees and streetscape treatments separate pedestrians from cyclists.	✓
47	3.2A Character	In the desing of new streets, pathways, and parks, provide pedestrian-scale lighting to enhance pedestrian activity.	Pedestrian scale lighting is introduced, enhancing the pedestrian activity along the Parcel I streetscape and the retail areas of the buildings.	✓
48	3.2.1 First Street	First Street should serve as a green connection into NorthPoint linking the neighborhood to NorthPoint Common and other interior spaces.	A double row of street trees is planted along First St to the Common, emphasising First Street's role as a major green connector through the neighborhood.	✓
48	3.2.1 First Street	The goal of First Street is to connect NorthPoint to East Cambridge with a vibrant, friendly pedestrian retail experience.	The streetscape of Parcel I along First Street, establishes First Street as a connector with a vibrant, friendly pedestrian retail environment. The high canopy trees, street furniture and generous sidewalks support this use.	✓



# Cambridge Crossing

Cambridge, Massachusetts

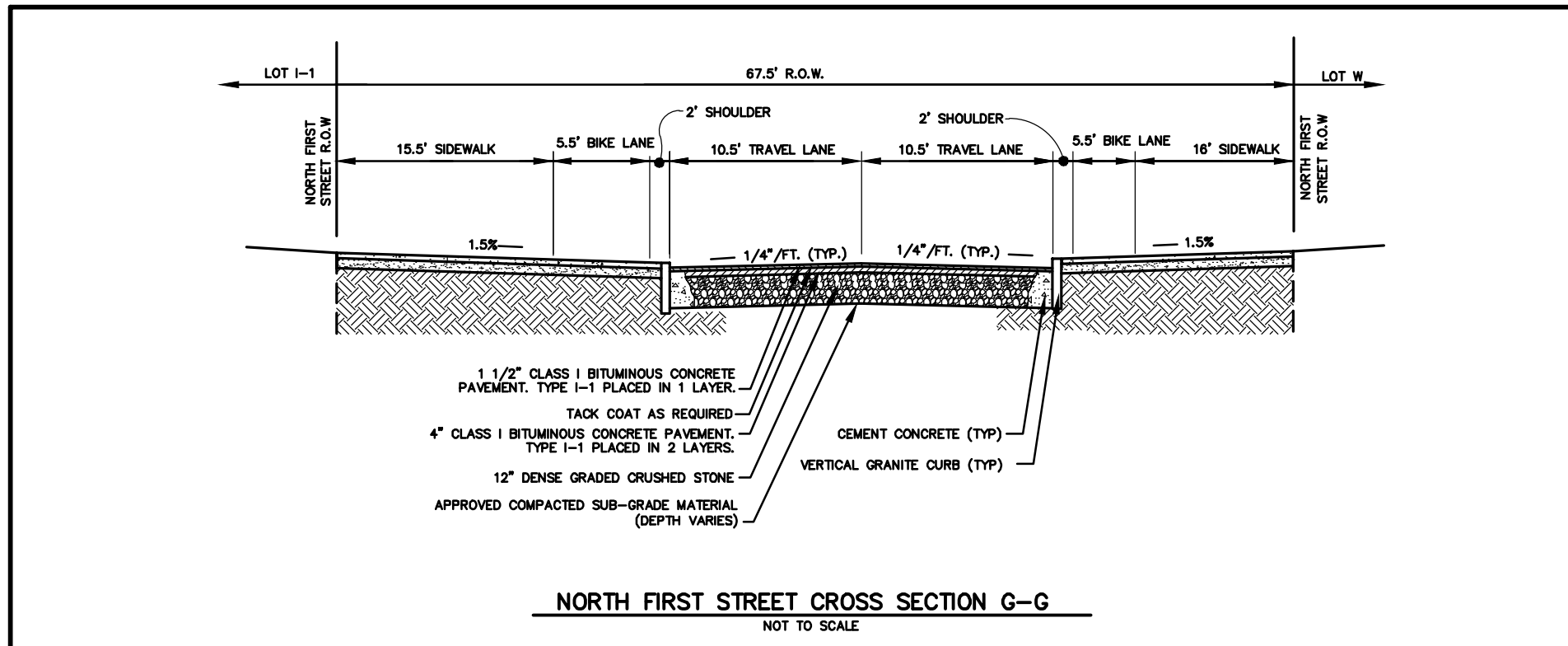
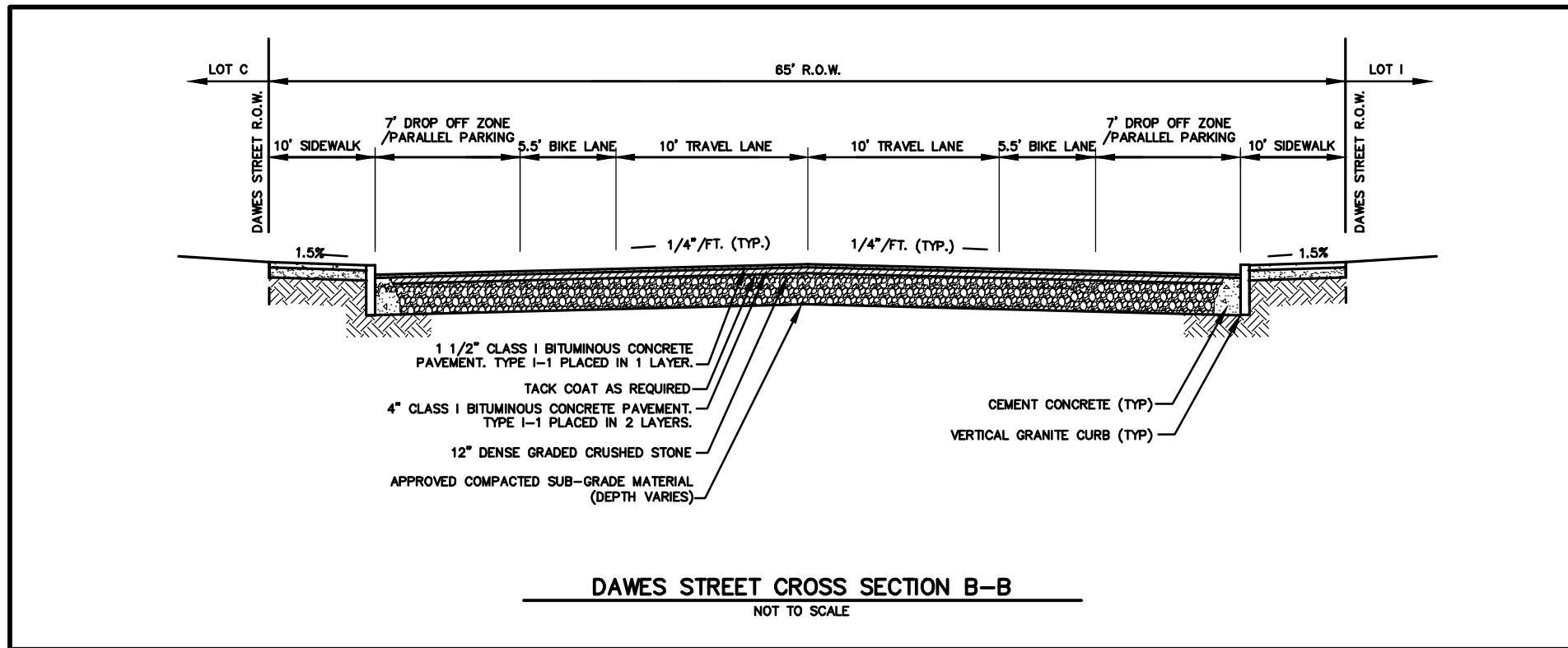


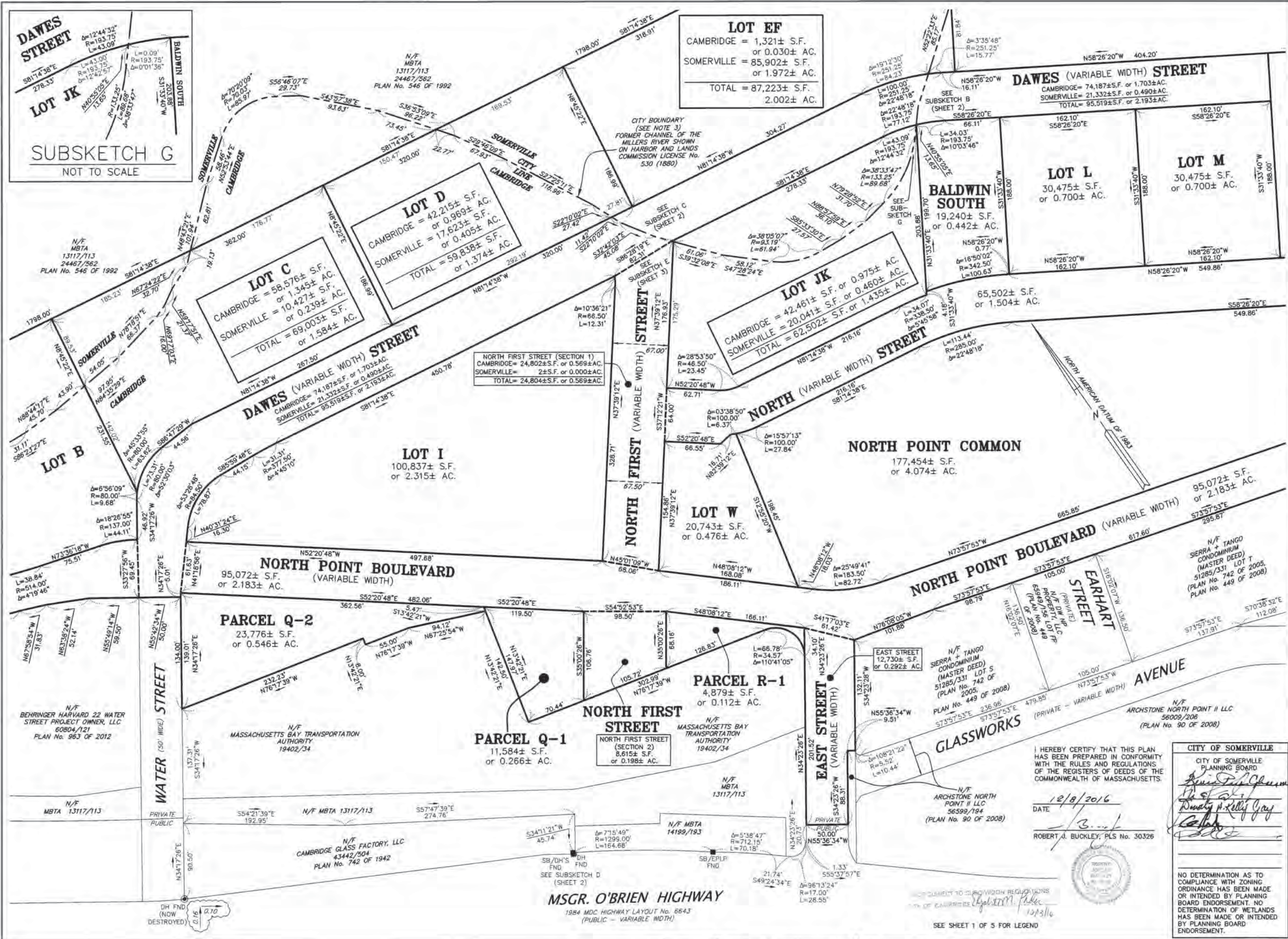
IN PROGRESS  
 2/15/18

## Lot I Residential Site Plan

# Cambridge Crossing

Cambridge, Massachusetts





**LOT EF**  
 CAMBRIDGE = 1,321± S.F.  
 or 0.030± AC.  
 SOMERVILLE = 85,902± S.F.  
 or 1.972± AC.  
 TOTAL = 87,223± S.F.  
 2.002± AC.

**DAWES STREET**  
**LOT JK**  
**SUBSKETCH G**  
 NOT TO SCALE

**LOT C**  
 CAMBRIDGE = 58,576± S.F.  
 or 1.345± AC.  
 SOMERVILLE = 10,427± S.F.  
 or 0.239± AC.  
 TOTAL = 69,003± S.F.  
 or 1.584± AC.

**LOT D**  
 CAMBRIDGE = 42,215± S.F.  
 or 0.969± AC.  
 SOMERVILLE = 17,623± S.F.  
 or 0.405± AC.  
 TOTAL = 59,838± S.F.  
 or 1.374± AC.

**LOT JK**  
 CAMBRIDGE = 42,461± S.F. or 0.975± AC.  
 SOMERVILLE = 20,041± S.F. or 0.450± AC.  
 TOTAL = 62,502± S.F. or 1.435± AC.

**BALDWIN SOUTH**  
 19,240± S.F.  
 or 0.442± AC.

**LOT L**  
 30,475± S.F.  
 or 0.700± AC.

**LOT M**  
 30,475± S.F.  
 or 0.700± AC.

**LOT B**  
 CAMBRIDGE = 24,802± S.F. or 0.569± AC.  
 SOMERVILLE = 2± S.F. or 0.000± AC.  
 TOTAL = 24,804± S.F. or 0.569± AC.

**LOT I**  
 100,837± S.F.  
 or 2.315± AC.

**LOT W**  
 20,743± S.F.  
 or 0.476± AC.

**NORTH POINT COMMON**  
 177,454± S.F.  
 or 4.074± AC.

**PARCEL Q-2**  
 23,776± S.F.  
 or 0.546± AC.

**PARCEL R-1**  
 4,879± S.F.  
 or 0.112± AC.

**PARCEL Q-1**  
 11,584± S.F.  
 or 0.266± AC.

**NORTH FIRST STREET**  
 NORTH FIRST STREET (SECTION 2)  
 8,615± S.F.  
 or 0.198± AC.

N/F BEHRINGER HARVARD 22 WATER STREET PROJECT OWNER, LLC  
 60804/121  
 PLAN No. 963 OF 2012

N/F MASSACHUSETTS BAY TRANSPORTATION AUTHORITY  
 19402/34

N/F MASSACHUSETTS BAY TRANSPORTATION AUTHORITY  
 19402/34

N/F TANGO CONDOMINIUM (MASTER DEED) 51285/331 LOT S (PLAN No. 742 OF 2005, 2005)  
 PLAN No. 449 OF 2008

N/F ARCHSTONE NORTH POINT II LLC  
 56009/206  
 (PLAN No. 90 OF 2008)

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN CONFORMITY WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.

DATE: 12/8/2016  
 ROBERT J. BUCKLEY, PLS No. 30326

**CITY OF SOMERVILLE**  
 CITY OF SOMERVILLE PLANNING BOARD  
 [Signatures]



**MSGR. O'BRIEN HIGHWAY**  
 1984 MDC HIGHWAY LAYOUT No. 6643  
 (PUBLIC - VARIABLE WIDTH)

PREPARED FOR:  
**DW NP PROPERTY, LLC**  
 c/o DIVCO WEST REAL ESTATE SERVICES, LLC  
 575 MARKET STREET  
 35th FLOOR  
 SAN FRANCISCO, CA 94105

RECORD OWNERS:  
**DW NP PROPERTY, LLC**  
 65949/156  
 PARCEL 1  
 PARCEL 2  
 "CENTRAL PARK" PARCEL  
 (PLAN No. 597 OF 2010)  
 (MIDDLESEX COUNTY)

54949/293  
 PARCEL 1  
 PARCEL 2  
 (PLAN BOOK 2010 PAGES 270, 271)  
 (SUFFOLK COUNTY)

5	
4	
3	
2	
1	
0	12/08/2016 INITIAL ISSUE
ISSUE DATE	DESCRIPTION
ATL	MEB
FLD	CALC
	DWN
	CHK'D
	RJB

Middlesex Registry of Deeds,  
 Southern District  
 Cambridge, Massachusetts  
 Plan No. 151 4/5 of 2016  
 rec'd 12-13 2016  
 at H M M  
 Attest  
 [Signature]  
 Register

**PLAN OF LAND**  
**NORTHPOINT IN CAMBRIDGE AND SOMERVILLE, MA**  
 (MIDDLESEX COUNTY) AND BOSTON, MA (SUFFOLK COUNTY)

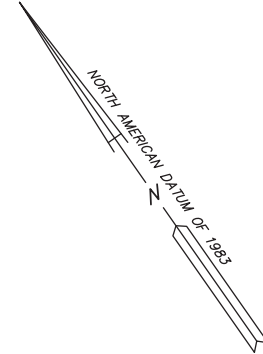
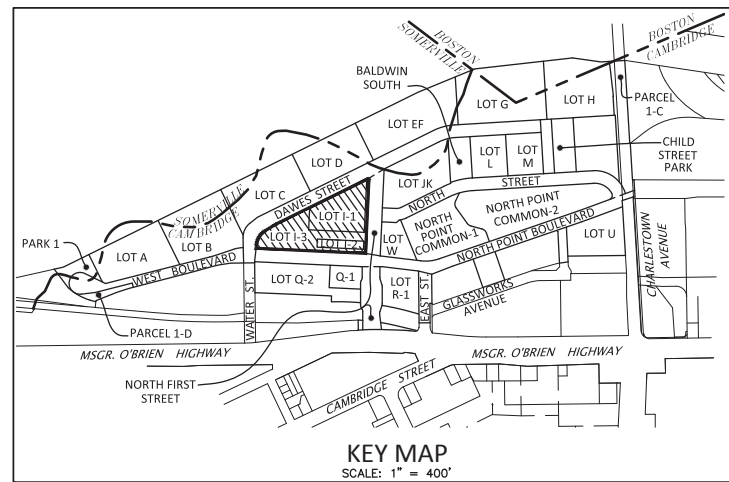
PREPARED BY:  
**BEALS+THOMAS**  
 Civil Engineers + Landscape Architects + Land Surveyors + Planners + Environmental Specialists

BEALS AND THOMAS, INC.  
 Reservoir Corporate Center  
 144 Turnpike Road  
 Southborough, Massachusetts 01772-2104  
 T 508.366.0560 | www.bealsandthomas.com

DATE: DECEMBER 8, 2016 METERS  
 0 25 50 100 150  
 SCALE: 1"=50' FEET

BTL JOB No. 2084-02  
 BTL PLAN No. 208402P244B-004  
**PL-4**  
 SHEET 4 OF 5

1151 of 2016 4/5



CITY BOUNDARY  
(SEE NOTE 3)  
FORMER CHANNEL OF THE  
MILLERS RIVER SHOWN  
ON HARBOR AND LANDS  
COMMISSION LICENSE No.  
530 (1880)

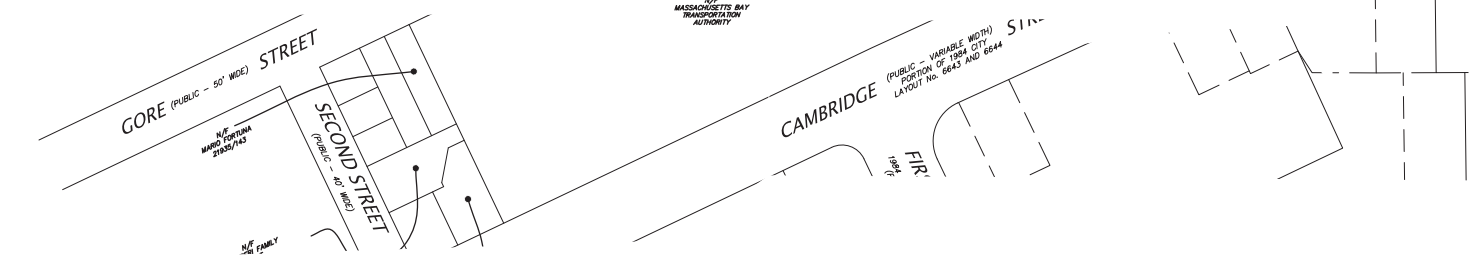
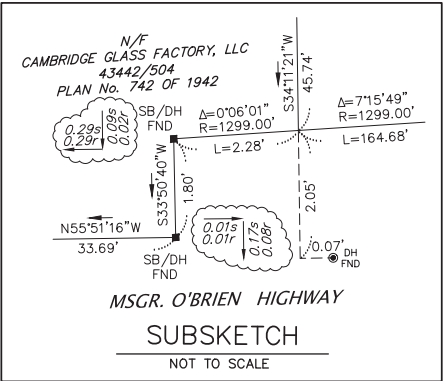
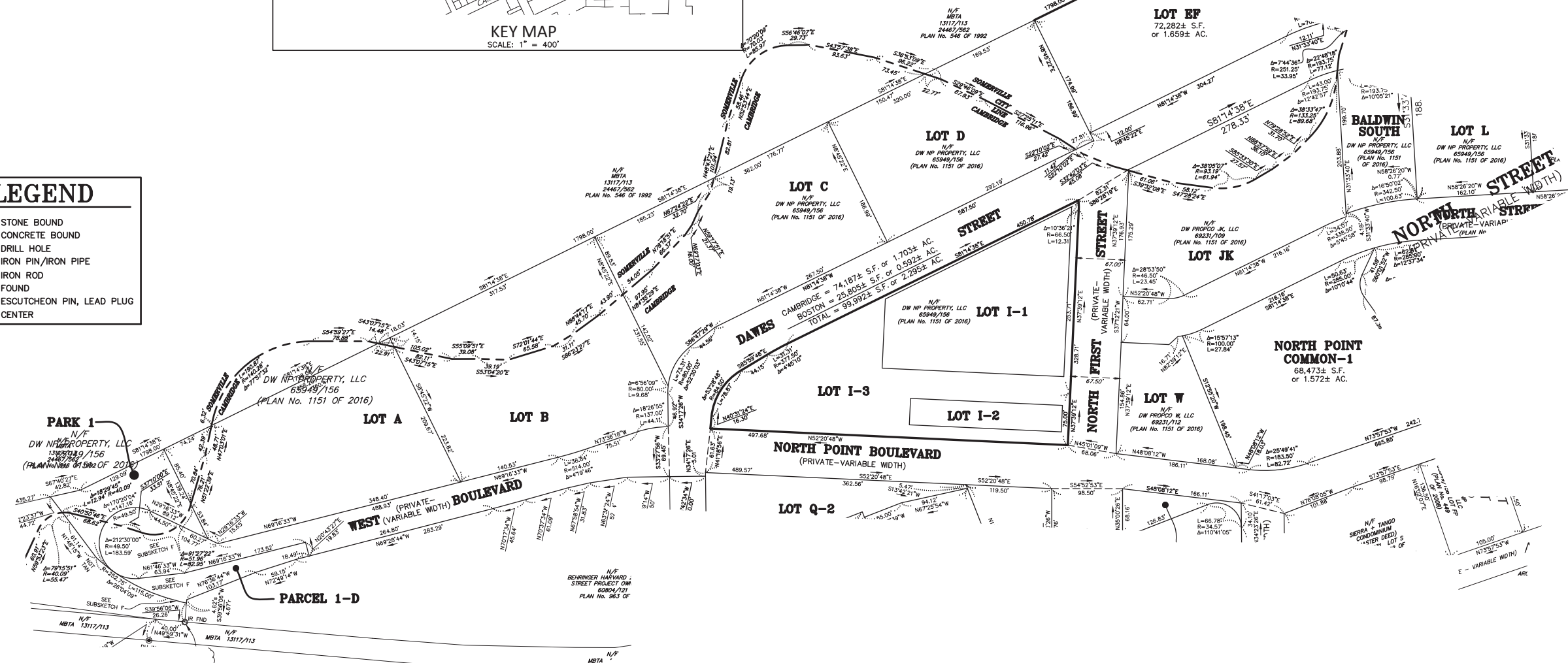
I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED  
IN CONFORMITY WITH THE RULES AND REGULATIONS OF  
THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF  
MASSACHUSETTS.

DATE \_\_\_\_\_

ROBERT J. BUCKLEY, PLS No. 30326

**LEGEND**

- SB STONE BOUND
- CB CONCRETE BOUND
- DH DRILL HOLE
- IP IRON PIN/IRON PIPE
- IR IRON ROD
- FND FOUND
- EPLP ESCUTCHEON PIN, LEAD PLUG
- CTR. CENTER



Final signed/sealed plan to  
be submitted at a later date.

PREPARED FOR:  
**DW NP  
PROPERTY, LLC**  
c/o DIVCO WEST REAL  
ESTATE INVESTMENTS  
200 STATE STREET  
12th FLOOR  
BOSTON, MA 02109

RECORD OWNERS:  
**DW NP  
PROPERTY, LLC**  
65949/156  
LOT I  
PLAN No. 1151 OF 2016

4				
3				
2				
1	XX/XX/2018	REVISE ABUTTERS AND LOT I		
0	12/21/2016	INITIAL ISSUE		
	ISSUE DATE	DESCRIPTION		
	ATL	MEB	MEB	RJB
	FLD	CALC	DWN	CHK'D

**IN PROGRESS**  
2/26/2018

**PLAN OF LAND**  
**CAMBRIDGE  
CROSSING**  
IN  
**CAMBRIDGE, MA**  
(MIDDLESEX COUNTY)

PREPARED BY:  
**BEALS + THOMAS**  
Civil Engineers + Landscape Architects +  
Land Surveyors + Planners +  
Environmental Specialists

BEALS AND THOMAS, INC.  
Reservoir Corporate Center  
144 Turnpike Road  
Southborough, Massachusetts 01772-2104  
T 508.366.0560 | www.bealsandthomas.com

DATE: DECEMBER 21, 2016  
SCALE: 1"=50'  
BTI JOB NO. 2084.02  
BTI PLAN NO. 208402P304B-001  
SHEET 1 OF 1

**PL**

## NORTHPOINT – PARCEL I

CAMBRIDGE, MA

### PEDESTRIAN WIND STUDY

RWDI #1603151

March 27, 2018

#### SUBMITTED TO

**Devanshi Purohit**

Senior Associate

Senior Urban Designer

Devanshi Purohit

purohit@cbtarchitects.com

#### CBT Architects

110 Canal Street,  
Boston MA 02114  
617 646 5132

#### SUBMITTED BY

**Priya Patel, B.Eng.**

Technical Coordinator

Priya.Patel@rwdi.com

**Jordan Gilmour, P.Eng.**

Senior Project Manager / Principal

Jordan.Gilmour@rwdi.com

#### RWDI

600 Southgate Drive,  
Guelph, Canada, N1G 4P6  
T: 519.823.1311  
F: 519.823.1316



## SUMMARY

The following document provides the preliminary results for the Pedestrian Wind Study conducted for the proposed Northpoint - Parcel I (Project) located in Cambridge, Massachusetts. The project site, photographs of the wind tunnel study model and the wind statistics recorded at the Boston Logan International Airport used in the study are shown in **Images 1, 2, and 3**, respectively. The RWDI Pedestrian Wind Criteria, which deal with both pedestrian safety and comfort as they relate to wind force, are also described to assist with the interpretation of the results presented.

The predicted wind comfort and safety conditions pertaining to the site configuration assessed are graphically depicted on a site plan in **Figures 1 through 3**. These conditions and the associated wind speeds are presented in **Table 1**. The following configuration was tested:

- Future Configuration: Parcel I in the presence of existing and future surrounding buildings, including existing and future landscaping

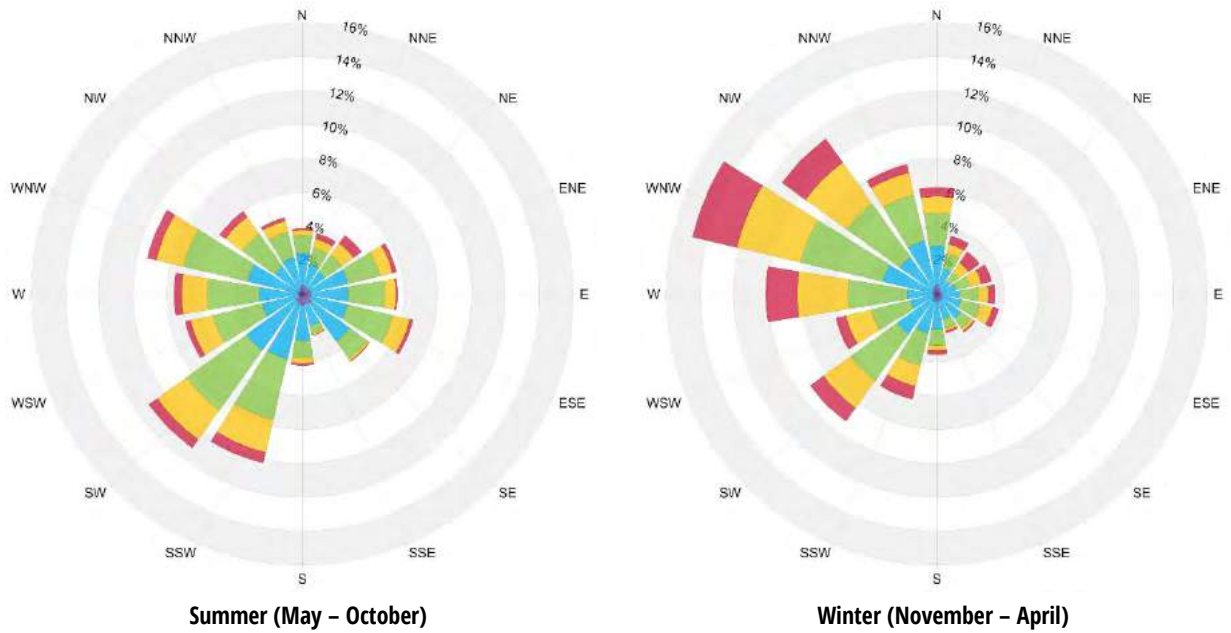
While referring to the RWDI Pedestrian Wind Criteria description that follows, we encourage the design team to review the results and assess them against the intended pedestrian usage at specific locations. If there are locations where improved conditions are desired, the RWDI team is prepared to discuss and suggest conceptual wind control strategies. Additional commentary regarding background on wind flow patterns, wind comfort levels, and any further recommendations for wind control measures to help moderate wind activity in areas of high wind activity will be presented within the final report. Prior to issuing the report, we suggest that we have a teleconference to go over the results and discuss the types/locations/feasibilities of possible wind control measures.



Image 1: Site plan – Aerial view of site and surroundings (courtesy of Google™ Earth)



Image 2: Wind tunnel study model - proposed configuration



Wind Speed (km/h)	Probability (%)	
	Summer	Winter
Calm	2.5	2.1
1-5	7.5	5.6
6-10	35.3	27.0
11-15	34.8	31.7
16-20	15.1	20.9
>20	4.8	12.6

**Image 3: Directional distribution of winds approaching Boston Logan International Airport from 1987 to 2017**





## RWDI PEDESTRIAN WIND CRITERIA

The RWDI pedestrian wind criteria are used in the current study. These criteria have been developed by RWDI through research and consulting practice since 1974. They have also been widely accepted by municipal authorities as well as by the building design and city planning community.

### RWDI Pedestrian Wind Criteria

Comfort Category	GEM Speed (mph)	Description
<b>Sitting</b>	≤ 6	Calm or light breezes desired for outdoor restaurants and seating areas where one can read a paper without having it blown away
<b>Standing</b>	≤ 8	Gentle breezes suitable for main building entrances, bus stops, and other places where pedestrians may linger
<b>Strolling</b>	≤ 10	Moderate winds that would be appropriate for window shopping and strolling along a downtown street, plaza or park
<b>Walking</b>	≤ 12	Relatively high speeds that can be tolerated if one's objective is to walk, run or cycle without lingering
<b>Uncomfortable</b>	> 12	Strong winds of this magnitude are considered a nuisance for all pedestrian activities, and wind mitigation is typically recommended

**Notes:**

- (1) Gust Equivalent Mean (GEM) Speed = max (mean speed, gust speed/1.85); and;
- (2) GEM speeds listed above based on a seasonal exceedance of 20% of the time between 6:00 and 23:00.

Safety Criterion	Gust Speed (mph)	Description
<b>Exceeded</b>	> 56	Excessive gust speeds that can adversely affect a pedestrian's balance and footing. Wind mitigation is typically required.

**Notes:**

Based on an annual exceedance of 9 hours or 0.1% of the time for 24 hours a day.

A few additional comments are provided below to further explain the wind criteria and their applications.

- Both mean and gust speeds can affect pedestrian comfort and their combined effect is typically quantified by a Gust Equivalent Mean (GEM) speed, with a gust factor of 1.85.
- Instead of standard four seasons, two periods of summer (May to October) and winter (November to April) are adopted in the wind analysis, because in a cold climate such as that found in Cambridge, there are distinct differences in pedestrian outdoor behaviors between these two time periods.



- Nightly hours between midnight and 5 o'clock in the morning are excluded from the wind analysis for comfort since limited usage of outdoor spaces is anticipated, while wind safety analysis is conducted for a 24-hour period.
- A 20% exceedance is used in these criteria to determine the comfort category, which suggests that wind speeds would be comfortable for the corresponding activity at least 80% of the time or four out of five days.
- Only gust wind speeds need to be considered in the wind safety criterion. These are usually rare events, but deserve special attention in city planning and building design due to their potential safety impact on pedestrians.

These criteria for wind forces represent average wind tolerance. They are sometimes subjective and regional differences in wind climate and thermal conditions as well as variations in age, health, clothing, etc. can also affect people's perception of the wind climate. Comparisons of wind speeds for different building configurations are the most objective way in assessing local pedestrian wind conditions.

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# FIGURES



**LEGEND:**

<b>MEAN SPEED CATEGORIES:</b>		<b>SENSOR LOCATION:</b>	
Sitting		Grade Level	
Standing		<b>LANDSCAPING:</b>	
Strolling		Existing Trees	
Walking		Proposed Trees	
Uncomfortable			

**Pedestrian Wind Comfort Conditions**  
 Proposed Configuration  
 Summer (May to October, 6:00 to 23:00)  
 Northpoint - Parcel I - Cambridge, MA

 True North	Drawn by: ck Figure: 1	
	Approx. Scale: 1"=80' Date Revised: Mar. 5, 2018	



**LEGEND:**

MEAN SPEED CATEGORIES:

- Sitting
- Standing
- Strolling
- Walking
- Uncomfortable

SENSOR LOCATION:

- Grade Level

LANDSCAPING:

- Existing Trees
- Proposed Trees

**Pedestrian Wind Comfort Conditions**  
 Proposed Configuration  
 Winter (November to April, 6:00 to 23:00)  
 Northpoint - Parcel I - Cambridge, MA

True North


Drawn by: ck	Figure: 2
Approx. Scale: 1"=80'	
Project #1603151	Date Revised: Mar. 5, 2018



**LEGEND:**


Effective Gust Speed CATEGORIES:  
 Acceptable   
 Unacceptable 

SENSOR LOCATION:  
 Grade Level 

LANDSCAPING:  
 Existing Trees   
 Proposed Trees 

**Pedestrian Wind Safety Conditions**  
 Future Configuration  
 Annual (January to December, 0:00 to 23:00)


Northpoint - Parcel I - Cambridge, MA

True North 

Drawn by: ck Figure: 3

Approx. Scale: 1"=80'

Project #1603151 Date Revised: Mar. 5, 2018



The background features a large, light beige curved shape on the right side, and a blue curved shape on the left side, separated by a white border.

# TABLES

**Table 1: Pedestrian Wind Comfort and Safety Conditions**

Location	Configuration	Wind Comfort				Wind Safety	
		Summer		Winter		Annual	
		Speed (mph)	Rating	Speed (mph)	Rating	Speed (mph)	Rating
1	Proposed	8	Standing	10	Strolling	39	Pass
2	Proposed	7	Standing	8	Standing	35	Pass
3	Proposed	6	Sitting	6	Sitting	25	Pass
4	Proposed	7	Standing	7	Standing	32	Pass
5	Proposed	9	Strolling	10	Strolling	44	Pass
6	Proposed	9	Strolling	10	Strolling	42	Pass
7	Proposed	7	Standing	8	Standing	35	Pass
8	Proposed	6	Sitting	7	Standing	33	Pass
9	Proposed	10	Strolling	11	Walking	45	Pass
10	Proposed	9	Strolling	12	Walking	45	Pass
11	Proposed	10	Strolling	12	Walking	43	Pass
12	Proposed	7	Standing	9	Strolling	35	Pass
13	Proposed	6	Sitting	8	Standing	30	Pass
14	Proposed	6	Sitting	7	Standing	28	Pass
15	Proposed	9	Strolling	11	Walking	41	Pass
16	Proposed	7	Standing	7	Standing	33	Pass
17	Proposed	8	Standing	8	Standing	39	Pass
18	Proposed	8	Standing	10	Strolling	35	Pass
19	Proposed	7	Standing	9	Strolling	34	Pass
20	Proposed	7	Standing	8	Standing	34	Pass
21	Proposed	9	Strolling	10	Strolling	43	Pass
22	Proposed	8	Standing	9	Strolling	44	Pass
23	Proposed	7	Standing	8	Standing	34	Pass



**Table 1: Pedestrian Wind Comfort and Safety Conditions**

Location	Configuration	Wind Comfort				Wind Safety	
		Summer		Winter		Annual	
		Speed (mph)	Rating	Speed (mph)	Rating	Speed (mph)	Rating
24	Proposed	7	Standing	7	Standing	29	Pass
25	Proposed	8	Standing	9	Strolling	37	Pass
26	Proposed	8	Standing	8	Standing	37	Pass
27	Proposed	8	Standing	8	Standing	39	Pass
28	Proposed	7	Standing	8	Standing	30	Pass
29	Proposed	7	Standing	8	Standing	32	Pass
30	Proposed	6	Sitting	7	Standing	27	Pass
31	Proposed	6	Sitting	6	Sitting	24	Pass

Seasons	Hours	Comfort Speed (mph) (20% Seasonal Exceedance)	Safety Speed (mph) (0.1% Annual Exceedance)
Summer May - October	6:00 - 23:00 for comfort	≤ 6 Sitting	≤ 56 Pass
Winter November - April	0:00 - 23:00 for safety	7 - 8 Standing	> 56 Exceeded
<b>Configurations</b>		9 - 10 Strolling	
Proposed	With the proposed development and future surroundings	11 - 12 Walking	
		> 12 Uncomfortable	