



# Cambridge Crossing

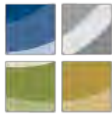
Cambridge, Massachusetts

## *Design Review Application – Parcel Q1*



*Presented by:*

**DW NP Property, LLC**  
c/o DivcoWest Real Estate Investments  
200 State Street, 12<sup>th</sup> Floor  
Boston, MA 02109



**BEALS + THOMAS**

*Prepared by:*

**Beals and Thomas, Inc.**  
Reservoir Corporate Center  
144 Turnpike Road  
Southborough, MA 01772

*In collaboration with:*

**Prellwitz Chilinski Associates**  
**Michael Van Valkenburgh Associates, Inc.**  
**Galluccio & Watson, LLP**  
**Goulston & Storrs PC**

*Submitted in Compliance with the City of Cambridge Zoning Ordinance and M.G.L. c.40A*

**December 5, 2017**



# BEALS + THOMAS

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December 5, 2017

Mr. H. Theodore Cohen, Chair  
Cambridge Planning Board  
344 Broadway  
Cambridge, MA 02139

Via: Hand Delivery

Reference: Cambridge Crossing Parcel Q1 Design Review  
PB#179  
Cambridge, Massachusetts  
B+T Project No. 2084.02

Dear Chairman Cohen and Members of the Board:

On behalf of the Applicant, DW NP Property, LLC (an affiliate of DivcoWest), Beals and Thomas, Inc. respectfully submits this Design Review Application for Parcel Q1 (the Site), which is part of the larger Cambridge Crossing development.

The Parcel Q1 project is the construction of an 18,844 sf retail and office building. The proposed structure on Parcel Q1 is located entirely within Cambridge. A design review submission for Parcel Q1 was previously submitted and presented before the Planning Board; however, DivcoWest requested a continuance of the hearing so that the comments made by the Planning Board could be addressed. This application represents a resubmission of the Site for design review. After the initial submission, the revised subdivision plan creating new boundaries for Parcel Q1, and as a minor modification to the Special Permit to increase the amount of allowable GFA on the Site were approved by the Planning Board.

As shown on the master plan included as part of this Application, the Site is bounded by North First Street to the east, North Point Boulevard to the north, Parcel Q2 to the west, and the future Green Line Extension to the south. The attached application is submitted in accordance with Special Permit #179 (through Major Amendment #6), Condition 10, and the City of Cambridge filing requirements for Large Project Review, pursuant to Section 19.43 of the City of Cambridge Zoning Ordinance (the Ordinance).

The Site is currently undeveloped vacant land. It is one of twenty (20) building parcels in the Cambridge Crossing mixed-use development. To date, condominium buildings on Lot S and Lot T, a rental residential building on Lot N, The Common (formerly known as NorthPoint Common), Child Street Open Space and related infrastructure and other public amenities (including the Brian P. Murphy Memorial Staircase) have been constructed in NorthPoint. In addition, Parcel JK has gone through Design Review in Cambridge and Somerville, building permits have issued in both cities for, and construction activities have commenced on, said Parcel.

The surrounding roadway network was approved by the Planning Board on September 2, 2016, as part of Major Amendment #6, and is currently under construction. Most recently, the Applicant received Design Review Approval for retail buildings on Parcel W.

As part of the attached application, we have submitted fifteen (15) copies, as well as a flash drive containing an electronic version, of the following materials for review by the Cambridge Planning Board:

- Site Plans;
- Cross-sections of Floor Plans;
- Architectural Elevations;
- A Zoning Compliance Summary;
- Wind Study;
- Acoustical Report and Noise Mitigation Narrative;
- Preliminary Signage Plan;
- Compliance Checklist – Zoning Ordinance and NorthPoint Design Guidelines;
- Building and site model, at a scale of one inch to 40 feet, inserted into a larger model encompassing the entire Development Parcel;
- LEED© compliance checklist;
- Shadow study;
- Exterior lighting plan depicting site, façade, and rooftop lighting; and
- Materials showing cross-sections of abutting streets.

There are no changes proposed to the approved uses or massing on the Site nor are there any changes to the layout of roads serving the Site from that shown on the approved 40-scale Roadway Network Schematic Plan.

The Cambridge Crossing team is excited to meet with the Planning Board to review and discuss the proposed project. Thank you for your consideration of this application.

Very truly yours,

BEALS AND THOMAS, INC.



John P. Gelcich, AICP  
Senior Planner

JPG/aak/208402PT037

**CAMBRIDGE CROSSING**

**DEVELOPMENT STATUS TABLE**

**Phase 1a**

<b>Building</b>	<b>Use(s)</b>	<b>Approved GFA per Special Permit Appendix I</b>	<b>GFA approved in thru Design Review</b>	<b>Project Status (i.e., Special Permit, Design Review Completed, Under Construction, Construction Completed)</b>
N	Residential	394,000	394,000 <sup>1</sup>	Construction Completed. Occupied.
	Retail	8,600	8,600	Construction Completed. Occupied.
S	Residential	112,398	112,398	Construction Completed. Occupied.
T	Residential	242,194	242,194	Construction Completed. Occupied.
JK	Office/Laboratory	370,000 Total	351,192	Under construction.
	Retail	TBD	14,700	Under construction.
W	Retail	18,000	16,337	Design Review Complete.
Q1	Retail	17,675 <sup>2</sup>		Minor Amendment Approved for GFA Increase. Revised Design Review to be submitted.
L	Residential	286,000 Total		Special Permit approval. Design Review timing TBD.
	Retail	TBD (Allowed)		Special Permit approval. Design Review timing TBD.
M	Residential	208,400 Total		Special Permit approval. Design Review timing TBD.
	Retail	TBD (Required)		Special Permit approval. Design Review timing TBD.
I	Residential	390,000 Total		Special Permit approval. Design Review timing TBD.
	Retail	TBD		Special Permit approval. Design Review timing TBD.

<sup>1</sup> Development of Parcels N, S and T was completed before issuance of Major Amendment No. 6, and, therefore, the revision of Appendix I. As a result, Appendix I reflects the as-built GFA of each of N, S and T.

<sup>2</sup> Increased by Amendment No. 7 (Minor) from 14,000 square feet of GFA to 17,675 square feet of GFA.

**Phase 1b**

<b>Building</b>	<b>Use(s)</b>	<b>Approved GFA per Special Permit Appendix I</b>	<b>GFA approved in thru Design Review</b>	<b>Project Status (i.e., Special Permit, Design Review Completed, Under Construction, Construction Completed)</b>
G	Office/Laboratory	410,000	451,000	Special Permit approval. Design Review Submitted. Design Review completed in Boston.
H	Office/Laboratory	375,000	347,600	Special Permit approval. Design Review Submitted. Design Review completed in Boston.
EF	Office/Laboratory	400,000 Total		Special Permit approval. Design Review submitted in Somerville.
	Retail	TBD		Special Permit approval. Design Review submitted in Somerville.
C	Mixed-Use	348,000		Special Permit approval. Design Review timing TBD.
U	Office/Laboratory	320,000		Special Permit approval. Design Review timing TBD.

**Phase 2**

<b>Building</b>	<b>Use(s)</b>	<b>Approved GFA per Special Permit Appendix I</b>	<b>GFA approved in thru Design Review</b>	<b>Project Status (i.e., Special Permit, Design Review Completed, Under Construction, Construction Completed)</b>
A	Residential	175,000		Special Permit approval. Design Review timing TBD.
B	Residential	373,000 Total		Special Permit approval. Design Review timing TBD.
	Retail	TBD (Allowed)		Special Permit approval. Design Review timing TBD.
D	Mixed Use	340,000		Special Permit approval. Design Review timing TBD.
Q2	Office/Laboratory	147,387 Total		Special Permit approval. Design Review timing TBD.
	Retail	TBD (Required)		Special Permit approval. Design Review timing TBD.
R	Mixed Use	148,945 Total		Special Permit approval. Design Review timing TBD.
	Retail	TBD (Required)		Special Permit approval. Design Review timing TBD.
V	Residential	199,855 Total		Special Permit approval. Design Review timing TBD.
	Retail	TBD (Required)		Special Permit approval. Design Review timing TBD.



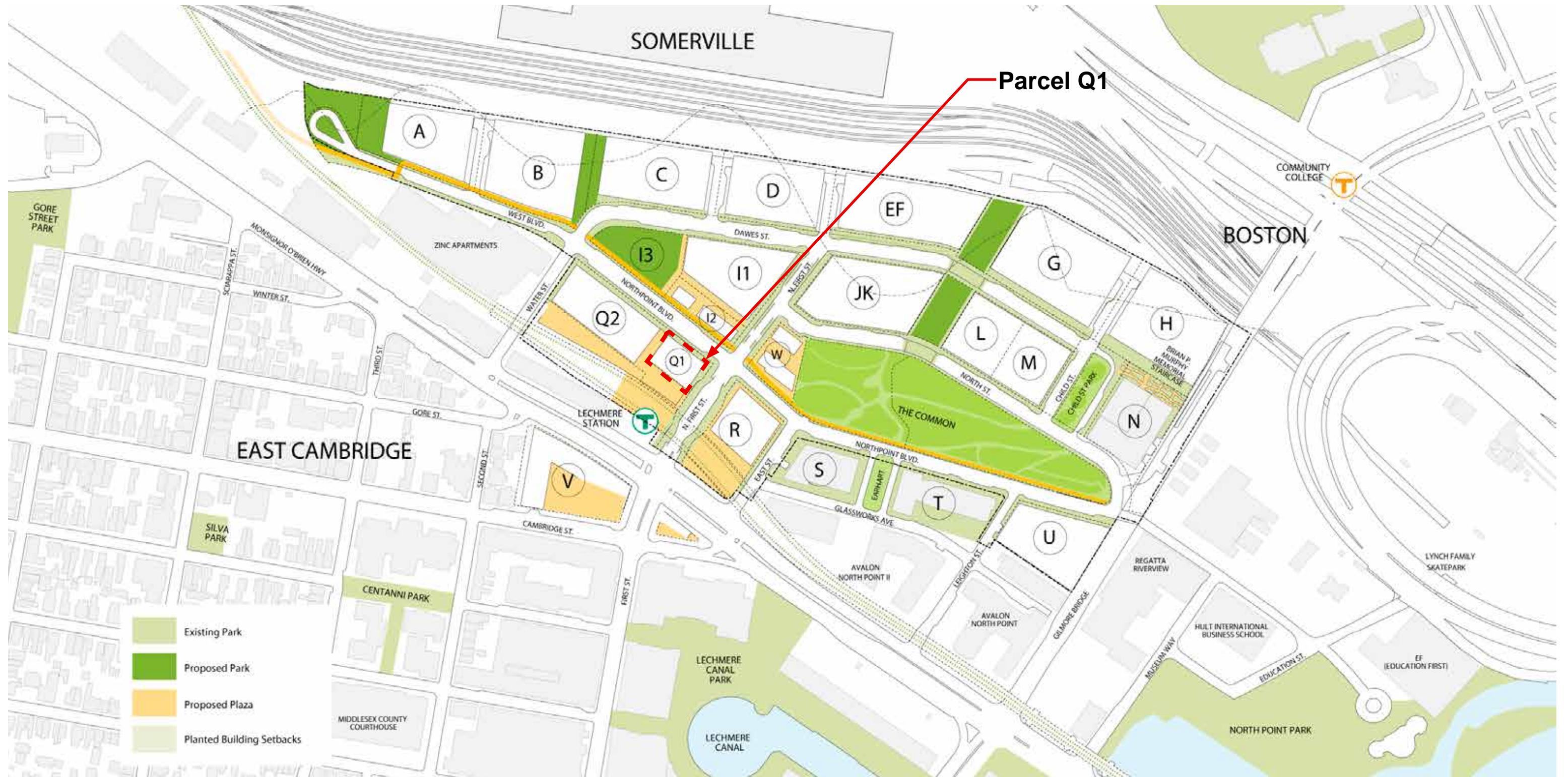
## **DESIGN REVIEW: PARCEL Q1**

### **KEY UPDATED DESIGN ELEMENTS**

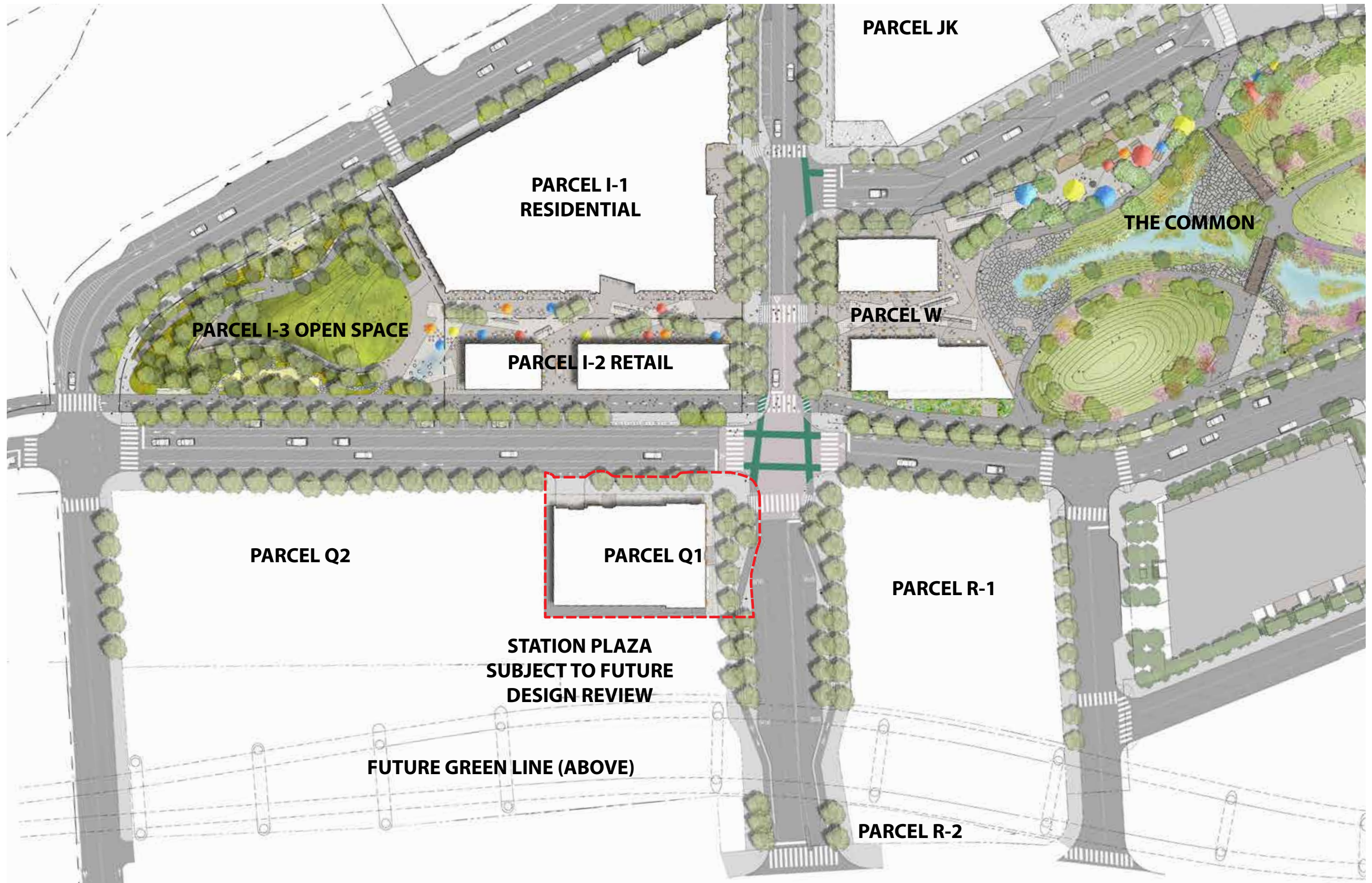
- Roof wraps around glass pavilion
- Glass pavilion extends north and south in plan
- Horizontal bands are continuous between glass pavilion and lower building
- Glass volume protrudes at office entry
- Revised treatment of louvers at top of glass pavilion
- Revised glazing sizing and alignment

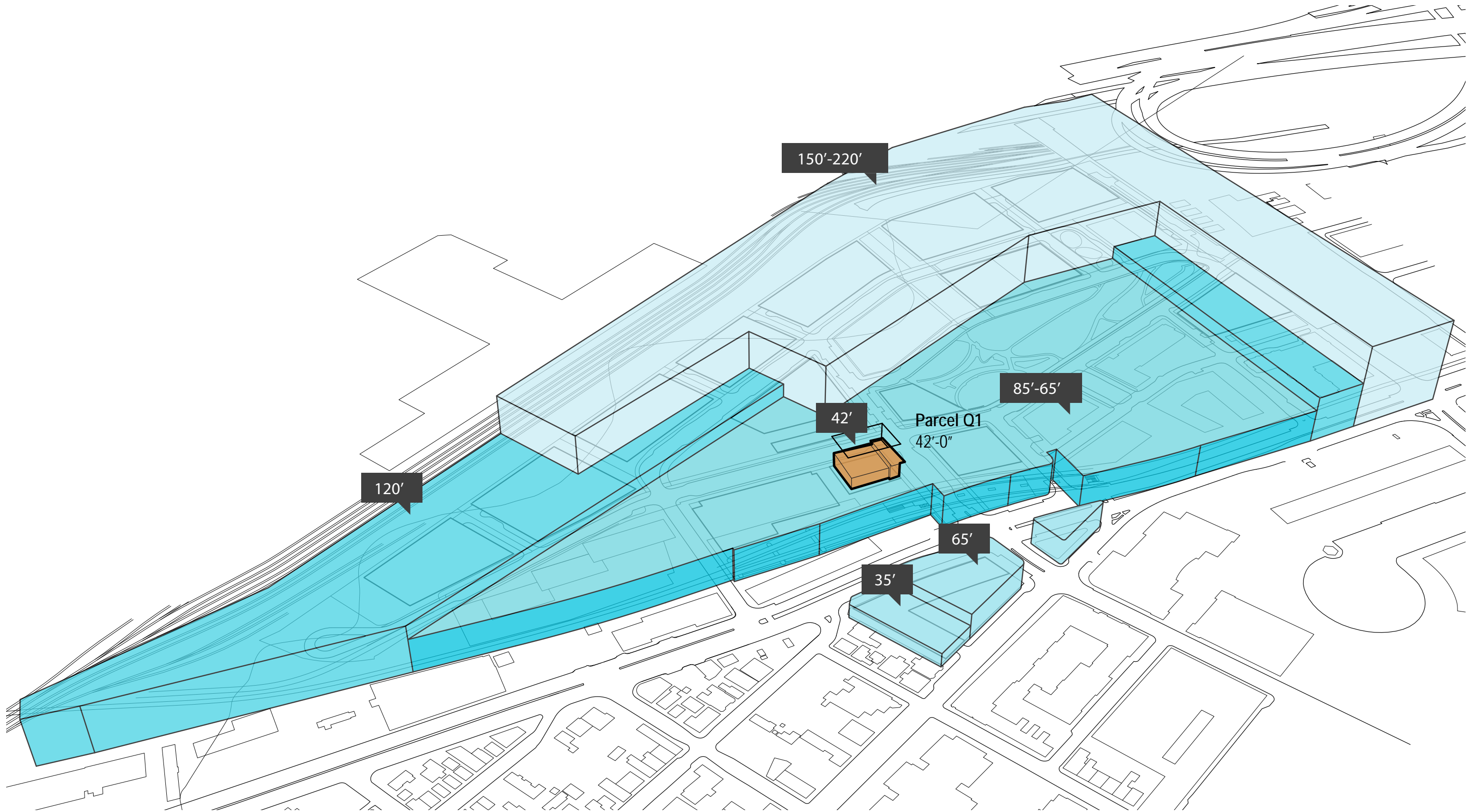
Page	Design Review Comments	Design Team Response	Check
page 154 - PB #179 Meeting Minutes	"So I think there need to be more bike racks, and they have to be thought about who's going to use them and where are they going to use them. That perhaps there could be some bike racks around basically on the back from this view that might be designated for employees, they would be close to the employee entrance".	MVVA increased the number of bike racks on NorthPoint Boulevard and introduced spaces for cargo bikes.	✓
page 154 - PB #179 Meeting Minutes	"Also you have some wide sidewalks that I'm glad you're planting trees, but there is still no understory planting, no real welcoming place. I hate to say this again but benches, plants, color, something".	MVVA introduced moveble planters in a variety of sizes to increase the planting in this area. On the west façade, tensile cables on the building will support flowering climbing vines to add color.	✓
page 157 & 176 - PB #179 Meeting Minutes	"I think the roof cantilever has to extend around both sides to in line with the façade down below" .... "So I'll be clear, I want to see the roof where the pavilion stick out the same amount on the three sides and maybe turn it around to the fourth side."	Roof extends 6' on the east façade (on North First Street) and 4' on the other 3 sides, wrapping around the west side of the "glass pavilion".	✓
page 157 - PB #179 Meeting Minutes	"I think the louvers need to be broken up in the same way that the windows in the right-hand end are articulated in that fashion and they shouldn't -- it should leave the frame being articulate in the place that they are."	Frame is articulated similarly throughout the glass pavilion. Mechanical well has been pulled away from the façade to allow for consistent glass & frame articulation across all facades.	✓
page 160 - PB #179 Meeting Minutes	"like two buildings are colliding and the one on the right is sort of like the back of a building. "... "the building on the left has this really powerful hat, and the building on the right has like an eight-inch tall hat."	Roof wraps around all four sides of the glass pavilion. The vertical extension, which previously split the "two buildings," has been removed. Horizontal expression of low roof parapet aligns with horizontal band in glass pavilion, creating a consistent horizontal expression uniting the two building volumes.	✓
page 161 - PB #179 Meeting Minutes	"why are those windows the size they are and the way they're articulated? Who knows. It's just somebody didn't think enough about it. So that's what I would like to see happen is some more thought."	Window locations align on one side and respond to ground floor retail / second floor office layout to determine width. Window location is also designed to allow for structural cross bracing within solid walls.	✓
page 179 - PB #179 Meeting Minutes	"could you for example push the pavilion maybe 18 inches farther out so that it's -- the corner column that's in the middle of the building is seen on two sides instead of just one?"	Glass pavilion footprint projects 1'10" on North and South façade.	✓
page 180 - PB #179 Meeting Minutes	"The other thing that Thacher pointed out, the entry to the office. And it seems like maybe that could project a lot, you know. Become a volumetric form."	Ground floor entry is recessed at the entry, while glass volume projects on the second floor, creating visual emphasis as well as an entry canopy.	✓





**CAMBRIDGE CROSSING - Parcel Q1**  
 Approved Masterplan per Amend #7 (Minor)





CAMBRIDGE CROSSING - Parcel Q1  
Zoning Height Envelope



*Framed glass facade: Pavilion Park, Seattle WA*



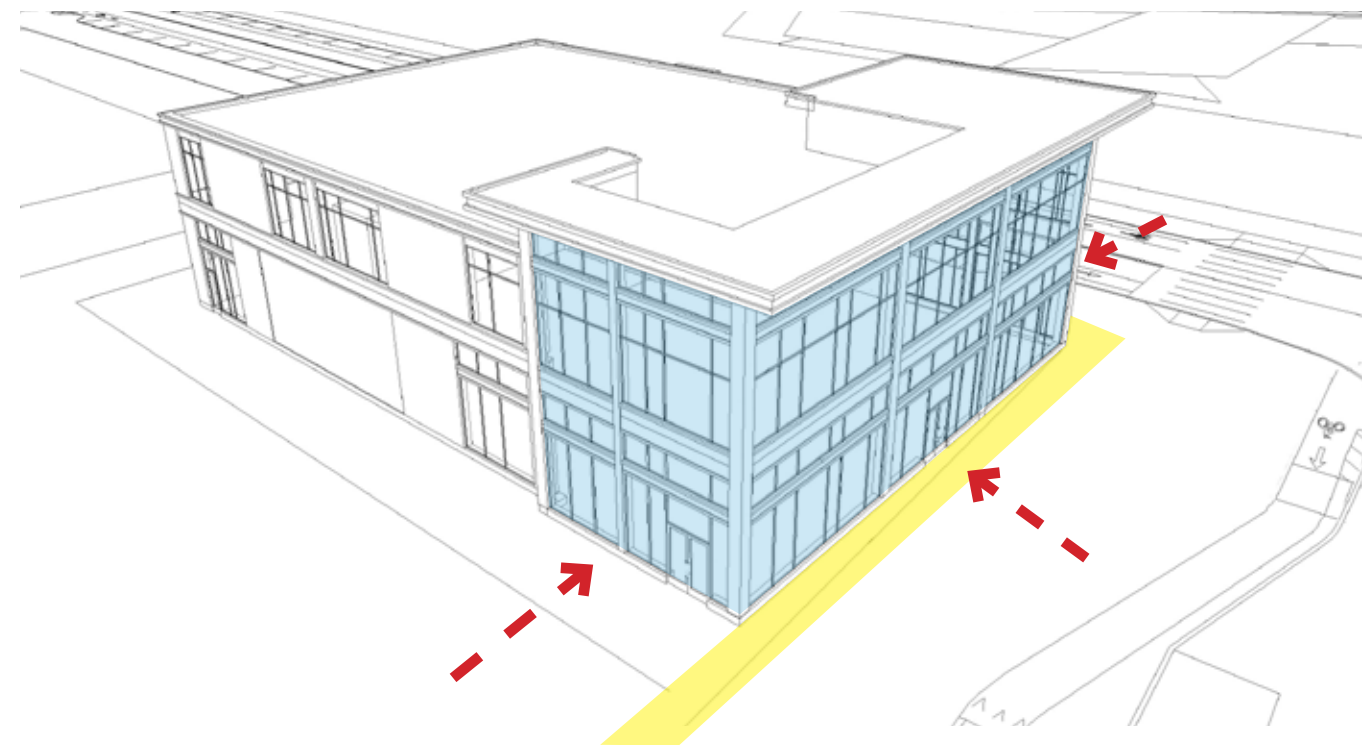
*Transparency on street edge: James Beard Public Market, Portland OR*



*Framed glass facade engages public: Municipal Building, Roxbury MA*



*Cambridge Public Library*



*Transparent facade along the east facade engages the public realm and creates a visual connection from the Train Station, North First St and Northpoint Boulevard*



*Boston Public Library*



Digital transit information board



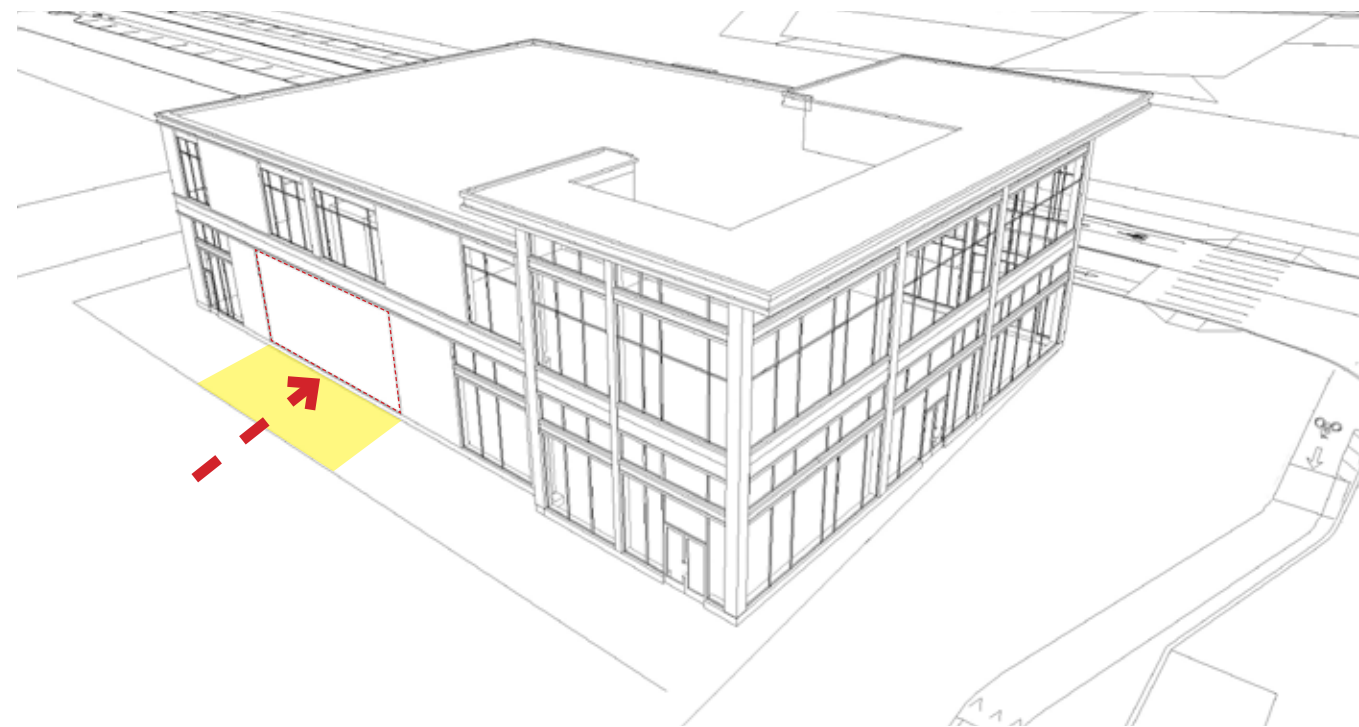
Wayfinding mural. Baltimore MD



Pedestrian wayfinding. United Kingdom



Digital wayfinding. Canary Wharf, London



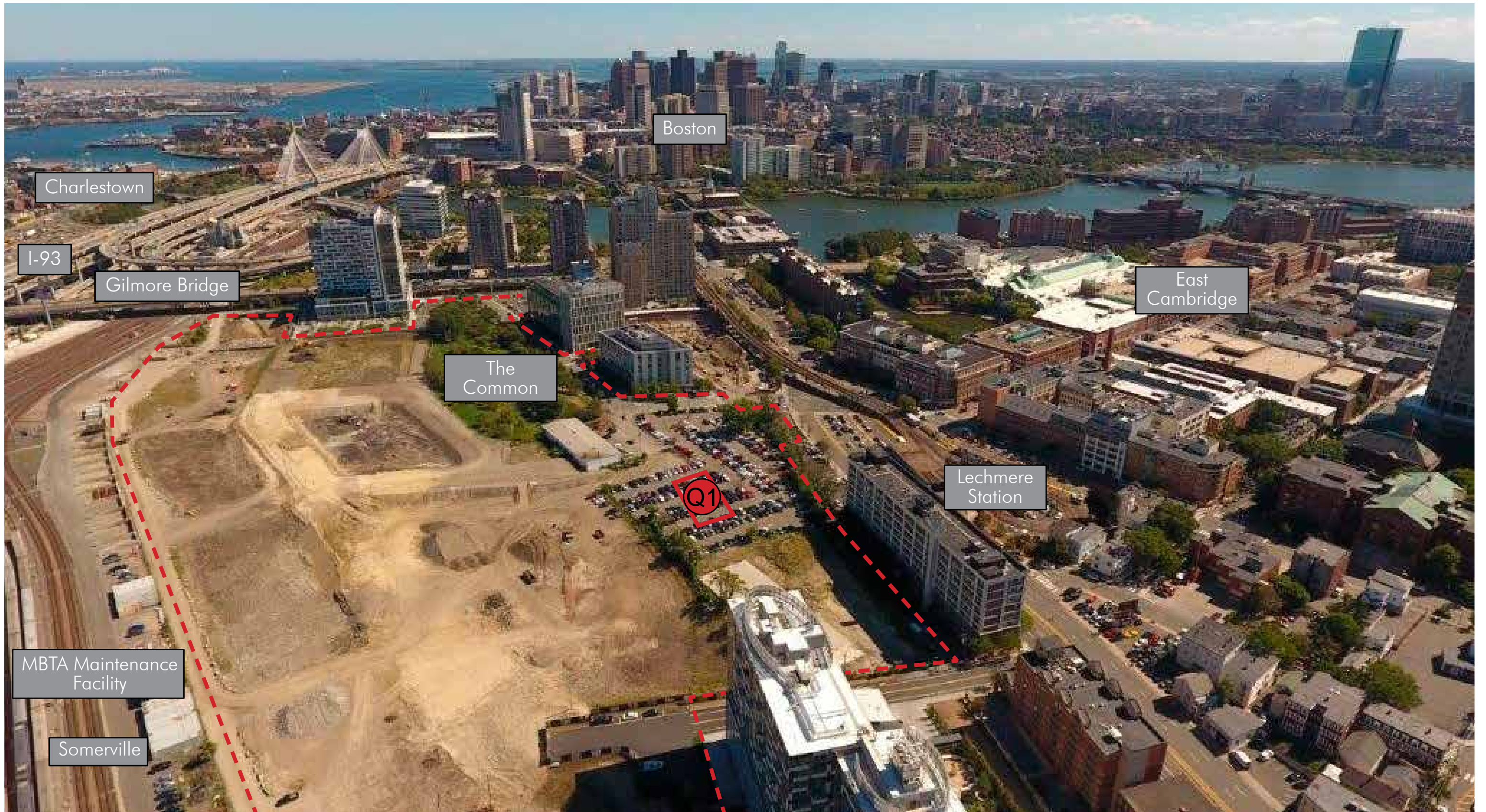
Solid wall on south facade for public engagement to the station plaza. Opportunity for wayfinding, neighborhood directory, art



Public engagement activity. Cambridge, MA



*Retail Corridor extends from the Cambridge Side Galleria mall into Cambridge Crossing, centralized at the intersection of North First Street and Northpoint Boulevard*



----- Cambridge Crossing Property Line      ● Site

PREVIOUS DESIGN PRESENTED AT JULY 11 PLANNING BOARD



Rendered image is intended for building design review. Landscaping and entourage in this view are for illustrative purposes only.





Rendered image is intended for building design review. Landscaping and entourage in this view are for illustrative purposes only.

## PROPOSED DESIGN

CAMBRIDGE CROSSING - Parcel Q1  
Building View Northwest from Parcel R

PREVIOUS DESIGN PRESENTED AT JULY 11 PLANNING BOARD



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## PROPOSED DESIGN

CAMBRIDGE CROSSING - Parcel Q1  
Building View from Parcel I-2 Retail



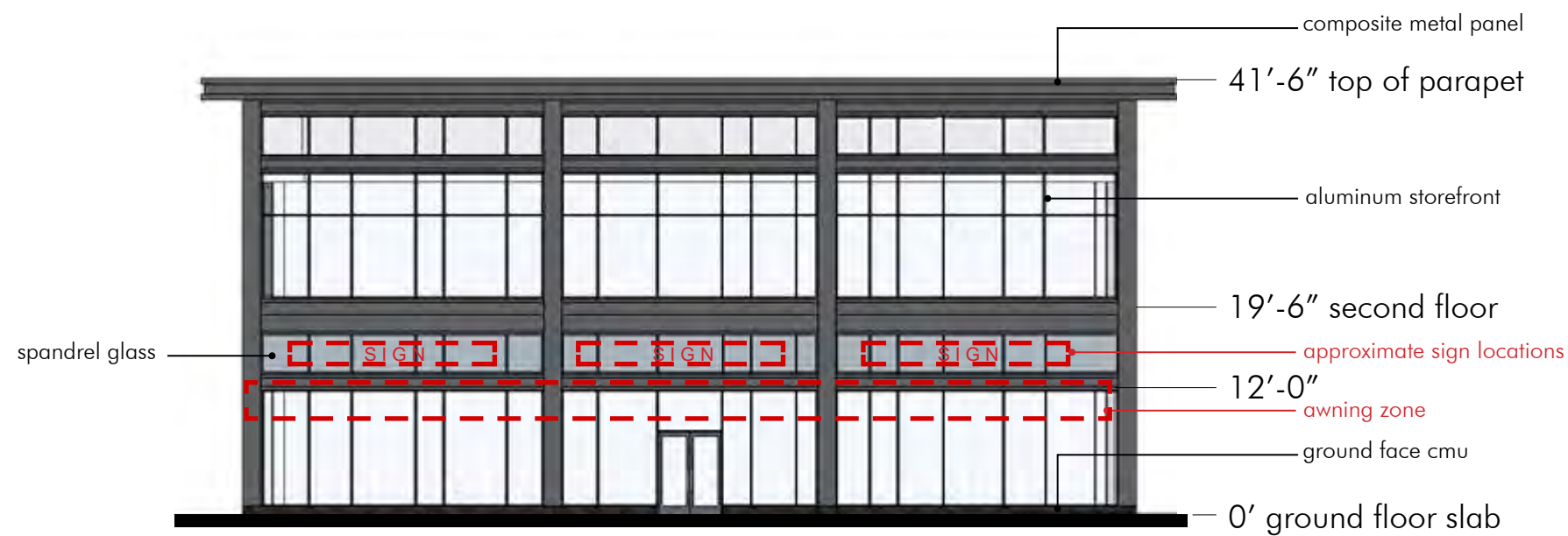
South Elevation



stained cedar siding ground face cmu



composite metal panel aluminum storefront system

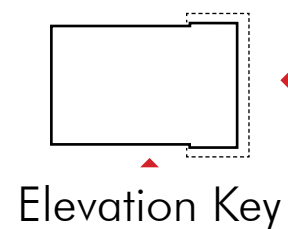
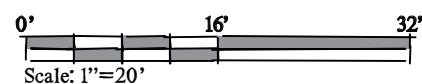


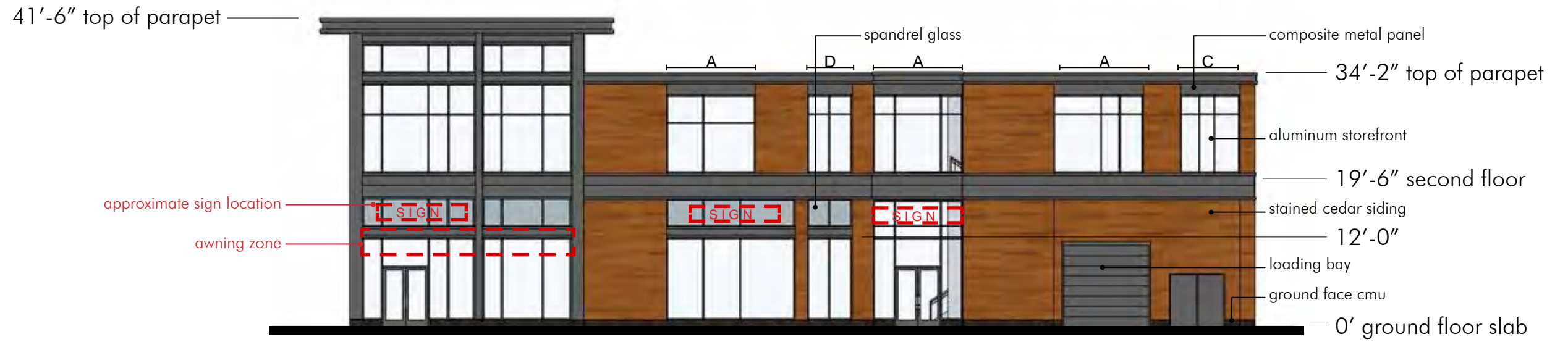
East Elevation

SIGNAGE - Article 7.16.22: Total of all signs shall not exceed 1sf per linear foot of frontage.  
 Projecting Signs: 13 sf max, 1 per establishment  
 Wall Sign: 60sf max or 1sf per foot of frontage

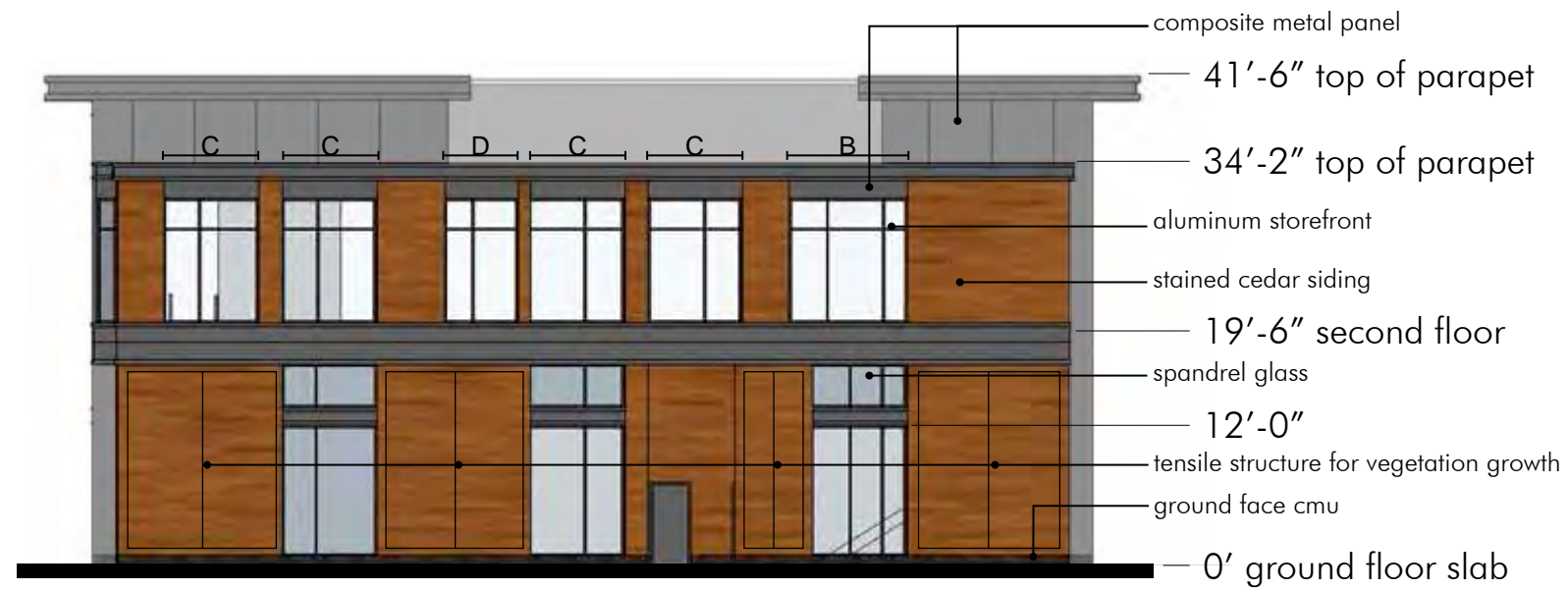
WINDOW KEY		Windows are tagged as indicated to show a limited number of opening sizes
TYPE	WIDTH	
A	12'	
B	10'	
C	8'	
D	6'	

WINDOWS - GLAZING  
 Ground Floor - Clear Low Iron Vision Glass  
 Second Floor - 70XL (2) Clear + Clear Glass Insulating Glass Unit

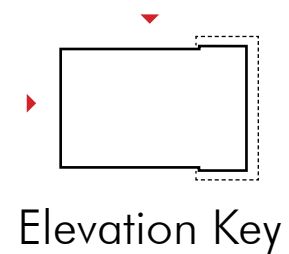
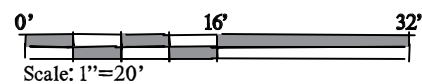




North Elevation



West Elevation



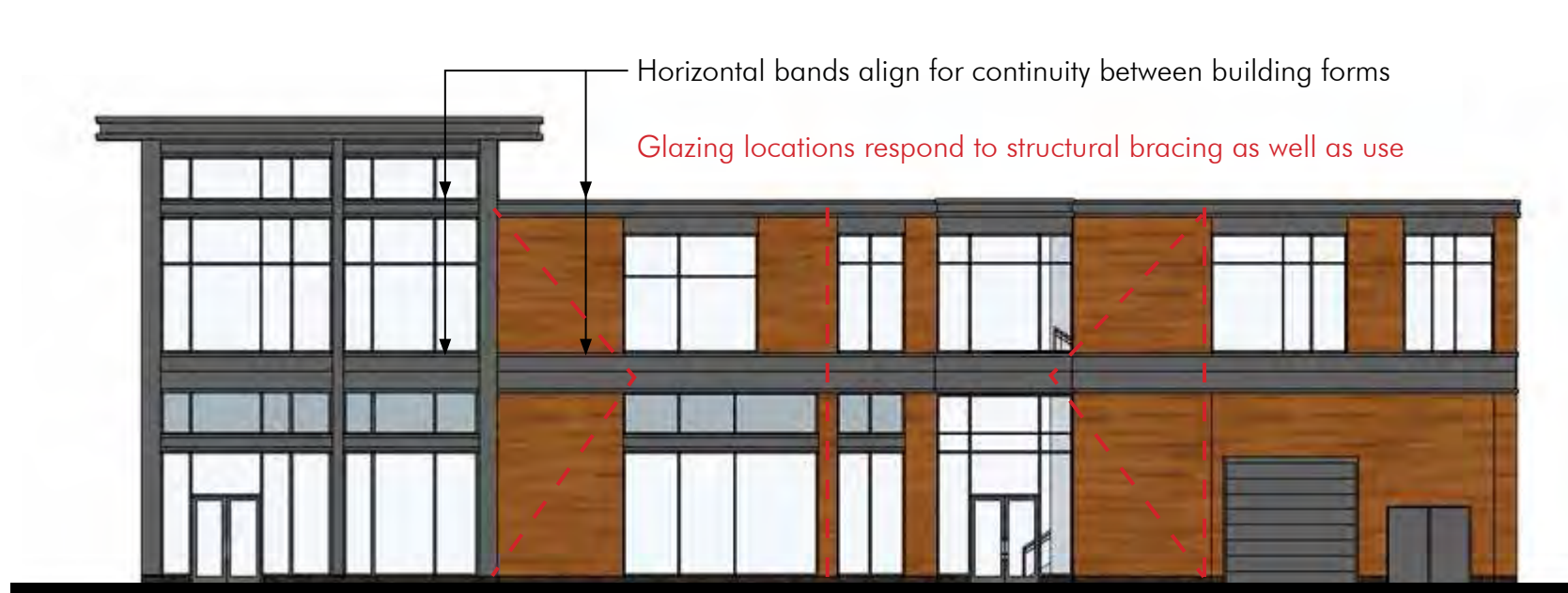
Elevation Key



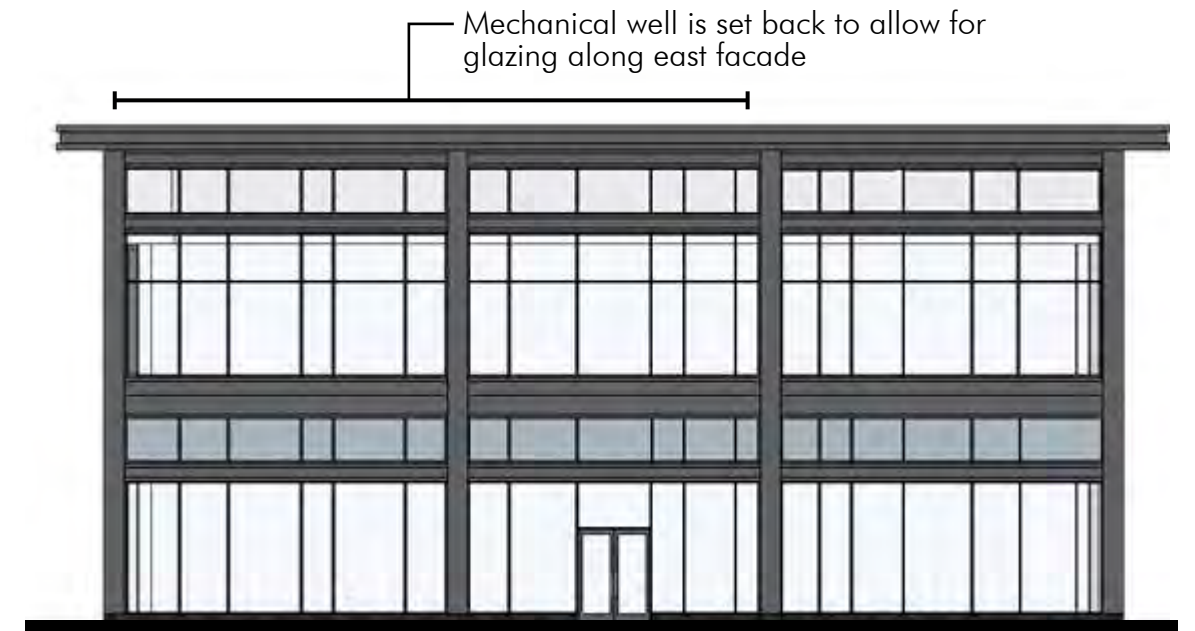
North Elevation - Previous Design



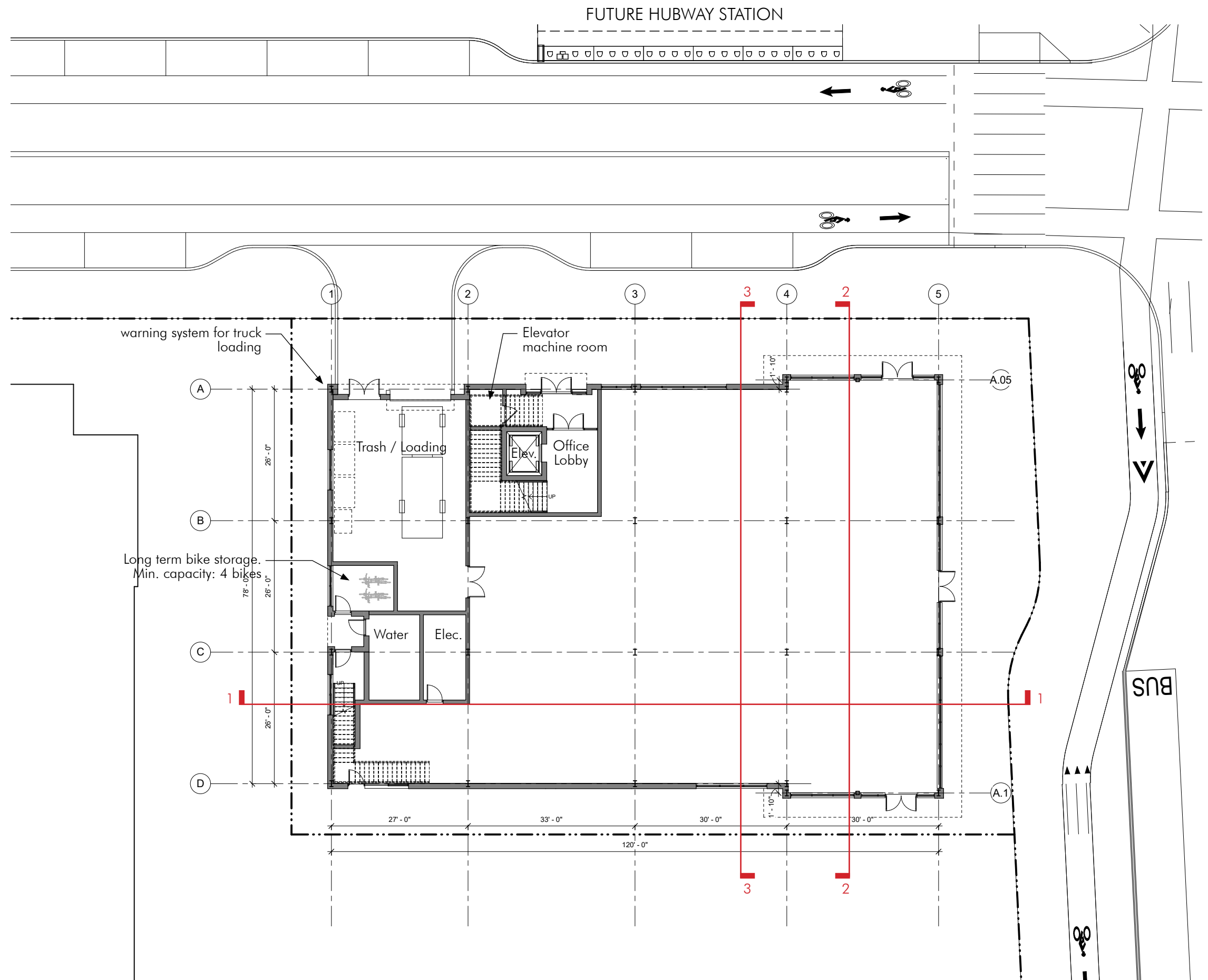
East Elevation - Previous Design



North Elevation - Proposed



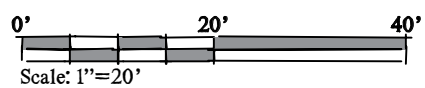
East Elevation - Proposed



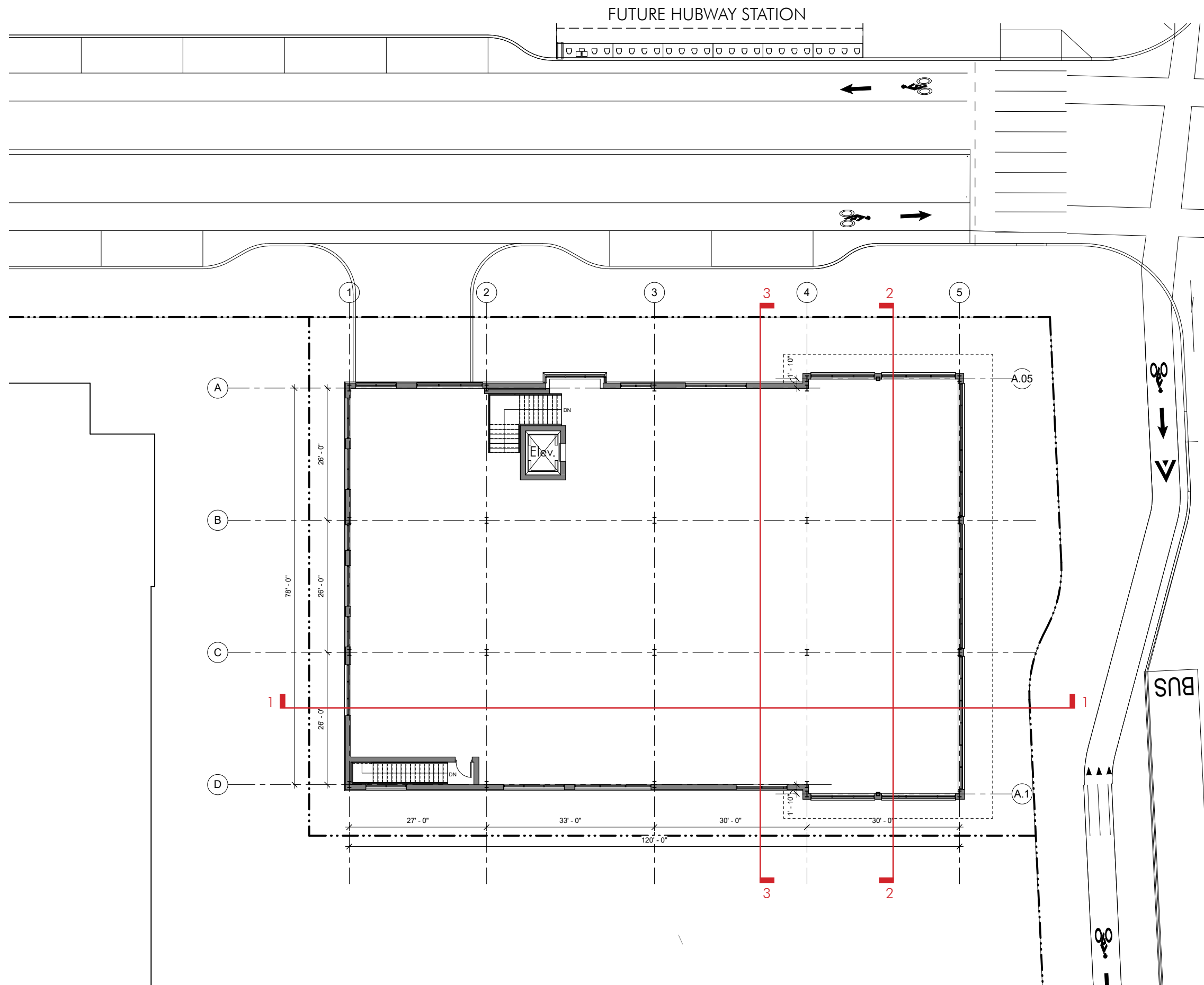
AREA CALCULATIONS

GROUND FLOOR GFA: 9,082 SF  
 SECOND FLOOR GFA: 9,762 SF

TOTAL GFA: 18,844 SF



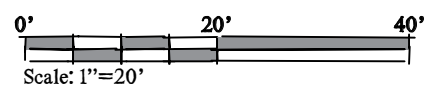
CAMBRIDGE CROSSING - Parcel Q1  
 Ground Floor Plan



AREA CALCULATIONS

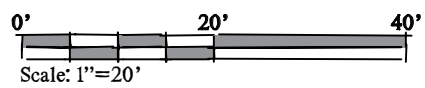
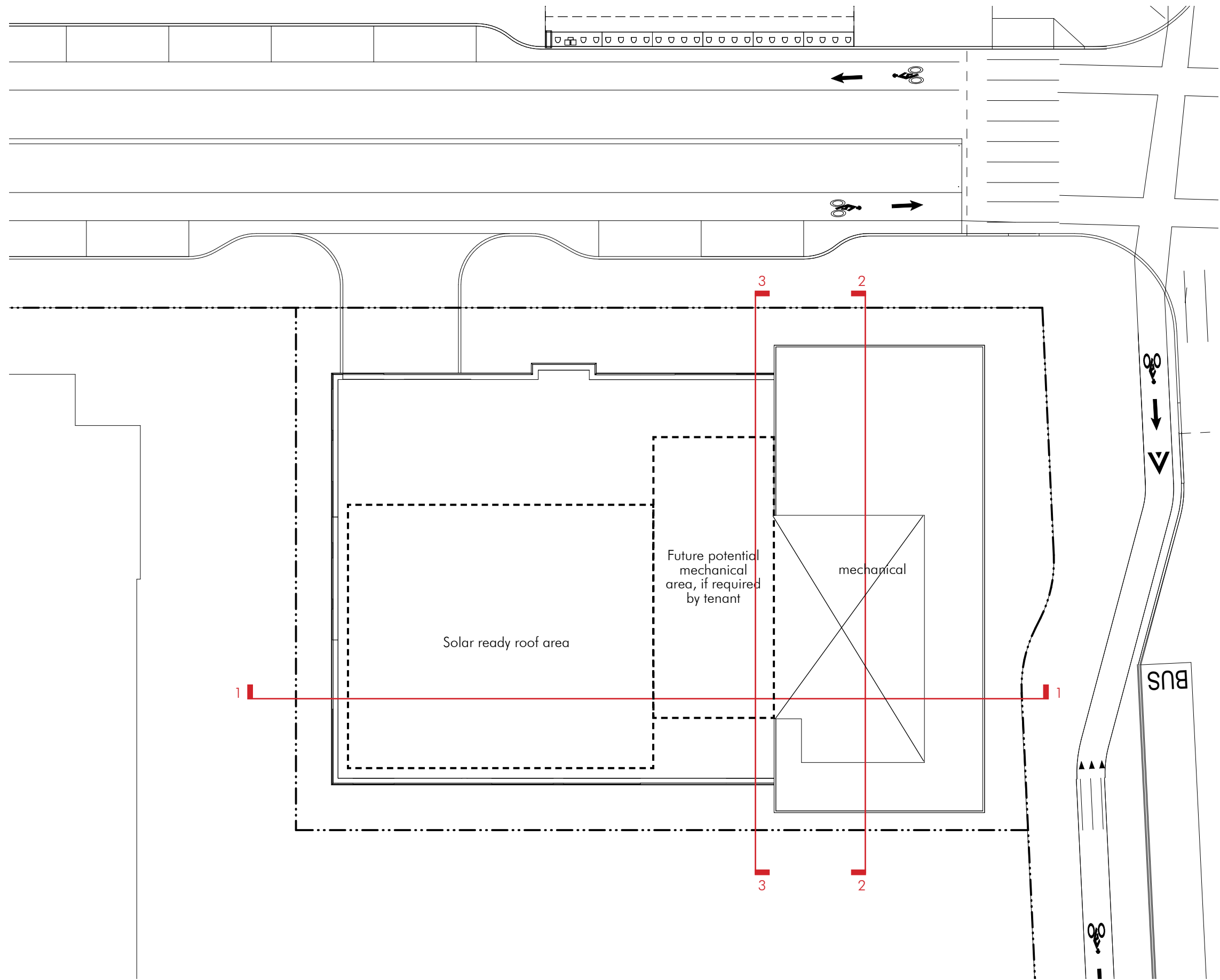
GROUND FLOOR GFA: 9,082 SF  
 SECOND FLOOR GFA: 9,762 SF

TOTAL GFA: 18,844 SF

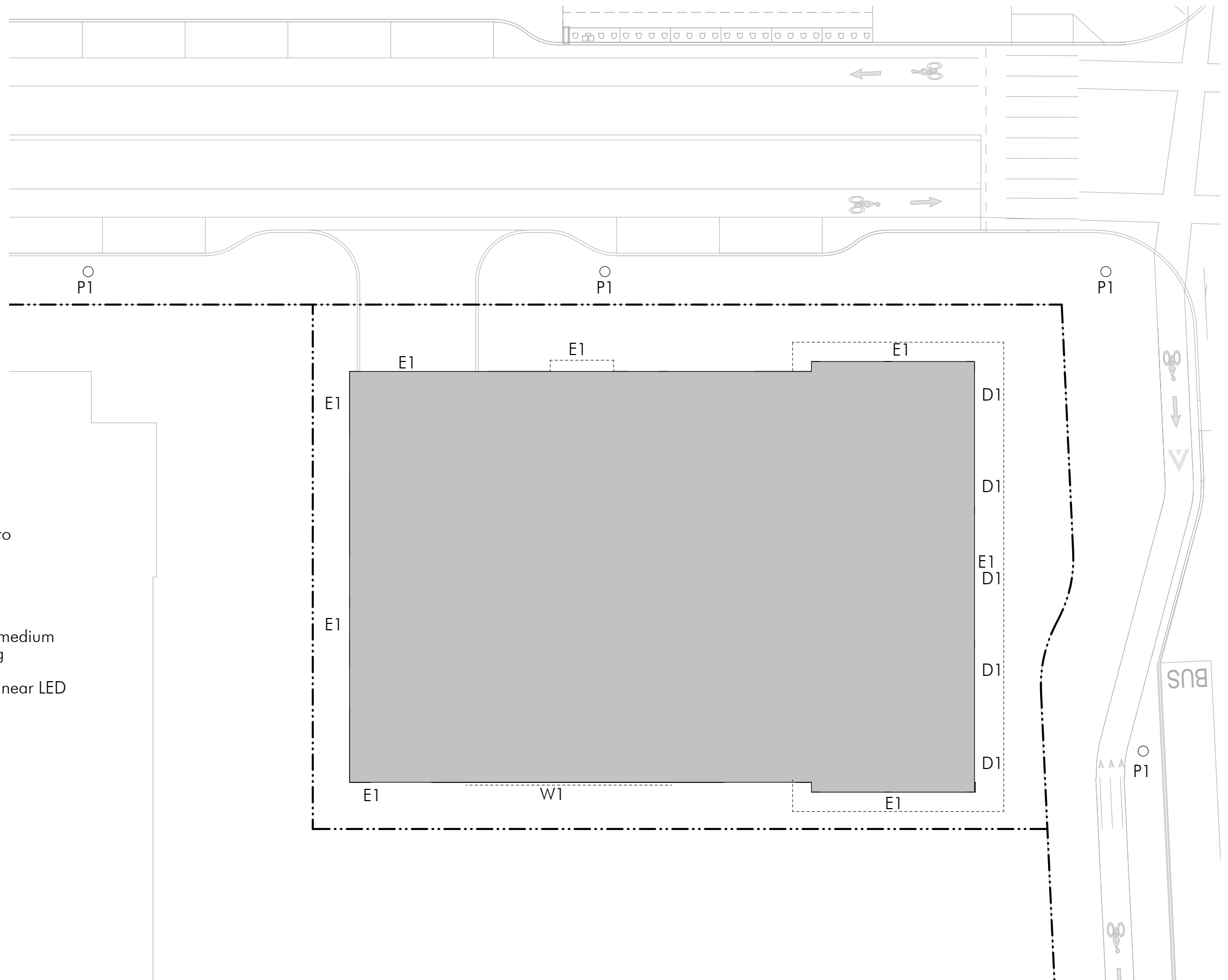


CAMBRIDGE CROSSING - Parcel Q1  
 Second Floor Plan





CAMBRIDGE CROSSING - Parcel Q1  
Roof Plan



All site lighting for Parcel Q1 is being designed to minimize light pollution and light trespass.

Building Mounted Exterior Lighting

D1 - Recessed LED downlights (dimmable) with medium beam distribution on underside of roof overhang

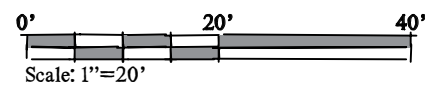
W1 - Wall bracketed, small profile, dimmable, linear LED wallwash with glare control

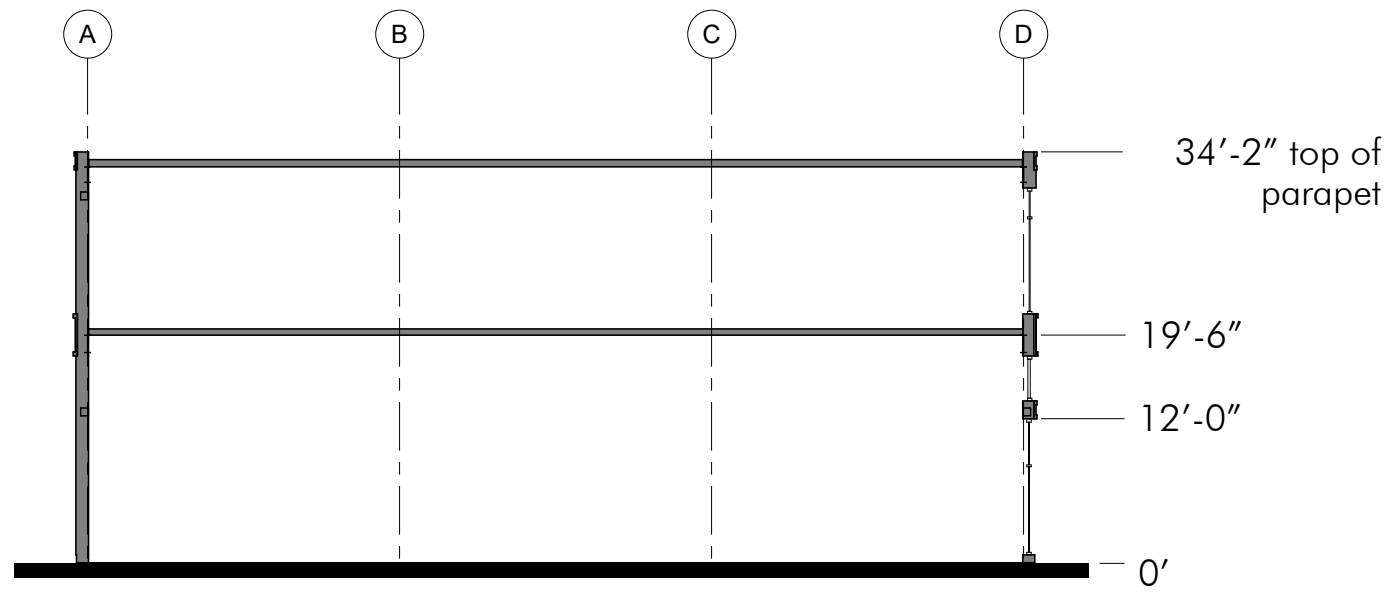
P1 - Street Light location

E1 - Egress Light

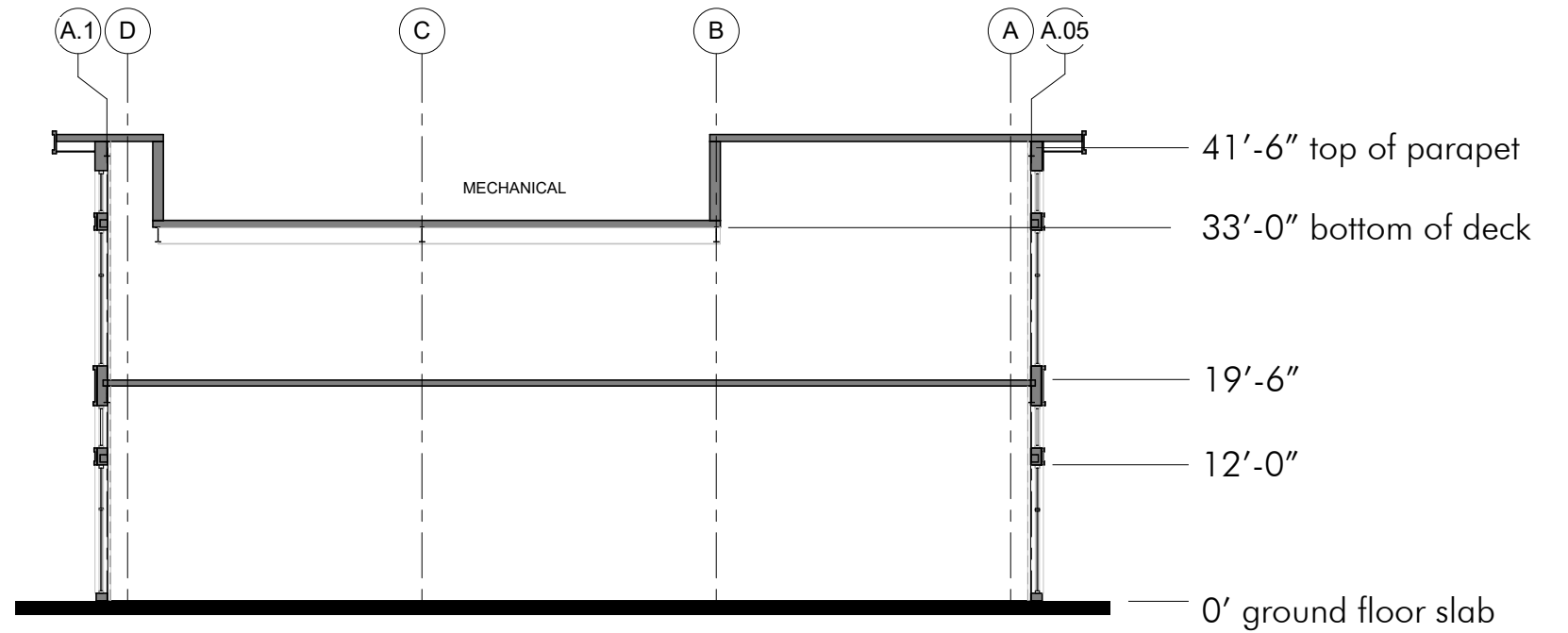
EXTERIOR LIGHTING FIXTURE KEY

- D = DOWNLIGHT
- P = POLE LIGHT
- W = WALL MOUNTED

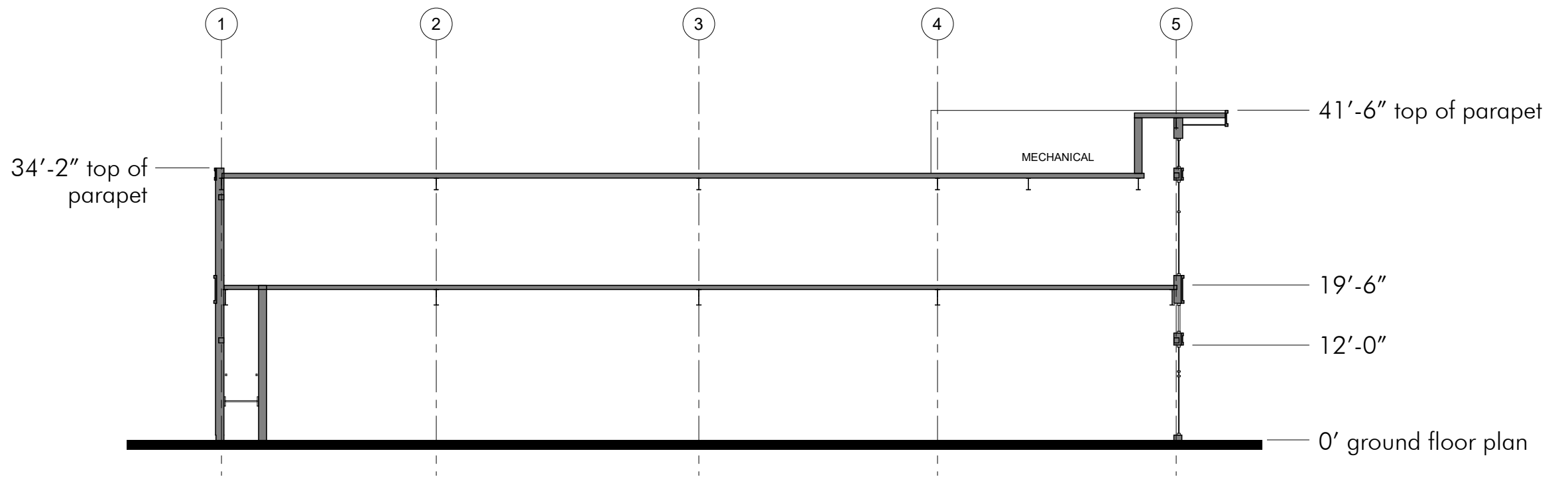




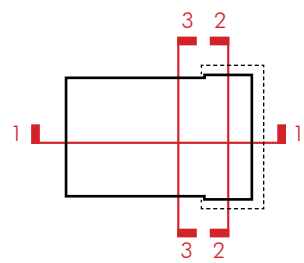
Section 3



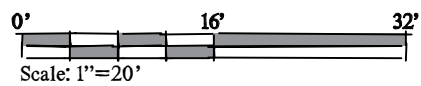
Section 2

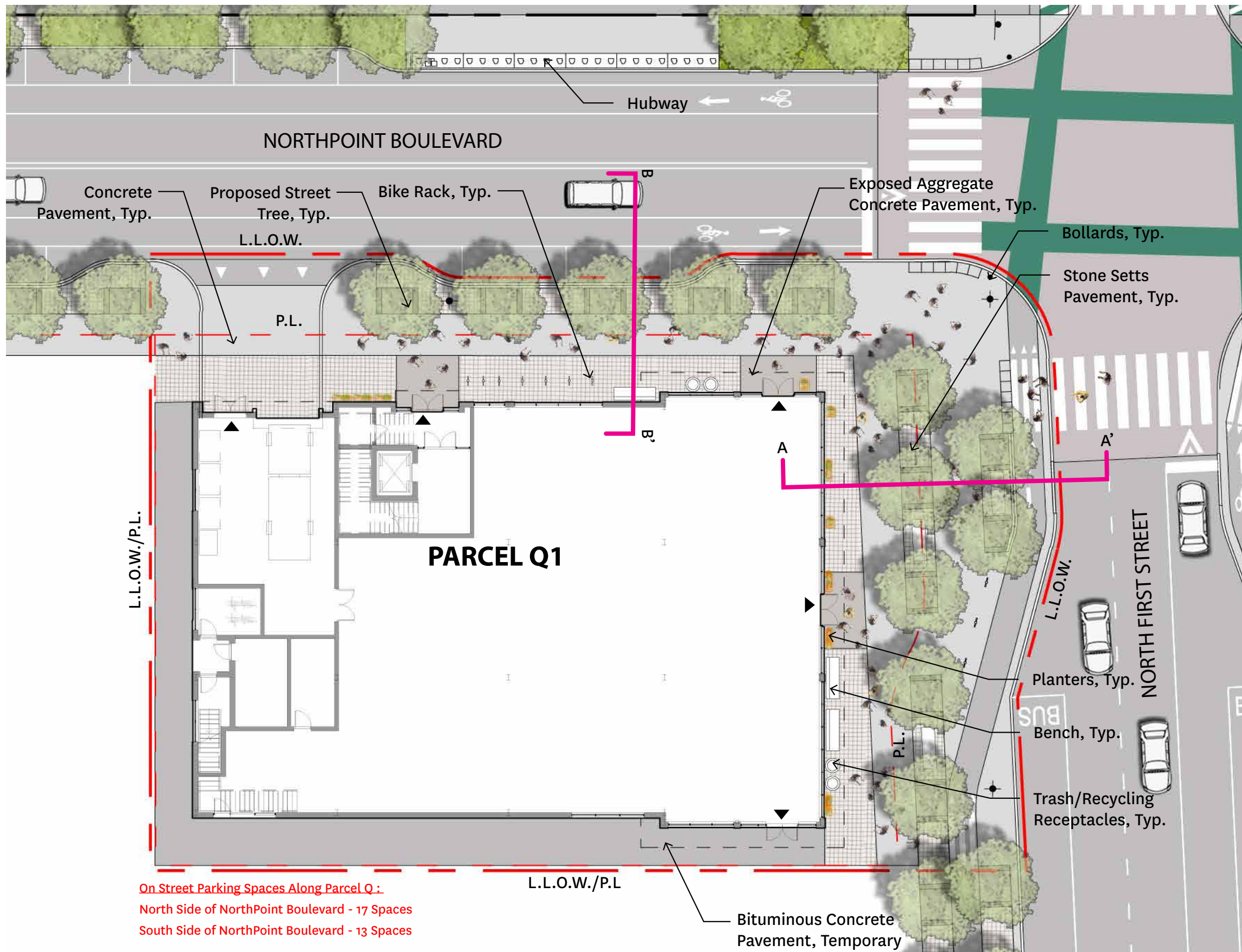


Section 1



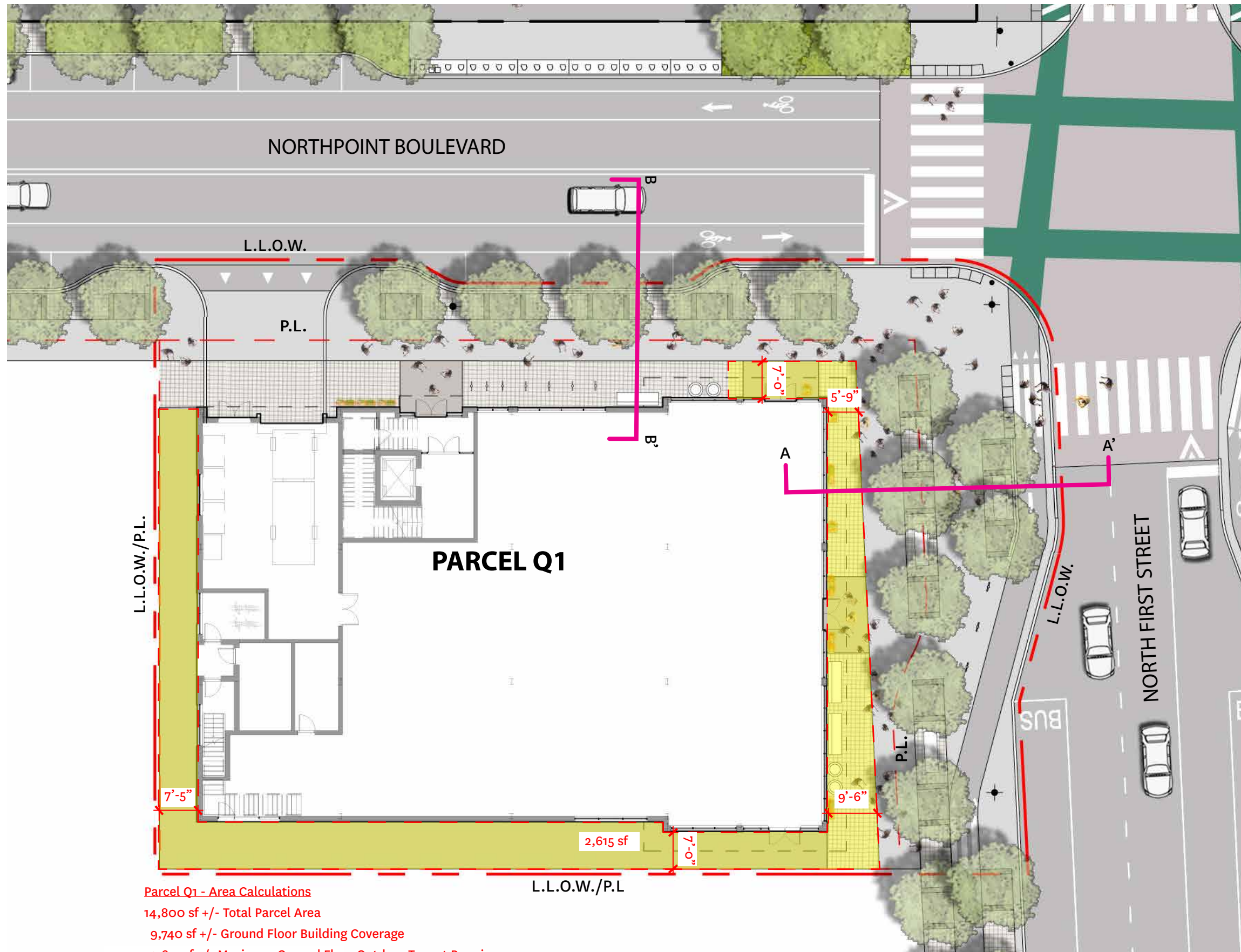
Section Key



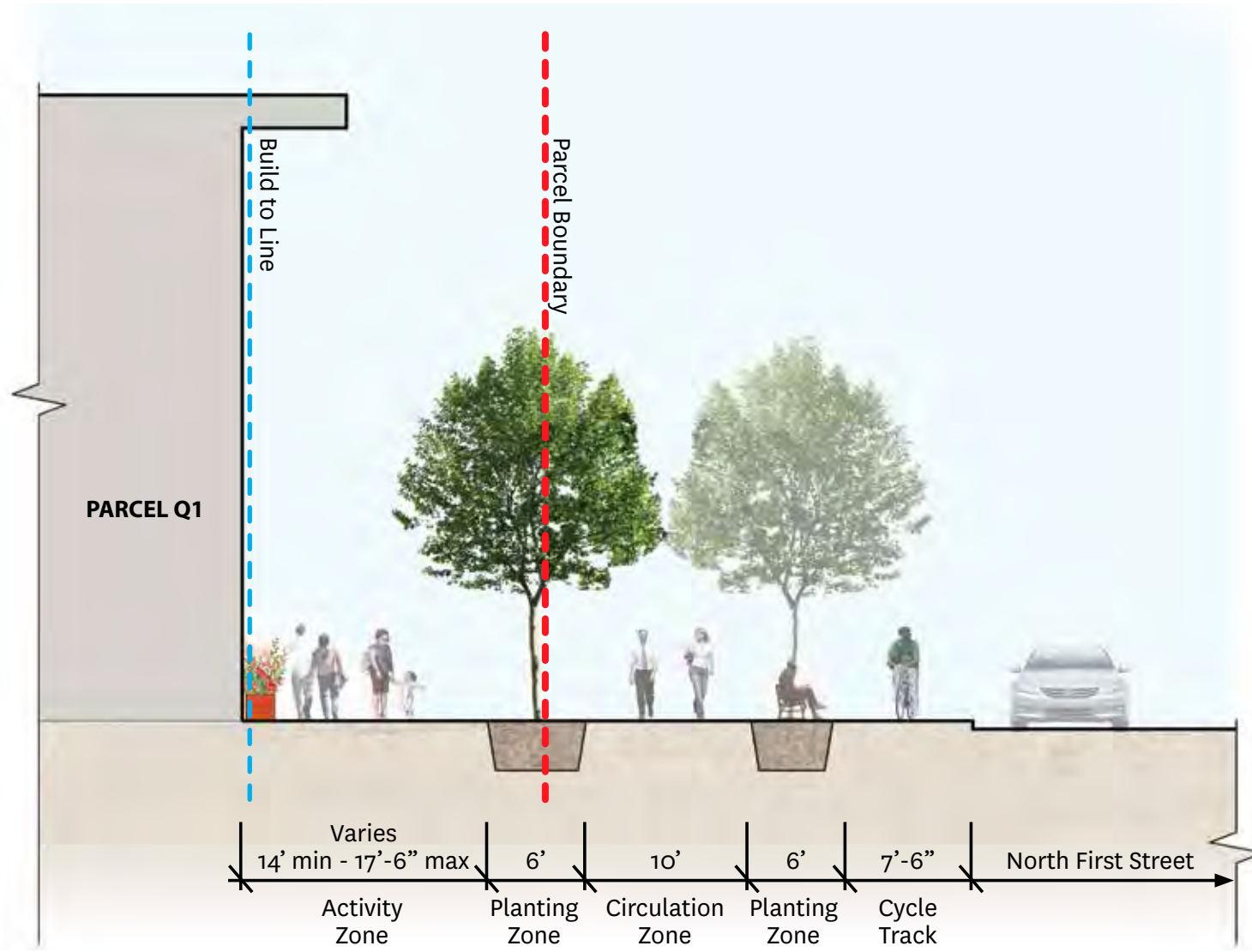


**On Street Parking Spaces Along Parcel Q:**  
 North Side of NorthPoint Boulevard - 17 Spaces  
 South Side of NorthPoint Boulevard - 13 Spaces



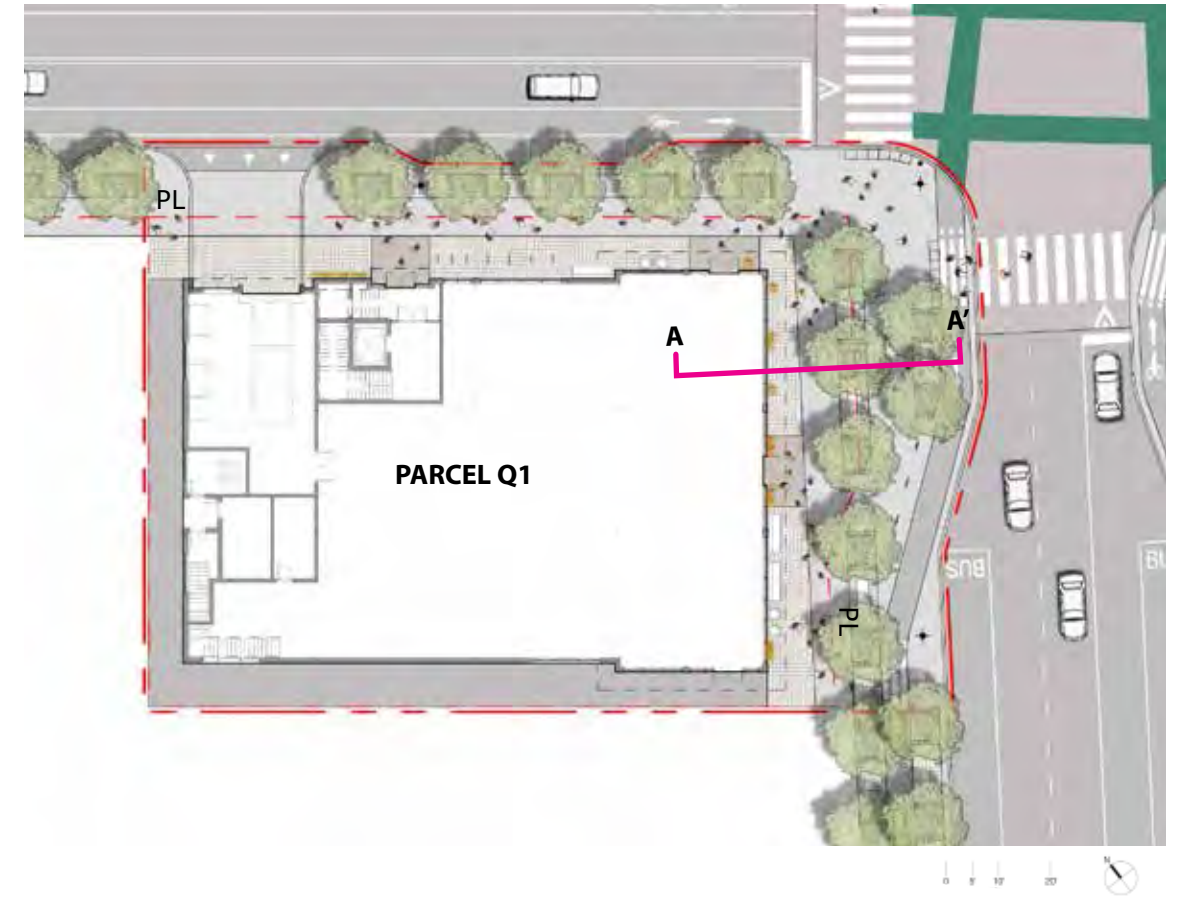


- Parcel Q1 - Area Calculations**
- 14,800 sf +/- Total Parcel Area
  - 9,740 sf +/- Ground Floor Building Coverage
  - 2,615 sf +/- Maximum Ground Floor Outdoor Tenant Premises
  - 2,445 sf Parcel Q1 Open Space; Publicly Beneficial
  - Maximum Ground Floor Outdoor Tenant Premises



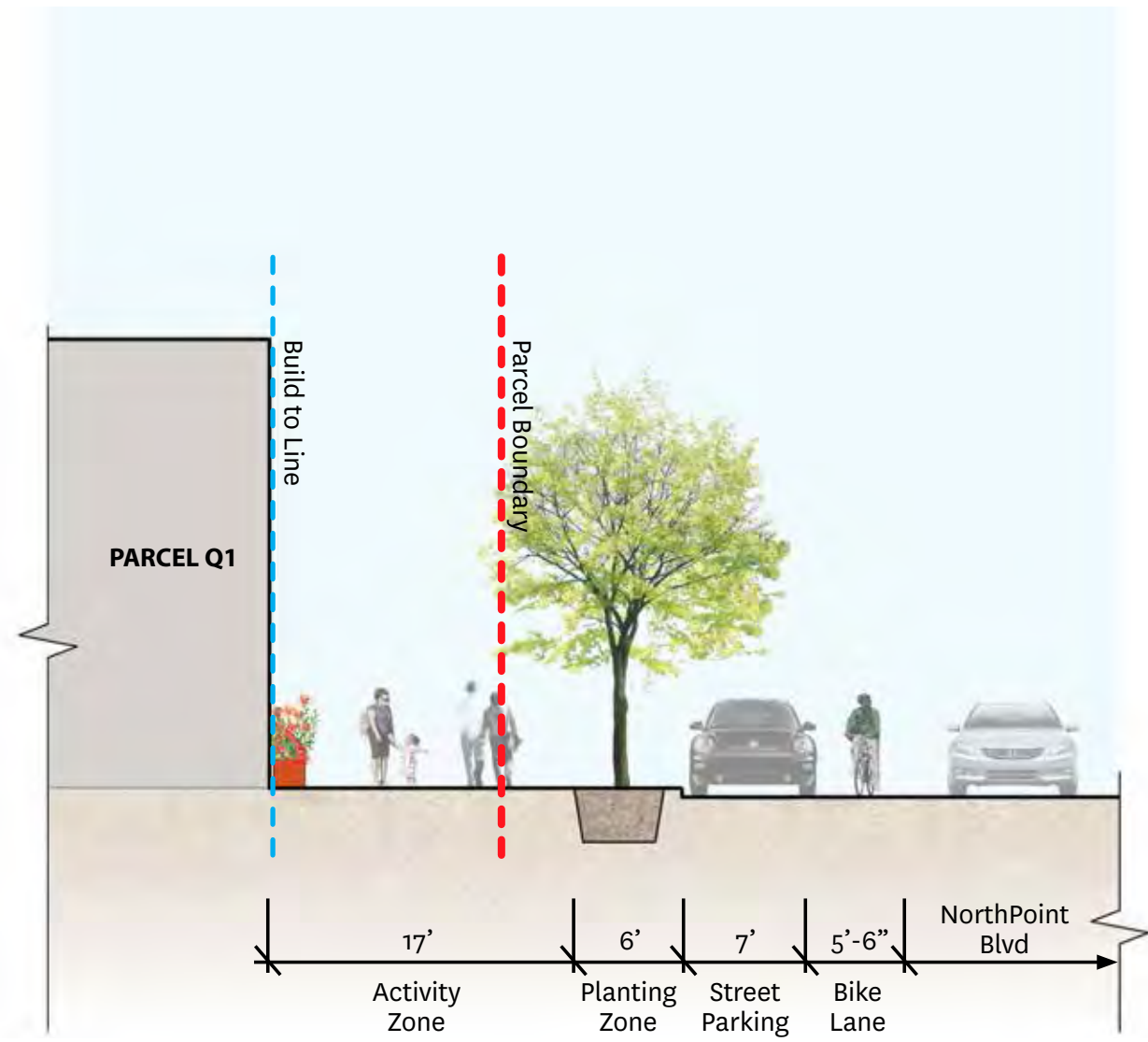
**SECTION A - A'** (Streetscape conforms with design guidelines dated October 11, 2016)

Scale: 1"=10'-0"



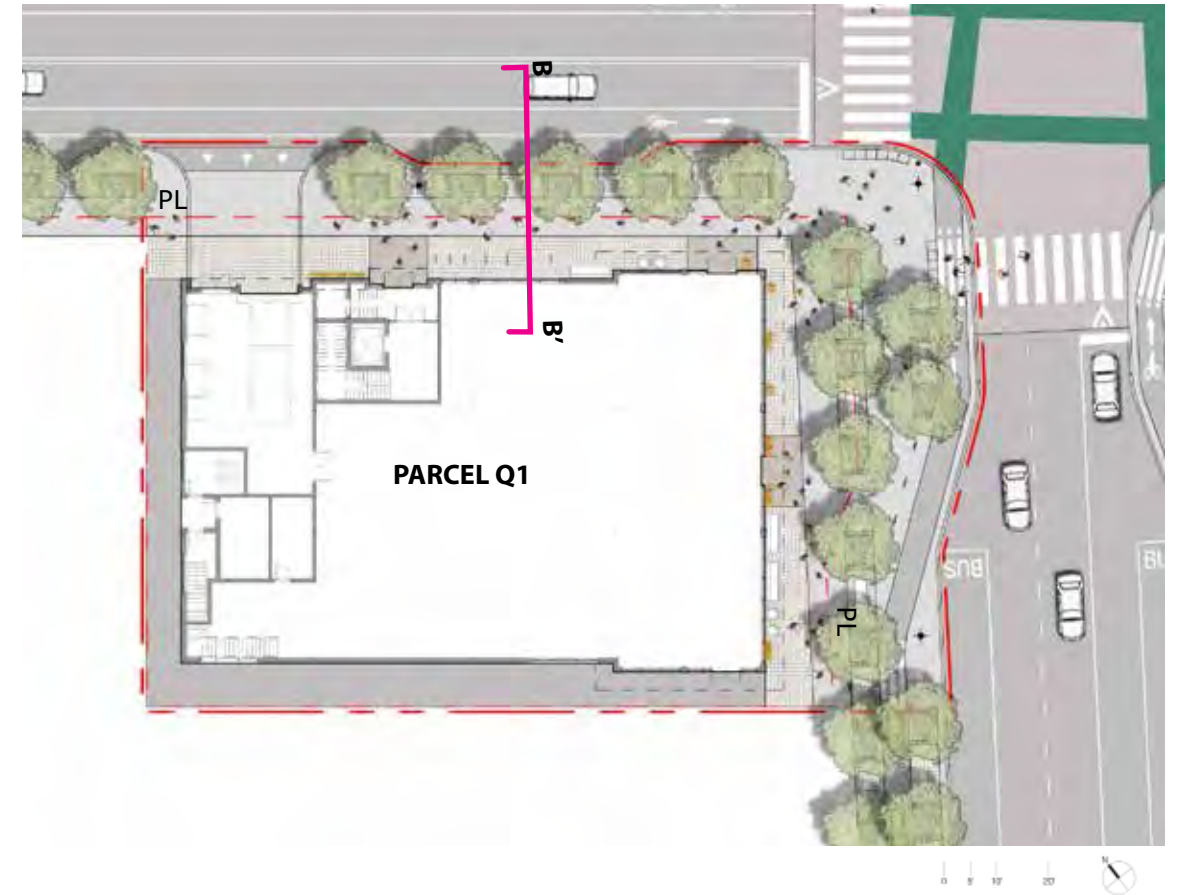
**KEYPLAN**

NTS



SECTION B - B' (Streetscape conforms with design guidelines dated October 11, 2016)

Scale: 1"=10'-0"



KEYPLAN

NTS



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





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Bike Rack



Trash Receptacle



Planter, Clustered



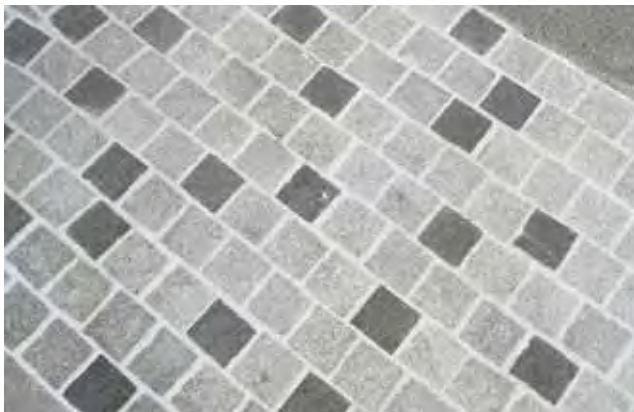
Planter, Linear



Bench



Backless Bench



Stone Setts Pavement



Exposed Aggregate Concrete Pavement



Decomposed Granite Pavement



Concrete Pavement

**Spring**



Daffodil, *Narcissus*



**Fall**



Chrysanthemum, *Chrysanthemum*



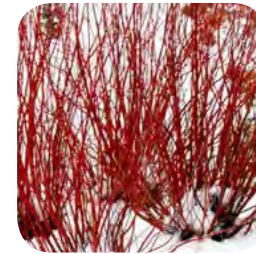
**Summer**



Canna lily, *Canna*



**Winter**



Redtwig dogwood, *Cornus sericea*



1  
0'  
1  
1'  
1  
2'  
1  
4'



*Platanus x acerifolia*  
London Plane Tree "Bloodgood"



*Styphnolobium japonicum*  
Japanese Pagoda Tree



*Gleditsia triacanthos var. inermis*  
Honey Locust "Skyline"

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

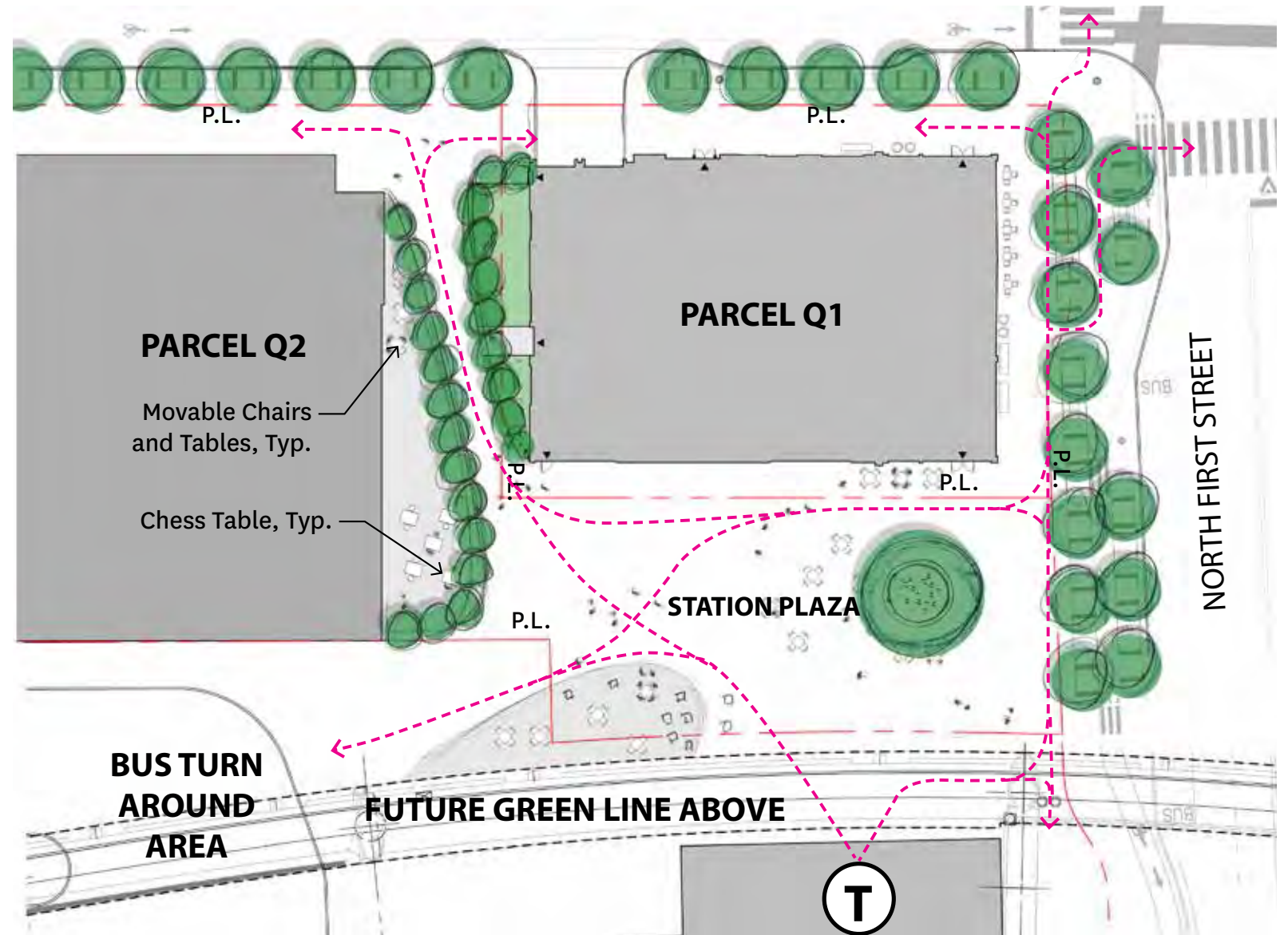


*Wisteria sinensis*  
Chinese Wisteria



Parcel Q1 West Elevation

0 5' 10' 20'



\*NOTE: Lechmere Station Plaza Illustrative Plan - Provided for General Context.

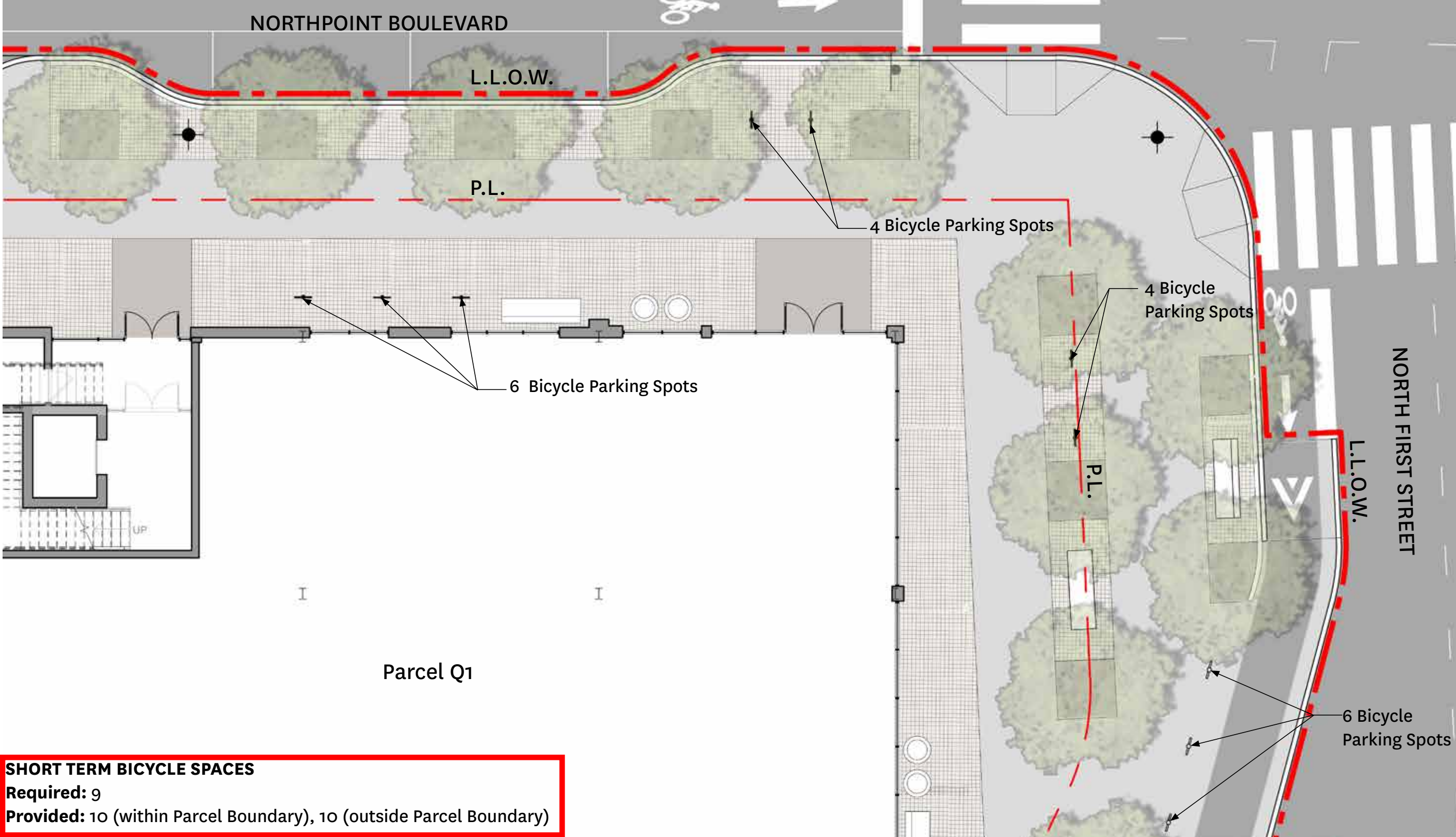
0 20' 40' 80' N



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.

\*NOTE: Lechmere Station Plaza - Provided for General Context.

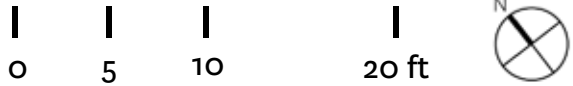
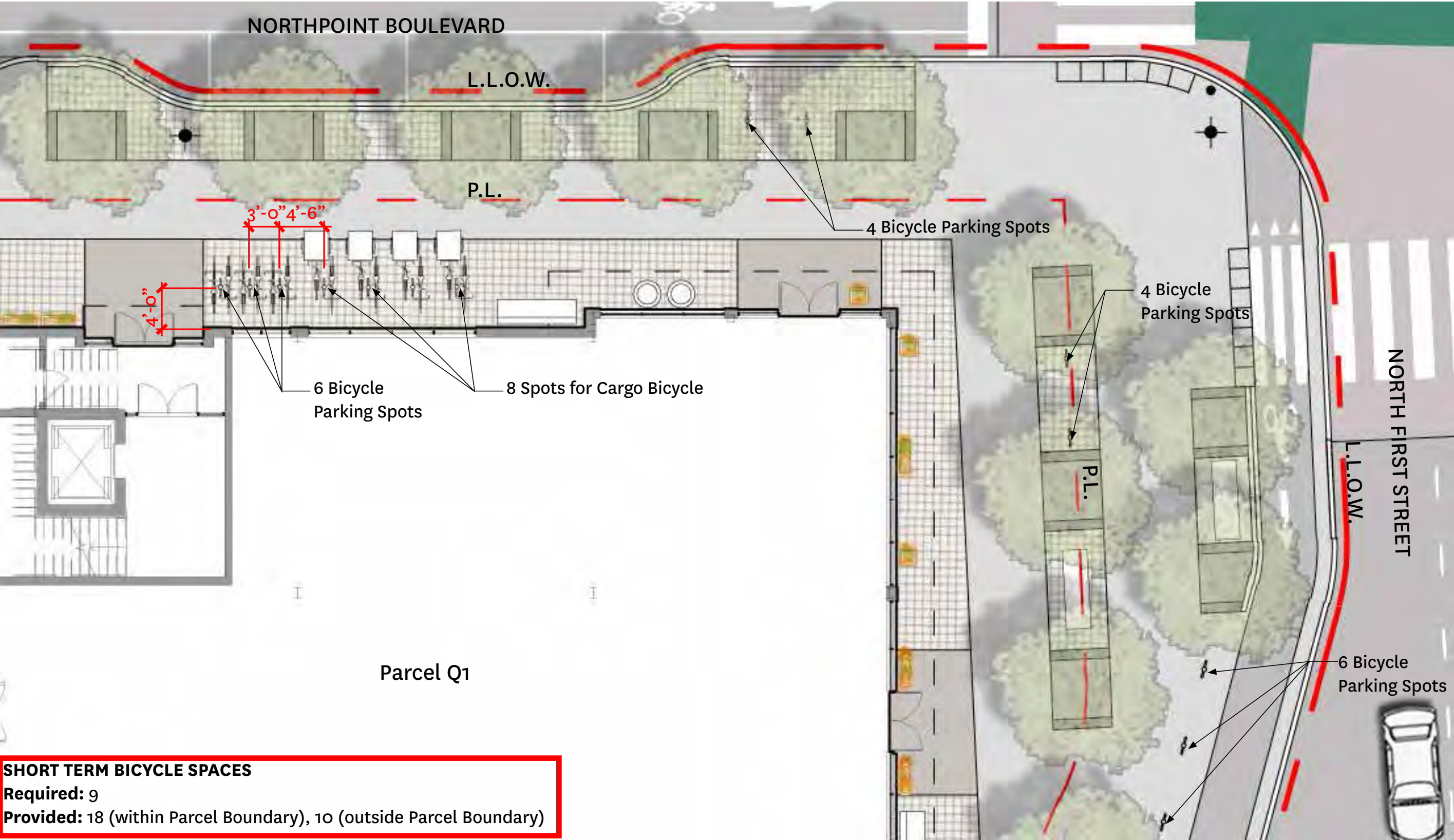
# Outdoor Bicycle Parking at Parcel Q1 Presented on July 11th



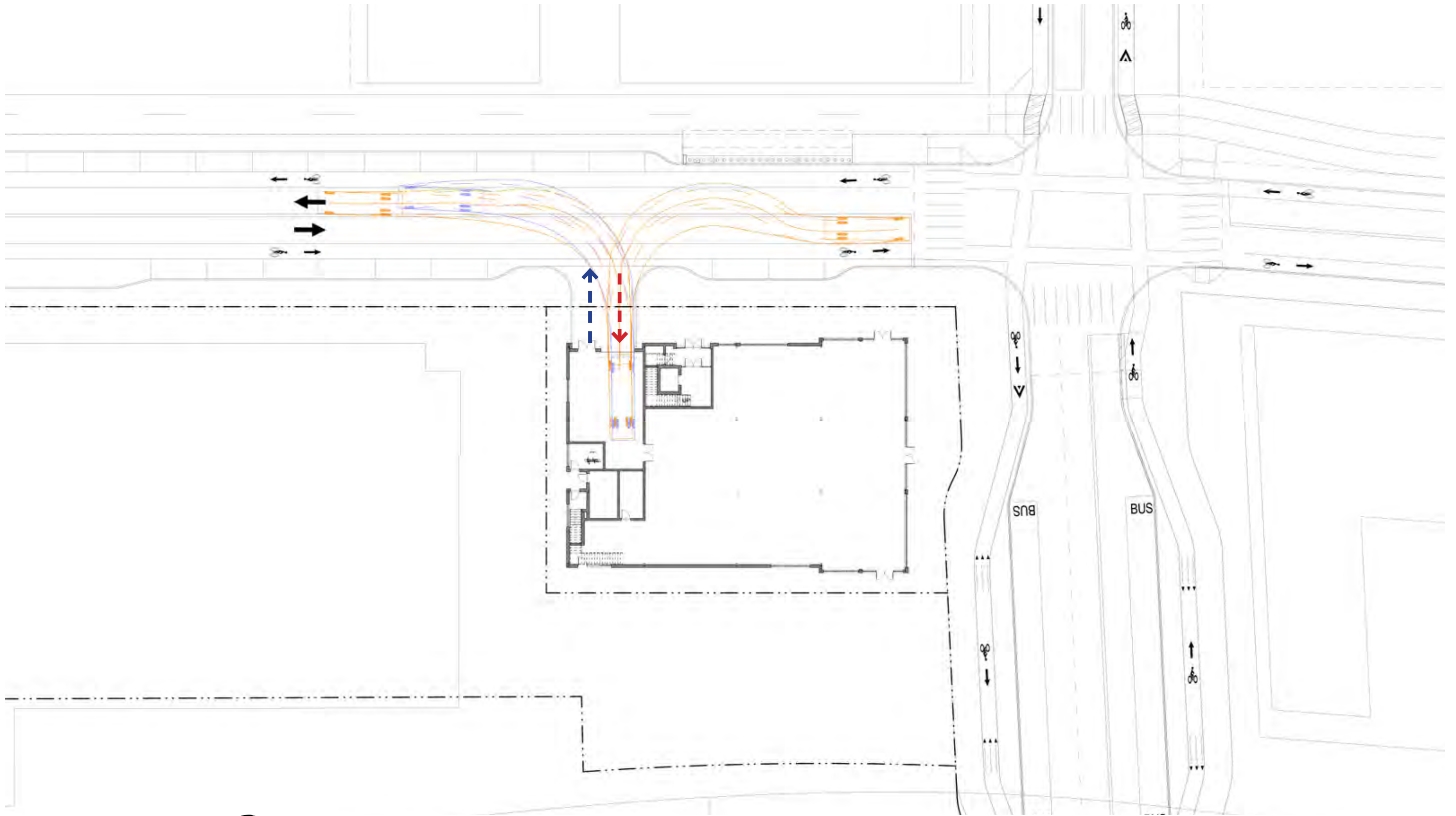
**SHORT TERM BICYCLE SPACES**  
**Required: 9**  
**Provided: 10 (within Parcel Boundary), 10 (outside Parcel Boundary)**



# Outdoor Bicycle Parking at Parcel Q1 - Revised



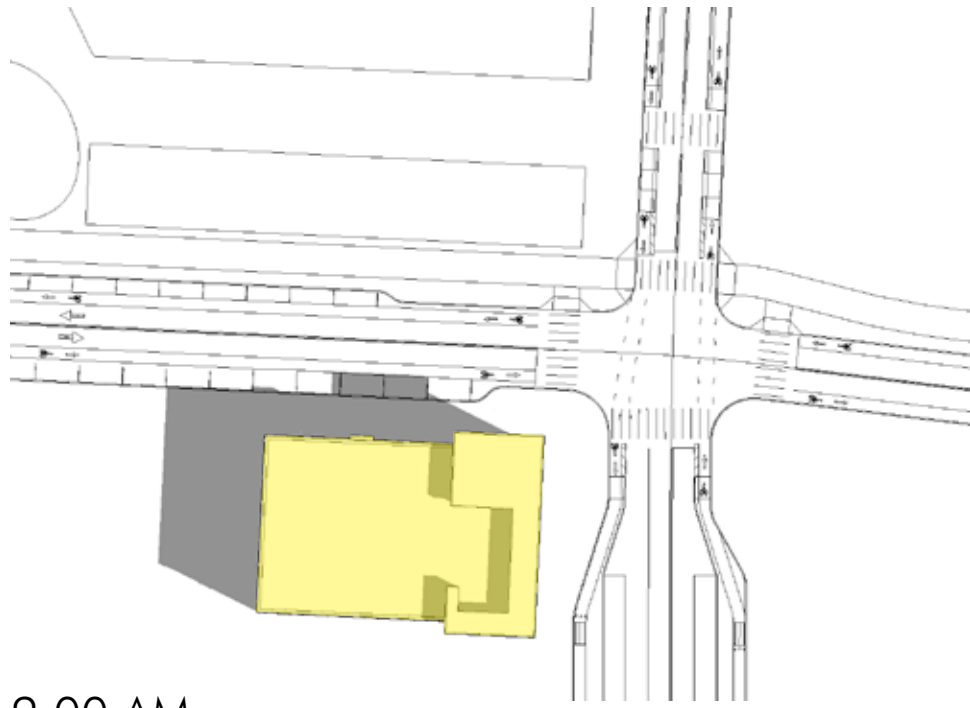




0' 32' 64'  
Scale: 1"=32'



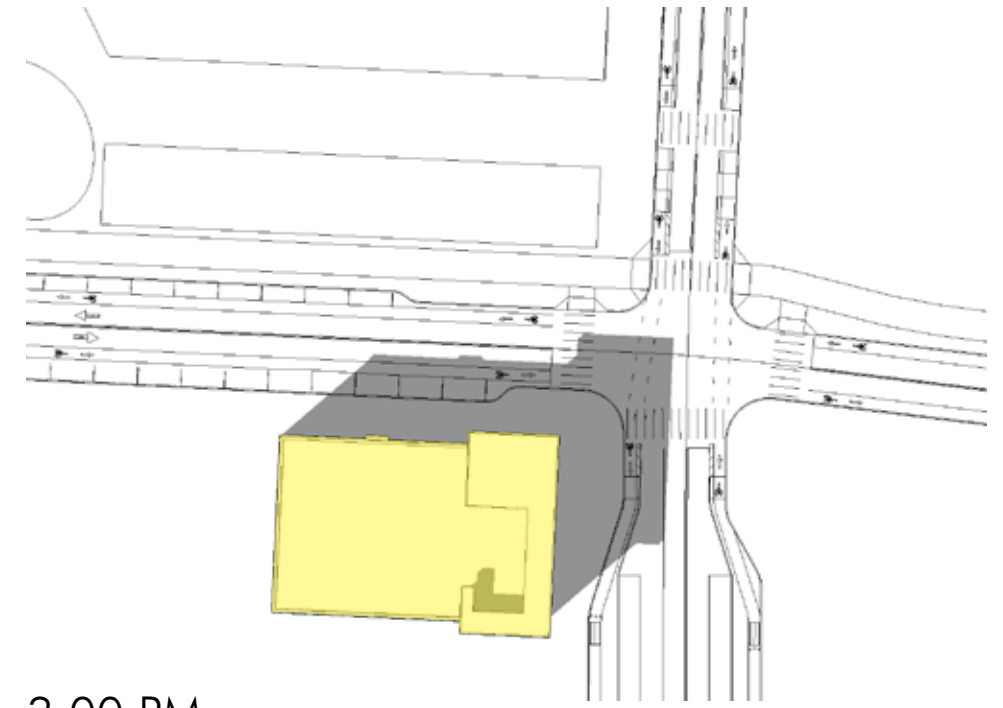
Trash - - - -> Loading - - - -> SU-30 entry - - - -> SU-30 exit - - - ->



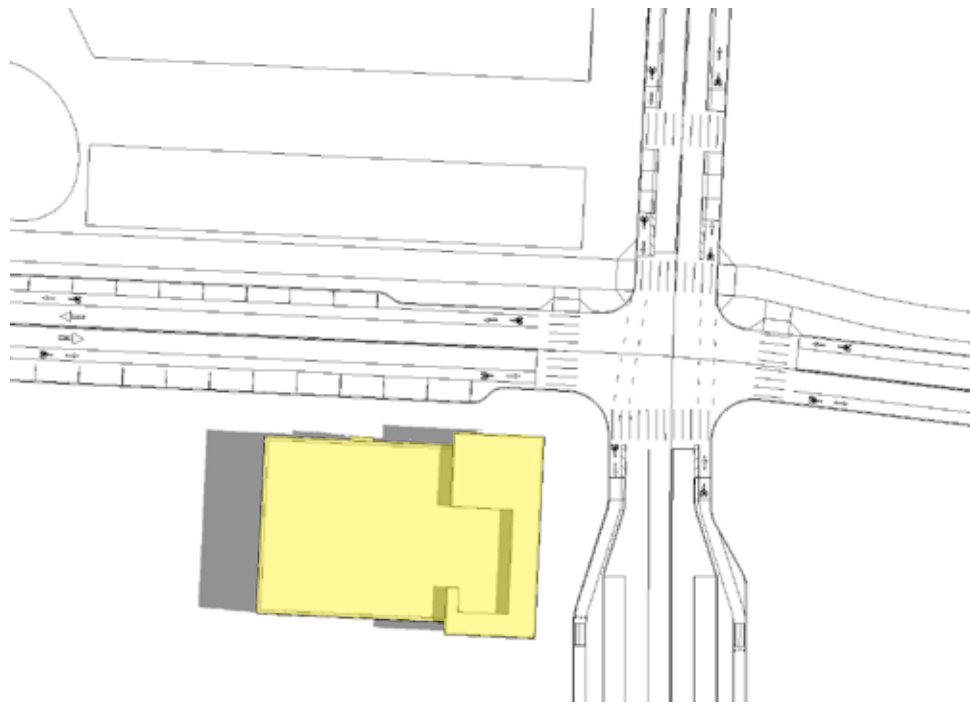
9:00 AM  
SHADOW STUDY: MARCH 21ST



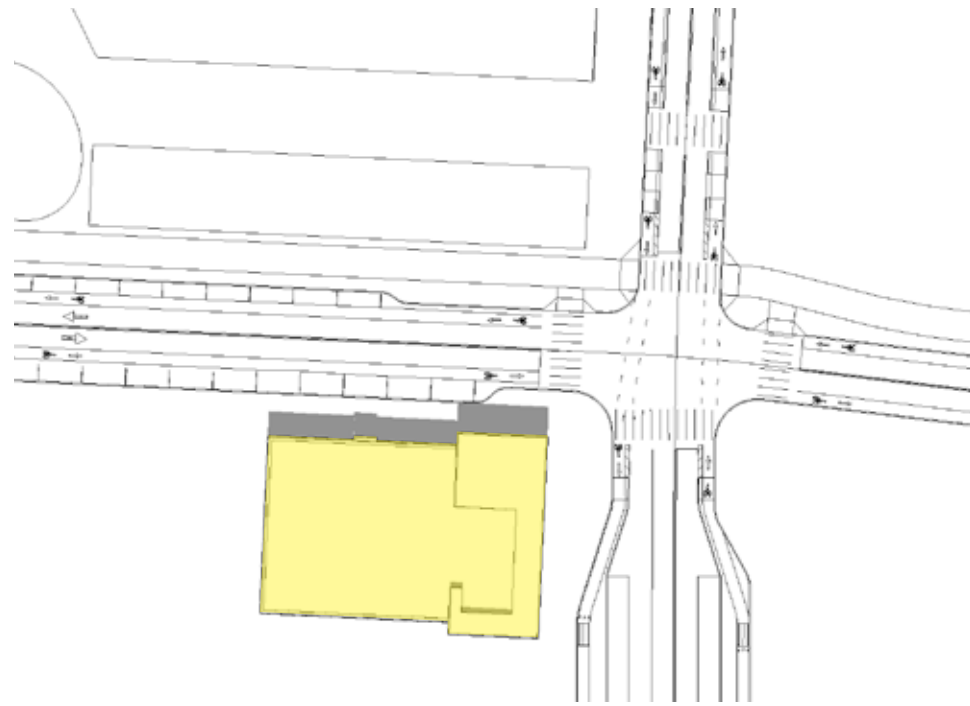
12:00 PM



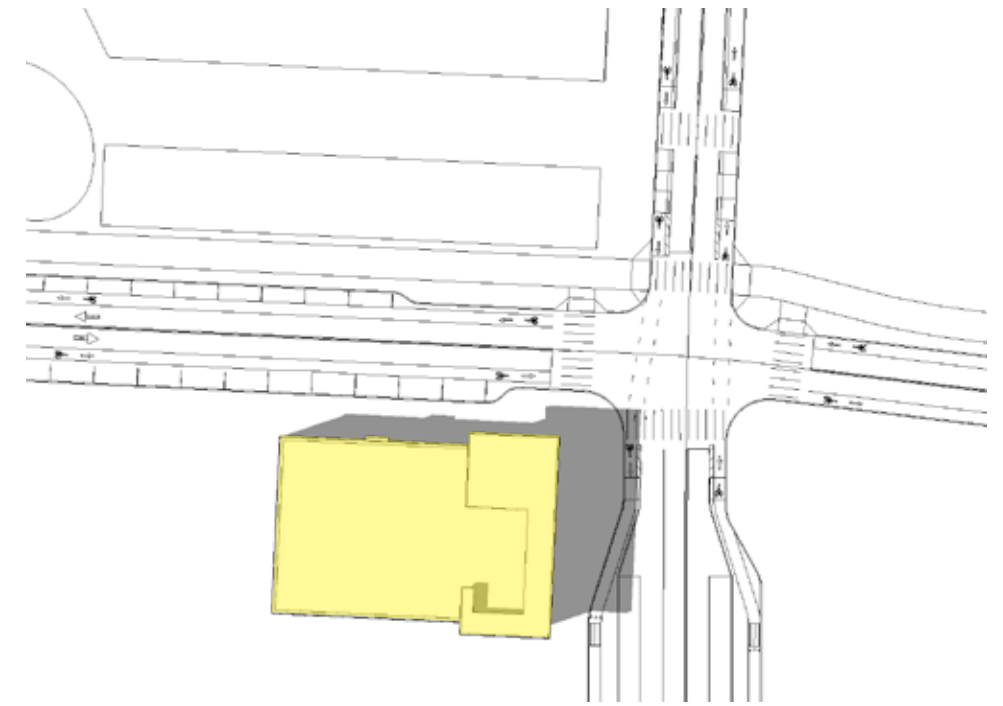
3:00 PM



9:00 AM  
SHADOW STUDY: JUNE 21ST

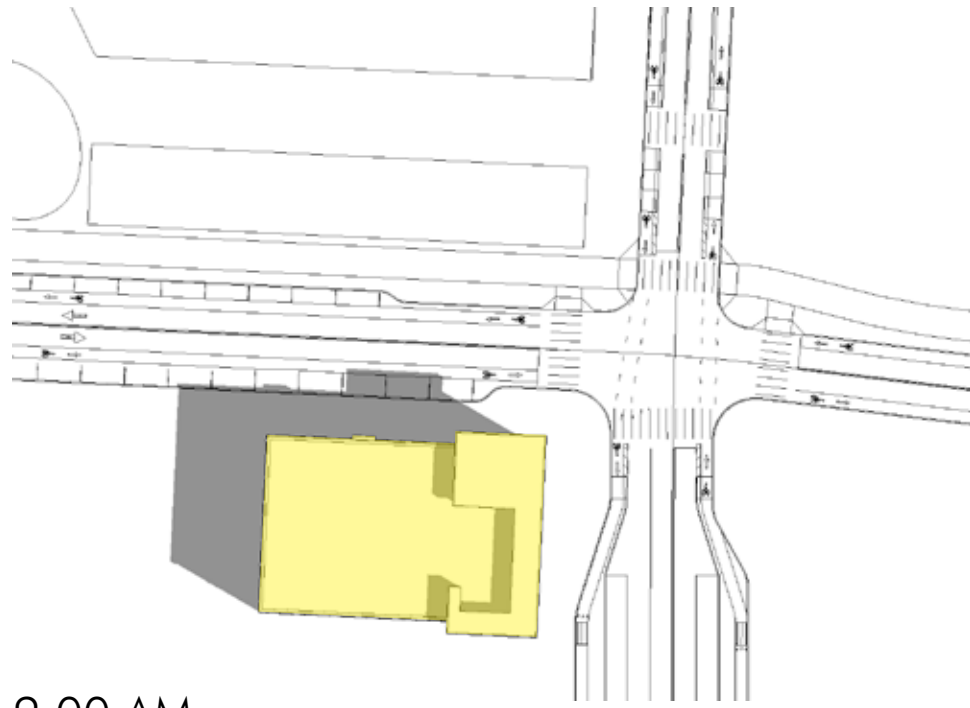


12:00 PM

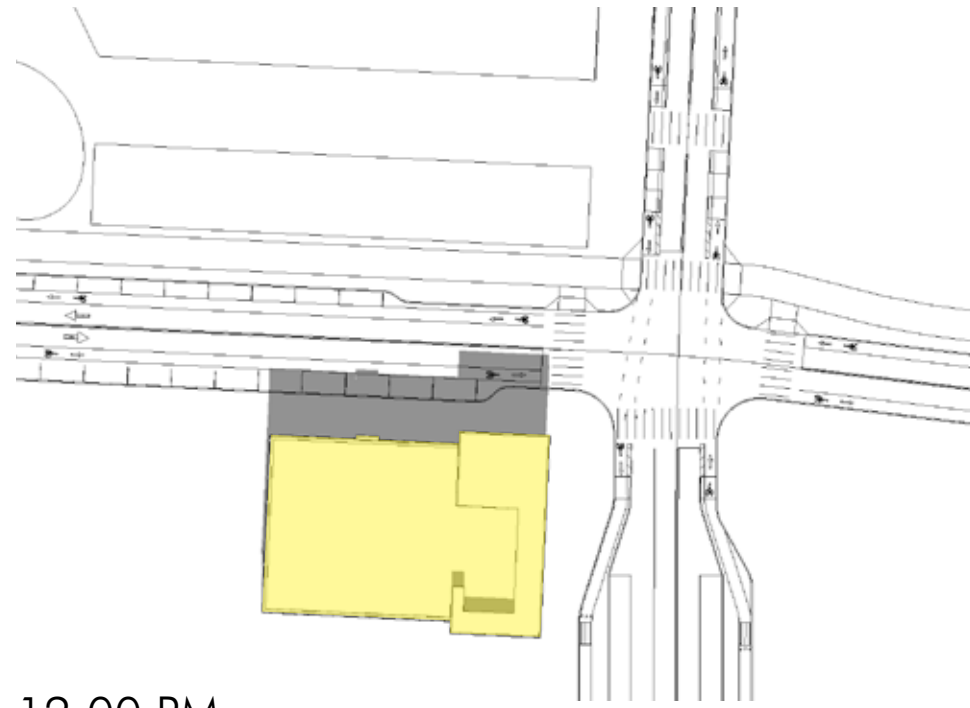


3:00 PM





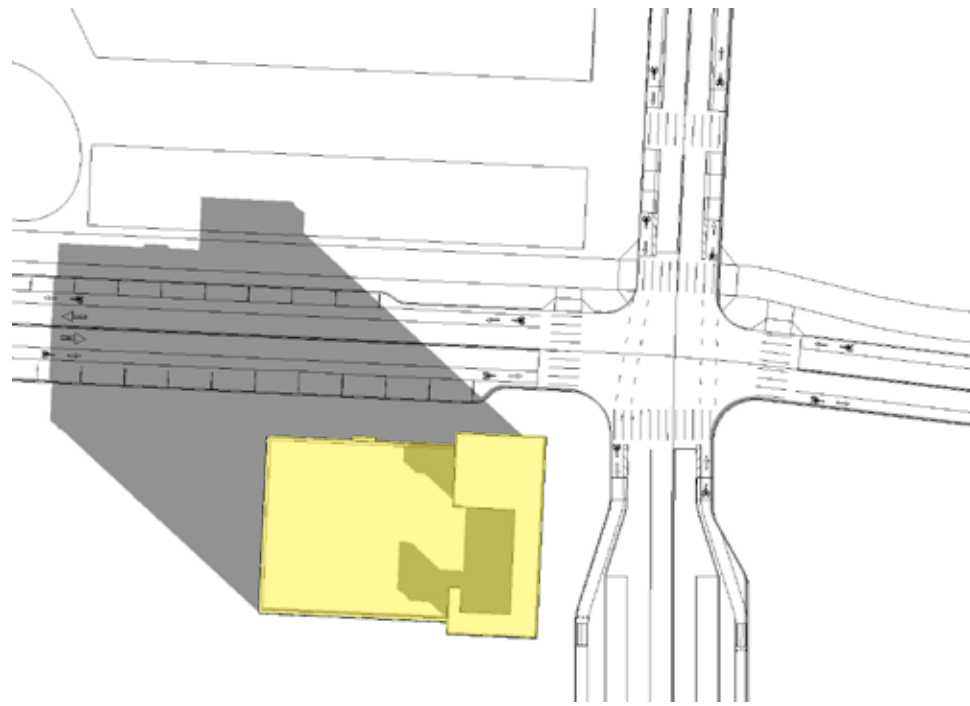
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SHADOW STUDY: SEPTEMBER 21ST



12:00 PM



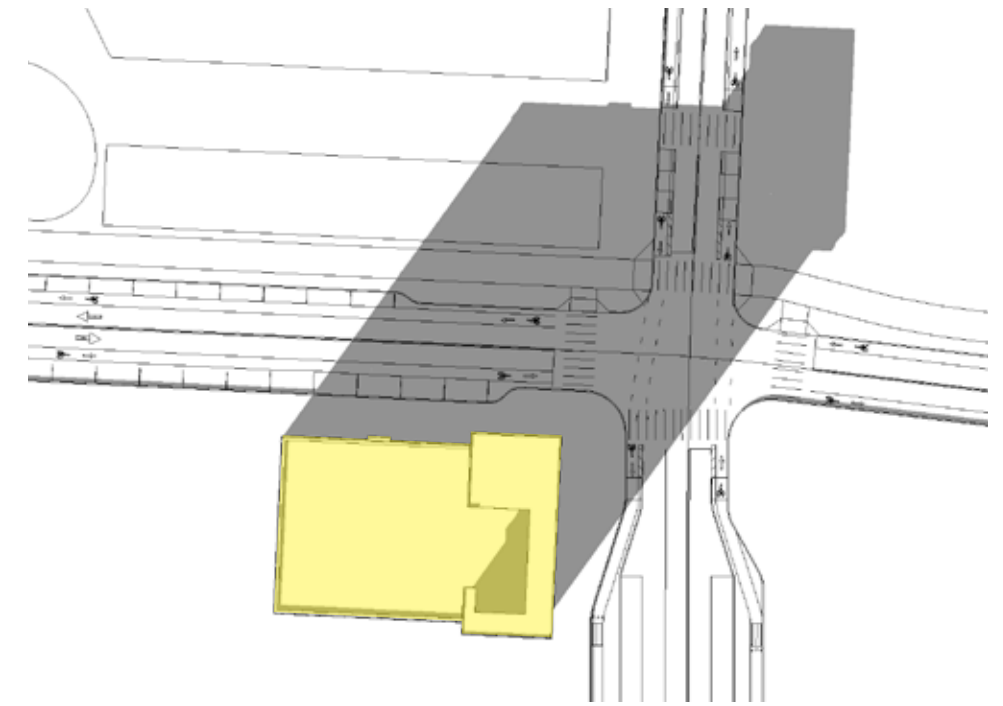
3:00 PM



9:00 AM  
SHADOW STUDY: DECEMBER 21ST



12:00 PM



3:00 PM



**LEGEND:**

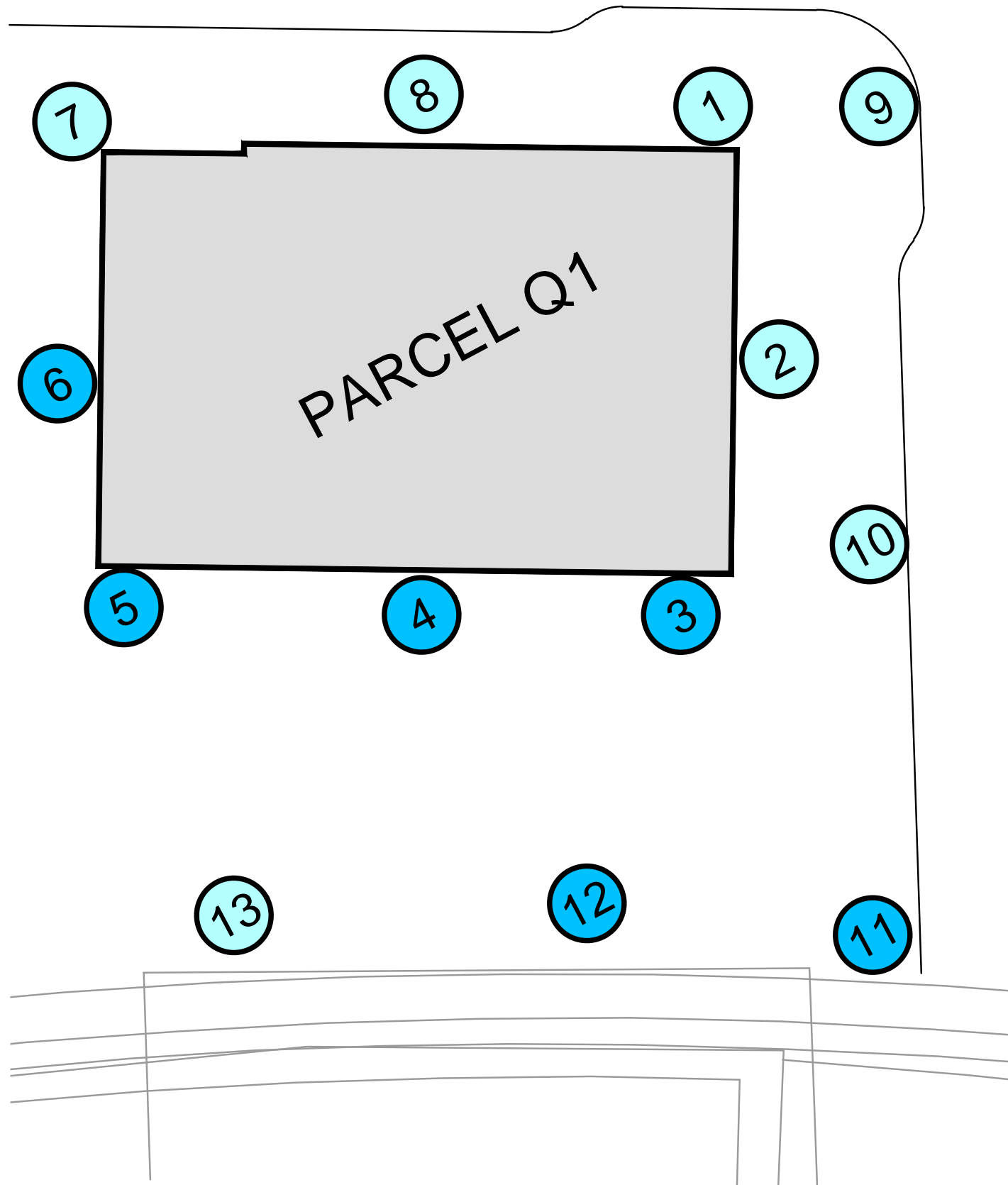
COMFORT CATEGORIES:

- Sitting
- Standing
- Strolling
- Walking
- Uncomfortable

SENSOR LOCATION:  
 Grade Level

**Pedestrian Wind Comfort Conditions**  
**Full Build**  
**Summer (May to October, 6:00 to 23:00)**

Northpoint - Parcel Q - Cambridge, MA



June 7, 2017

Mark Eclipse, AIA, LEED AP  
221 Hampshire Street  
Cambridge, MA 02139

Subject: Northpoint Parcel Q1 Building – Noise Compliance for Outdoor Mechanical

Dear Mark,

This letter presents our review of noise emissions from the proposed retail and office building at parcel Q1, located within the Northpoint development in Cambridge.

The Parcel Q1 building will be two stories, with retail on the ground floor with office space above. Noise from outdoor mechanical equipment must comply with the City of Cambridge and MassDEP noise regulations outlined below. This mechanical equipment is not included in the base building design package, but will be provided as part of tenant fitup. The developer (DIVCO) intends to make sure that tenant mechanical systems are compliant with the noise regulations.

**MassDEP Noise Regulation**

Our noise monitoring at the site found that the lowest overnight sound levels were 53 dBA. Based on this, the allowable limit under the MDEP noise regulation would be 63 dBA. The Cambridge noise regulation is more stringent, so a noise design that meets the Cambridge limits for a residential zone will also meet the MassDEP regulations.

**Cambridge Noise Control Ordinance**

Table 8.16.060E of the Ordinance (reproduced below) shows A weight and octave band limits for different zoning categories in Cambridge. The A weight limits are highlighted in yellow. The regulation applies to any point on the property, but is normally evaluated at the property line.

**Table of Zoning District Noise Standards (maximum octave band sound pressure levels).**

Octave Band center Frequency Measurement (Hz)	Residential Area		Residential in Industrial		Commercial Area	Industry Area
	Daytime	Other	Daytime	Other	Anytime	Anytime
31.5	76	68	79	72	79	83
63	75	67	78	71	78	82
125	69	61	73	65	73	77
250	62	52	68	57	68	73
500	56	46	62	51	62	67
1,000	50	40	56	45	56	61
2,000	45	33	51	39	51	57
4,000	40	28	47	34	47	53
8,000	38	26	44	32	44	50
Single Number Equivalent (dB(A))	60 dBA	50 dBA	65 dBA	55 dBA	65 dBA	70 dBA

**Noise at Nearby Receptors**

The developer intends to make sure outdoors mechanical systems for tenant fitups comply with the applicable noise regulations. It is in the developer's interests to avoid creating an outdoor noise nuisance on their own campus, and this all but assures there will be no significant noise to properties beyond Northpoint boundaries.

Sincerely,

CAVANAUGH TOCCI ASSOCIATES

*Timothy J. Foulkes*  
Timothy J. Foulkes



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

Project Checklist

Parcel Q1

Project: Northpoint Parcel Q1  
Date: 10/31/2017

Y	?	N			
1	0	0	<b>Integrative Process</b>		<b>1</b>
1			Credit	Integrative Process	1

Y	?	N			
14	0	2	<b>Location and Transportation</b>		<b>16</b>
		x	Credit	LEED for Neighborhood Development Location	16
1			Credit	Sensitive Land Protection	1
2			Credit	High Priority Site	2
5			Credit	Surrounding Density and Diverse Uses	5
5			Credit	Access to Quality Transit	5
1			Credit	Bicycle Facilities	1
		1	Credit	Reduced Parking Footprint	1
		1	Credit	Green Vehicles	1

Y	?	N			
4	3	3	<b>Sustainable Sites</b>		<b>10</b>
Y			Prereq	Construction Activity Pollution Prevention	Required
1			Credit	Site Assessment	1
		2	Credit	Site Development - Protect or Restore Habitat	2
	1		Credit	Open Space	1
	2	1	Credit	Rainwater Management	3
2			Credit	Heat Island Reduction	2
1			Credit	Light Pollution Reduction	1

Y	?	N			
5	0	6	<b>Water Efficiency</b>		<b>11</b>
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
1		1	Credit	Outdoor Water Use Reduction	2
3		3	Credit	Indoor Water Use Reduction	6
		2	Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1

Y	?	N			
10	3	20	<b>Energy and Atmosphere</b>		<b>33</b>
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
3		3	Credit	Enhanced Commissioning	6
5	2	11	Credit	Optimize Energy Performance	18
		1	Credit	Advanced Energy Metering	1
		2	Credit	Demand Response	2
		3	Credit	Renewable Energy Production	3
	1		Credit	Enhanced Refrigerant Management	1
2			Credit	Green Power and Carbon Offsets	2

Y	?	N			
4	0	9	<b>Materials and Resources</b>		<b>13</b>
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
		5	Credit	Building Life-Cycle Impact Reduction	5
1		1	Credit	Building Product Disclosure and Optimization - Environmental Product	2
		2	Credit	Building Product Disclosure and Optimization - Sourcing of F	2
1		1	Credit	Building Product Disclosure and Optimization - Material Ingre	2
2			Credit	Construction and Demolition Waste Management	2

Y	?	N			
8	0	8	<b>Indoor Environmental Quality</b>		<b>16</b>
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
2			Credit	Enhanced Indoor Air Quality Strategies	2
1		2	Credit	Low-Emitting Materials	3
1			Credit	Construction Indoor Air Quality Management Plan	1
1		1	Credit	Indoor Air Quality Assessment	2
1			Credit	Thermal Comfort	1
1		1	Credit	Interior Lighting	2
		3	Credit	Daylight	3
1			Credit	Quality Views	1
		1	Credit	Acoustic Performance	1

Y	?	N			
3	0	3	<b>Innovation</b>		<b>6</b>
1			Credit	Innovation in Design - Low Mercury Lighting	1
1			Credit	Innovation - EB Starter Kit	1
		1	Credit	Innovation - TBD	1
		1	Credit	Innovation - TBD	1
		1	Credit	Pilot Credit - TBD	1
1			Credit	LEED Accredited Professional	1

Y	?	N			
1	1	2	<b>Regional Priority</b>		<b>4</b>
1			Credit	Regional Priority: High Priority Site	1
	1		Credit	Regional Priority: Rainwater management (2 pt threshold)	1
x	x	x	Credit	Regional Priority: Optimize Energy (8 pt threshold)	1
		1	Credit	Regional Priority: Renewable Energy Production	1
x	x	x		Regional Priority: Indoor Water Use Reduction	1
		1		Regional Priority: Building Lifecycle Impact Reduction	1

<b>50</b>	<b>7</b>	<b>53</b>	<b>TOTALS</b>	Possible Points:	<b>110</b>
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**Certified:** 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110



## Northpoint Retail – Parcel Q1

### *Transitioning to Net Zero*

Parcel Q1 at Northpoint reflects new construction being built to the best of currently available technology and efficiency given market and program restraints. The design team continues to evaluate opportunities to reduce energy consumption and greenhouse gas emissions.

The team has brainstormed pathways for potential emissions reductions, including analyzing various building envelope properties, lighting and HVAC systems, future greening of the grid, and what it would take to fully electrify the buildings.

Additional energy savings are likely to be seen in advancement of building controls and active personalization of spaces. New technologies have the opportunity to be tested and incorporated as tenant turnover happens to bring spaces up to the most current integrated systems.

The biggest reduction potential in energy consumption and greenhouse gas emissions for an office and retail building will likely be in lighting and HVAC performance. In this case, the team predicts a significant reduction in building emissions is possible. Fit out program and technology is determined by the tenant that occupies the space.

The team discussed where it sees energy supply and decarbonization in the future, particularly with improvements from the grid electricity sources. The makeup of the Massachusetts energy grid is anticipated to shift more towards renewable energy sources in the coming decades. Thus, the electricity component consumed by the project under the current design could see an improvement in emissions factor, reducing the overall emissions from operation of the building.

The project mechanical equipment has the ability to be transitioned to all-electric systems in the future.

## Northpoint Parcel Q | Energy Modeling Report

### LEED and Building Permit Analyses

The purpose of this energy study is to investigate the project's compliance with the LEED v4 minimum and optimize energy performance criteria and Massachusetts Energy Code requirements, and to evaluate the impacts of several glazing options on the building overall energy use and cost. The minimum requirements of ASHRAE 90.1-2010 and 2013 versions as well as the proposed design assumptions are listed in the Energy Modeling Assumption table. The basis of design for HVAC system is two 20-30 ton RTUs, DX cooling and gas furnace, with hot water reheat at the zone level. In this preliminary analysis, the proposed envelop design has been assumed to meet the minimum requirements of ASHRAE 90.1-2013 which is the baseline code for MA Energy Code.

This energy analysis indicates that the project currently complies with the Minimum Energy Performance requirements of LEED v4 and the MA Energy Code. This report summarizes the Energy Efficiency Measures (EEMs) currently included in the proposed design as well as the recommended EEMs that can be incorporated for increased energy and energy cost savings.

### Methodology

The DOE II based energy simulation program, eQuest 3.65, has been used in this analysis to generate the estimated annual energy savings associated with each proposed improvement options. The building geometry is based on the Schematic Design drawings. The windows are customized in the energy models to reflect the exact proposed dimensions and positions. The calculated window-to-wall ratio is 42% as compared to the maximum allowed in the Baseline Code which is 40% for LEED and 31% for the MA Energy Code, used for the building permit application. Please note that the proposed estimated energy performance are not predictions of actual energy consumptions or costs for the proposed design after construction. The actual energy use will differ from these estimates due to the variations in occupancy patterns and schedules, weather conditions, and building operation and maintenance, but the energy modeling results should serve as an accurate comparison tool.

The following energy models were generated:

- LEED Baseline - ASHRAE 90.1-2010: Following the Appendix G – Performance Rating Method, the envelope, HVAC, lighting and service water heating systems are modified to meet the minimum requirements of 2010 version. This model is used as the baseline for LEED application.
- Building Permit Baseline - ASHRAE 90.1-2013: Following the Appendix G – Performance Rating Method, the envelope, HVAC, lighting and service water heating systems are modified to meet the minimum requirements of 2013 version. This model is used as the baseline for MA Energy Code analysis. Since the building is smaller than 100,000 SF, compliance with the Stretch Energy Code isn't required.
- Proposed Options: Represents the Basis of Design which has been used in this study. Also, three sets of alternatives for window systems were evaluated:
  - 1- Solarban 60 glazing plus 451T framing system for both retail and office floors.
  - 2- Solarban 60 plus 451T framing system for the retail floor and Arcade laminated window system for office floor.
  - 3- Starphire glazing plus 451T framing system for the retail floor and Arcade laminated window system for the office.
  - 4- Canopies for the retail level at 3 different depths: 3', 2.5' and 2'

## Energy Simulation Assumptions

### Parcel Q Energy Modeling Inputs - Baseline Requirements & Proposed Assumptions

	LEED ASHRAE 90.1-2010 Baseline	MA Energy Code ASHRAE 90.1-2013	Proposed Design & ECMs (Energy Conservation Measures)
Envelope	Metal Framing Curtainwall	U-value 0.45; SHGC-0.4	U-value 0.42; SHGC-0.4
	Window-To-Wall Ratio	As Proposed Design or <b>40%</b>	As Proposed Design or <b>31%</b>
	Roof	R-20 c.i.; U-value of 0.048	R-30 c.i.; U-value of 0.032
	Exterior Walls (steel-framed)	R-13 + R-7.5 c.i.; U-0.064	R-13 + R-10 c.i.; U-0.055
Interior Loads	Occupancy	Grocery: 150 SF/ Person Office: 250 SF/ Person	Grocery: 150 SF/ Person Office: 250 SF/ Person
	Interior Lighting	0.98 W/SF Office 1.68 W/SF Retail	0.98 W/SF Office 1.44 W/SF Retail
	Office Plug Load	Office: 0.75 W/SF Grocery: 0.25 W/SF, 1 W/SF Refrig.	Office: 0.75 W/SF Grocery: 0.25 W/SF, 1 W/SF Refrig.
	Elevator Load	1 car (15 kW per car)	1 car (15 kW per car)
DHW	Low-Flow Hot Water Fixtures	0.5 GPM Lavatory Faucet 2.2 GPM Kitchenette Faucet	0.5 GPM Lavatory Faucet 1.5 GPM Kitchenette Faucet
	Gas-fired Water Heater	Efficiency: 80%	Efficiency: 95%
Cooling System	Cooling System Type	Single Zone Sys.; DX Cooling	RTUs; Multi-zone; DX Cooling
	Cooling Tower Fan Control & Power	N/A	N/A
	Chiller Type & EFF	N/A	N/A
	Condenser Water Supply & ΔT	N/A	N/A
	Chilled Water Supply & ΔT	N/A	N/A
HW System	Heating System Type & Efficiency	Gas Furnace if Proposed design uses gas for space heating. <b>80%</b>	Gas furnace whether proposed case uses gas or electricity for space heating. <b>80%</b>
	HW Boilers	N/A	Hot water gas-fired condensing boilers; 90% efficient at 120° F return HW. 96% Efficient Condensing
	HW Pump Control	N/A	Variable Speed Pump
	HW Supply Temperature	N/A	150° F 30° F
	Hot Water ΔT	N/A	
Air-Side HVAC	Ventilation (Building)	Single Zone Systems; Meets ASHRAE 62.1	Through RTUs; Meets ASHRAE 62.1
	Space Heating/ Cooling	Single Zone; Constant Volume; DX Cooling; Gas-fired Furnace Heating	Variable Volume Roof Top Units; DX Cooling; Gas Furnace; HW reheat.
	System Efficiency	Cooling: 11 EER; 13 SEER	Cooling: 12 EER Heating: 80% efficient furnace and 90% efficient boilers
	Supply Fan Control	Constant Volume	Variable Speed

**Note 1** The Baseline Model is consistent with ASHRAE 90.1-2010 for LEED v4 and ASHRAE 90.1-2013 for new MA Energy Code.

**Note 2** The utility rates are consistent with the EIA average rates for MA through Feb-17 - Electricity: \$0.1541/ kWh; Gas: \$0.992/ therm



## Energy Simulation Results

The following table summarizes the annual energy consumption and energy cost savings as compared to the LEED and Energy Code Baseline models.

	Interior Lighting	Misc. Equipment	Space Heating	Space Cooling	Pumps & Aux.	Ventilation Fans	Exterior Lighting	Space Heating	Domestic HW	Total Site Energy	Total Source Energy	Site Energy Savings (%) Compared to Baseline		Source Energy Savings (%) Compared to Baseline		Total Energy Cost	Energy Cost Savings (%) Compared to Baseline	
	kWh	kWh	kWh	kWh	kWh	kWh	kWh	Therms	Therms	MBTU	MBTU	LEED	MA Code	LEED	MA Code	\$	LEED	MA Code
LEED Baseline	81,106	78,744	0	22,214	0	29,133	2,968	4,267	1,204	1,278	2,796	ASHRAE 2010	ASHRAE 2013	ASHRAE 2010	ASHRAE 2013	\$ 38,430	ASHRAE 2010	ASHRAE 2013
Code Baseline	73,165	78,744	0	17,990	0	24,195	2,968	3,442	1,201	1,137	2,530	2010	2013	2010	2013	\$ 34,973	2010	2013
Proposed Design	70,561	78,744	93	24,508	1,210	10,477	2,968	3,303	1,013	1,075	2,407	15.9%	5.4%	13.9%	4.9%	\$ 33,339	13.2%	4.7%
Proposed Alt#1	70,561	78,744	86	24,494	1,118	10,250	2,968	3,051	1,013	1,049	2,376	17.9%	7.7%	15.0%	6.1%	\$ 33,036	14.0%	5.5%
Proposed Alt#2	70,561	78,744	74	26,134	1,031	10,753	2,968	2,573	1,011	1,008	2,345	21.1%	11.4%	16.1%	7.3%	\$ 32,875	14.5%	6.0%
Proposed Alt#3	70,561	78,744	68	31,676	1,067	13,113	2,968	2,149	1,011	992	2,380	22.3%	12.7%	14.9%	5.9%	\$ 33,677	12.4%	3.7%
Starphire + 3' C	70,561	78,744	69	29,500	1,026	12,167	2,968	2,279	1,011	994	2,362	22.2%	12.5%	15.5%	6.7%	\$ 33,319	13.3%	4.7%
Starphire + 2.5' C	70,561	78,744	69	29,827	1,030	12,304	2,968	2,258	1,011	994	2,364	22.2%	12.6%	15.4%	6.6%	\$ 33,369	13.2%	4.6%
Starphire + 2' C	70,561	78,744	69	30,147	1,036	12,453	2,968	2,237	1,011	993	2,367	22.3%	12.6%	15.4%	6.5%	\$ 33,421	13.0%	4.4%

LEED Baseline: Baseline model following the requirements of ASHRAE 90.1-2010, Appendix G, for LEED v4; 40% window-to-wall ratio

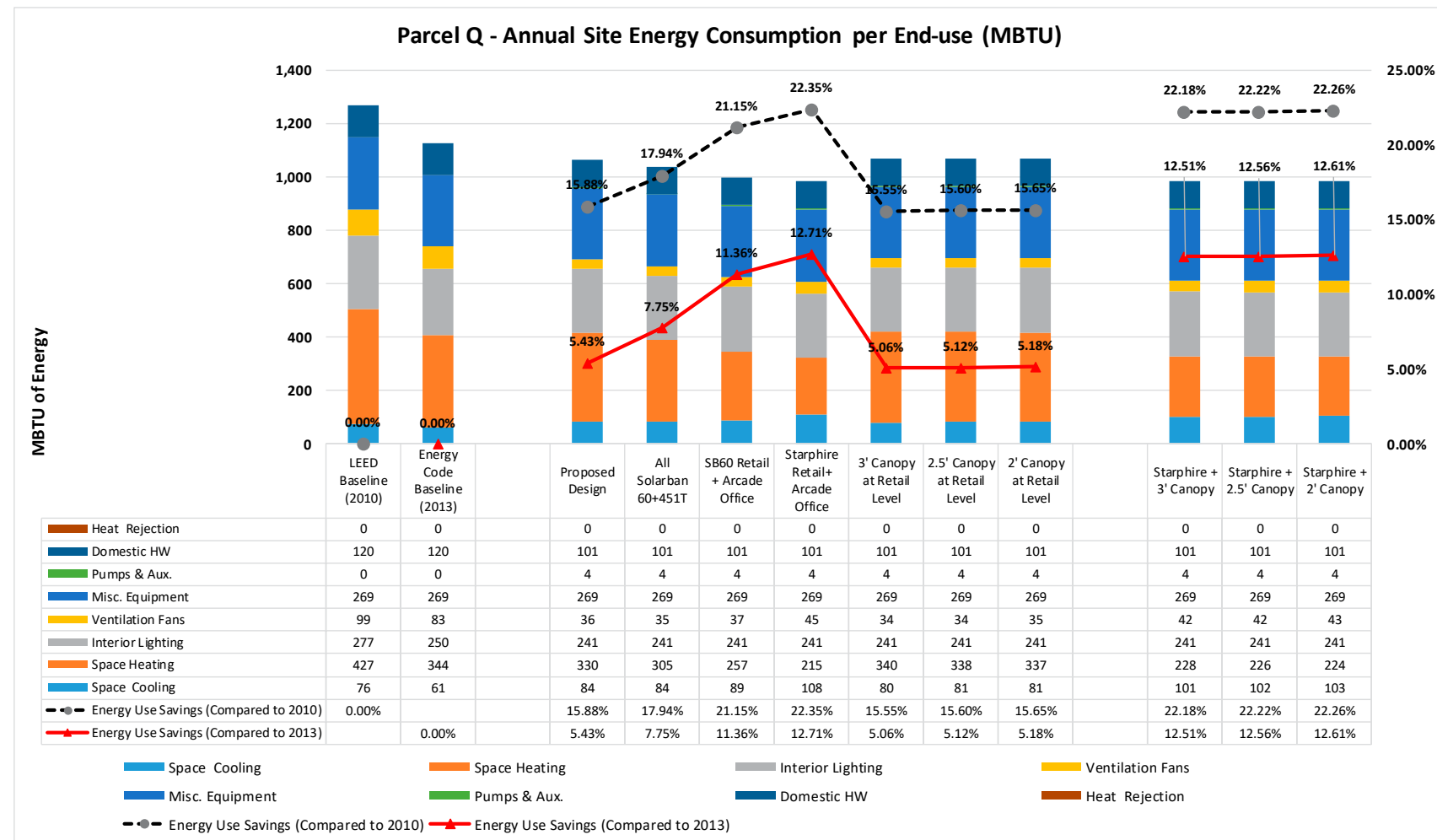
Code Baseline: Baseline model following the requirements of ASHRAE 90.1-2013, Appendix G, for MA Energy Code; 31% window-to-wall ratio

Proposed Design (42% WWR): Schematic Design, considering ASHRAE 2013 compliant window system for both Office and Retail Floors

Proposed Alt#1: Schematic Design, considering Solarban 60 glass and 451T framing system for both Office and Retail Floors

Proposed Alt#2: Schematic Design, considering Solarban 60 glass and 451T framing system for Retail and laminated Arcade window system for Office.

Proposed Alt#3: Schematic Design, considering Starphire glass and 451T framing system for Retail and laminated Arcade window system for Office.



## Energy Efficiency Measures

**Proposed Option 1 - Basis of Design:** The following EEMs are included in the base building design.

- Improved thermal properties for glazing assembly
- Increased roof insulation (only for LEED)
- Increased wall insulation (only for LEED)
- High efficiency gas-fired condensing boilers
- Reduced interior lighting power density; ASHRAE 90.1-2013 levels (only as compared to the LEED baseline case) – This EEM needs a signed Tenant Lease Agreement
- Low-flow plumbing fixtures
- Variable Speed, premium efficiency hot water pumping system

**Proposed Option 2:** Additional EEMs would be analyzed.

- Increase roof insulation: R-35 Continuous
- Increase wall insulation: R-21 batt and R-10 continuous
- Increase the cooling efficiency of RTUs.

Additional EEMs to be investigated for increased energy savings:

- Dual enthalpy air-side economizer
- Hot water loop temperature reset control

## Conclusion:

As shown in the energy savings table and graph, Alternative#3 – Starphire glass in retail and Arcade in office – results in the highest site energy use savings, due to a high value of SHGC associated with Starphire glass which helps with the space heating energy savings; however, this alternative results in an increase in the annual site energy cost as compared to other alternatives because of the higher SHGC which leads to a higher space cooling demand. Since the cost of electricity per unit in Massachusetts is significantly higher than the cost of gas per unit, the annual building operating cost increases when the overall electricity use in the building is higher than the gas consumption. To overcome some of the energy penalties associated with an increase in the space cooling demand at the retail level, the project team has decided to implement canopies in the base building design. As shown in the table and graph, the last three energy modeling runs focus on the combination of Starphire glazing and different depth of canopies. These alternatives help with the overall energy cost savings as canopies block a portion of solar radiation and therefore decreases the indoor energy needs for space cooling during the peak cooling hours.

	Section	Requirements	Compliance	Check
	13.73 Use Regulations	Any use permitted in Article 16 but subject only to the requirements and limitations of this section 13.70.	Potential Uses: Retail, Office	✓
	13.73.1 Special Provisions Related to Permitted Retail Uses	Individual cannot exceed 15,000 gross square feet; no off street parking, Planning Board may approve 1 space per 2,000 sf gross floor area	No Proposed Uses over 15,000sf	✓
	13.74.4 Other Dimensional Requirements	No specified minimum lot size, width, or yards	N/A	
	13.74.31 Portions of Buildings Limited to Sixty-five Feet	Buildings within 50 feet of public open space, max height = 65 feet	Proposed Building Height Q1 = 41'-6"; Max 42'-0"	✓
	13.76 Parking and Loading, see Article 6.83 Loading Facility Category C	First Bay Required at 10,000 gsf	Proposed Loading Bay	✓
	6.107.2 Schedule of Long-Term Bicycle Parking requirements 6.107.3 Schedule of Short-Term Bicycle Parking requirements	Bike Parking: Retail - Long Term .1 per 1,000sf, Short Term 1 per 1,000sf / Office - Long Term .3 per 1,000sf, Short Term .06 per 1,000sf	Proposed Bike Parking: Short Term = 10, Long Term = 4	✓
	13.76 Parking and Loading	No accessory parking required	Proposed Parking = none	✓

Zoning Map: NP/PUD6 according to Northpoint Business, Office, and Residential District. See Article 13 for PUD-6 Regulations

Section	Guideline Description	Compliance	Check
3.12 Parcel Q	The design of the building should recognize its significant presence on the corner of North First Street and NorthPoint Boulevard.	Building height rises at North First Street to engage the corner intersection within glass pavilion. Glazing on south, north, and east façades create transparency along North First Street, the MBTA plaza, and North Point Boulevard.	✓
3.12 Parcel Q	Special consideration should be made to the relationship to the MBTA Greenline viaduct to the south.	Ground floor glazing at corner engages MBTA Green Line Viaduct, and plaza with a zone for potential wayfinding graphics and tenant directory on the south façade.	✓
3.12 Parcel Q	The configuration shall positively use the orientation and exposure to sun and minimize shadows on parks and surrounding buildings.	Two story building limits shadows on surrounding streets and buildings. Height on east façade allows natural daylight to enter building.	✓
3.12 Parcel Q	Special corner treatment should be considered on NorthPoint Boulevard.	Corner of NorthPoint Boulevard and North First Street is a glass pavilion with clerestory.	✓
3.12 Parcel Q	Have visual presence from First Street and the Train Station	The glass pavilion creates visual presence from First Street and the Train Station.	✓
3.12 Parcel Q	Ground floor of the building should engage the water street Park and the retail plaza and retail frontage should be maximized along all sides.	Glazing along ground floor allows for continuous retail frontage along North First Street and NorthPoint Boulevard and the Green Line station plaza.	✓
3.12 Parcel Q	These structures should have interesting roofscape as they will be highly visible from majority of the buildings at NorthPoint.	The Roof of the glass pavilion overhangs on all sides to creating a powerful visible element on the major intersection of NorthPoint Boulevard and North First Street.	✓

Page	Section	Guideline Description	Compliance	Check
47	3.2 Streetscape and Circulation	The pedestrian experience in and around transit stops should be designed to be pedestrian and bicycle friendly. Expanded sidewalks in public realm in and around such station are encouraged whenever feasible.	The sidewalks around the transit stops are planted with two rows of trees and wide in order to encourage pedestrian use and provide pleasant environment for a variety of users. The sidewalks are bicycle friendly as bike racks are installed within the planting zone and along the cycle track.	✓
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 Q1 are planted with two rows of trees along First Street and with a single row of trees along NorthPoint Boulevard. Benches located along the face of the building or between the planting zones encourage social interaction and pedestrian uses. Streetscape elements, such as bike racks, trash receptacles and movable furniture reinforce the inviting character of the streetscape.	✓
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 open spaces.	The double row of street trees at the Parcel Q1 along First Street allows for the streetscape to act as a green corridor/connector at Cambridge Crossing linking the Parcel Q1 streetscape with the Common and the retail corridor.	✓
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 treatment and the use of street furniture such as benches, movable tables and chairs and bike racks along Parcel Q1 connects the public to retail spaces and provides a friendly pedestrian experience.	✓
48	3.2.1 First Street	The developer will provide expanded sidewalks and bicycle accommodation from the transit hub to the center of the NorthPoint.	The expanded sidewalks along Parcel Q1 are part of the larger strategy of providing a continuous green and view corridor along First Street at the heart of Cambridge Crossing.	✓
52	3.2.3 NorthPoint Boulevard	Street Trees will be planted on both sides of the street where possible, and the design of the Community Path should be handled as a part of the street and sidewalk section of NorthPoint Boulevard, and should meet the standards required for buffers and signage.	Street trees are planted on NorthPoint Boulevard along Parcel Q1. Crosswalks along NorthPoint Boulevard connect Parcel Q1 streetscape with the Community Path, the retail corridor and Park I Open Space.	✓

## SIGNAGE CRITERIA

See building elevations for extent of allowable signage.

## GUIDING PRINCIPLES

These criteria provide guidelines for the design of tenant signage to ensure high standards of design quality that enhances the Northpoint neighborhood and conveys the Tenant's identity. Tenants are encouraged to use high quality materials and lighting in creative ways that enliven the streetscape. Individual brand identity, colors, and logos are encouraged. All tenant designs must be submitted for review by DivcoWest, their retail master plan architect, and the base building architect, in conformance with applicable requirements.

## PREFERRED SIGNAGE TYPES AND AREAS



**Wall Signs:** 1 sf per linear foot of tenant frontage, 60 sf maximum. 20 feet maximum height above grade, provided it is below the sill line of the second floor windows or the lowest point of the roof, whichever is less.



**Awning Signs:** Graphics are encouraged on tenant installed canopies. All graphics must comply with City of Cambridge area requirements.



**Projecting Signs:** 6 sf maximum area per side; 1 sign allowed per ground floor establishment; 1 sign allowed at a public building entrance not serving a ground floor establishment.



**Window Graphics** are considered Wall Signs per Cambridge Zoning Ordinance.

## SIGNAGE ILLUMINATION

**Preferred:**



**Preferred: Halo-illumination:** individual reverse channel letters with lighting concealed inside the letter, casting light behind the letter against an opaque sign panel of wall surface.



**Preferred: Exterior gooseneck-type lighting** of individual lettering. Continuous strip lighting is not allowed.



**Preferred: Internally illuminated individual translucent letters** with opaque sides. Lighting to be mounted inside each individual letter. See Zoning Article 7 for additional requirements.

## INTRODUCTION

Tenant design guidelines are intended to encourage a high level of design and placemaking for the neighborhood and maximize visibility and identity for tenants. All tenant designs must be submitted for review by DivcoWest, their retail master plan architect, and the base building architect, in conformance with applicable requirements.



## STOREFRONT AND SURROUND

Tenants are encouraged to design and construct a creative storefront and surround in accordance with their individual brand identity. The specific limits of design work will be indicated in each tenant's Lease.



Storefront and surround materials should be high quality, low maintenance, and durable. Storefronts should maximize the amount of clear glazing and display space. Storefront glazing should have a minimum 6" high durable/impact resistant base. Recessed entries are encouraged.

## AWNINGS

Awnings and canopies are strongly encouraged by all tenants to provide character and variety to the streetscape, increase identity of retailers, and cover pedestrians from inclement weather.



Awnings should not extend below 9'-0" above the sidewalk and should project a minimum of 3'-0" and a maximum of 5'-0" from the building face. Tenant identity color and graphics are encouraged. Awning material may be fabric, metal or glass. Awnings should not have vertical sides.

## DISPLAY ZONE

The first six feet of a retail tenant's space shall be a display zone with creative displays that showcase their brand identity. Merchandising racks and fixtures are not permitted within the display zone. Lighting that highlights the displays shall be provided within the zone. Lighting shall be on a timeclock and must be illuminated during hours determined by the landlord.



Well-designed and detailed storefronts and surrounds are encouraged.



Tenants in multi-story buildings must incorporate ventilation louvers into their storefront design.



Awnings and canopies add to tenant identity and create protection for pedestrians and diners.



A display zone showcases tenant's identity and enlivens the streetscape.

# NorthPoint

Cambridge, Massachusetts

