



MXD
CAMBRIDGE, MA

**INFILL DEVELOPMENT
CONCEPT PLAN**

AMENDMENT 2

JULY 1 2021

SASAKI

PREFACE

The second major amendment to the Approved Infill Development Concept Plan (Concept Plan Amendment #2) represents the culmination of years of work from community members, public officials and private entities. At its core Concept Plan Amendment #2 has been created to enable the relocation of a proposed electrical substation and its associated heavy infrastructure from a predominantly residential East Cambridge neighborhood to a below-grade site in the Kendall Square Mixed-Use Development District (the “MXD District”). As part of this relocation and as contemplated by the recent amendments to the Cambridge Zoning Ordinance and Kendall Square Urban Redevelopment Plan discussed in Chapter 1.0, Concept Plan Amendment #2 also seeks to construct 800,000 SF of new commercial GFA, consolidate the approved residential GFA originally in two buildings into one building, create significant additional public open space, and relocate existing above-grade parking spaces and construct new parking spaces into two below-grade parking garages.

This proposed substation relocation provides a significant public benefit to the adjoining East Cambridge residential neighborhood. The following Concept Plan Amendment #2 and its contents reflect a constrained optimization deliberated in public for many months, and fundamentally intended to address a pressing public need and improve the resilience of the area electrical grid for decades to come.

In addition to evaluating the broader changes at the master plan level, the CRA Board and Planning Board will have the opportunity to review the proposed design of Commercial Building C, Commercial Building D, and Residential Building South during the subsequent design review process to ensure the continued, successful transformation of Kendall Square into a dynamic and vibrant neighborhood. The clarifying points below should be considered along with the materials found in this submission:

- While responsive to a parallel, state-directed regulatory process, the electrical substation and its associated infrastructure drive the configuration and distribution of GFA envisioned as part of this Concept Plan Amendment #2.
- The demolition of the existing above-grade Blue Garage and the creation of public space in its stead creates the opportunity for new connections through the adjacent Volpe development and improves pedestrian connections throughout the North Parcel and the MXD District.
- The proposed amendment affirms a commitment to accelerate delivery of the full amount of remaining residential GFA in the MXD District (approximately 420,000 SF), which includes up to 465 market rate, affordable, middle income, and three-bedroom rental units in the same phase as Commercial Building C.

SUBMITTED TO**Cambridge Community Development Department**

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The Cambridge Redevelopment Authority

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APPLICANT**Boston Properties Limited Partnership**

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July 1st 2021

THE CONSULTANT TEAM**Sasaki
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Concept Plan
Permitting

Pickard Chilton

Commercial Building A (145 Broadway)
Commercial Building B (325 Main Street)
Commercial Building C (290 Binney Street)
Commercial Building D (250 Binney Street)

Stantec

Residential Building South (135 Broadway)
Commercial Building A Architect of Record
Commercial Building B Architect of Record

NBBJ
Sasaki

Urban Design (Center Plaza)
Urban Design / Project Landscape Architects (Center Plaza)
145 Broadway Interior Architects / Landscape Architects

Lemon Brooke
VHB
The Green Engineer
RWDI
Haley & Aldrich

325 Main Street Landscape Architects
Traffic Engineering / Civil Engineering
Sustainability
Environmental Science
Geotech

INTRODUCTION AND ACKNOWLEDGMENTS

This second amendment to the MXD Infill Development Concept Plan is the product of a collaborative effort from many teams. It has been prepared to communicate a comprehensive vision and is hoped that this concept plan framework will provide the blueprint for a robust mix of uses, vibrant open space, and a strong sense of place for the MXD District in Kendall Square.

This framework communicates the complete spectrum of existing regulations, site assumptions, architectural and urban design principles through a series of diagrams and annotations. Unless otherwise noted, illustrations in this document represent existing and proposed development surrounding the project site. However, the development proposal remains cognizant of potential for changing future conditions.

This document shows improvements to the public realm in some instances beyond the MXD boundary that are conceptual and require further coordination with the City of Cambridge.

We thank all of the participants for their generous contribution of time and insight.



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The background of the slide is a repeating pattern of isometric city skyline illustrations. Each illustration shows a cluster of buildings of varying heights and shapes, rendered in a light yellow color against a solid yellow background. The buildings are arranged in a way that creates a sense of depth and perspective, with some buildings appearing closer and larger than others.

1. PROPOSED DEVELOPMENT PLAN

1.0 INTRODUCTION

On January 17, 2017, Boston Properties Limited Partnership (the “Applicant”) received approval of the MXD Infill Development Concept Plan (the “Original Concept Plan”) from the Cambridge Redevelopment Authority (CRA), and the Planning Board. A special permit authorizing the development of new commercial and residential uses within the Kendall Square Mixed-Use Development District (the “MXD District”) as shown on the Original Concept Plan was issued by the Planning Board on March 20, 2017 (PB#315, or “The Original Special Permit”). The Original Concept Plan authorized the development of additional infill gross floor area (“Infill GFA”), pursuant to Article 14 of the City of Cambridge Zoning Ordinance (the “Zoning Ordinance”) and Amendment No. 10 to the Kendall Square Urban Redevelopment Plan (KSURP), totaling 1,065,900 SF (SF) of gross floor area (“GFA”) on four development sites within the existing Kendall Center complex in Kendall Square.

On December 4, 2018 the Applicant received approval of the first major amendment to the Original Concept Plan (the “Concept Plan Amendment #1”). Concept Plan Amendment #1 was focused primarily on shifting approved commercial GFA associated with Commercial Building B as shown on the Original Concept Plan from 250 Binney Street, to 325 Main Street, as well as offering an alternative approach to accommodating parking needs by taking advantage of opportunities to appropriately reduce the delivery of new structured parking spaces. There were no changes to the amount of approved GFA, the allocation of GFA between residential and commercial uses or any of the substance of the Original Special Permit.

The Applicant is submitting this second major amendment to Original Concept Plan (the “Concept Plan Amendment #2”) in order to reflect the recently enacted changes to Article 14 of the Zoning Ordinance (the “MXD Zoning”) and Amendment No. 11 to the KSURP approved by the CRA Board on September 16, 2020, and by the Cambridge City Council on February 3, 2021. Concept Plan Amendment #2 proposes the development of additional Utility Project GFA for a total Aggregate GFA not to exceed 5,073,000 SF of GFA on five development sites within the existing Kendall Center complex in Kendall Square. The proposed modifications will establish a revised master plan that will accommodate the relocation of an Eversource electrical substation to the MXD in response to a planning priority identified by the City of Cambridge and various community groups, the construction of 800,000 SF of new commercial Utility Project GFA, the consolidation of the approved residential GFA from the

Original Concept Plan into one building, the creation of significant additional public open space, and the relocation of existing above-grade parking spaces and the construction of new parking spaces into two below-grade parking garages (the “Project”).

As set forth in the MXD Zoning Ordinance, the currently proposed Concept Plan Amendment #2 is being submitted to the Planning Board and the CRA as a major amendment, meaning that this application shall be subject to all of the same review, notice and hearing requirements as would be applicable to a new special permit. This Concept Plan Amendment #2 identifies and documents the key differences between the development program and building massing scheme previously presented in Concept Plan Amendment #1 and as required by Section 14.32.2 of the Zoning Ordinance also provides narratives and supporting graphical materials that document the Project associated with the following:

Refer to Figure 1.3 for a site context map

- **Proposed Development Plan**
- **Zoning Conformance**
- **Open Space Plan**
- **Retail Plan**
- **Transportation**
- **Infrastructure**
- **Environmental Impacts**
- **Sustainability Plan**
- **Phasing Plan**
- **Design Guidelines**

1. Formerly known as the Kendall Square Urban Renewal Plan

A summary of the Concept Plan Amendment #2 is as follows. original values from Concept Plan Amendment #1 are shown in ~~red-strikethrough~~ text to highlight the additive changes to the existing approved program that would result from the currently proposed Project.

- Up to **465** ~~425~~ units of new, diverse housing across a broad spectrum of unit type, size, and affordability;
- **1,428,200** ~~636,500~~ GFA of new commercial lab/office space;
- **105,200** GFA of new innovation space converted from existing office uses.
- Approximately **17,700** ~~10,000~~ GFA of new ground floor retail/active use space that will activate Broadway and add to the activation of Kendall Square and the North Parcel;
- Approximately **40,000** ~~42,300~~ GFA of retail space that will activate Main Street and the Kendall Plaza;
- New and enhanced open space and streetscapes along Broadway, Binney Street, Main Street and the 6th Street connector;
- New covered and secure long-term and short-term bicycle parking spaces; and
- Up to **414** additional vehicle parking spaces.

As demonstrated herein, Concept Plan Amendment #2 remains in conformance with the criteria for approval of a Planned Unit Development of Article 12.35.3 and Project Review Special Permit set forth in Section 19.25 of the Zoning Ordinance (as discussed in Section 2), the Sustainable Design and Development Requirements of Article 22.23 (as discussed in Section 6), and satisfies all other requirements necessary for the issuance of the requested major amendment to the Special Permit.

The following sections provide a brief summary of Project updates, an overview of the Project history and background, including a summary of Massachusetts Environmental Policy Act (MEPA) and Special Permit Review and approvals, a description of existing and proposed conditions, an analysis of the Project's consistency with the K2 Master Plan and Volpe Design Guidelines, a description of the Project's requested amendments to the Special Permit, and a summary of public benefits associated with the Project.

CONSTRUCTION UPDATE

Since Concept Plan Amendment #1 was approved in 2019, the Applicant has completed construction of the commercial space and ground floor retail associated with the Commercial Building A (Phase 1) located at 145 Broadway. Commercial Building B (Phase 2), also known as 325 Main Street, is currently under construction and anticipated to be completed in Q2 of 2022. As part of delivery of the Phase 2 building—which will serve as Google's local headquarters—the Applicant is reconstructing approximately 40,000 SF of retail uses, enhancing the Green Garage Rooftop Garden, creating a new public lobby in the ground floor of 325 Main Street, and working closely with the Massachusetts Bay Transportation Authority (MBTA) to renovate the existing Kendall Northbound Headhouse.

PROJECT UPDATES

SUMMARY OF PROJECT REFINEMENTS SINCE CONCEPT PLAN AMENDMENT #1

The Project consists of modifications to the approved development program and building massing scheme previously presented in the Concept Plan #1, as well as an amended approach to accommodating parking requirements. Overall, the development program and accompanying building massing and site modifications are limited to the North Parcel and propose to alter the amount of approved GFA through the addition of 800,000 of new commercial Infill GFA. The Project maintains the previously approved residential GFA of 400,000 and accompanying affordability commitments with several key modifications, which include the elimination of condominium units and the consolidation of all residential GFA into a single building. The proposed modifications comply fully with the MXD Zoning, and the following points summarize the refinements to the Project since the Concept Plan Amendment #1.

Delivery of Substation Relocation Benefit: At the request of the City of Cambridge, and in response to growing demand for electricity in Cambridge the Project accommodates the relocation of a proposed electrical substation from its previously-envisioned Fulkerson Street location to a below-grade site within the MXD. Re-siting this electrical substation will require the demolition of the existing above-grade parking structure at the center of the North Parcel known as the “Blue Garage,” as well as extensive excavation to house the new facility below grade. Refer to Section 9.1 for additional details on the timing/phasing of the proposed electrical substation work.

Addition of 800,000 Commercial GFA: The Project proposes the construction of 800,000 SF of additional commercial GFA added to the MXD District comprising of two buildings, located at 290 Binney (Commercial Building C) and 250 Binney (Commercial Building D).

Delivery of Enhanced Public Space: The Project proposes an incremental increase of approximately 17,400 square feet of open space relative to what was proposed in Concept Plan Amendment #1. The new open space and pedestrian realm improvements will include a new approximately 30,000 SF central open space known as “Center Plaza”, which will serve to consolidate and expand upon the open space currently contained within Broadway and Binney Parks and contribute to a vibrant public realm, foster new cross-block connections and promote pedestrian connectivity through the North Parcel, and with the Volpe development to the east. The new open space and public realm improvements will serve residents, workers, and the general public alike. The Project aims to convert the existing service drives to East and West “Plaza Drives” (comprising an area of approximately 20,000 SF altogether), that will operate as streets that accommodate existing service uses while prioritizing bicycle and pedestrian access..

Consolidation of Residential GFA: The Project proposes to consolidate the approved residential GFA formerly located at 135 Broadway (Residential Building South) and 290 Binney Street (Residential Building North) into one residential building located at 135 Broadway. The total residential GFA located in the Residential Building South will be consistent with Concept Plan Amendment #1, however the Project proposes to eliminate the previously proposed condominium units (consistent with the recent amendment to the MXD Zoning) and proposes up to 465 all-rental units. The Project will continue to meet the MXD affordability requirements.

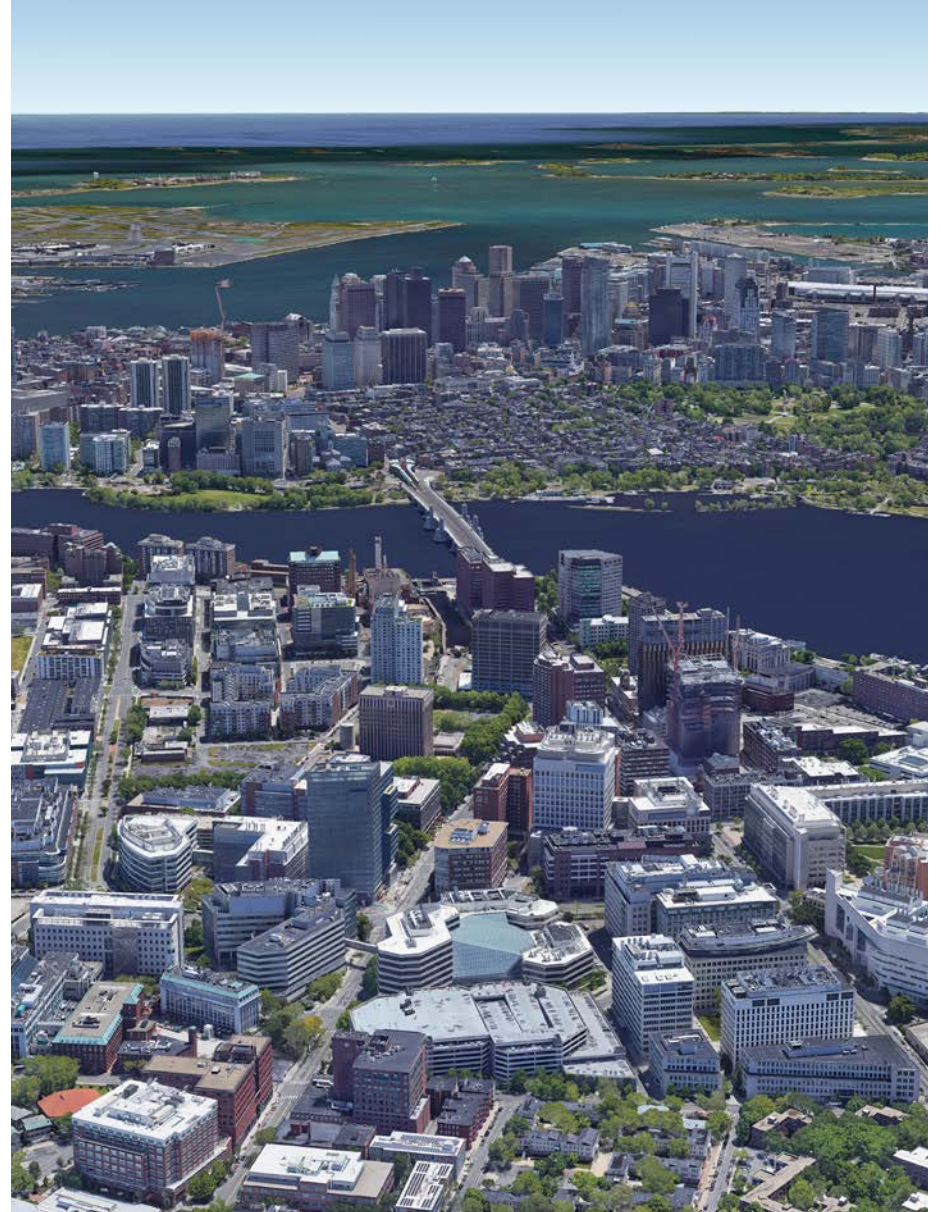
Parking Consolidation: To accommodate the electrical substation, the approximately 1,170 existing above-grade parking spaces associated with the Blue Garage will be relocated below-grade into two, connected parking garages situated beneath Commercial Building C and Commercial Building D. The Project also proposes up to an additional 414 vehicle parking spaces to be accommodated within the two garages. Please refer to Section 5.5 for a detailed summary of the Applicant's approach to accommodating vehicle parking needs the adoption of a managed parking strategy to service existing and proposed commercial buildings.

Bicycle Parking: The Applicant is proposing to implement a commercial bicycle valet to service the majority of anticipated demand for bicycle parking from the Residential Building, as well as Commercial Buildings C and D. Acknowledging the unique approach to bicycle parking being proposed as part of this plan, in accordance with Article 6.108.1 the Applicant therefore intends to seek a modification of bicycle parking requirements via special permit. The implications of applying these minimum bicycle parking requirements to the Project have been determined by applying the ratios established by the City of Cambridge Bicycle Parking Guide, shown in Table 5-1 of Section 5, Transportation.



1978 AERIAL VIEW OF KENDALL SQUARE.

FIGURE 1.1



2020 GOOGLE EARTH AERIAL VIEW OF KENDALL SQUARE.

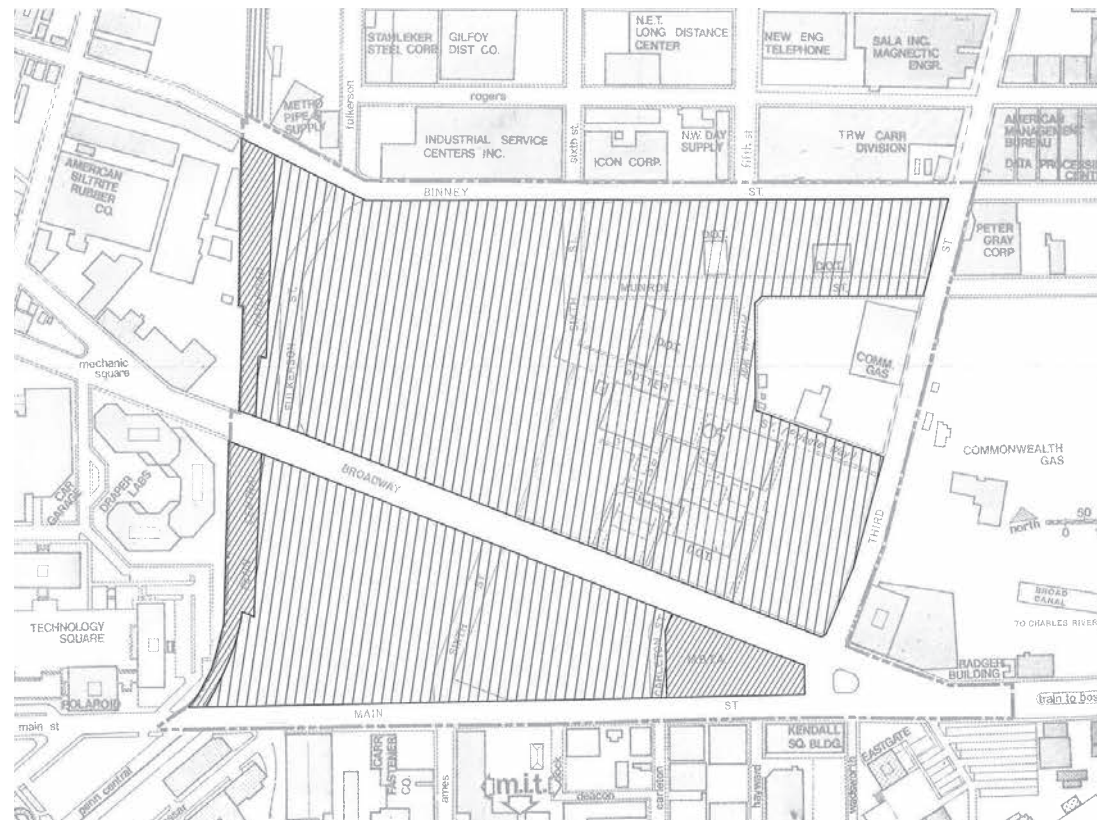
1.1 PROJECT HISTORY AND BACKGROUND

The adoption of the KSURP in 1965 allowed the CRA to acquire 70 parcels of land, relocate over 100 businesses, demolish approximately 100 buildings and clear 43 acres of land. The original Kendall Square Urban Renewal Area included land between Main, Third, and Binney Streets as well as the Grand Junction Railroad. Figure 1.1 shows the 1976 KSURP boundary and property acquisition areas.

In the late 1970s, the CRA and Cambridge City Council engaged the public in a planning effort which led to the creation of the MXD District in 1977 with the intention of attracting mixed-use development to the area north of the MBTA Kendall/MIT Red Line station. The District boundary, as shown in Figure 1.2, represents the zoning district established to facilitate the development within the Urban Renewal Area for all non-federally owned land. The CRA selected Boston Properties as the master developer for the Cambridge Center Master Plan.

Over the last 30 years, Kendall Square has become a center of innovation, creativity, and technology—exceeding the expectations of many of the planners, designers and developers who oversaw its creation. KSURP Amendment No. 10 advanced the City's planning goals for the KSURP consistent with recommendations from the 2013 K2C2 Planning Study for Kendall Square through more efficient use of area infrastructure. Amendment No.10 also updated the KSURP to achieve broader goals of creating a sustainable and inclusive neighborhood by way of requirements for affordable housing and open space. New provisions of Amendment No.10 also assisted the CRA in linking transit investment to development to ensure that the KSURP area's transit assets keep pace with growth.

Hewing to the principles and approach articulated above, KSURP Amendment No. 11 incrementally expands on these foundations by linking continued, strong market demand for commercial space in Kendall Square with investment in critical infrastructure—in this case, an Eversource electrical substation that will serve the Cambridge community and improve the resilience of the area electrical grid for decades to come.



1976 KSURP BOUNDARY AND PROPERTY ACQUISITION AREAS

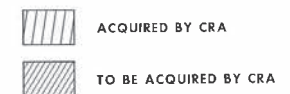


FIGURE 1.2

1.1.1 MEPA REVIEW

Since amended in 1977, the KSURP has been updated and amended a number of times since it was originally reviewed and approved (EEA No. 1891). As part of these updates (Plan Amendments No. 2 through No. 9), the CRA and the Applicant regularly consulted with and updated the MEPA office, specifically on changes to traffic as a result of development program changes.

This section provides a summary of the review and approval history for the most recent previously-reviewed proposed build condition, Plan Amendment No. 10. Refer to the Single Environmental Impact Report (SEIR) filed on October 15, 2015 for a detailed summary of the original KSURP MEPA filing and Plan Amendments No. 2 through No. 9. This Section also provides an update on the status of review and approval for Plan Amendment No. 11.

MOST RECENT PREVIOUSLY - REVIEWED PROPOSED BUILD CONDITION - AMENDMENT NO. 10

On April 15, 2015, the CRA filed an “expanded” Notice of Project Change (NPC) with a request for a Single Environmental Impact Review (SEIR) for a Major Plan Amendment to the KSURP (Amendment No. 10) to allow for up to 1,034,000 gross SF of additional commercial and residential development. The submission to MEPA included a traffic analysis, which projected that a maximum build out under Plan Amendment No. 10 would have generated 14,457 average daily vehicle trips.

On May 29, 2015, the Secretary of Energy and Environmental Affairs issued a Certificate requiring a SEIR, which was filed on October 15, 2015. The SEIR addressed the Scope presented in the NPC Certificate and, at the request of City of Cambridge reviewers, represented a final updated document

for the Project rather than providing a document that solely responds to the MEPA Scope. On November 25, 2015 the Secretary issued a Certificate on the SEIR that determined the Project adequately and properly complied with MEPA and its implementing regulations. The Certificate required the CRA to file an NPC that included updated mitigation commitments for public review and comment. Following MEPA review, Plan Amendment No. 10 was approved by the Cambridge City Council on December 21, 2015.

On June 30, 2016 the Applicant filed the NPC, and on August 5, 2016, the Secretary of EEA issued a Certificate that determined the Project adequately and properly complied with MEPA and its implementing regulations.

On May 9th, 2017 the Kendall Square Transit Enhancement Program (KSTEP) Memorandum of Understanding (MOU) was executed.

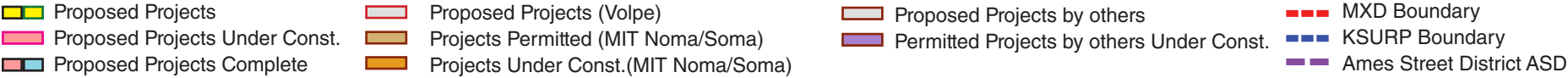
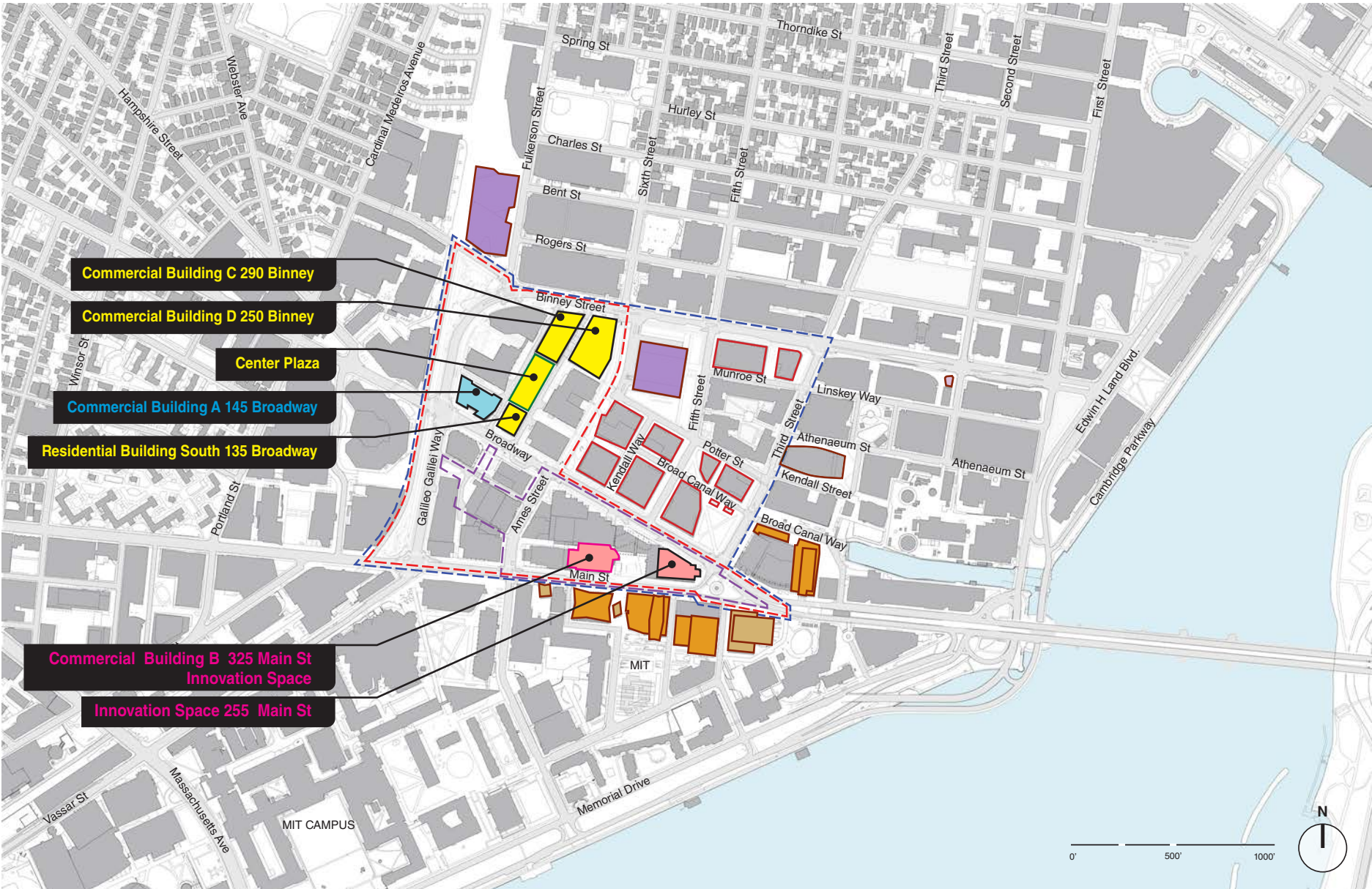
REVIEW STATUS OF KSURP AMENDMENT NO. 11

The CRA anticipates filing an “expanded” NPC concurrently with this Concept Plan Amendment #1 for a Major Plan Amendment to the KSURP (Amendment No. 11). The Project described herein is consistent with Amendment No. 11 to the KSURP which was approved by the CRA Board on September 16, 2021, and by the Cambridge City Council on February 3, 2021.

1.1.2 SPECIAL PERMIT REVIEW

The Original Special Permit was issued for the Original Concept Plan on March 20, 2017, and Concept Plan Amendment #1 was approved on December 4, 2018. Concept Plan Amendment #1 was focused primarily on shifting approved commercial GFA associated with Commercial Building B as shown on the Original Concept Plan from 250 Binney Street to 325 Main Street, as well as offering an alternative approach to accommodating parking needs by taking advantage of opportunities to appropriately reduce the delivery of new structured parking spaces. There were no changes to the amount of approved GFA, the allocation of GFA between residential and commercial uses or any of the substance of the Original Special Permit.

The currently proposed amendments to the Original Concept Plan are being submitted to the Planning Board and the CRA Board as a Major Amendment, which results in this application being subject to all of the same notice and hearing requirements as would be applicable to a new Special Permit. Under Concept Plan Amendment #2, the Planning Board and the CRA Board shall consider the substance of the proposed changes (and not review the entirety of the Original Concept Plan) where proposed changes do not constitute a substantial alteration to the intent, purpose and substance of the Special Permit.



1.2 EXISTING SITE CONDITIONS

EXISTING ZONING

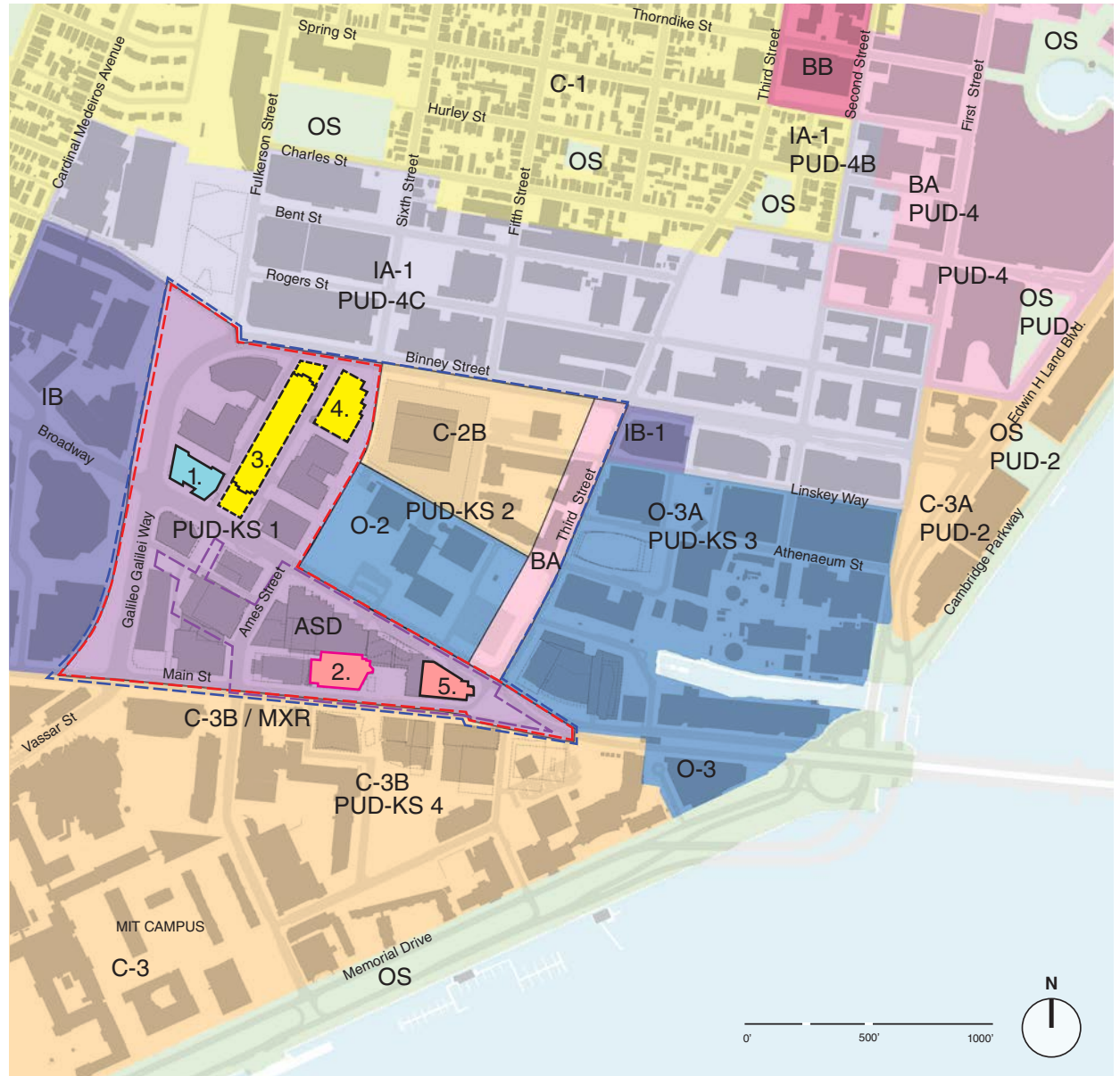
FIGURE 1.4

Figure 1.4 presents the existing zoning map and Figure 1.5 presents the existing land use diagram. Refer to Table 1-1 for a summary of the existing development on these parcels.

Figure 1.6 A and B shows the specific parcels within the Kendall Center areas that are the subject of the Project.

Please note the existing site conditions for Commercial Building A have been revised to show the building is complete. Similarly, the existing site conditions for Commercial Building B have been revised to show the building under construction.

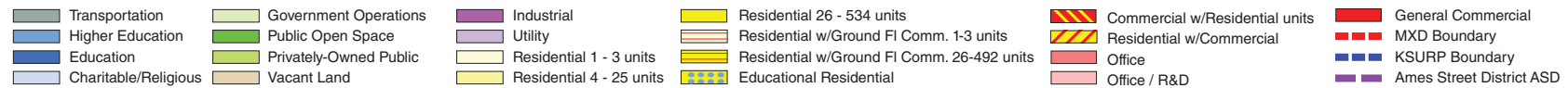
1. 145 Broadway
2. 325 Main Street
3. Blue Garage: Broadway to Binney Street
4. 250 Binney Street
5. 255 Main Street



- | | | | |
|--|--------------------------------|--|--------------------------|
| | Proposed Project Sites | | MXD Boundary |
| | Proposed Projects Under Const. | | KSURP Boundary |
| | Proposed Projects Complete | | Ames Street District ASD |

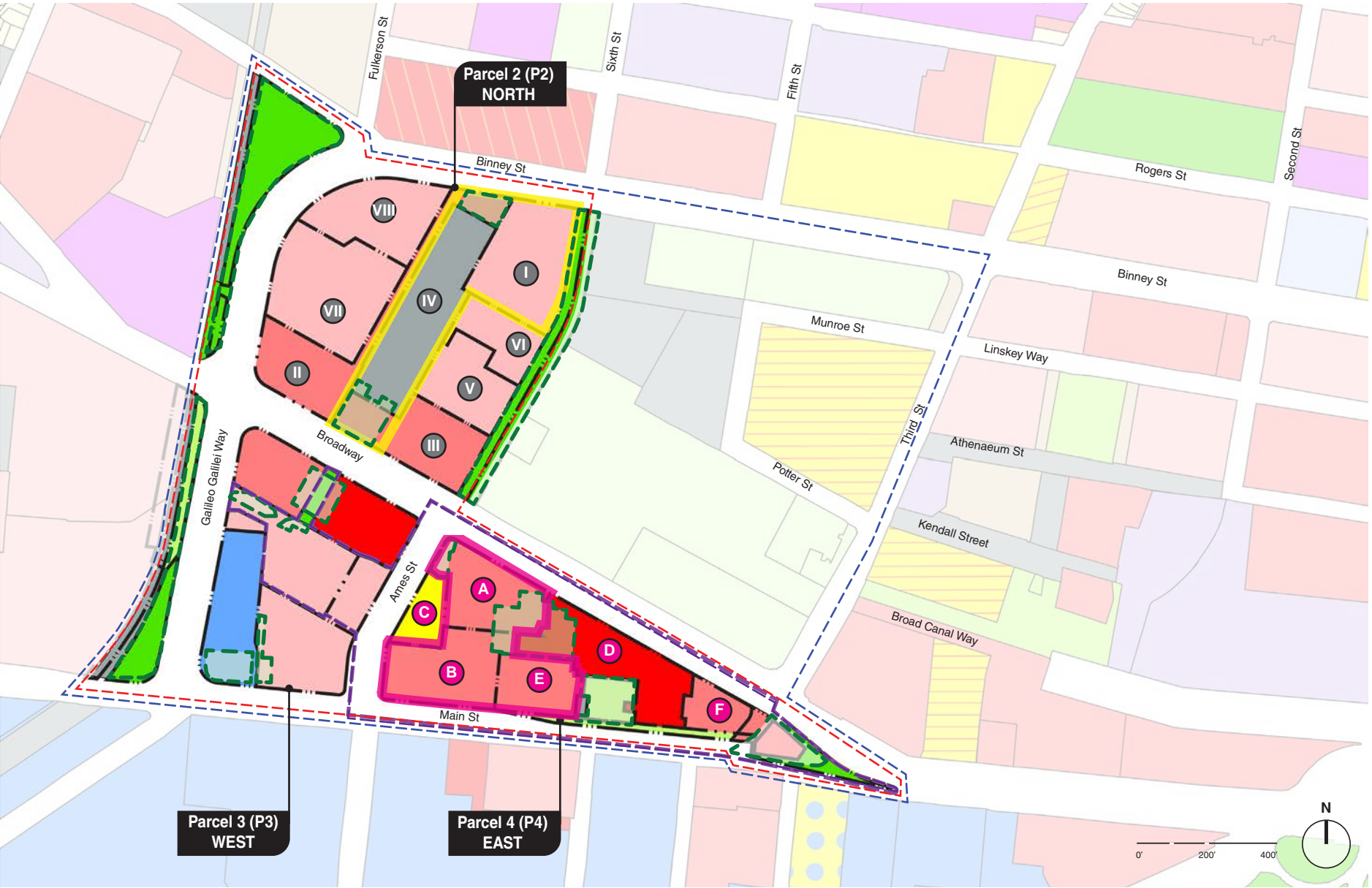


Source: Base Map Adapted from CDD GIS Map: Map prepared by Brendan Monroe on August 5, 2019 Link : https://www.cambridgema.gov/-/media/Files/CDD/Maps/LandUse/cddmap_landuse_2019.pdf



EXISTING LAND USE MXD

FIGURE 1.6A

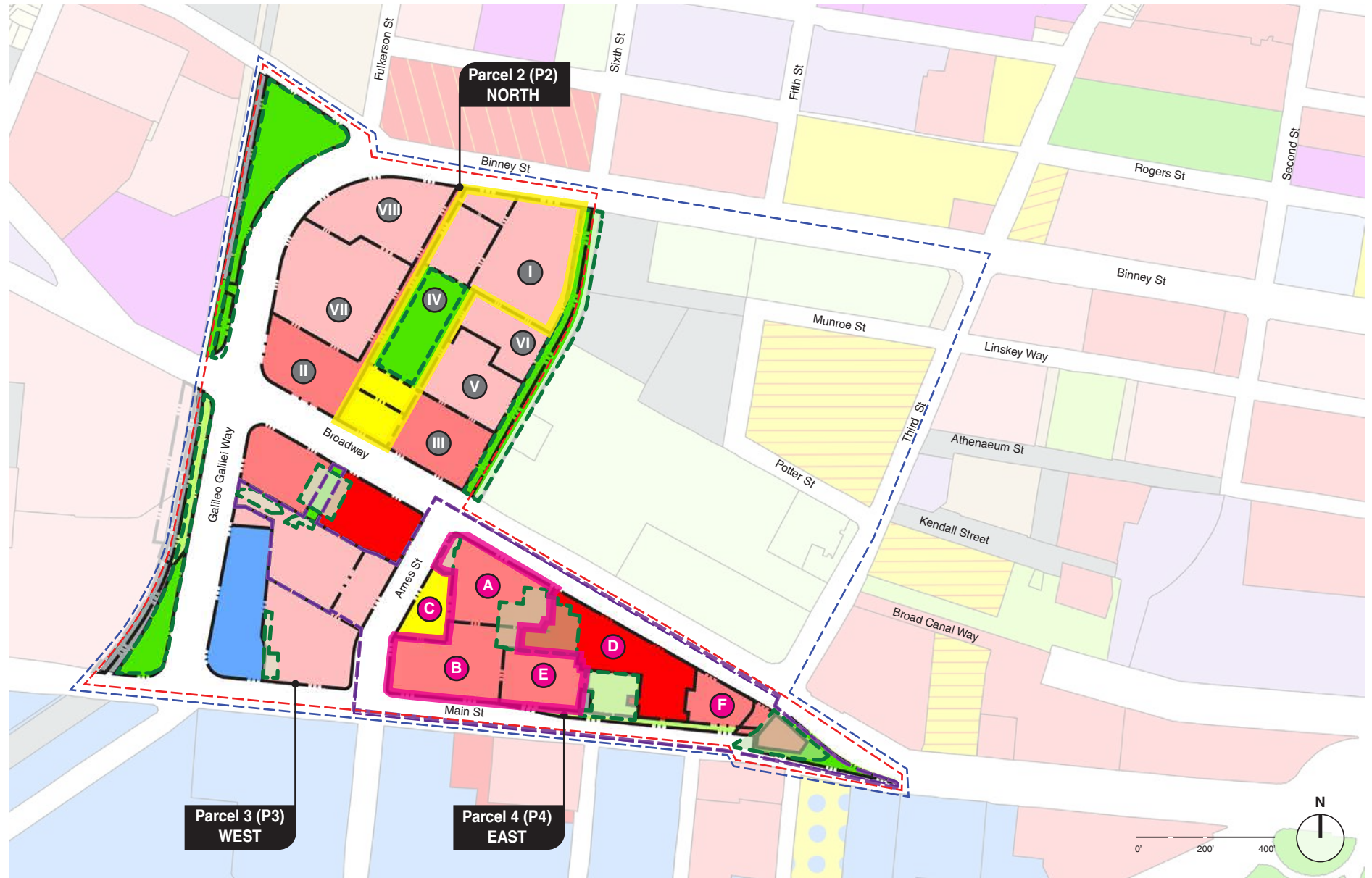


Source: Base Map Adapted from CDD GIS Map

- Transportation
- Higher Education
- Public Open Space
- Privately-Owned Public Space
- General Commercial
- Office
- Office / R&D
- Residential 26 - 534 units
- Tract Number
- Lot Letter
- Project Boundary Amendment #1
- Project Boundary Amendment #2
- Open Space/Park
- MXD Boundary
- KSURP Boundary
- Ames Street District ASD
- Tract/Lot Boundary

PROPOSED LAND USE MXD

FIGURE 1.6B

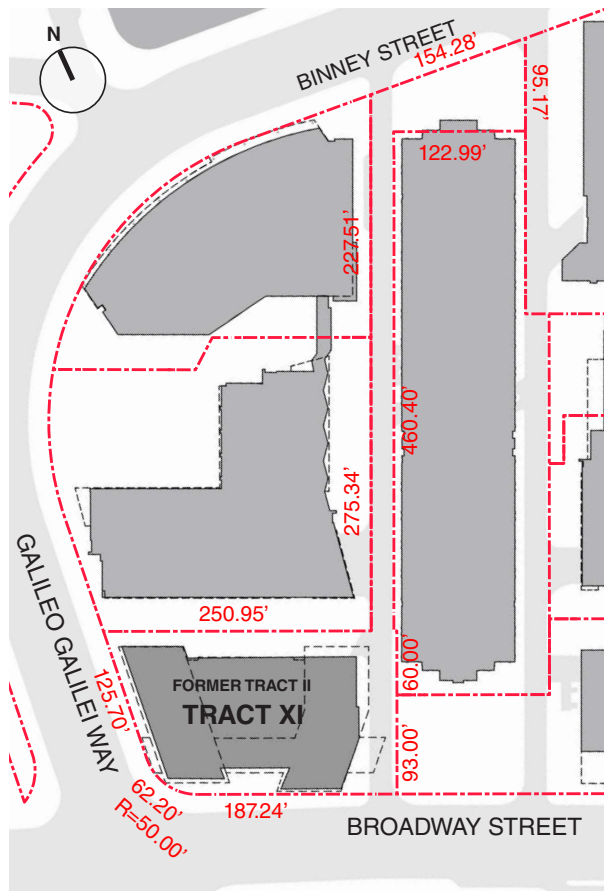


Source: Base Map Adapted from CDD GIS Map

- | | | | | |
|---|--|--|---|--|
| <ul style="list-style-type: none"> Transportation Higher Education Public Open Space Privately-Owned Public Space | <ul style="list-style-type: none"> General Commercial Office Office / R&D Residential 26 - 534 units | <ul style="list-style-type: none"> Tract Number Lot Letter | <ul style="list-style-type: none"> Project Boundary Amendment #1 Project Boundary Amendment #2 Open Space/Park Tract/Lot Boundary | <ul style="list-style-type: none"> MXD Boundary KSURP Boundary Ames Street District ASD |
|---|--|--|---|--|

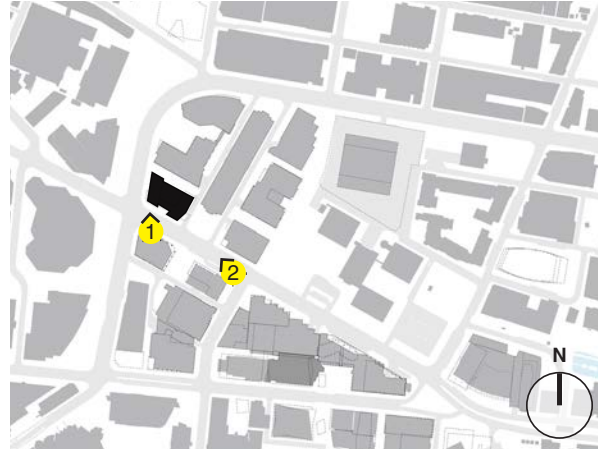
1.2.1 145 BROADWAY

The 145 Broadway site consists of approximately 57,097 SF of land at the corner of Broadway and Galileo Galilei Way. The Applicant has now completed construction of the commercial space and ground floor retail associated with the Commercial Building A (Phase 1). The office space is operating as Akamai's new global headquarters, and has delivered 8,700 GFA of new ground floor retail space.

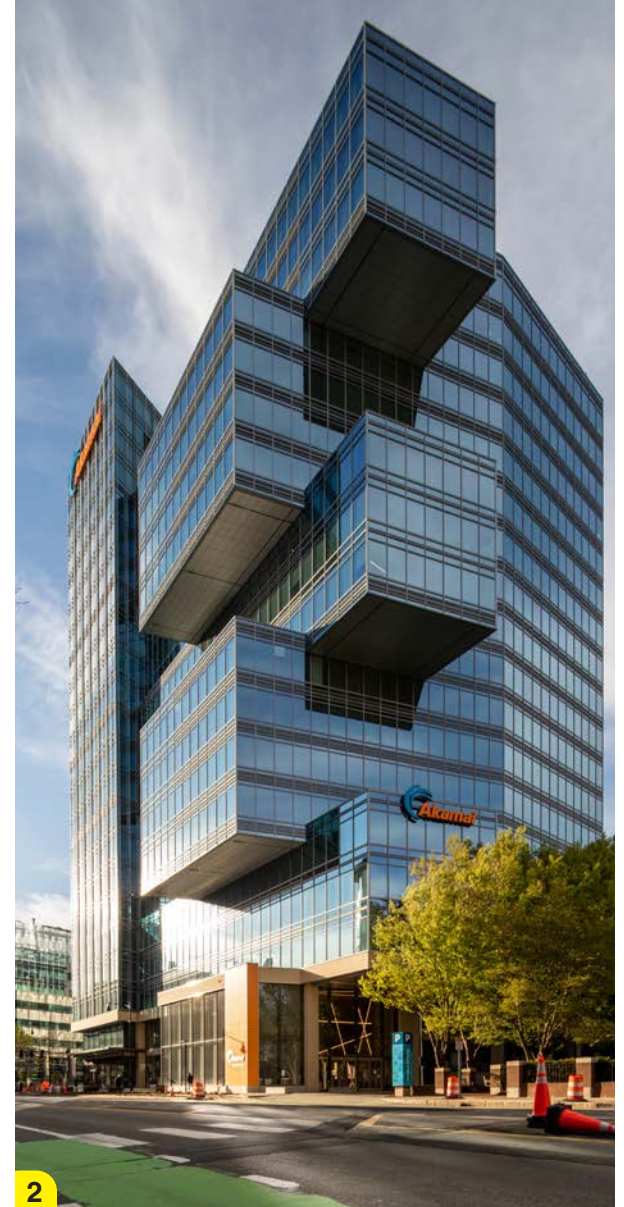


PARCEL BOUNDARY

1. PARCEL BOUNDARIES SHOWN FOR REFERENCE, PLEASE REFER TO SURVEYS IN APPENDIX
2. *REFLECTS REVISED LOT

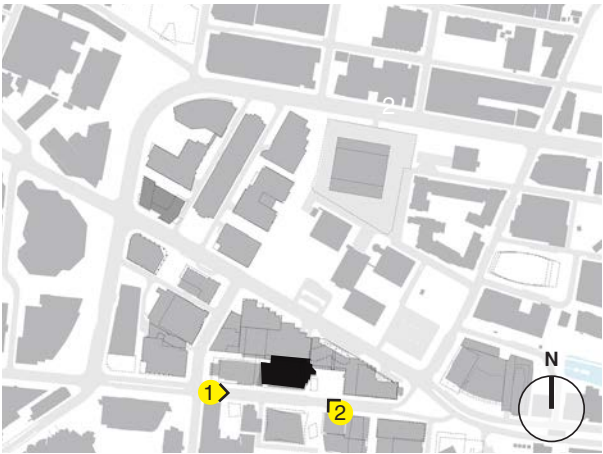


KEY PLAN

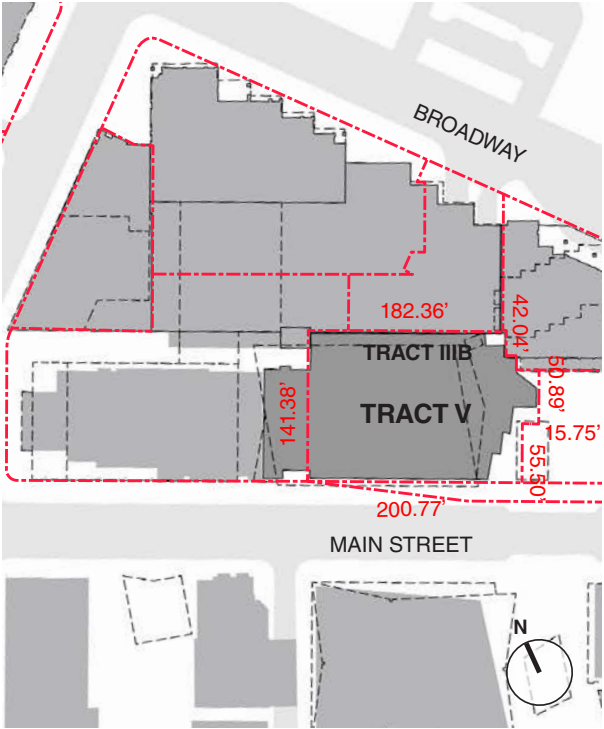


1.2.2 325 MAIN STREET

The Applicant has initiated construction of the commercial space and ground floor retail associated with Commercial Building B (Phase 2), with an estimated completion and Certificate of Occupancy in Q2 2022. The office space shall commence operating as Google's local headquarters upon completion, and will be accompanied by approximately 40,000 SF of retail GFA delivered in the basement, ground floor, and second floor. The 325 Main Street site is bordered by Main Street to the south, 355 Main Street to the west, the Green Garage to the north, and the Kendall Plaza to the east.



KEY PLAN



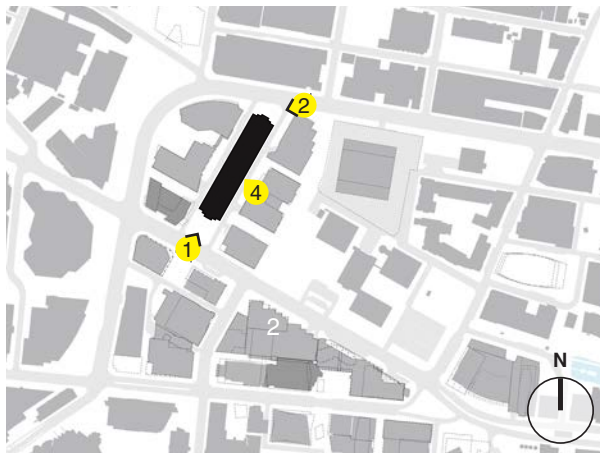
PARCEL BOUNDARY

1. PARCEL BOUNDARIES SHOWN FOR REFERENCE, PLEASE REFER TO SURVEYS IN APPENDIX



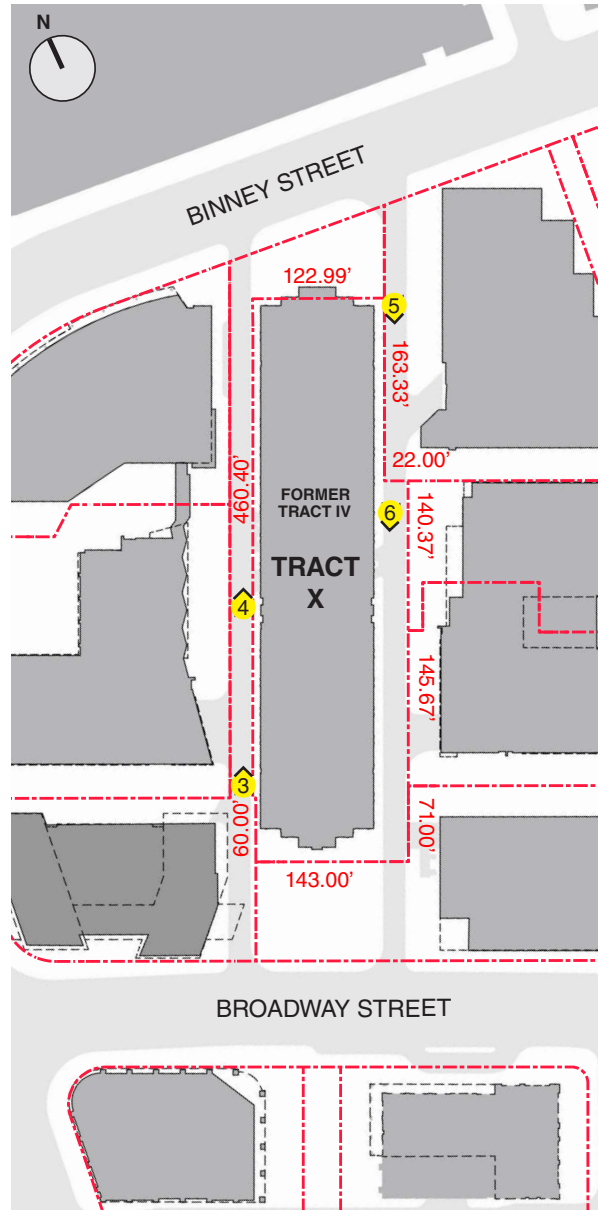
1.2.3 BLUE GARAGE

The Blue Garage is a six-story approximately 72,613 square foot site with an existing parking facility located between 105 Broadway and 145 Broadway to the south and 300 Binney and 250 Binney Street to the north. The Blue Garage is surrounded by commercial office and biotech lab buildings to the east and west and bounded by park space to the north and south. Access to the Blue Garage is through two one-way service roads (the “East Service Road” and the “West Service Road”) (collectively the “Service Roads”) on either side of the garage, that connect to Binney Street to the north and Broadway to the south. As part of the Project, the Blue Garage is contemplated for demolition and redevelopment into (i) one commercial building of approximately 412,00 net new GFA at 290 Binney Street, along with supporting attendant sub-grade parking, (ii) an electrical substation sited below grade in the center of the parcel, (iii) Center Plaza, a public plaza situated atop the roof of the electrical substation, and (iv) a 420,700 net new GFA residential building at 135 Broadway.

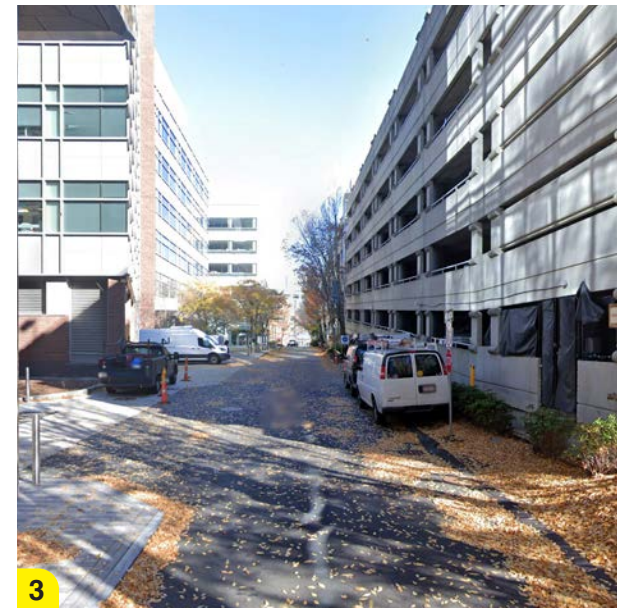


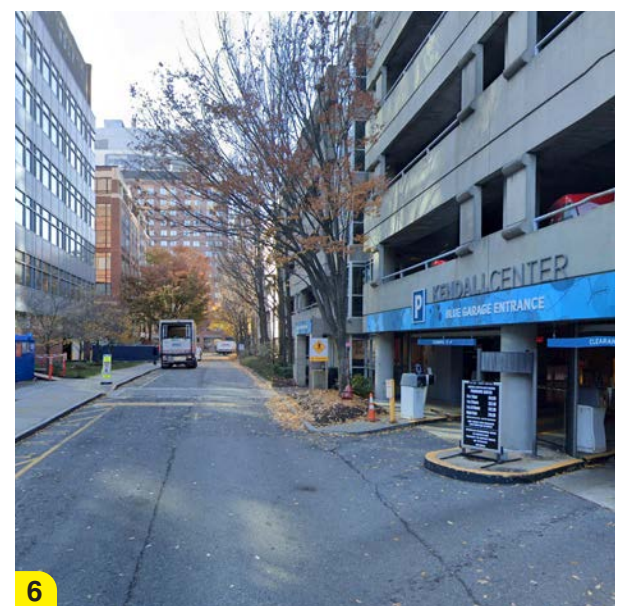
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1. PARCEL BOUNDARIES SHOWN FOR REFERENCE, PLEASE REFER TO SURVEYS IN APPENDIX



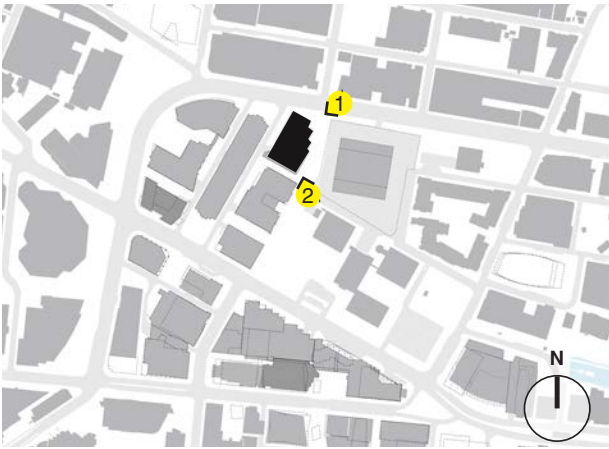
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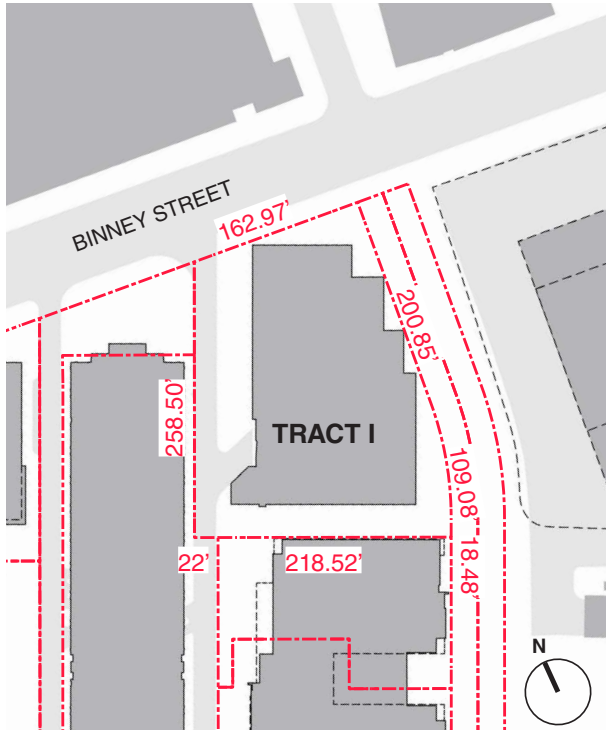


1.2.4 250 BINNEY STREET

The 250 Binney Street site consists of approximately 53,996 SF of land and contains an existing manufacturing/lab building of approximately 62,576 GFA. The site is bordered by a tree-lined landscaped path called the Six Street Walkway to the east and 115 Broadway, a lab building owned by Biogen to the south, the West Service Road to the west, and Binney Street to the north. As part of the proposed Project, this facility is contemplated for demolition and redevelopment into an approximately 450,576 GFA commercial building with supporting attendant sub-grade parking.



KEY PLAN

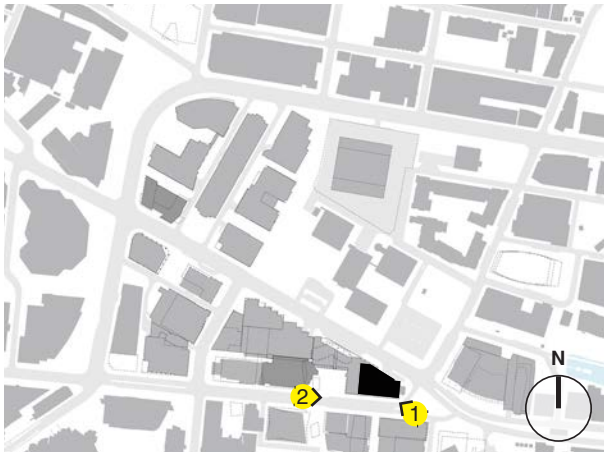


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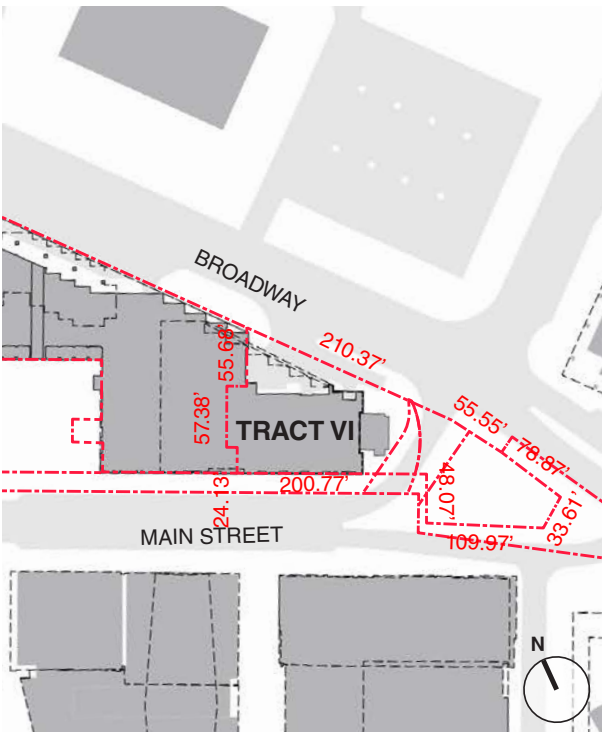


1.2.5 255 MAIN STREET

The 255 Main Street site consists of approximately 224,538 SF of commercial office space located at the corner of Broadway and Main Street. The site is bordered by Broadway to the north, Galaxy Park to the east, Main Street to the south and the Kendall Plaza to the west.

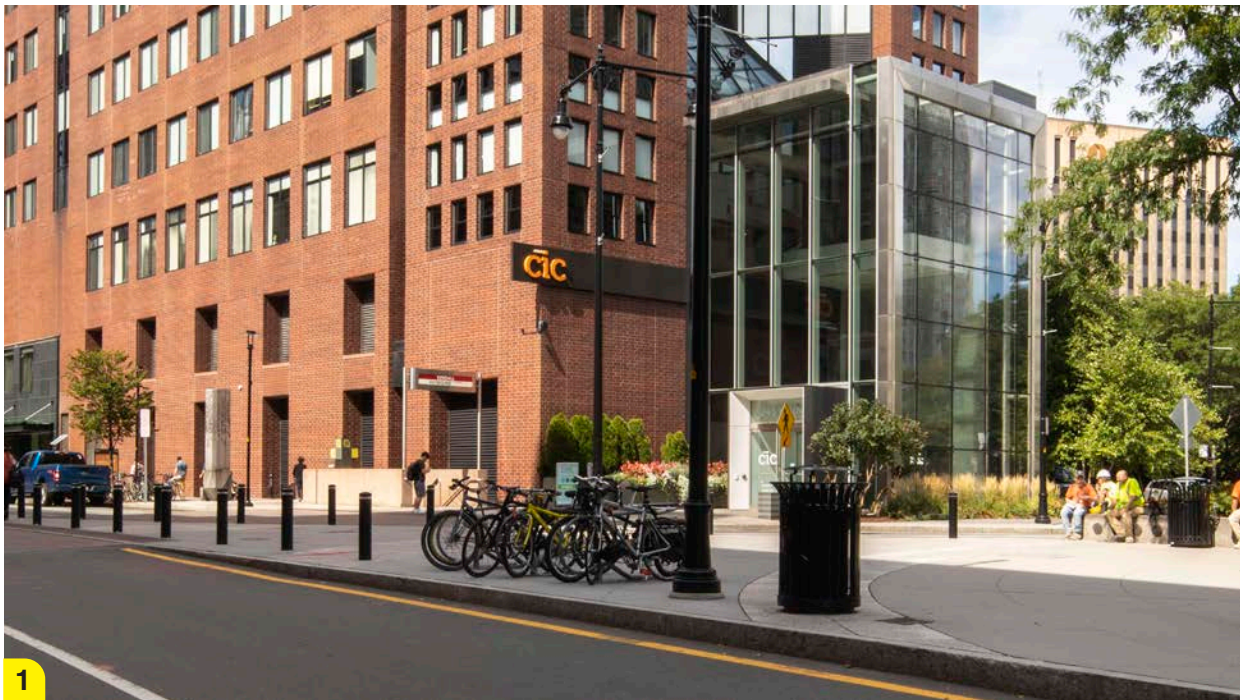


KEY PLAN



PARCEL BOUNDARY

1. PARCEL BOUNDARIES SHOWN FOR REFERENCE, PLEASE REFER TO SURVEYS IN APPENDIX



1.3 PROPOSED CONCEPT PLAN

1.3.1 OVERALL VISION

This Concept Plan Amendment #2 recommit to the vision documented in the Original Concept Plan amidst a unique set of circumstances. At its heart lies the relocation and delivery of critical energy infrastructure essential to supporting electrical service not only for businesses and residents of the MXD, but the broader Cambridge community. The proposed Eversource electrical substation relocation—arguably the catalyst for Concept Plan Amendment #2—is required to accommodate growth as well as provide better resilience. Moreover, the unique approach of constructing this infrastructure below grade promises to substantially advance key public realm improvements, including the construction of a Center Plaza open space and new cross-block pedestrian connections—all while satisfying urgent market demand for additional commercial space in Kendall Square, a hotbed of the global life sciences sector.

This vision is achieved through the following specific goals:

Active and Connected Open Space

The creation of new open space and public realm improvements that facilitates connections between existing public spaces and promotes flexibility in programming and use.

Mix of Development Programs

The blending of commercial, residential, and retail space to ensure a dynamic and lively environment that serves people of different backgrounds, interests, professions and incomes.

Diversity of Housing

The addition of new housing across a range of unit types, sizes and affordability including middle income and affordable housing.

Investment in Alternative Transportation Infrastructure

The creation of new multi-modal paths to facilitate new cross-block connections for cyclists and pedestrian with connectivity to the future Volpe development to the east.

Retail

Creating a diverse, sustainable retail program that helps enliven the streetscape while being considerate of the broader retail landscape in Kendall Square.

Distinctive Architecture in Context

Architecture that respects the context of the surrounding area but creates a visually interesting streetscape that offers a blend of materials, forms and experiences.

Thoughtful Adherence to Urban Planning Guidelines

Urban design that respects the spirit, goals and guidelines established by the by the Cambridge Zoning Ordinance, K2 Study and Volpe Working Group, but allows for purpose-based design decisions that result in a better built environment.

Sustainability

Meeting established criteria while thinking beyond the constraints of a scorecard to integrate designs that incorporate public benefits and building occupant wellness.

Infrastructure Delivery

Delivering critical electrical infrastructure while striking a considered balance between engineering requirements, the public realm, and the economic viability of this amendment's proposed substation relocation.

1.3.2 PROPOSED AMENDMENT 2 PROGRAM

The proposed Concept Plan Amendment #2 program complies with the most recent amendment to the MXD Zoning. The Concept Plan Amendment #2 process is being carried out concurrently with the most recent MEPA review process detailed in Section 1.1.1.

The Project continues to address the City and the CRA's desire for affordable and middle-income housing as well as the creation of innovation space consistent with the K2 Plan. Further, the Project will result in a myriad of public benefits and improvements including delivery of critical energy infrastructure essential to supporting electrical service, new public open space, upgraded storm water management facilities, increased property tax revenue, job creation, streetscape improvements and bicycle accommodations, all of which are documented in detail herein.

As shown in Figures 1.11 - 1.14, the Project as a whole aims to encourage new development in the form of the following individual components (the "Project Components"):

- Commercial Building A located at 145 Broadway (Complete);
- Commercial Building B located at 325 Main Street (Under Construction);
- Residential Building South located 135 Broadway (Proposed);
- Commercial Building C located at 290 Binney Street (Proposed);
- Commercial Building D located at 250 Binney Street (Proposed);
- Innovation Space Conversion (Phase 1 Innovation Space at 255 Main Street is complete. The remaining Phase 2 Innovation Space is currently in development and will be delivered at 325 Main Street and 80 Broadway concurrently with Commercial Building B.

Table 1-1 A-C presents the proposed development program. Where applicable, original values from Concept Plan Amendment #1 are shown in ~~red strikethrough~~ text to highlight the additive changes to the existing approved program that would result from the currently proposed Project.

TABLE 1-1A PROPOSED DEVELOPMENT PROGRAM

DEVELOPMENT PROGRAM SUMMARY BY USE (GFA ¹)							
	PHASE 1	PHASE 2	PHASE 3		PHASE 4		
	<u>COMMERCIAL BUILDING A</u>	<u>COMMERCIAL BUILDING B</u>	<u>RESIDENTIAL BUILDING SOUTH</u>	<u>COMMERCIAL BUILDING C</u>	<u>COMMERCIAL BUILDING D</u>	<u>BROAD INSTITUTE OFFICE CONVERSION²</u>	<u>TOTAL</u>
COMMERCIAL GFA ³	354,278	268,222	0	NA 409,500	NA 382,200	14,000	636,500 1,428,200
RETAIL/ACTIVE USE ⁴ GFA	8,700	0 [*]	1,300 700	NA 2,500	NA 5,800	0	10,000 17,700
RESIDENTIAL ⁵ GFA	0	0	420,000	0	0	0	420,000
TOTAL NET NEW	362,978	268,222	420,700	NA 412,000	NA 388,000	14,000	1,066,500 1,865,900

TABLE 1-1B PROPOSED DEVELOPMENT PROGRAM

DEVELOPMENT PROGRAM SUMMARY BY BUILDING HEIGHT						
	PHASE 1	PHASE 2	PHASE 3		PHASE 4	
	<u>COMMERCIAL BUILDING A</u>	<u>COMMERCIAL BUILDING B</u>	<u>RESIDENTIAL BUILDING SOUTH</u>	<u>COMMERCIAL BUILDING C</u>	<u>COMMERCIAL BUILDING D</u>	<u>BROAD INSTITUTE OFFICE CONVERSION²</u>
HEIGHT (FEET)	250'	250'	400'	250'	250'	N/A
FLOORS	19 FLOORS	UP TO 16 FLOORS	UP TO 38 FLOORS	UP TO 17 FLOORS	UP TO 17 FLOORS	N/A

1. GFA as defined in Article 2.0 of the Cambridge Zoning Ordinance.

2. Represents the conversion of existing mechanical space to be re-purposed/fit-out into leasable commercial/laboratory office space at the Broad Institute's 75 Ames Street location. The Applicant is not responsible for the execution of this component of the Project.

3. Incorporated within the Commercial GFA Figures is the Innovation Space tied to Commercial Building A and Commercial Building B.

4. Active Ground Floor Uses, can include retail uses and active public gathering space (whether open or enclosed) where that ground floor fronts Main Street, Broadway or Ames Street, per Article 14.38 of the Zoning Ordinance.

5. Refer to Section 2.1.1, Housing Program for a more detailed breakdown of the Residential GFA.

6. The Applicant plans the distribution of up to approximately 8,300 SF of ground floor active use or retail GFA between Commercial Building C and Commercial Building D so as to activate the northeast edge of the proposed Center Plaza open space. The majority of this space may be required for a bike valet to meet City of Cambridge requirements and may include some complementary bike oriented service retail.

7. Innovation space delivered with Phase 1 of the Project.

8. Per Article 14.32.2 of the Zoning Ordinance, the CRA shall require an Infill Development Concept Plan to be prepared providing for the distribution of additional GFA for new Utility Project GFA within the District above and beyond 4,273,000 SF of infill GFA approved under Concept Plan Amendment #1.

* Area represents zero net new GFA (As a part of the Concept Plan Amendment #1, Commercial Building B is replacing and reconstructing approximately 40,000 SF of existing retail GFA, the majority of which will be located on the ground level, and one level above ground. A portion may remain at one level below ground. The Project will therefore not only result in a net increase of enhanced retail GFA as compared to the Original Concept Plan, but the majority of the reconstructed retail space at 325 Main Street will be located above grade, making the retail space more attractive to potential tenants, and better activating the public realm and the existing retail corridor along Main Street and the Kendall Plaza.

TABLE 1-1C PROPOSED DEVELOPMENT PROGRAM

DEVELOPMENT PROGRAM SUMMARY (GFA ¹)							
	PHASE 1	PHASE 2	PHASE 3		PHASE 4		
	<u>COMMERCIAL BUILDING A</u>	<u>COMMERCIAL BUILDING B</u>	<u>RESIDENTIAL BUILDING SOUTH</u>	<u>COMMERCIAL BUILDING C</u>	<u>COMMERCIAL BUILDING D</u>	<u>BROAD INSTITUTE OFFICE CONVERSION²</u>	<u>TOTAL</u>
TOTAL BUILDING GFA	441,614	385,423	420,700	N/A 412,000	N/A 450,576	14,000	1,264,101 1,124,313
EXISTING GFA	(78,636)	(117,201)	0	N/A 0	N/A (62,576)	0	(-197,601) (-258,413)
NET NEW GFA	362,978	268,222	420,700	N/A 412,000	N/A 388,000	14,000	1,066,550 1,865,900
EXEMPT GFA							
INNOVATION SPACE ⁶	(60,496)	(44,704)					(105,200)
MIDDLE-INCOME HOUSING			(20,000)				(20,000)
RETAIL/ACTIVE USE ⁴			(700)				(700)
NET NEW INFILL GFA	302,482	223,518	400,000	N/A 412,000	N/A 388,000	14,000	940,000 1,740,000
EXISTING DISTRICT AGGREGATE INFILL GFA ⁸							4,273,000
PROPOSED ADDITIONAL UTILITY PROJECT GFA							800,000
NEW DISTRICT AGGREGATE GFA							4,273,000 5,073,000

TABLE 1-1D PROPOSED DEVELOPMENT PROGRAM

TOTAL GFA (NET NEW)	1,066,500 1,865,900
Office/Laboratory (GFA)	636,500 1,428,200
Retail/Active Use (GFA)	10,000 17,700
Residential (GFA)	420,000
Residential Units	Up to 425 465
Parking Spaces (total)	3,750
Bike Parking Long-Term Spaces	685 875
Bike Parking Short-Term Spaces	122 143

The Zoning Ordinance and the KSURP regulate the amount of development through a cap on aggregate GFA of all land uses in the MXD District and a minimum requirement for residential development. The aggregate GFA regulation is designed to provide flexibility in the distribution of development throughout the MXD District while maintaining a balance of land use in the area.

Consistent with the recently enacted zoning amendments to the MXD District, this Concept Plan Amendment #2 proposes a total Infill GFA of 5,073,000 SF of GFA on five development sites. The distribution of planned GFA is comprised of 1,428,200 SF of GFA of net new commercial development, 420,000 SF of GFA of net new residential development, 17,700 SF of GFA of net new active use/retail development and the conversion of up to 14,000 SF of GFA of mechanical space to commercial office space at the Broad Institute. The analysis of impacts provided throughout the Concept Plan Amendment #2 is based on these revised Program figures.

The 1,865,900 SF of GFA continues to incorporate approximately 126,500 SF of exempt gross floor area ("Exempt GFA"), as specified in Section 14.32.6 of the Zoning Ordinance. These exemptions comprise 105,200 GFA of Innovation Space satisfied in Phases and Phase 2, 20,000 GFA of middle-income housing which will be satisfied in Phase 3, and 700 GFA of ground floor retail space satisfied in Phase 3. (Refer to Table 2-1 of Section 2, Regulatory Compliance, for a detailed summary of zoning compliance.) Excluding the exemptions provides for the addition of 1,740,000 SF of Infill GFA which meets the total aggregate GFA cap of 5,073,000 SF. This is summarized in below, and in more detail in Table 1-1D

PROJECT GFA	1,264,101 2,124,313
LESS EXISTING GFA	(197,837) (-258,413)
NET NEW GFA	1,065,900 1,865,900
LESS EXEMPT GFA	(125,900)
NET NEW INFILL GFA	940,000 1,740,000

THE FOLLOWING SECTIONS DESCRIBE EACH PROJECT COMPONENT IN FURTHER DETAIL THAT ARE CONTROLLED BY THE APPLICANT.

Figures 1.7 A–B presents the Current and Proposed massing conditions. Figure 1.8 A–D presents proposed massing views. Figure 1.9 A–B demonstrates the Projects consistencies with the City's K2 Plan, and Figures 1.10 –1.14 present the proposed site conditions.

COMMERCIAL BUILDING A (PHASE 1)

Figure 1.10 presents the approved Commercial Building A massing at 145 Broadway. The Applicant has completed construction of the 19-story commercial building with ground floor retail associated with the Commercial Building A (Phase 1). The office space is occupied by Akamai's new global headquarters.

COMMERCIAL BUILDING B (PHASE 2)

Figure 1.11 presents the approved Commercial Building B massing at 325 Main Street. The Applicant has commenced construction on the 16-story commercial and retail building associated with the Commercial Building B (Phase 2), with an estimated completion and Certificate of Occupancy in Q2 of 2022. The office space will be occupied by Google's local headquarters. As a component of Phase 2, the Applicant will deliver an enhanced Kendall Roof Garden, and a renovated Kendall Northbound Headhouse.

RESIDENTIAL BUILDING SOUTH (PHASE 3)

Figure 1.12 presents the proposed amended massing for the single Residential Building South located at 135 Broadway. The proposed Residential Building South consists of a new, up to 38-story ($\pm 400'$) residential building with up to 465 rental units, totaling approximately 420,700 GFA of net new development. Dedication to a single use will require only one dedicated lobby on the ground floor, thereby freeing up ground floor space for 700 GFA of active use/retail along Broadway.

COMMERCIAL BUILDING C (PHASE 3)

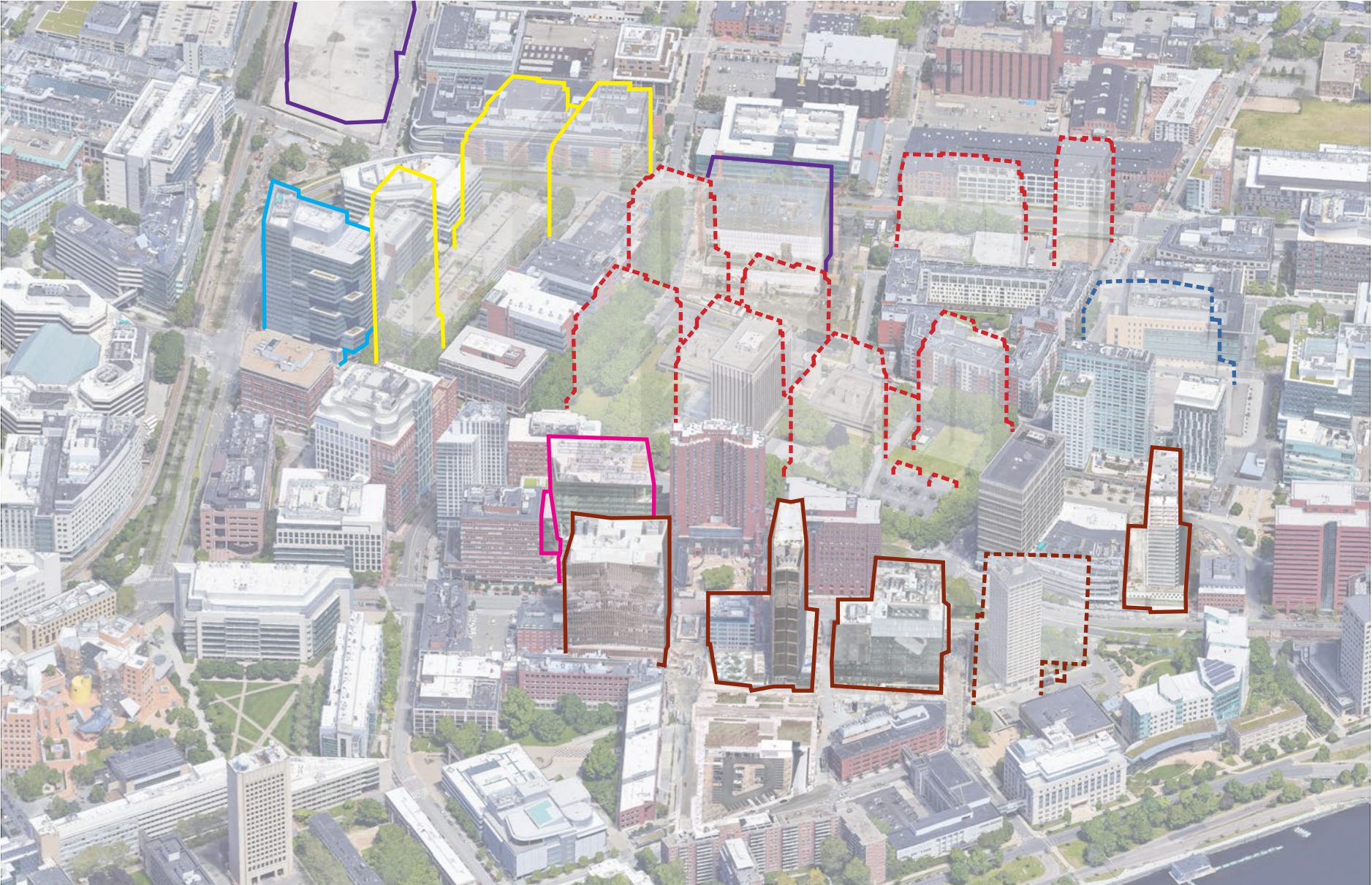
Figure 1.13 presents the proposed Commercial Building C massing. The proposed Commercial Building consists of a new, up to 17-story ($\pm 250'$) commercial office and retail/active use building up to approximately 412,000 net new utility GFA. Ground floor uses will include active space along Binney Street and the West Service Drive, the building's ground level will connect to the new Center Plaza on the south side of the building.

COMMERCIAL BUILDING D (PHASE 4)

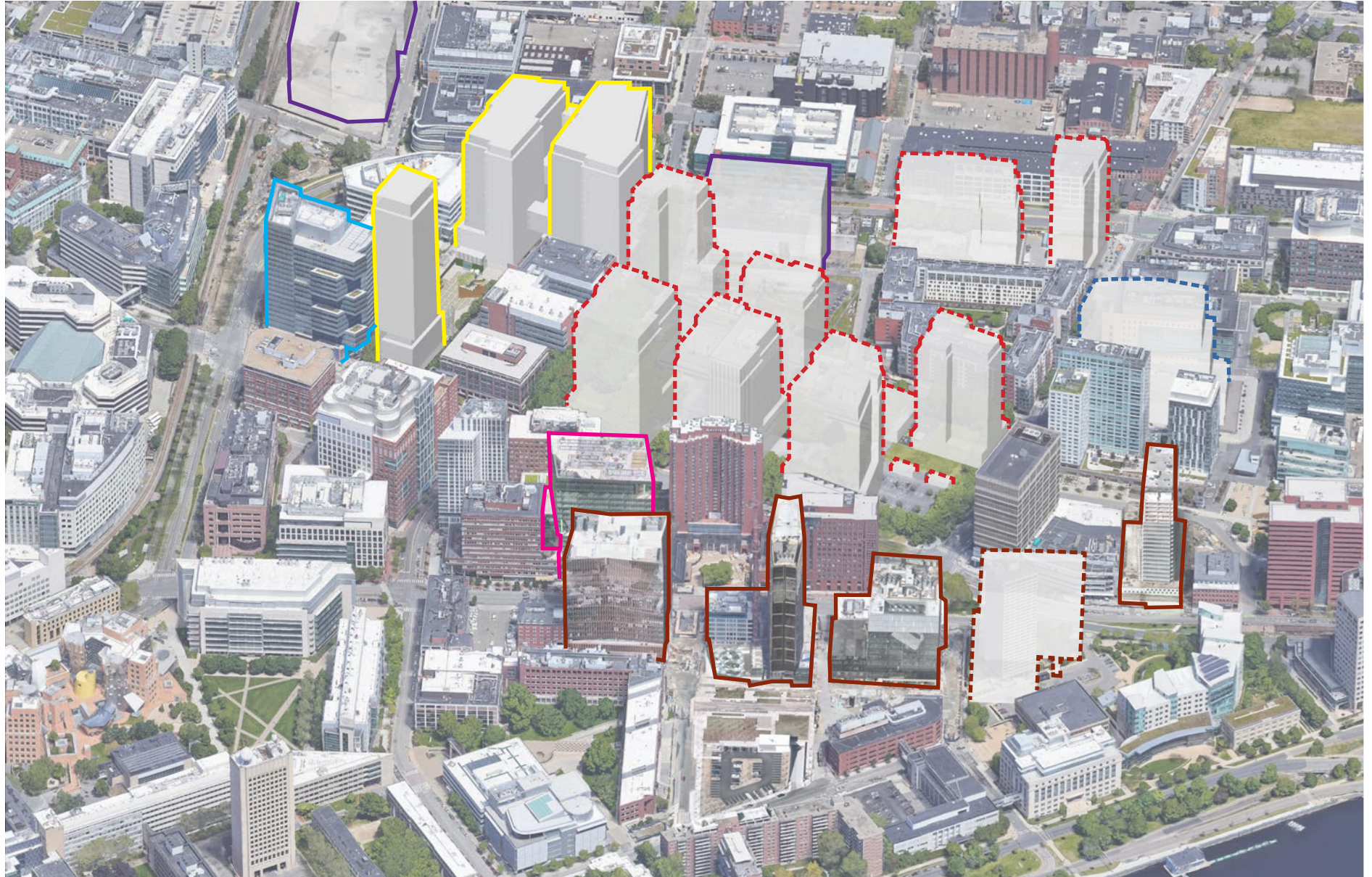
Figure 1.14 presents the proposed Commercial Building D massing. The redevelopment of 250 Binney Street consists of a new, up to 17 story ($\pm 250'$) commercial building of up to approximately 460,576 GFA, (including 388,000 net new utility GFA). The new building will be constructed in place of the existing 62,576 GFA two-story masonry commercial office and laboratory building, originally built in 1983. In order to provide programmatic flexibility to accommodate either an office or research laboratory program, the building, as currently designed, contains up to 17 stories, which will be further defined during the future design review process for this phase of the Project. Ground floor uses will include retail/active use space along Binney Street and the Sixth Street Connector, an engaging lobby entrance at Binney Street and access to the below grade parking from the existing internal access road.

INNOVATION SPACE CONVERSION

Consistent with the Concept Plan Amendment #1, Phases 1 and 2 of the Project include the delivery of approximately 105,200 GFA of Innovation Space in at 255 Main Street, 325 Main Street and 80 Broadway. The Applicant has delivered the Innovation Space conversion at 255 Main Street, and anticipates that the remaining Innovation Space will be delivered at 325 Main Street and 80 Broadway concurrent with Commercial Building B, which anticipates a Certificate of Occupancy in Q2 of 2022. Figure 1.14C represents the location of the proposed Innovation Space Conversion.



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|--------------------------------|--------------------------------------|---|
| Proposed Projects | Proposed Projects (Volpe) | Proposed Projects by others |
| Proposed Projects Under Const. | Projects Permitted (MIT Noma/Soma) | Permitted Projects by others |
| Proposed Projects Complete | Projects Under Const.(MIT Noma/Soma) | Permitted Projects by others Under Const. |



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|---|---|---|
| ▬ Proposed Projects | - - - Proposed Projects (Volpe) | - - - Proposed Projects by others |
| ▬ Proposed Projects Under Const. | - - - Projects Permitted (MIT Noma/Soma) | - - - Permitted Projects by others |
| ▬ Proposed Projects Complete | ▬ Projects Under Const.(MIT Noma/Soma) | ▬ Permitted Projects by others Under Const. |



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|--------------------------------|--------------------------------------|---|----------------|
| Proposed Projects | Proposed Projects (Volpe) | Proposed Projects by others | MXD Boundary |
| Proposed Projects Under Const. | Permitted Projects (MIT Noma/Soma) | Permitted Projects by others | KSURP Boundary |
| Proposed Projects Complete | Projects Under Const.(MIT Noma/Soma) | Permitted Projects by others Under Const. | |



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|---|--|--|
| Proposed Projects | Proposed Projects (Volpe) | Proposed Projects by others |
| Proposed Projects Under Const. | Permitted Projects (MIT Noma/Soma) | Permitted Projects by others |
| Proposed Projects Complete | Projects Under Const.(MIT Noma/Soma) | Permitted Projects by others Under Const. |












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|--------------------------------|--------------------------------------|---|
| Proposed Projects | Proposed Projects (Volpe) | Proposed Projects by others |
| Proposed Projects Under Const. | Permitted Projects (MIT Noma/Soma) | Permitted Projects by others |
| Proposed Projects Complete | Projects Under Const.(MIT Noma/Soma) | Permitted Projects by others Under Const. |



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|--------------------------------|--------------------------------------|---|
| Proposed Projects | Proposed Projects (Volpe) | Proposed Projects by others |
| Proposed Projects Under Const. | Permitted Projects (MIT Noma/Soma) | Permitted Projects by others |
| Proposed Projects Complete | Projects Under Const.(MIT Noma/Soma) | Permitted Projects by others Under Const. |



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|---|--|---|
|  Proposed Projects |  Proposed Projects (Volpe) |  Proposed Projects by others |
|  Proposed Projects Under Const. |  Permitted Projects (MIT Noma/Soma) |  Permitted Projects by others |
|  Proposed Projects Complete |  Projects Under Const.(MIT Noma/Soma) |  Permitted Projects by others Under Const. |



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|---|---|---|
| Proposed Projects | Proposed Projects (Volpe) | Proposed Projects by others |
| Proposed Projects Under Const. | Permitted Projects (MIT Noma/Soma) | Permitted Projects by others |
| Proposed Projects Complete | Projects Under Const.(MIT Noma/Soma) | Permitted Projects by others Under Const. |

1.3.3 KEY ELEMENTS

This section summarizes the key elements of the Concept Plan Amendment #2 and how the Project addresses each.

Sections of the document are referenced herein for further information.

OPEN SPACE (CHAPTER 3)

- The Project proposes an incremental increase of approximately 17,400 square feet of open space relative to what was proposed in Concept Plan Amendment #1. The new open space and pedestrian realm improvements will include the approximately 30,000 SF Center Plaza between Residential Building South and Commercial Building C
- The Project will provide improvements to existing East and West service drives via conversion to a “Plaza Drive” condition and the creation of a thoughtful interface between the new Center Plaza and Broadway. The East and West plaza drives measure approximately 20,000 SF in total, and aim to operate as a street that accommodates existing service uses, while prioritizing pedestrian and bicycle access.
- The Project will eliminate a 30+ year-old parking structure, creating new opportunities for open space and cross-block connectivity for cyclists and pedestrians

GROUND LEVEL ACTIVATION / RETAIL PLAN (CHAPTER 4)

- Retail will be located in visible, well-traveled areas that will help ensure their viability.
- The broader market mix of retail in Kendall Square will be evaluated to ensure that potential retailers complement existing retail offerings.
- The Project will identify and prioritize retailers that will serve the diverse needs of the new mixed-use environment.
- The retail program will be consistent with the requirements of Article 14.

TRANSPORTATION (CHAPTER 5)

- The Applicant proposes to implement a commercial bike valet to manage the required bicycle parking associated with the Residential Building South, and Commercial Buildings C and D. Acknowledging this unique approach to bicycle parking being proposed as part of this plan, in accordance with Article 6.108.1 the Applicant therefore intends to seek a modification of bicycle parking requirements via special permit. The implications of applying these minimum bicycle parking requirements to the Project have been determined by applying the ratios established by the City of Cambridge Bicycle Parking Guide, shown in Table 10 of the TIS Update #2 in Appendix B.
- The Project will increase parking capacity to accommodate up to 414 additional parking spaces (3,750 total) within the MXD. The Applicant is proposing to accommodate these spaces in two, connected parking garages situated beneath Commercial Building C and Commercial Building D, which will replace the above-grade parking hosted in the existing Blue Garage and add incremental spaces to service new commercial and residential GFA.
- The Project will be adding an estimated 4,948 daily vehicle trips to the area with 627 morning peak hour trips (487 entering, 140 exiting) and 654 evening peak hour trips (164 entering, 490 exiting), along with up to 6,146 daily transit trips, 1,706 daily walking trips and 1,590 daily bicycle trips.
- Off-street designated loading areas will be provided for loading and service activities associated with the Project. The loading areas will be located within the ground level of the proposed buildings, with the exception of Commercial Building B, which is serviced from a below-grade loading dock, accessed from Broadway. The loading dock activities will be managed so that service and loading operations do not impact traffic circulation on the adjacent local roadways.
- The KSTEP MOU was executed on May 9, 2017. Refer to Section 5.2 for a summary of the KSTEP, including an update on the status of transit mitigation projects that have been advanced since the Original Concept Plan to improve transit access in Kendall Square.
- The City and CRA worked in partnership to complete a schematic redesign of the Streetscapes through parts of Kendall Square to include separated bicycle and pedestrian facilities, pocket parks, redesigned intersections and floating bus stops among other changes known collectively as the ALTA plan.

INFRASTRUCTURE (CHAPTER 6)

The Project Site is currently serviced by Cambridge Department of Public Works (DPW), and private utility companies.

- The Project is estimated to generate 196,152 gallons per day of net new wastewater and the baseline water demand is estimated to be 215,767 gallons per day.
- The Project will comply with the applicable CDPW and Massachusetts Department of Environmental Protection standards.
- The Project will implement a District stormwater management system, which incorporates green roofs, permeable pavements, landscaped areas, and subsurface infiltration structures. The remaining Project utilities will be coordinated with the individual utility service providers.
- The Project will reduce the Site stormwater runoff for the 25-year design storm to be less than the runoff in the 2-year design storm in the existing condition, while reducing the Phosphorus loads to meet the requirements of the Lower Charles River Basin Total Maximum Daily Load.

ENVIRONMENTAL IMPACTS (CHAPTER 7)

- Concept Plan Amendment #2 presents a revised wind tunnel analysis based upon the proposed scale and massing of the Project to assist the CRA and Planning Board in evaluating the potential wind impacts. Following approval of the Concept Plan, all future Design Review submissions will incorporate revised wind tunnel analysis and necessary mitigation.
- Concept Plan Amendment #2 presents a revised shadow analysis across varying times of the day and year to assess potential seasonal shadow impacts to the surrounding public open space. The shadow analysis also includes the approved massing for the Volpe Site and other recent project proposals in the immediate vicinity of the MXD.
- Concept Plan Amendment #2 provides an existing noise condition analysis and presents recommendations to mitigate future potential noise generation from construction activity and mechanical equipment

SUSTAINABILITY / RESILIENCY (CHAPTER 8)

Sustainability has been integrated into the Project design in the following ways:

- The repurposing of previously developed land rather than building on vacant land, as well as locating new development within a high-density area accessible to public transportation, sidewalks, and a bicycle network.
- New commercial and residential space will be located on previously developed sites.
- As a Transit Oriented Development (TOD), the Project will utilize the existing public transportation and mode share infrastructure to further reduce traffic and indirect air emissions, including mobile source GHG emissions.
- The Project will promote the design and construction of high-performance, green buildings through an integrated design approach where all project disciplines are engaged early and throughout the design process in order to meet sustainability goals.
- The Project design will prioritize sustainability as a core strategic imperative and will implement state-of-the-art high-performance green building technologies, construction, and operating procedures. Sustainability planning with an integrated design team during conceptual design will establish a pathway to Gold-level certification under the Leadership in Energy and Environmental Design (LEED®) Green Building Rating System Version 4.
- The Project design teams will use iterative energy modeling and life cycle analysis to consider the long-term value of sustainable property investment decisions.
- The integrated design approach will address best practices in energy and emissions, water management, reduced urban heat island effect (cool roofs), energy use monitoring and rooftop mechanical equipment noise mitigation, as set forth in Article 14.74.
- The Applicant is looking beyond these zoning requirements by addressing climate change preparedness, implementing sustainable tenant guidelines, and considering the health and wellness of its future occupants and users possibly through the use of the WELL Building Standard® ("WELL") design and operation principles.

SUSTAINABILITY / RESILIENCY CONT.

- The Applicant will explore strategies that address climate change-related impact including storm surge and precipitation-related flooding events that include setting the finished floor elevation (FFE) and elevating critical infrastructure above the design flood elevation (DFE) where feasible, and exploring flood-resistant material selection on the ground floor to minimize potential flood damage in the event of an extreme weather event.
- The Project will promote design strategies that address negative impacts from urban heat island effect and strive to keep occupants and visitors safe and comfortable during extreme heat events. Strategies could include but are not limited to using roof and non-roof hardscape materials that do not absorb heat such as light-colored, high albedo paving and roofing, planting trees that will provide shaded spaces, and using drought-resistant plantings.

PHASING PLAN (CHAPTER 9)

The Project has been divided into four distinct phases for execution, with each phase delivering key Project Components as outlined below, and with them the delivery of public benefits including open space, housing, public realm improvements, Innovation Space and bicycle parking:

- Phase 1 - Commercial Building A
- Phase 2 - Commercial Building B
- Phase 3 - Residential Building South, Commercial Building C,
- Phase 4 - Commercial Building D

DESIGN GUIDELINES (CHAPTER 10)

The Project seeks to incorporate several key design guidelines into the massing and urban design in a manner that speaks to the context and intent of the K2, KSURP, and Volpe Design Guidelines. Some of these key design guidelines include:

- Consistent with representations made during the MXD re-zoning petition that is enabling this proposed Concept Plan Amendment #2, the Applicant in this instance intends to adopt the design guidelines applied to the adjacent Volpe development project while respecting the aspirations and objectives of the guidelines that acted on Amendment #1 to the Infill Development Concept Plan. This evolution in design direction will ensure that the proposed amendment is responsive to the interrelationship between the Applicant's proposed Concept Plan Amendment #2 and the adjacent Volpe development being advanced by the MIT. As such, the design guidelines for Concept Plan Amendment #2 shall serve the purpose intended in prior iterations of the Infill Development Concept Plan—to promote cohesive design via harmonization of goals, objectives and guidelines within the MXD.

1.3.4 REQUESTED AMENDMENTS TO SPECIAL PERMIT

SUMMARY OF REQUESTED AMENDMENTS TO THE APPROVED CONCEPT PLAN

The Original Concept Plan and Concept Plan Amendment #1 authorized the construction of up to 1,065,900 SF of GFA for a total Aggregate GFA not to exceed 4,273,000 SF of GFA. The Project documented in this application will establish a revised master plan that will enhance the Project by accommodating the relocation of an Eversource electrical substation to the MXD at the request of the City of Cambridge, the construction of 800,000 SF of new Utility Project GFA, the consolidation of the approved residential GFA into one building, the creation of significant additional public open space, and the relocation of existing above-grade parking spaces and the construction of new parking spaces into two below-grade parking garages beneath Commercial Buildings C and D.

REQUESTED AMENDMENTS TO THE APPROVED CONCEPT PLAN

The following sections address the requested amendments by condition.

CONDITION 1 - APPROVED DEVELOPMENT PROGRAM

1(a)(i): Total Development: The maximum Gross Floor Area (GFA) permitted within the MXD District shall not exceed 4,273,000 SF, in the aggregate, as more specifically set forth in Appendix B. Such GFA shall not include certain spaces that are specifically exempted from the calculation of GFA by Section 14.32.6 of the Zoning Ordinance.

Requested Amendment: As described above, the Project proposes additional commercial Utility Project GFA above and beyond the approved 4,273,000 SF of Infill GFA, for a total Aggregate GFA of 5,073,000.

1(a)(ii): Mix of Uses: Subject to the provisions of Section 14.32.1, within the MXD District as a whole, GFA devoted to non-residential uses shall not exceed 3,673,000 SF, and the remaining GFA permitted in the district shall be limited to multifamily residential uses.

Requested Amendment: As described above, the Project proposes an additional commercial Utility Infill GFA. Within the MXD District as a whole, GFA devoted to non-residential uses shall not exceed 4,673,000 SF, and the remaining GFA permitted in the district shall be limited to multifamily residential uses.

1(a)(v): Retail Uses: The Concept Plan Amendment #1 modified the aggregate development plan to authorize an increase in retail GFA from approximately 19,366 SF to approximately 53,637 SF, of which approximately 42,300 SF is existing retail space to be demolished and reconstructed at 325 Main Street.

Requested Amendment: The Project proposes to increase the aggregate retail GFA from approximately 53,637 to 57,700 SF, including 42,300 SF of exiting retail space to be demolished, approximately 40,000 SF of which will be reconstructed at 325 Main Street. The Project will result in a new increase of enhanced retail and active use GFA through the construction of new ground-level retail/active uses in Commercial Building C and Commercial Building D, which will better activate the public realm along Binney Street, as well as the new cross-block connections that will promote pedestrian connectivity through the North Parcel, and between the Volpe development to the east.

The Applicant plans to construct up to approximately 8,300 SF of ground floor active use or retail GFA between Commercial Building C and Commercial Building D so as to activate the northeast edge of the proposed Center Plaza open space. The majority of this space may be required for a bike valet to meet City of Cambridge requirements and may include some complementary bike oriented service retail.

1(a)(vi): New Development Authorized by IDCP: As modified by Concept Plan Amendment #1, the Special Permit authorized the demolition of approximately 197,601 SF of GFA in two commercial buildings and the construction of approximately 828,801 SF of GFA in two new commercial buildings for a total of 631,200 SF of net new infill GFA, as well as the construction of 421,300 SF of GFA in two primarily residential buildings, of which 21,300 SF shall be exempt from GFA in accordance with Section 14.32.6 (including 20,000) SF devoted to middle income housing units and 700 SF devoted to ground-floor retail use), containing up to 425 total dwelling units.

Requested Amendment: As described above, the Project proposes the construction of 800,000 SF of additional commercial Utility Project GFA between two commercial buildings, located at 290 Binney (Commercial Building C) and 250 Binney Street (Commercial Building D). This Concept Plan Amendment #2 requests authorization to demolish approximately 62,576 GFA of existing GFA at 250 Binney Street (aggregate of 258,413 SF existing GFA to be demolished), and the construction of 1,428,200 of GFA across four commercial buildings for a total of 1,340,000 SF of net new infill commercial GFA. The Project also proposes to consolidate the approved residential GFA associated with Residential Building North into one Residential Building South located at 135 Broadway. The total residential GFA will be consistent with the Original Concept Plan, however in response to shifting market demands, the Project eliminates the previously proposed condominium units and proposes an up to 465 all-rental units (consistent with the recent amendment to the MXD Zoning).

1(a)(vi): Parking: As modified by Concept Plan Amendment #1, the Special Permit authorized a net increase of 413 parking spaces for a total of 3,121 parking spaces in the MXD. Accessory parking shall serve non-residential and residential uses in accordance with the limitations set forth in Section 14.52.2. Parking spaces may be used for carsharing to the extent allowable by zoning. Electric Vehicle (EV) charging stations shall also be allowed within parking facilities. A reduction in the total number of off-street parking spaces may be approved administratively by CDD, without requiring an amendment from the Planning Board, provided that such decrease does not exceed five percent (5%) of the total number of approved parking spaces on the Development Parcel, while any further reduction may be approved as a Minor Amendment pursuant to Condition #11 of this Decision provided that the provisions of the Zoning Ordinance are met.

Requested Amendment: The Project proposes to relocate the approximately 1,170 existing above-grade parking spaces associated with the Blue Garage below-grade into in two, connected parking garages situated beneath Commercial Building C and Commercial Building D. The Concept Plan Amendment #2 also proposes up to an additional 414 vehicle parking spaces to be accommodated within the two garages to support the additional commercial Utility Project GFA as well as the Residential South Building. This results in a net total addition of 1,042 spaces since the Original Concept Plan was approved, and total future parking supply of 3,750 spaces. Please refer to Section 5.5 for a detailed summary of the Applicant's approach to accommodating vehicle parking needs via minor additions of new parking and adoption of a managed parking strategy.

1(a)(x): Bicycle Parking: A minimum of 633 long-term and 102 short-term bicycle parking spaces will be provided for new development authorized by this Special Permit, as required by Section 6.100. Any modifications that deviate from the requirements of Section 6.100 shall require a special permit from the Planning Board pursuant to Section 6.108.

Requested Amendment: As part of Concept Plan Amendment #2, the Applicant is proposing to implement a bicycle valet to manage required parking associated with the Residential Building and Commercial Buildings C and D. For reference, the straightforward application of bicycle parking requirements in Section 6.107 to Concept Plan Amendment #2 would entail delivery of 875 long-term and 143 short-term traditional bicycle parking spaces in support of the Project. Acknowledging the unique approach to bicycle parking being proposed as part of this plan, in accordance with Article 6.108.1 the Applicant therefore intends to seek a modification of bicycle parking requirements via special permit. Please refer to Section 5.3.1 for a detailed narrative and figures depicting the amount and location of bike parking associated with each Project component.

1(b)(iii): Residential Building South, 135 Broadway (fronting Broadway): This Special Permit authorizes the construction of a new residential building with approximately 350,000 SF of GFA and up to 355 dwelling units.

Requested Amendment: As described above, the Concept Plan Amendment #2 requests authorization to consolidate the approved aggregate residential GFA formerly located at Residential Building South and Residential Building North into one residential building located at Residential Building South. At the site of the previously proposed Residential Building North along Binney Street, the Applicant proposes the construction of a new commercial office and retail building with approximately 412,000 new Utility Project GFA (Commercial Building C).

1(b)(iv): Residential Building North B, 135 Broadway (fronting Binney Street). This Special Permit authorizes the demolition of a portion of an existing above-grade parking structure and the construction of a new residential building with approximately 71,300 SF of GFA and up to 70 dwelling units, and a ground-floor retail use.

Requested Amendment: As described above, the Concept Plan Amendment #2 requests authorization to consolidate the approved aggregate residential GFA formerly located at Residential Building South and Residential Building North into one residential building located at Residential Building South. At the site of the previously proposed Residential Building North along Binney Street, the Applicant proposes the construction of a new commercial office and retail building with approximately 412,000 new GFA (Commercial Building C).

1(b)(ii): Commercial Building B, 250 Binney Street: Concept Plan Amendment #1 modified the Original Concept Plan by relocating the approved commercial GFA associated with Commercial Building B from the previously approved 250 Binney Street location, to 325 Main Street, which as is currently under construction and is anticipated to be completed in Q2 of 2022.

Requested Amendment: This Concept Plan Amendment #2 requests authorization for the demolition of an existing commercial building at 250 Binney Street with approximately 62,576 SF of GFA and the construction of a new commercial office and retail building with approximately 388,000 SF of net new commercial GFA (Commercial Building D).

CONDITION 2 - OPEN SPACE

2(b): According to the IDCP, the approved development shall result in approximately 276,289 SF of Public Open Space in the MXD district, exceeding the minimum of 100,000 SF required by Section 14.42. Such Public Open Space shall be reserved for public use and enjoyment as guaranteed through one or more of the following: retention by the Cambridge Redevelopment Authority (CRA); dedication to and acceptance by the City of Cambridge or other public entity; easements or deed restrictions over such land sufficient to ensure its perpetual reservation for public open space purposes; dedication, by covenant or comparable legal instrument, to the community use of the residents, lessees and visitors to the MXD district for reasonable amounts of time on a regular basis; or lease agreements of ninety-nine (99) years or longer from the private developer or owner to the City or other public entity.

Requested Amendment: As described above, with the demolition and relocation of the Blue Garage below-grade and consolidation of Binney and Broadway Parks, The Project proposes an incremental increase of approximately 17,400 square feet of open space relative to what was proposed in Concept Plan Amendment #1. The new open space and pedestrian realm improvements will include an approximately 30,000 central open space known as “Center Plaza”, which will contribute to a vibrant public realm, foster new cross-block connections and promote pedestrian connectivity through the North Parcel, and to between the Volpe development to the East. The proposed modifications to the Original Concept Plan shall result in approximately 302,919 SF of Public Open Space in the MXD district, exceeding the minimum of 100,000 SF required by Section 14.42.

CONDITION 6 - RETAIL AND ACTIVE USES

(c): Any relocation of retail use or other active public gathering space from the locations depicted in the IDCP to another location within the MXD district may be permitted as a Minor Amendment pursuant to Condition #11 of this Decision, upon a determination by the Planning Board that there will be no reduction in the total amount of such uses and that the proposed relocation will better serve the objectives of the district, and provided that the requirements of Section 14.38 continue to be met. Conditions 13a and 13b shall be provided with Residential Building South design review information. Condition 13c has been revised and integrated as Section 10 of the Concept Plan Amendment.

Requested Amendment: The Project proposes to increase the aggregate retail GFA from approximately 53,637 to 57,700 SF, including 42,300 SF of exiting retail space to be demolished, approximately 40,000 SF of which will be reconstructed at 325 Main Street. The Project will result in a net increase of enhanced retail GFA through the construction of new ground-level retail and active uses in Residential Building South along Broadway, and in Commercial Building C and Commercial Building D, which will better activate the public realm along Binney Street, as well as the new cross-block connections that will promote pedestrian connectivity through the North Parcel, and between the Volpe development to the east.

1.4 CONSISTENCY WITH K2 PLAN

Since the Original Concept Plan was approved in January 2017, the Applicant has completed construction of the 19-story commercial building with ground floor retail associated with the Commercial Building A (1). The office space is occupied by Akamai's new global headquarters. Since the Concept Plan Amendment #1 was approved in 2019 the Applicant has also commenced construction on the 16-story commercial and retail building associated with the Commercial Building B (2), with an estimated completion and Certificate of Occupancy in Q2 of 2022. The office space will be occupied by Google's local headquarters. The construction of Commercial Building B at 325 Main Street is consistent with the K2 study, and the height and density concentrated along Main Street. K2 building outlines in black are for comparison to the proposed development massing.

Consistent with the representations made during the zoning process, for incremental development proposed for the North Parcel the Applicant intends to adhere to the Volpe Design Guidelines while continuing to respect the aspirations and objectives of the guidelines that acted on Amendment #1 to the Infill Development Concept Plan. This evolution in design direction will ensure that the proposed amendment is responsive to the interrelationship between the

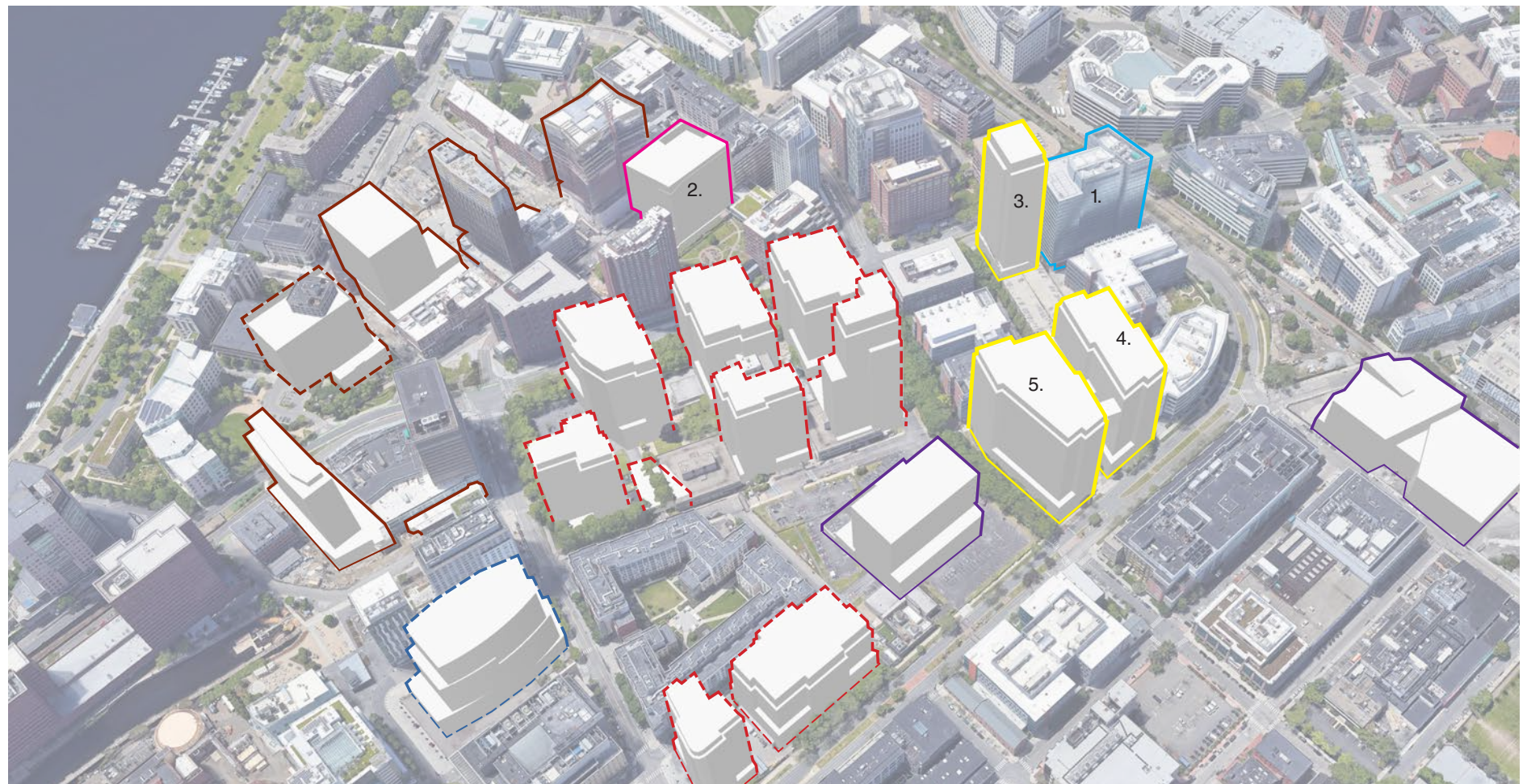


K2C2 MASSING

From: Kendall Square Final Report 2013

FIGURE 1.9A

Applicant's proposed Concept Plan Amendment #2 and the adjacent Volpe development being advanced by the MIT. As such, the design guidelines for Concept Plan Amendment #2 shall serve the purpose intended in prior iterations of the Infill Development Concept Plan—to promote cohesive design via harmonization of goals, objectives and guidelines within the MXD. To this end, as documented in the Original Concept Plan and Concept Plan Amendment #1, consistent with the K2 study massing, the Residential Building South (3) and Commercial Building C (4) are located in the interior of the Project Site along the south and north sides of the existing Blue Garage and are consistent with the height and density concentrated along Broadway and Binney Street. Consistent with the K2 Plan, the Project Change proposes the demolition and relocation of the Blue Garage below-grade, and the construction of the approximately 30,000 SF Center Plaza designed to foster new cross-block connections and promote pedestrian connectivity through the North Parcel and between the Volpe development to the east. Both the Concept Plan Amendment #2 and the K2 study represent the Commercial Building D (5) at the corner of the Project site along Binney Street.



- | | | |
|---|--|--|
| Proposed Projects | Proposed Projects (Volpe) | Proposed Projects by others |
| Proposed Projects Under Const. | Permitted Projects (MIT Noma/Soma) | Permitted Projects by others |
| Proposed Projects Complete | Projects Under Const.(MIT Noma/Soma) | Permitted Projects by others Under Const. |

FIGURE 1.9B

1.5 PUBLIC BENEFITS

The Project as a whole will construct over 1.8 million new SF of mixed-use infill development contributing to the overall vitality of the Kendall Square neighborhood by bringing new and complementary uses, creating additional housing, and enhancing the urban environment. The Project will deliver numerous public benefits, including the accommodation of critical energy infrastructure, considerable urban design and public realm improvements, a mix of new residential units, job opportunities and new tax revenues.

Public benefits to be delivered as part of the cumulative Project include:

ADDITIONAL HOUSING

The delivery of 420,000 SF of GFA of housing that will significantly contribute to the housing needs of the City of Cambridge through the offering of a broad spectrum of residential units ranging in size and affordability. More information can be found about the housing program in Section 2.1.1.

AFFORDABLE HOUSING

Twenty percent (20 percent) of the residential Infill GFA will be dedicated affordable housing units, equal to approximately 80,000 SF of GFA. This is estimated to contribute approximately 80-85 affordable units, depending on the final building design.

MIDDLE INCOME HOUSING

Five percent (5 percent) of the residential Infill GFA will be dedicated to middle-income housing units, equal to 20,000 SF of GFA. This is estimated to contribute approximately 20-25 middle-income units, depending on the final building design.

THREE BEDROOM UNITS

A minimum of five percent (5 percent) of the residential Infill GFA will be dedicated to larger, three-bedroom units, equal to 20,000 SF of GFA to be devoted to middle-income and affordable uses. These units will be designed to accommodate families intended to further the City's goal of providing large, family-sized housing across varied income levels.

ACCELERATED DELIVERY OF THE HOUSING

All 420,000 GFA of housing will be delivered in the single Residential Building, scheduled for Phase 3 of the Concept Plan Amendment #2 and slated for construction concurrently with any of the incremental commercial GFA contemplated by this Concept Plan Amendment #2. This represents a significant increase in area residential density, and ensures accelerated delivery of 100 percent of the housing envisioned as part of the Original Concept Plan.

INNOVATION SPACE

The 105,200 SF of GFA Innovation Space is to be located at 255 Main Street and 325 Main Street. The Applicant has delivered the Innovation Space conversion at 255 Main Street associated with Phase 1 and Phase 2.

255 Main Street has been re-purposed in accordance with the requirements of Article 14.32.5 and offer 25 percent of the space at below market rates. At the present time, the fulfillment of the innovation space requirement at this location will be split between two entities. Market innovation space will be offered by Cambridge Innovation Center (CIC), an established, Cambridge based provider of flexible office, co-working, and lab space for entrepreneurs and early-stage companies. The below-market innovation space is located on the 8th floor and operated by an appropriate third-party manager as a co-working space for non-profits focused on providing technology education as well as associated classroom and conference facilities available for rent. The program and cultivation of applicable non-profits will be the responsibility of an advisory board composed of relevant stakeholders including but not limited to the Applicant, the CRA and the CIC. The prominent location in the middle of the Kendall Square technology economy will help ensure the continued proliferation of entrepreneurial ventures and offer a new pathway for all residents of Cambridge to gain practical technology education to prepare for employment within the technology sector. Consistent with the requirements of Article 14, an operations plan was submitted to the CRA in July of 2018. The remaining Phase 2 Innovation Space will be delivered at 325 Main and at 80 Broadway concurrent with Commercial Building B, which anticipates a Certificate of Occupancy in Q2 of 2022 (Figures 1.14A-C).

HIGH QUALITY URBAN DESIGN

In response to the City's stated planning principles and goals outlined in the K2 plan and Volpe Design Guidelines, the Applicant is committed to delivering high-quality architecture and has engaged a selection of world-class architecture, landscape architecture and planning firms to design the Project. The resulting development will greatly contribute to the architectural diversity of the City, reinforcing the Applicant's commitment to creating a high-quality built environment.

IMPROVED PUBLIC REALM AND CONNECTIVITY

Through a combination of new active ground floor uses and high-level streetscape design, the public realm will be greatly enhanced from existing conditions. Pedestrian and bicycle connectivity will be enhanced by significant improvements to the 6th Street Connector (described below), the two East-West Connectors between the buildings, and the construction of the multi-modal improvements associated with Phase 2, which will improve the Broadway to Galileo Galilei Way intersection to be a protected intersection. Improvements will also include new landscaping and lighting along sidewalks and pathways for safer pedestrian accommodations. Additionally, the Project aims to convert the existing service drives to east and west plaza drives, comprising an area of approximately 20,000 SF altogether. This concept will be explored further during design review for Commercial Building C and Residential Building South.

ENHANCEMENT OF THE 6TH STREET CONNECTOR (LOUGHREY WALKWAY)

The Loughrey Walkway (6th Street connector) is a pedestrian and bicycle path that is an important north/south arterial for alternative transportation. As a component of Phase 1, the Project completed improvements to the 6th Street connector in 2019 that created a new, bi-directional separated two-way bicycle path to the west of the existing path that aligns with the Ames Street Cycle Track to provide an additional link in a broader bicycle path infrastructure that runs throughout the district and beyond. This bike path is now known as the Kittie Knox Bike Path.

KENDALL PLAZA AND KENDALL SQUARE ROOFTOP GARDEN

With the construction of Commercial Building B, the Project will significantly enhance and enliven the public realm in multiple ways, including a redesigned ground and second floor retail edge along Main Street and the building's east facade, directly abutting Kendall Plaza, thus enhancing the pedestrian experience at the street level and further enlivening the Plaza. In addition, the Project will create a new pedestrian connection from Kendall Plaza up to the Kendall Roof Garden through a combination of publicly accessible stairs and an elevator, providing an opportunity for multi-level public space and potential programming as well as increased visual interest on Kendall Plaza. As described in more detail in Chapter 3, Open Space, the Kendall Roof Garden has been completely redesigned and reimagined to accommodate a wide range of programming through the day and into the evening hours during the warmer seasons.

Further, Commercial Building B will provide enhanced access from Pioneer Way through the ground floor retail portion of the building to facilitate pedestrian connection between Ames Street and the Kendall Plaza, enhance neighborhood connectivity and permeability and to enliven the proposed retail. The Project will also deliver aesthetic and functional upgrades to the MBTA Red Line Outbound Headhouse.

CENTER PLAZA

With the demolition and relocation of the Blue Garage below-grade, the Project will deliver a new approximately 30,000 SF of new open space atop the roof of the electrical substation, and between Residential Building South and Commercial Building C. The new open space and pedestrian realm improvements will contribute to a vibrant public realm, foster new cross-block connections and promote pedestrian connectivity through the North Parcel, and between the Volpe development to the east. The new open space and public realm improvements will serve the residents and workers in the MXD, and the general public alike.

SUSTAINABLE DEVELOPMENT

The Project design will prioritize sustainability as a core strategic imperative and will implement state-of-the-art high-performance green building technologies, construction, and operating procedures. Sustainability planning with an integrated design team during conceptual design will establish a pathway to Gold-level certification under Version 4 of the Leadership in Energy and Environmental Design (LEED®) Green Building Rating System. The Project design teams will use iterative energy modeling and life cycle analysis to consider the long-term value of sustainable property investment decisions.

REDUCED CLIMATE CHANGE IMPACTS

The Project Components are being designed to significantly reduce Greenhouse Gas (GHG) emissions and will work with its design teams to evaluate and incorporate, where feasible and reasonable, strategies that support the Cambridge Net Zero Action Plan.

ENCOURAGE ALTERNATIVE MODES OF TRANSPORTATION

The Project aims to implement a bicycle valet to service bicycle parking demand from the Residential Building and Commercial Buildings C and D. This, along with significant improvements to bike and pedestrian paths of travel and proximity to public transit, will encourage the use of sustainable modes of transportation and seek to reduce vehicle trips.

PUBLIC TRANSIT ENHANCEMENTS

In conjunction with the City and State, the CRA and Applicant are committed to developing an expanded program of transportation enhancements designed to both preserve the favorable mode share balance in Kendall Square and provide additional improvements to support local efforts to further reduce the vehicle trips generated as a result of the Project and the broader Kendall Square area. Refer to Section 5.2 for a summary of the KSTEP, including an update on the status of transit mitigation projects that have been advanced since the Original Concept Plan to improve transit access in Kendall Square.

JOB CREATION

Creation of innovative new workplace opportunities for a variety of business types that will lead to approximately 9,000 permanent jobs in the City, and approximately 2,600 construction jobs. The new buildings and the uses therein will attract new workers and residents to Cambridge who will shop in the City and take advantage of the nearby cultural opportunities.

TAX REVENUE GENERATION

Generate substantial new annual real estate tax revenue for the City of Cambridge, along with additional tax and sales revenues tied directly to the influx of new workers and residents.

1.6 AGENCY COORDINATION AND PUBLIC OUTREACH

1.6.1 CITY AND STATE AGENCY COORDINATION

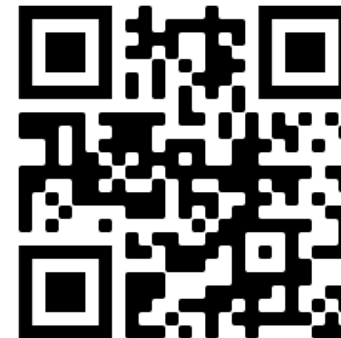
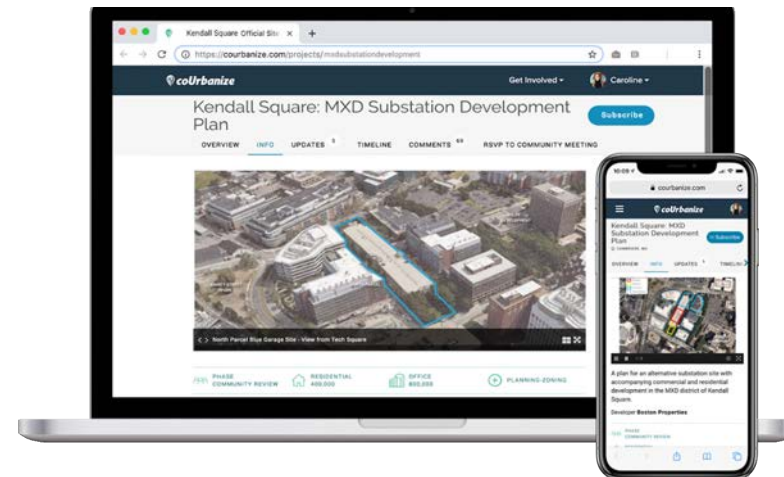
Before filing this Concept Plan Amendment #2, the Applicant has met with numerous City and State public agencies, including the following:

- Cambridge Traffic, Parking & Transportation;
- Cambridge Engineering Department;
- Cambridge Community Development Department;
- MEPA Office;
- Massachusetts Department of Energy Resources;
- Massachusetts Department of Transportation; and
- Massachusetts Bay Transportation Authority.

1.6.2 PUBLIC OUTREACH

Through 2020 and 2021, the CRA and the Applicant conducted a robust outreach program centered on various community group meetings, virtual open house sessions, monthly public meetings of the CRA Board, a hearing with the Planning Board, and utilization of an online website forum on the CoUrbanize platform. As of June 2021 the number of followers on the project is now 122 with 144 comments and 2,691 unique visitors.

For updated information about various components of the amendment, please log onto: **[HTTPS://WWW.MXDSUP.SITE](https://www.mxdsup.site)** or you can access the site using this QR code with a mobile device.



Numerous public meetings have been held by the CRA and the Applicant in preparation for this submission.

2020

- 07 April ECPT Meeting [Project Introduction]
- 15 April CRA Board Meeting [Project Introduction]
- 21 April Linden Park Neighbors [Project Overview]
- 20 May CRA Board Meeting [Preliminary Zoning Changes]
- 17 June CRA Board Meeting [Draft MXD Zoning Petition]
- 25 June Virtual Open House [Concept Plan Development]
- 01 July Zoom Open office Hours [Q&A]
- 15 July CRA Board Meeting [Draft KSURP Amendment]
- 22 July ECPT Meeting [Eversource Update]
- 04 August ECBA Meeting [Project Overview]
- 19 August Linden Park Neighbors [Project Update]
- 02 September Kendall Square Association [Project Update]
- 03 September Kendall Residents Association [Project Update]
- 16 September CRA Board Meeting [Vote on Zoning Petition]
- 11 November CRA/CDD Design Review Committee [Project Update]
- 12 November Cambridge Planning Board Meeting [Zoning Petition Review]
- 19 November Cambridge Ordinance Committee [Zoning Petition Review]

2021

- 05 January Cambridge City Council [Review & Q&A]
- 27 January Cambridge Ordinance Committee [Financial Review]
- 03 February Cambridge City Council [Zoning Petition Approved]
- 30 March Design Review Committee Meeting [Review & Q&A]
- 31 March Virtual Open House Community Meeting [Review & Q&A]
- 04 April Open Office Hours [Review & Q&A]
- 14 April ECPT Meeting [Review & Q&A]
- 13 May CRA/BXP Joint MXD Substation Open House 18 May Joint Planning Board and CRA Board Meeting [Project Introduction]
- 28 May Cambridge Community Charter School [Project Introduction]
- 09 June Joint Design Review Committee Meeting [135 Broadway Design Consultation]

PROJECT RESPONSE TO FEEDBACK

Additionally, through the public meeting process, the project team has focused on the following suggestions and feedback:

Project Origins – The origins of Concept Plan Amendment #2 are intimately tied to an extensive community process that culminated in a request from the City of Cambridge for proposals to relocate the proposed Fulkerson Street electrical substation. The central task of identifying an alternative site within the MXD and developing a potential urban plan to support that alternative site all stem from these initial consultations and ongoing public support for a relocation facilitated by Boston Properties and Eversource.

Public Open Space – It was noted during early CRA Board meetings that—despite the need to accommodate an electrical substation--the redevelopment of the North Parcel (particularly demolition of the Blue Garage) created an opportunity for developing new open space and strengthening pedestrian circulation. These comments led to a substantial and ultimately successful effort to prove the engineering feasibility of housing the electrical substation below grade, thereby opening up a new public space at the center of the North Parcel and the contemplated commercial and residential buildings.

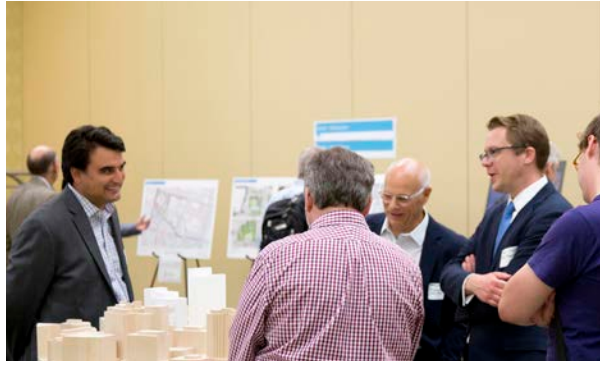
Open Space Amenities – The possibility of creating a new central open space in turn catalyzed considerable community input—both online and within public meetings—regarding the potential programming and amenities that could be incorporated within this new central open space, subject to substation engineering constraints. This feedback led to evaluation of a series of thematic alternatives, incorporation of a water feature, and evaluation of a variety of schemes for incorporating ventilation infrastructure for the below grade substation that were eventually integrated into the baseline scheme for “Center Plaza” proposed within Concept Plan Amendment #2.

Service Drives – Throughout the process, members of the public and members of the CRA Board and Planning Board raised the potential for modifying the character of the service drives as part of the contemplated redevelopment so as to emphasize a pedestrian character. While the precise nature of the intervention remains to be determined, rethinking one or parts of both service drives now represents a modal assumption for the Project Team's efforts. Additional detail will be provided during design review.

Broadway Connection – The project team has heard from multiple sources that fostering a connection between Broadway and the contemplated new public open space would be highly salient to activating the envisaged new public open space. Partially in response to this feedback, the proposed residential tower was shifted to the east end of the site so as to create a pedestrian corridor from Broadway, opening up the new public open space to street traffic.

Retail – Throughout the process, the project team has solicited feedback on how to integrate retail into the proposed development plan as well as received feedback on desired uses from members of the public. This has informed targeted placement of potential retail/active use space within Commercial Building

JULY 19, 2016 – PUBLIC OPEN HOUSE AND WORKSHOP ON CONCEPT PLAN

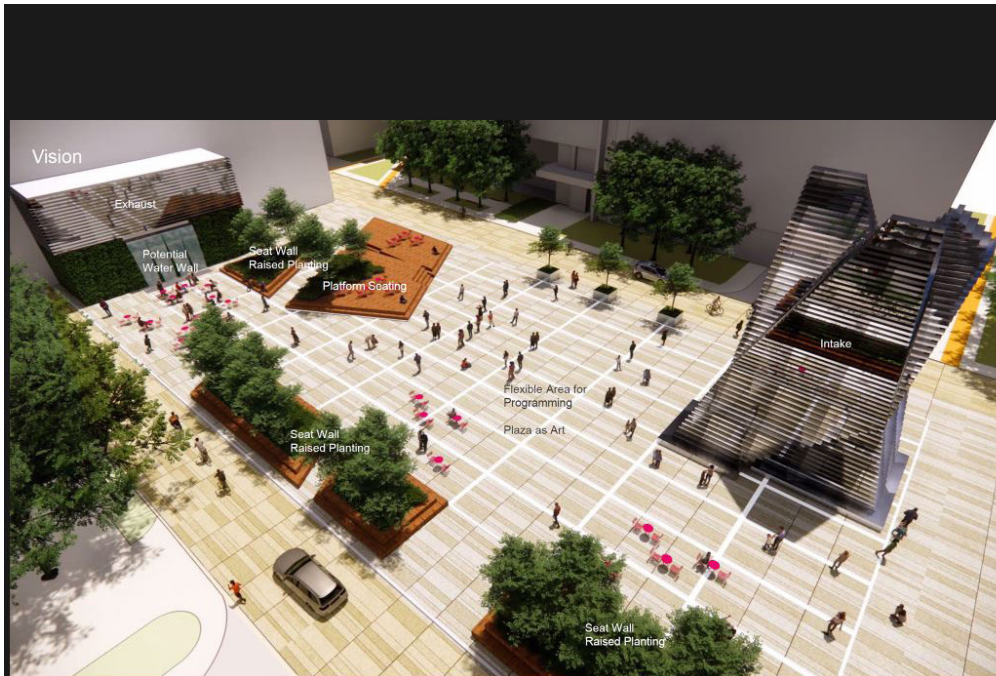


AUGUST 1, 2018 – PUBLIC OPEN HOUSE ON AMENDMENT TO CONCEPT PLAN





MAY 18 2021 – JOINT PLANNING BOARD AND CRA BOARD MEETING [PROJECT INTRODUCTION]



DEVELOPMENT COMPONENTS

COMMERCIAL BUILDING A (145 BROADWAY)

PROJECT SUMMARY

Since the Concept Plan Amendment #1 was approved in 2019, the Applicant has completed construction of the commercial space and ground floor retail associated with the Commercial Building A, which includes 441,614 SF of commercial GFA across nineteen floors plus a mechanical penthouse at the intersection of Broadway and Galileo Galilei Way.

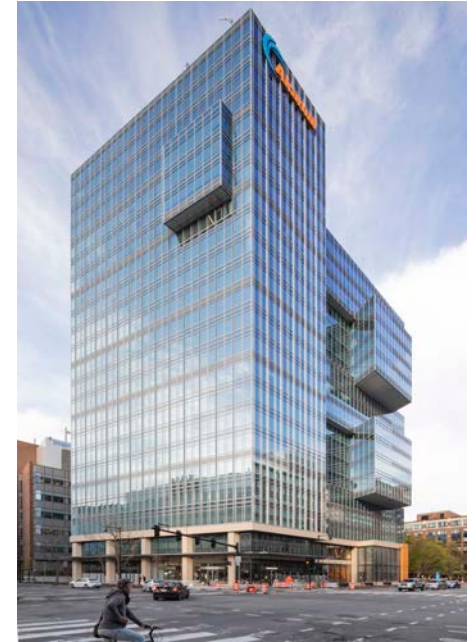
The total height of Commercial Building A is up to 250'-0", as defined in the zoning ordinance. Commercial Building A is designed with a +/-12'- 8" floor to floor height on typical floors above ground level in order to accommodate commercial office program, ensuring the building's longevity in a rapidly evolving commercial office market.

The ground floor plan is designed to activate the adjacent public realm to the greatest extent possible, with a public plaza providing direct and open access to the lobby and active use spaces, which extends along Broadway and wraps the corner of Galileo Galilei Way. Ground-level pedestrian circulation along Broadway and the West Service Road allows direct access and views to the existing open park space. Service and loading is accessed along the northern side of the site, with a dedicated off-street loading facility for both deliveries and waste management provided at the northeast corner of the building off the western internal service drive. Access to vehicular and underground long-term bike parking are also located in this area.

Commercial Building A was constructed with the capacity to accommodate 457 vehicle parking spaces, and 131 bike parking spaces in a five (5) story below grade garage, allowing it to serve not only the 145 Broadway building, but also other projects identified as part of this Concept Plan.



145 BROADWAY
CONCEPT PLAN MARCH 2017



145 BROADWAY MAY 2021



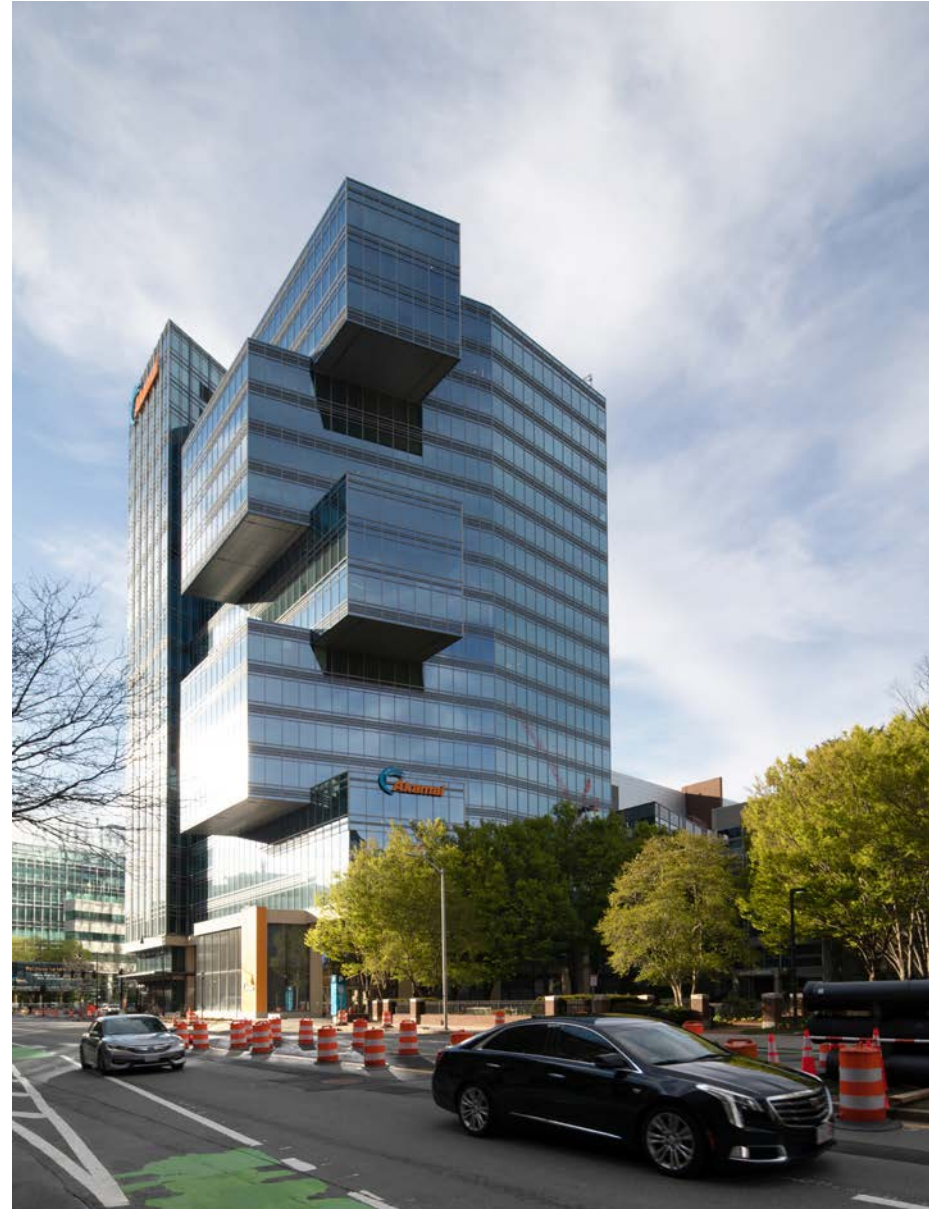
145 BROADWAY - AKAMAI'S GLOBAL HEADQUARTERS

COMMERCIAL BUILDING A (145 BROADWAY)

FIGURE 1.10



145 BROADWAY CONCEPT PLAN MARCH 2017



145 BROADWAY MAY 2021

DEVELOPMENT COMPONENTS

COMMERCIAL BUILDING B (325 MAIN STREET)

PROJECT SUMMARY

Commercial Building B is currently under construction and anticipated to be completed in Q2 of 2022. Commercial Building B will replace an existing, approximately 117,201 SF four-story masonry commercial office and retail building, and will occupy approximately the same footprint. Commercial Building B will have a total GFA of approximately 387,187 SF and be up to sixteen floors plus a mechanical penthouse. The total height will be up to 250'-0" to the last occupied floor, as defined under zoning.

Commercial Building B will significantly enhance and enliven the public realm in multiple ways. The Project includes a redesigned ground and second floor retail edge along Main Street and the building's east facade, directly abutting Kendall Plaza, thus enhancing the pedestrian experience at the street level and further enlivening Kendall Plaza. In addition, the Project will create a new pedestrian connection from Kendall Plaza up to the Kendall Square Rooftop Garden through a combination of publicly accessible stairs, a second-level terrace and an elevator. This will provide a multi-level public space and programming opportunities, as well as increased visual interest on Kendall Plaza. Further, Commercial Building B will provide enhanced access from Pioneer Way through the ground floor retail portion of the building, creating a pedestrian connection between Ames Street and the Kendall Plaza. This will enhance neighborhood connectivity and permeability and enliven the proposed ground floor retail. The Applicant is also working closely with the Massachusetts Bay Transportation Authority (MBTA) to renovate the existing Kendall Northbound Headhouse as a benefit of this Project component.

Commercial Building B will be served by the existing dedicated off-street loading facility for both deliveries and waste management that is shared with 255 Main and the Marriott Hotel, and accessed from Broadway. The loading dock activities will be managed so that service and loading operations do not adversely impact traffic circulation on the adjacent local roadways. Parking for 325 Main will be provided through the existing garages managed by the Applicant in the area. No parking will be constructed on-site at Commercial Building B. Additionally, Commercial Building B will provide 108 long term bike parking spaces within the basement and 47 short term bike parking spaces at grade distributed at various entrances to the building.



325 MAIN STREET
CONCEPT PLAN JAN 2019



325 MAIN STREET MAY 2021



KENDALL SQUARE ROOFTOP GARDEN- UNDER CONSTRUCTION

COMMERCIAL BUILDING B (325 MAIN STREET)

FIGURE 1.11



325 MAIN STREET CONCEPT PLAN JAN 2019



325 MAIN STREET MAY 2021

DEVELOPMENT COMPONENTS

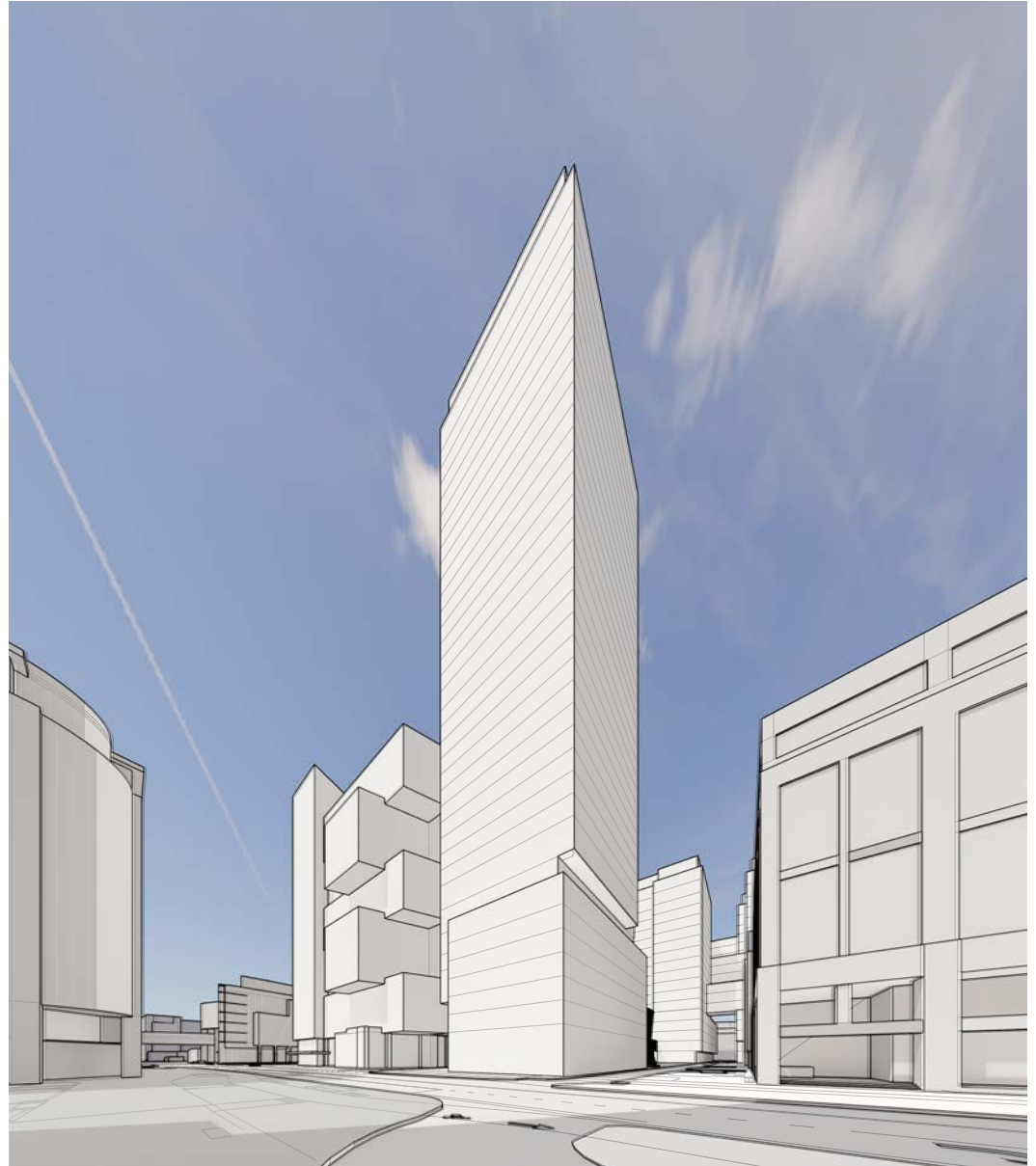
RESIDENTIAL BUILDING SOUTH (135 BROADWAY)

PROJECT SUMMARY

This Concept Plan Amendment #2 is proposing the construction of 420,000 total residential GFA, contributing to the housing needs of the City through the offering of a broad spectrum of residential rental units ranging in size, type and affordability. This GFA is slated for delivery in one consolidated residential building which is proposed for construction on the south end of the existing Blue Garage parcel situated between Broadway, the East and West Service Roads, and the planned Center Plaza public open space and below grade Eversource electrical substation.

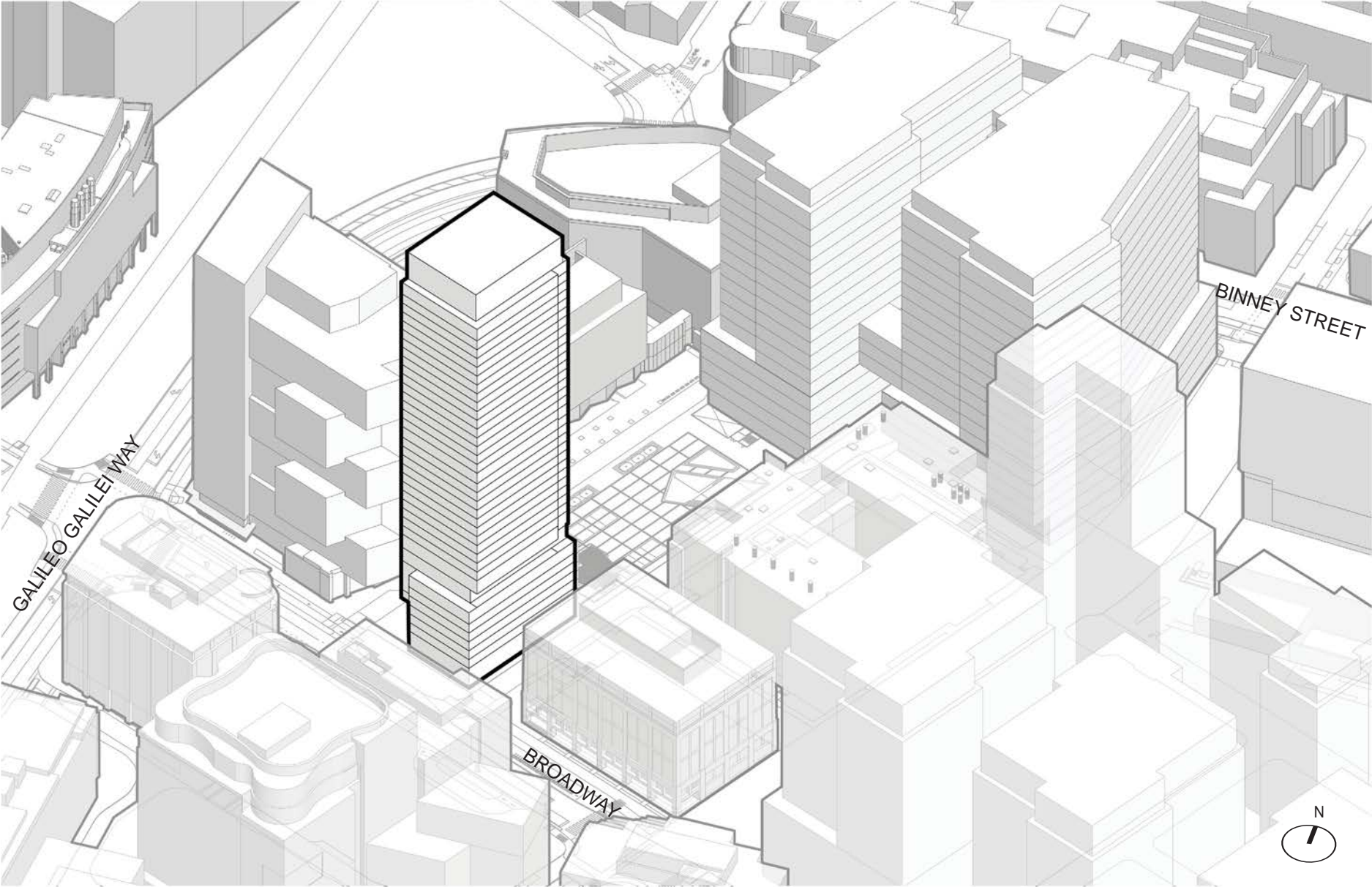
The Residential Building South is located along Broadway and will stand at approximately 400 feet in height to the highest occupied floor as defined under the zoning ordinance. The building's massing provides for a rectangular, approximately 12,000 GFA typical floor plate for a total of 420,000 GFA over 38 occupiable floors. The Residential Building South will deliver one hundred percent (100%) of the residential density envisioned as part of the Original Concept Plan, as well as its proportionate share of affordable, middle income and three-bedroom units.

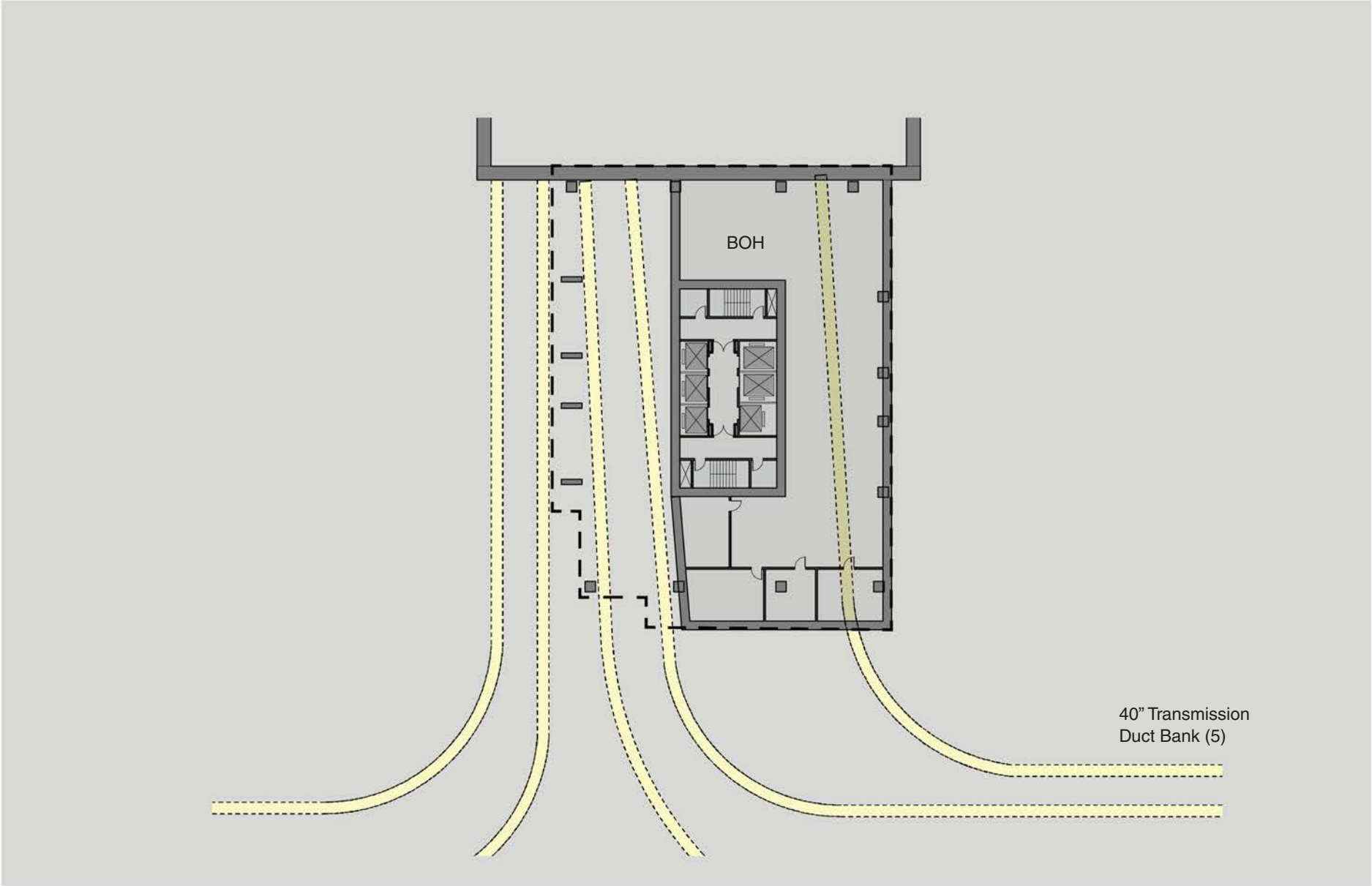
The ground floor has been designed to activate the streetscape fronting Broadway through an active lobby serving the rental units, as well as adjacent ground floor retail. The lobby will be well lit and transparent, providing around the clock activity beyond traditional working hours. Service and loading functions will be handled via a dedicated off-street loading facility for both deliveries and waste management, located off the East Service Road. Vehicular parking will be accommodated by the new below-grade parking garage planned for construction beneath Commercial Buildings C and D located at 290 Binney and 250 Binney, while bicycle parking will be delivered via a bicycle valet situated within Commercial Buildings C and D, as well as traditional bicycle parking spaces distributed between the residential and commercial components of Concept Plan Amendment #2.



PERSPECTIVE VIEW FROM BROADWAY LOOKING NORTH WEST
(CONCEPTUAL MASSING)

FIGURE 1.12





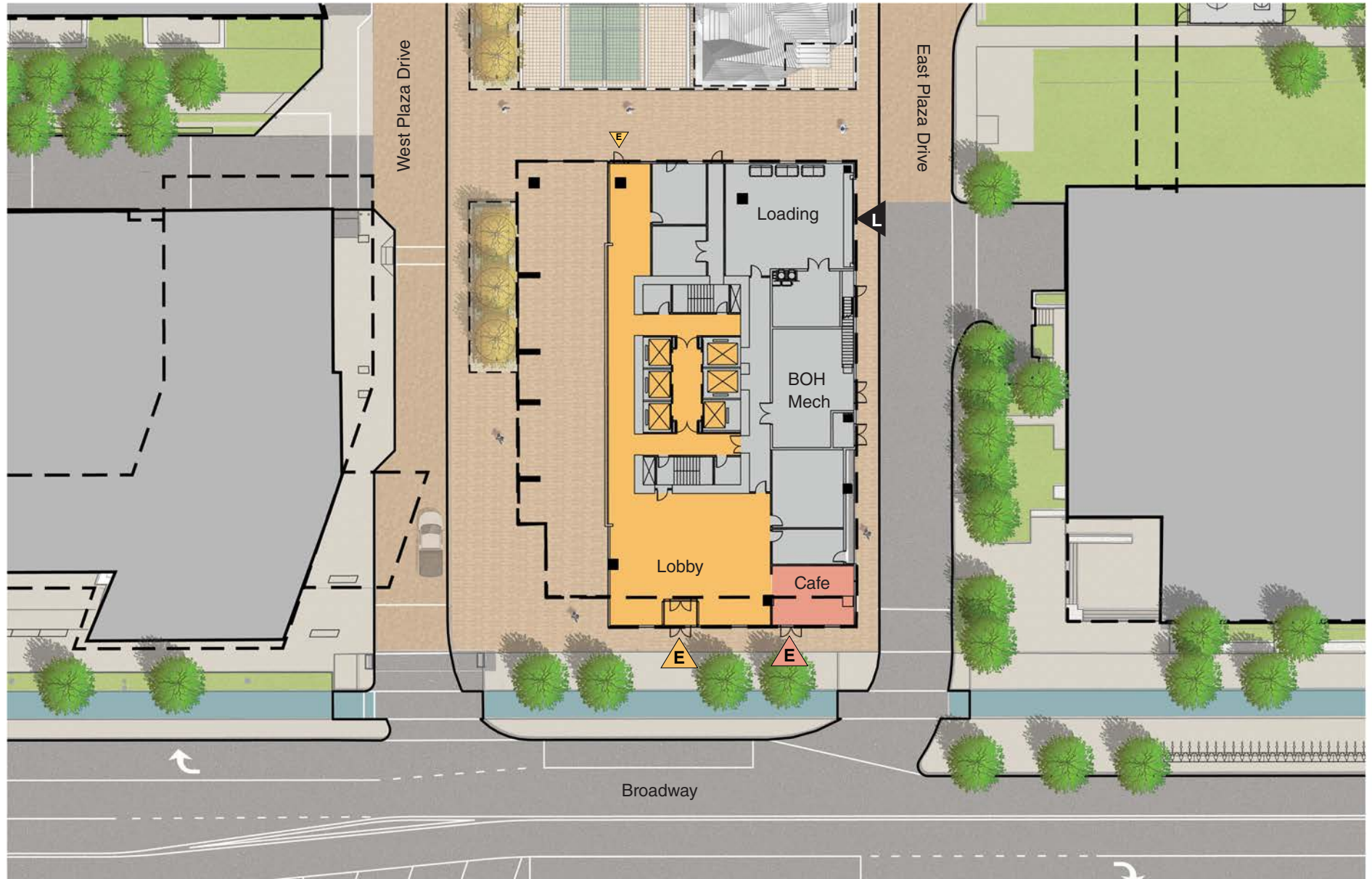
TYP. BASEMENT LEVEL

N

0' 20' 40'

RESIDENTIAL BUILDING SOUTH (135 BROADWAY)

FIGURE 1.12C



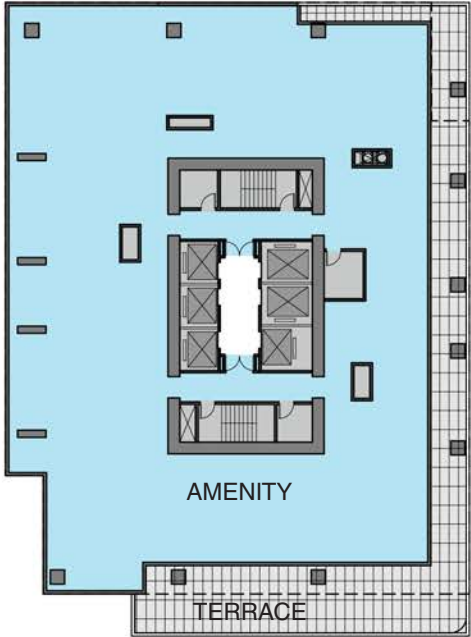
- Lobby
- Active use
- Mechanical / BOH

Parking Entrance
 Loading

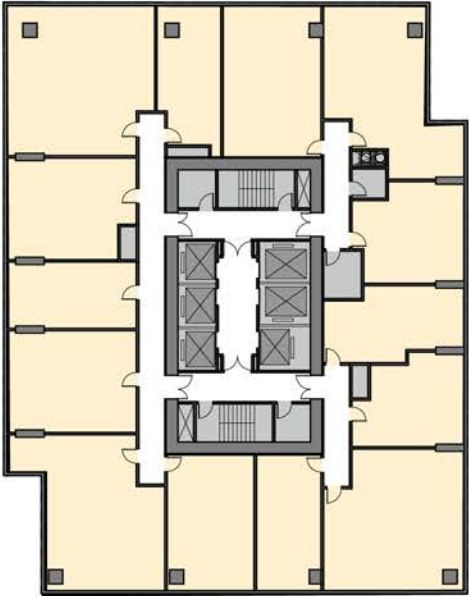
Entrance (per use type)



GROUND LEVEL
 0' 20' 40'



AMENITY LEVEL 5-6

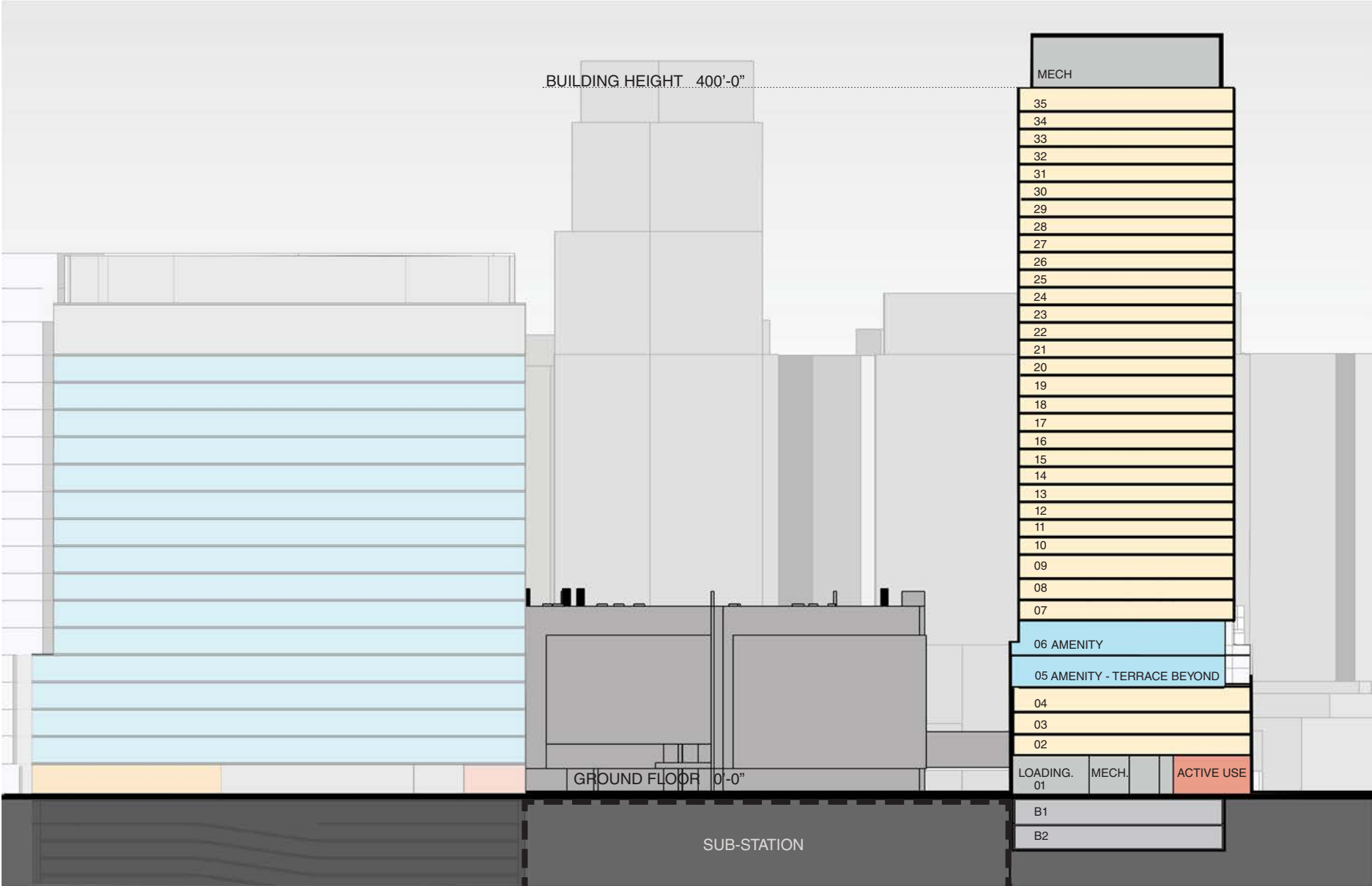


TYPICAL RESIDENTIAL LEVELS 7-35



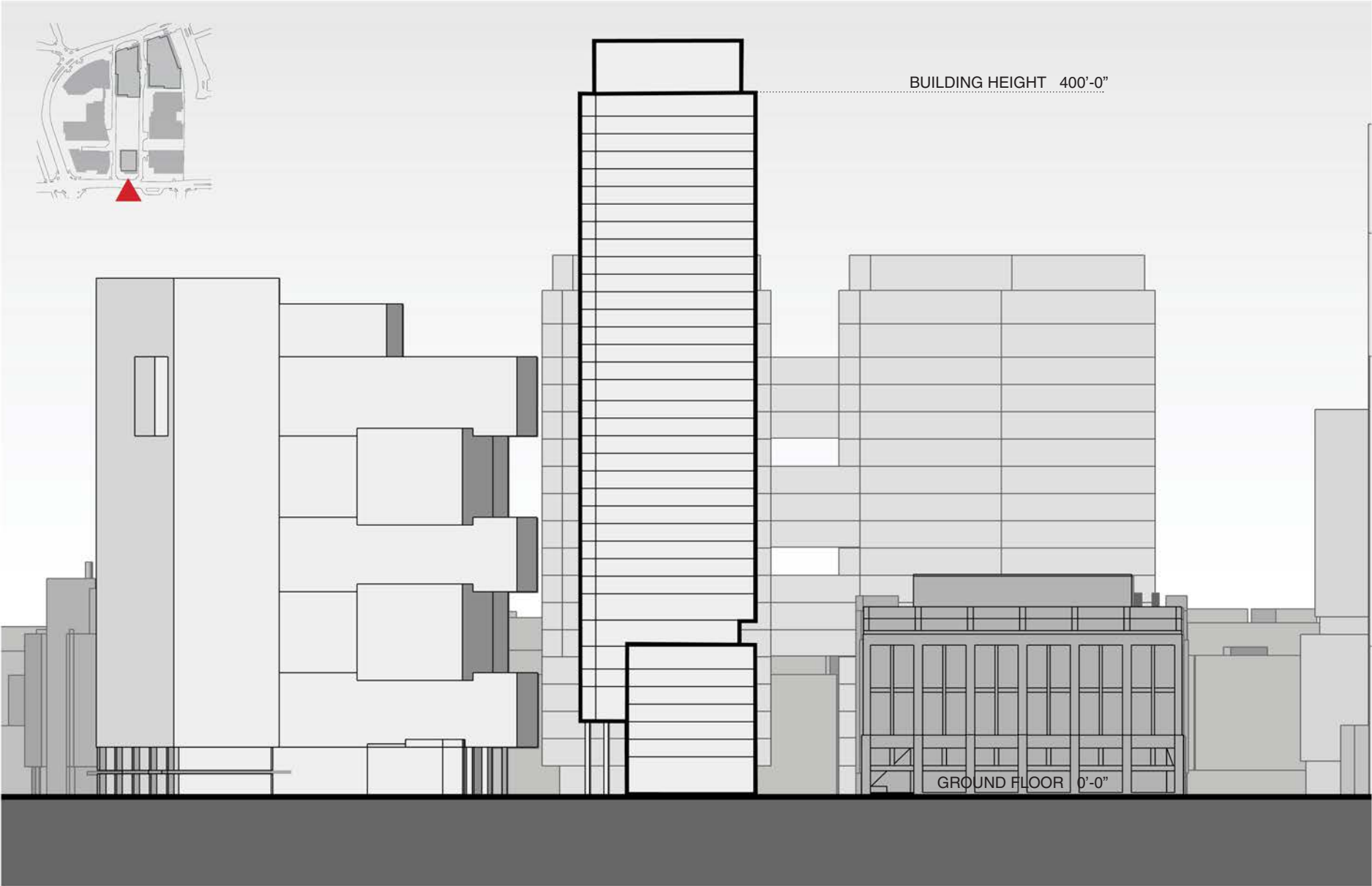
RESIDENTIAL BUILDING SOUTH (135 BROADWAY)

FIGURE 1.12E



RESIDENTIAL BUILDING SOUTH (135 BROADWAY) - ELEVATION

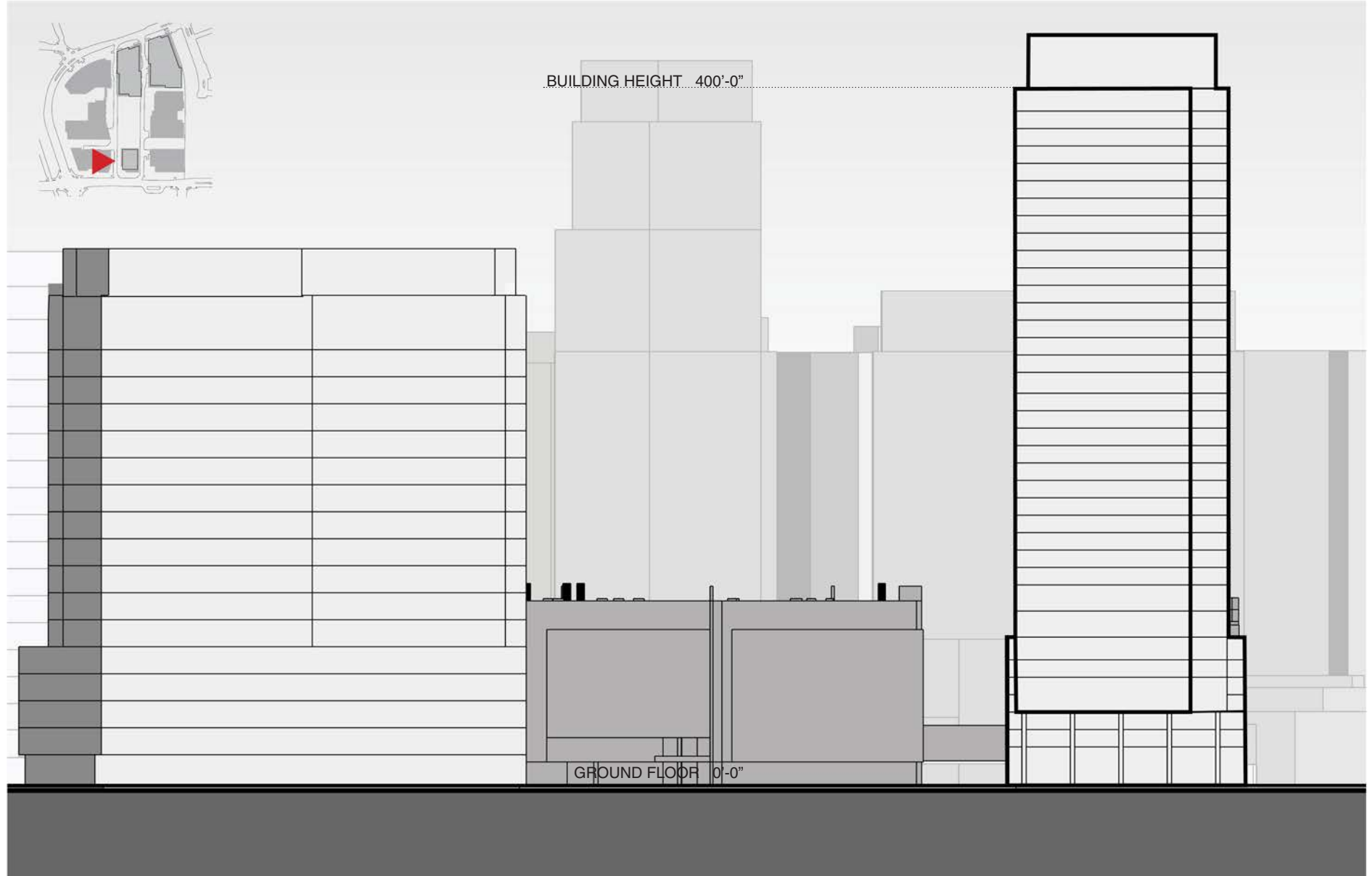
FIGURE 1.12F



SOUTH ELEVATION

RESIDENTIAL BUILDING SOUTH (135 BROADWAY)

FIGURE 1.12G

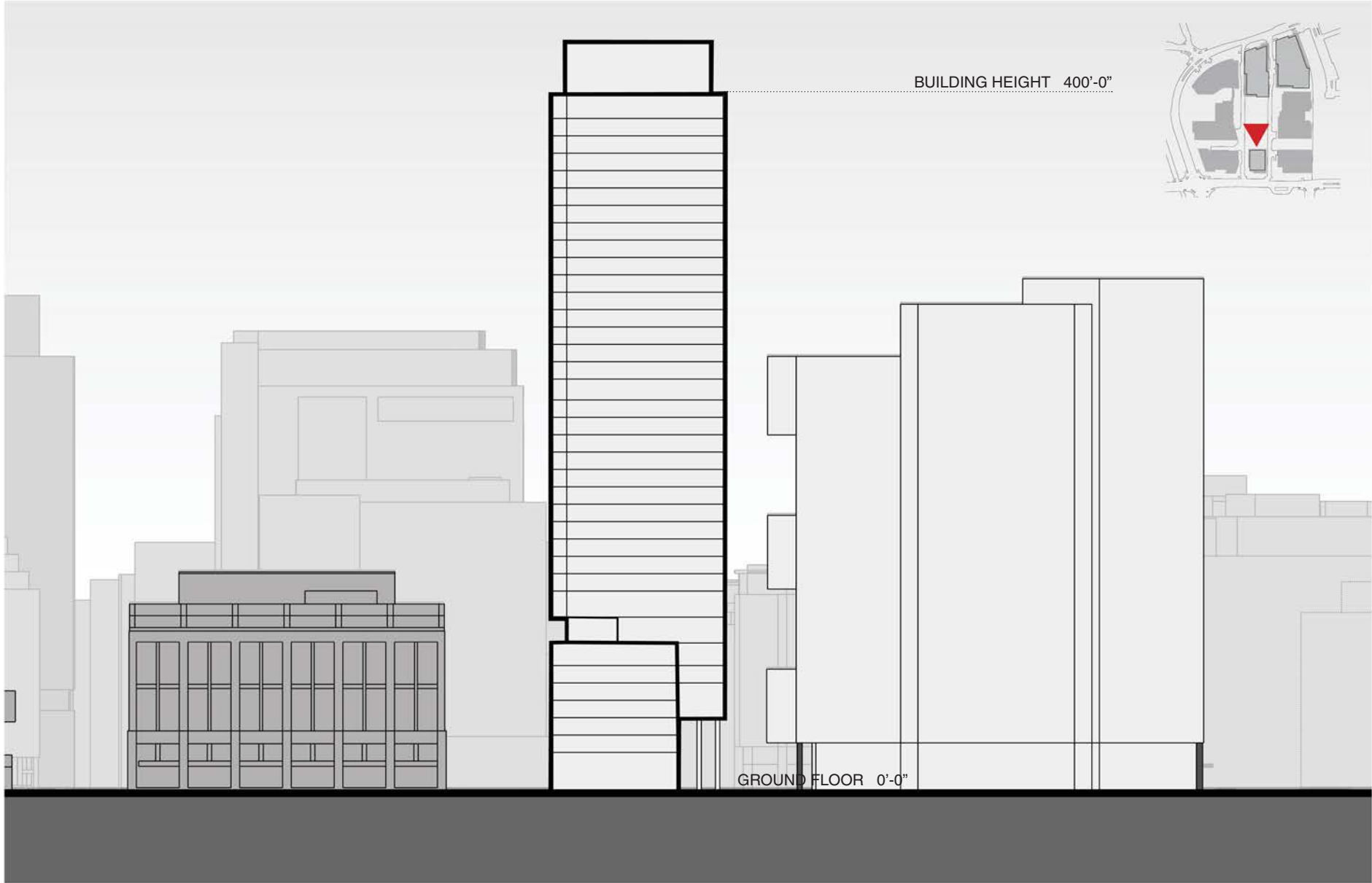


WEST ELEVATION

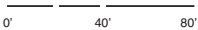
0' 40' 80'

RESIDENTIAL BUILDING SOUTH (135 BROADWAY)

FIGURE 1.12H

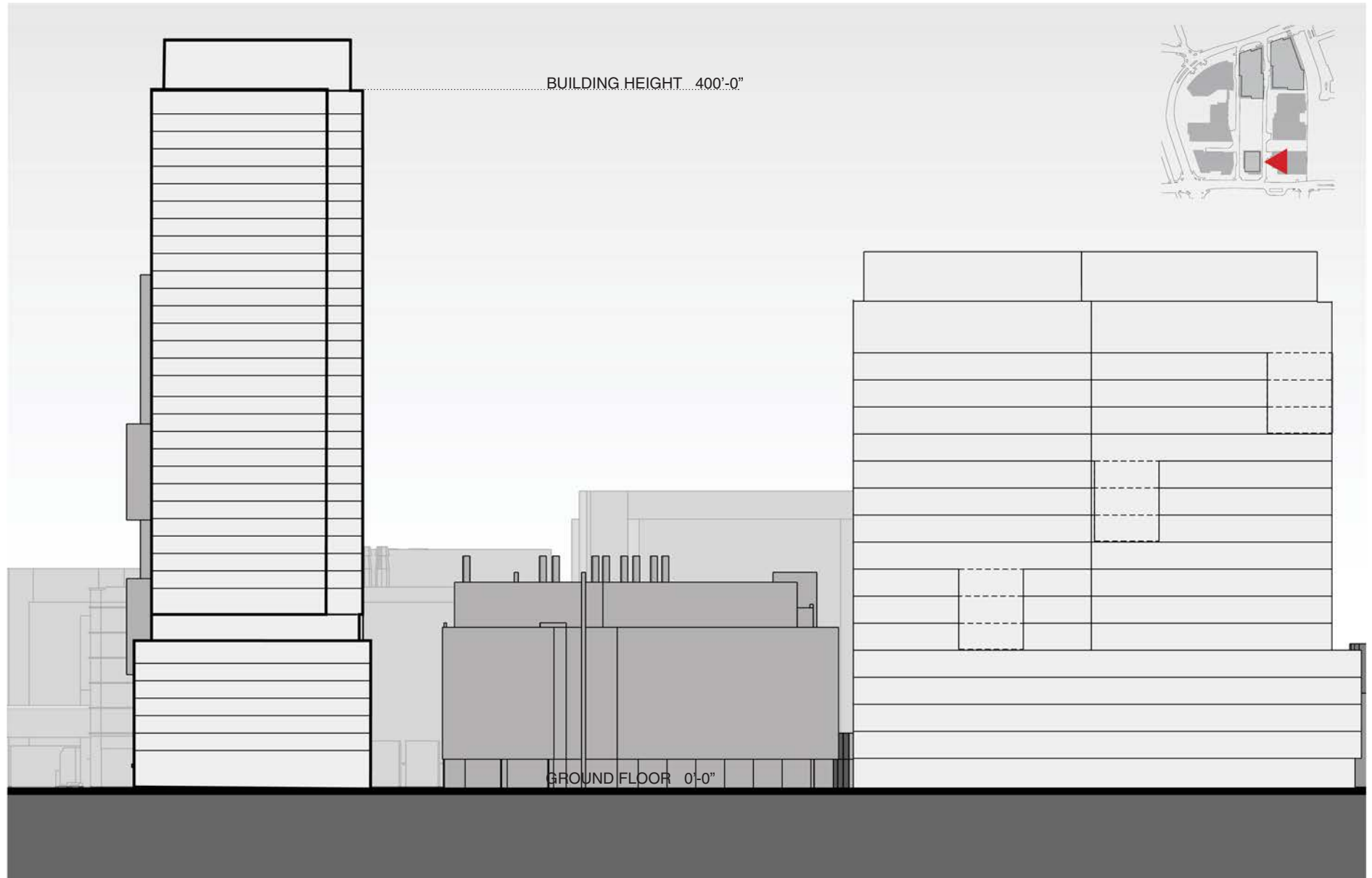


NORTH ELEVATION



RESIDENTIAL BUILDING SOUTH (135 BROADWAY)

FIGURE 1.121



EAST ELEVATION

0' 40' 80'

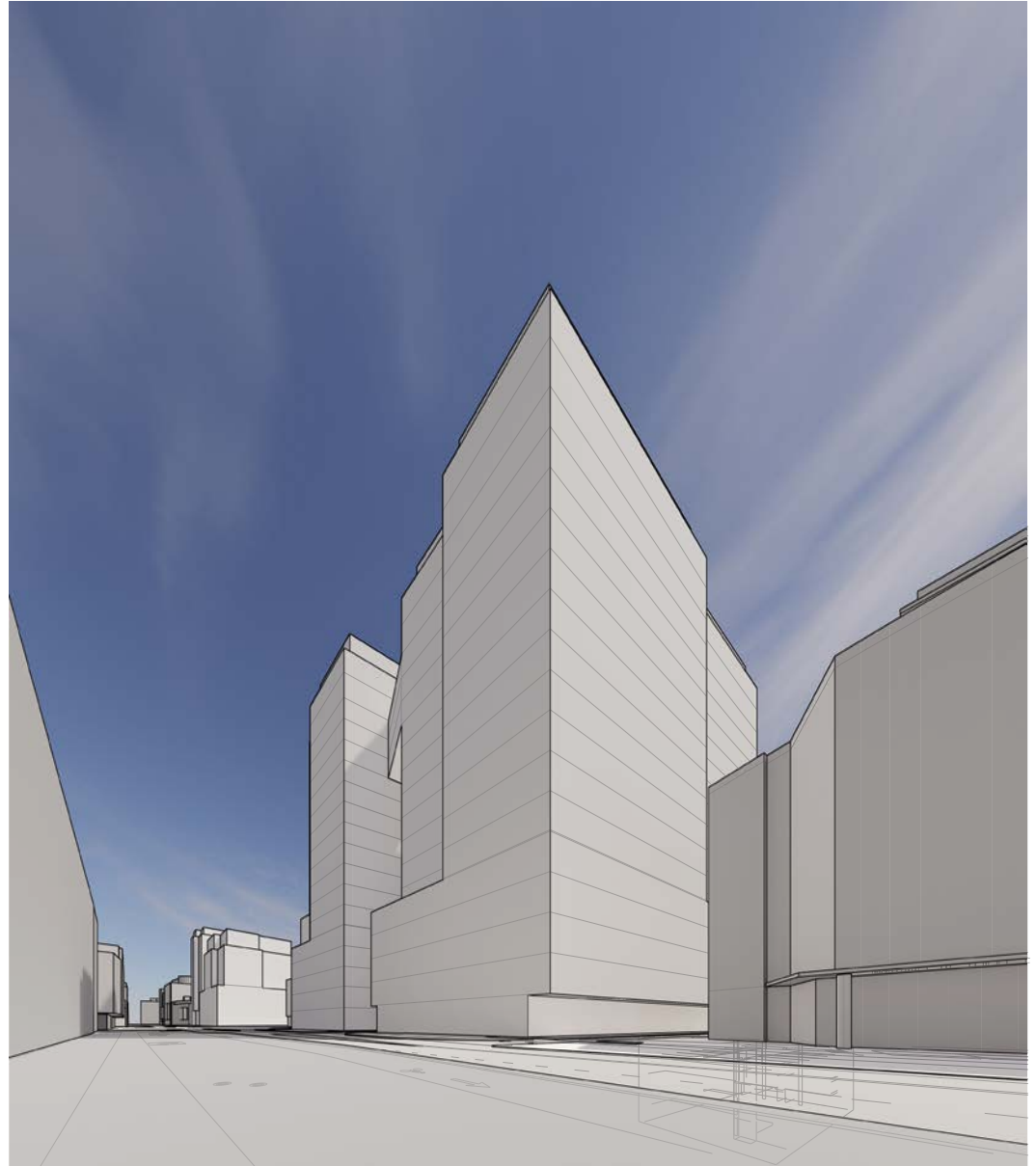
DEVELOPMENT COMPONENTS

COMMERCIAL BUILDING C (290 BINNEY STREET)

PROJECT SUMMARY

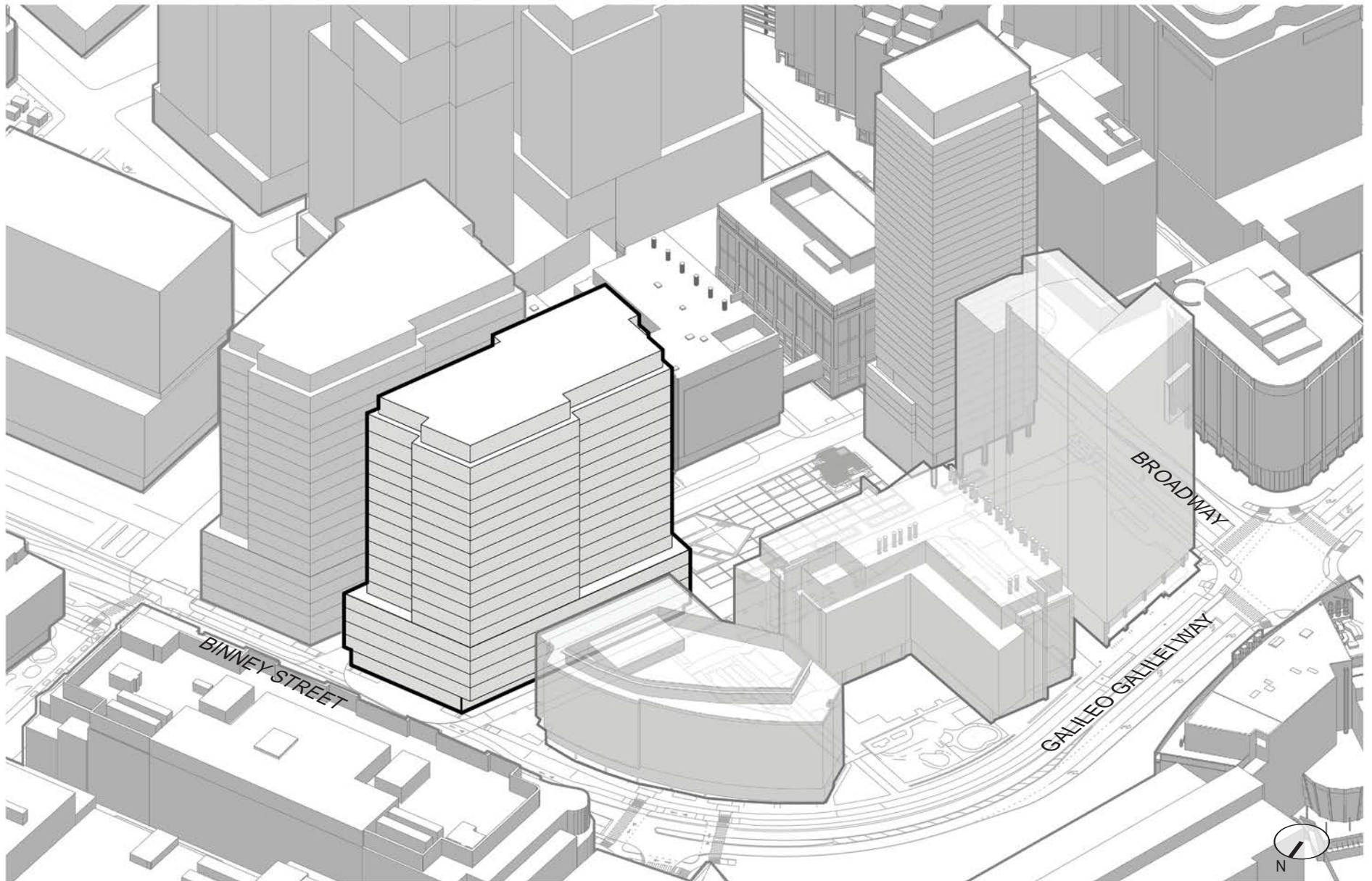
The project at 290 Binney Street (“Commercial Building C” or “Commercial West”) is proposed to be a commercial office/laboratory building meeting the requirements of Article 14 of the zoning ordinance. Commercial Building C will be situated at the north end of the Blue Garage parcel, located between the East and West Service Drives, Binney Street, and the new Center Plaza public open space atop a below-grade electrical substation. Commercial Building C will contain total GFA of approximately net new 412,000 SF of net new commercial utility GFA, and will be up to seventeen floors plus a mechanical penthouse. Total height will be up to 250'-0" to the last occupied floor as defined under zoning.

Directly abutting the proposed Center Plaza public open space, Commercial Building C will significantly enliven the public realm contemplated as part of this Concept Plan, as well as offer critical support to the Concept Plan Amendment's transportation strategy for Phase 3. The Project will provide an opportunity for potential ground floor active use on the northeast edge of the Center Plaza, as well as host a bike valet operation designed to meet demand from both tenants and residents of Residential Building South for bicycle parking. The Project will also serve as a source of pedestrian activation for the East Service Drive, alongside its counterpart at 250 Binney Street—aiding in the transformation of the Service Drives from strictly auto centric conduits to corridors for the circulation of vehicles, pedestrians, and cyclists. Vehicular parking will be accommodated by the new below-grade parking garage planned for construction beneath Commercial Buildings C and D respectively.



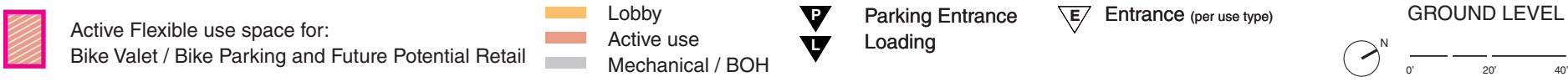
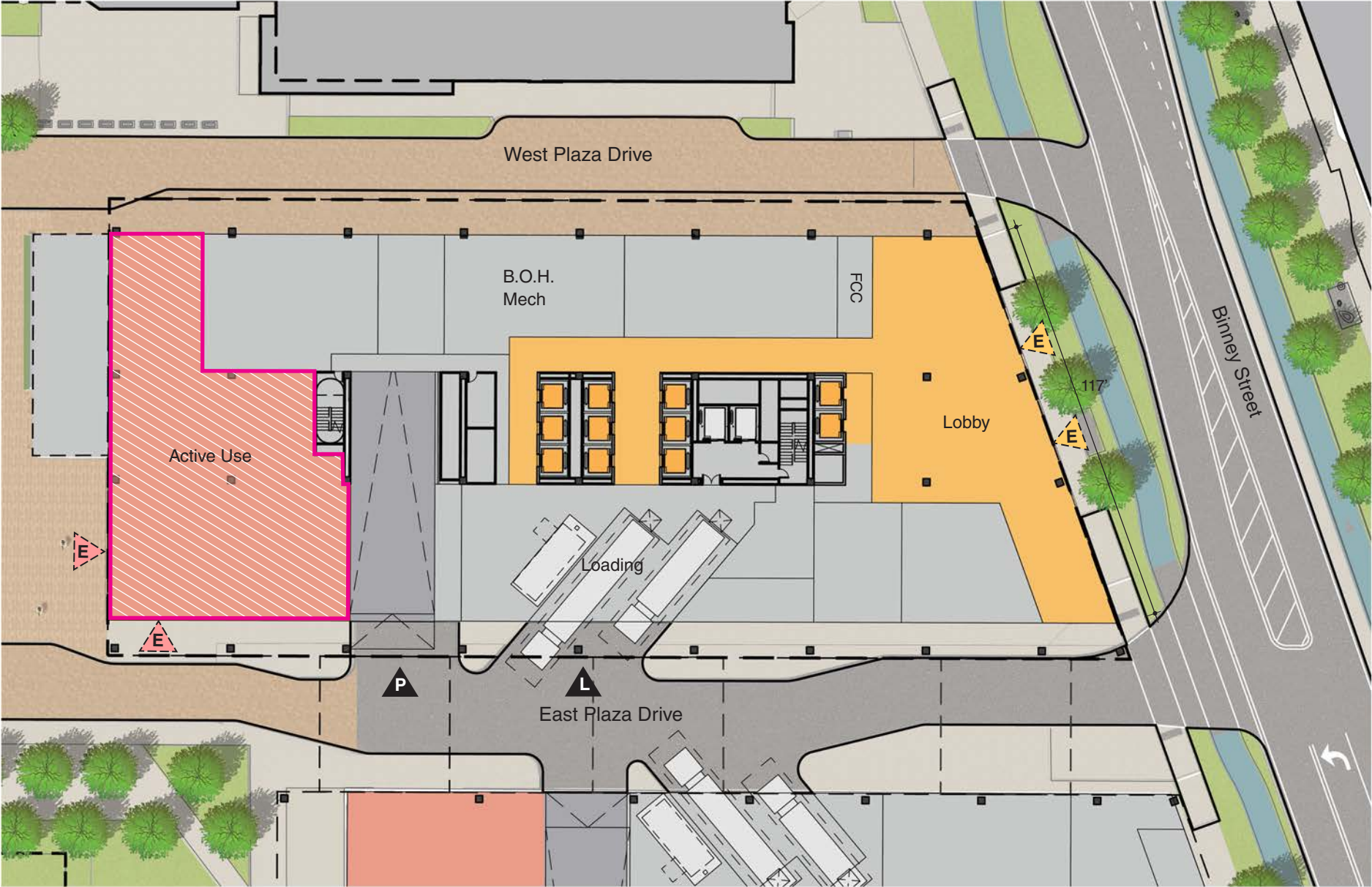
PERSPECTIVE VIEW OF COMMERCIAL BUILDING C FROM BINNEY STREET
LOOKING EAST (CONCEPTUAL MASSING)

FIGURE 1.12



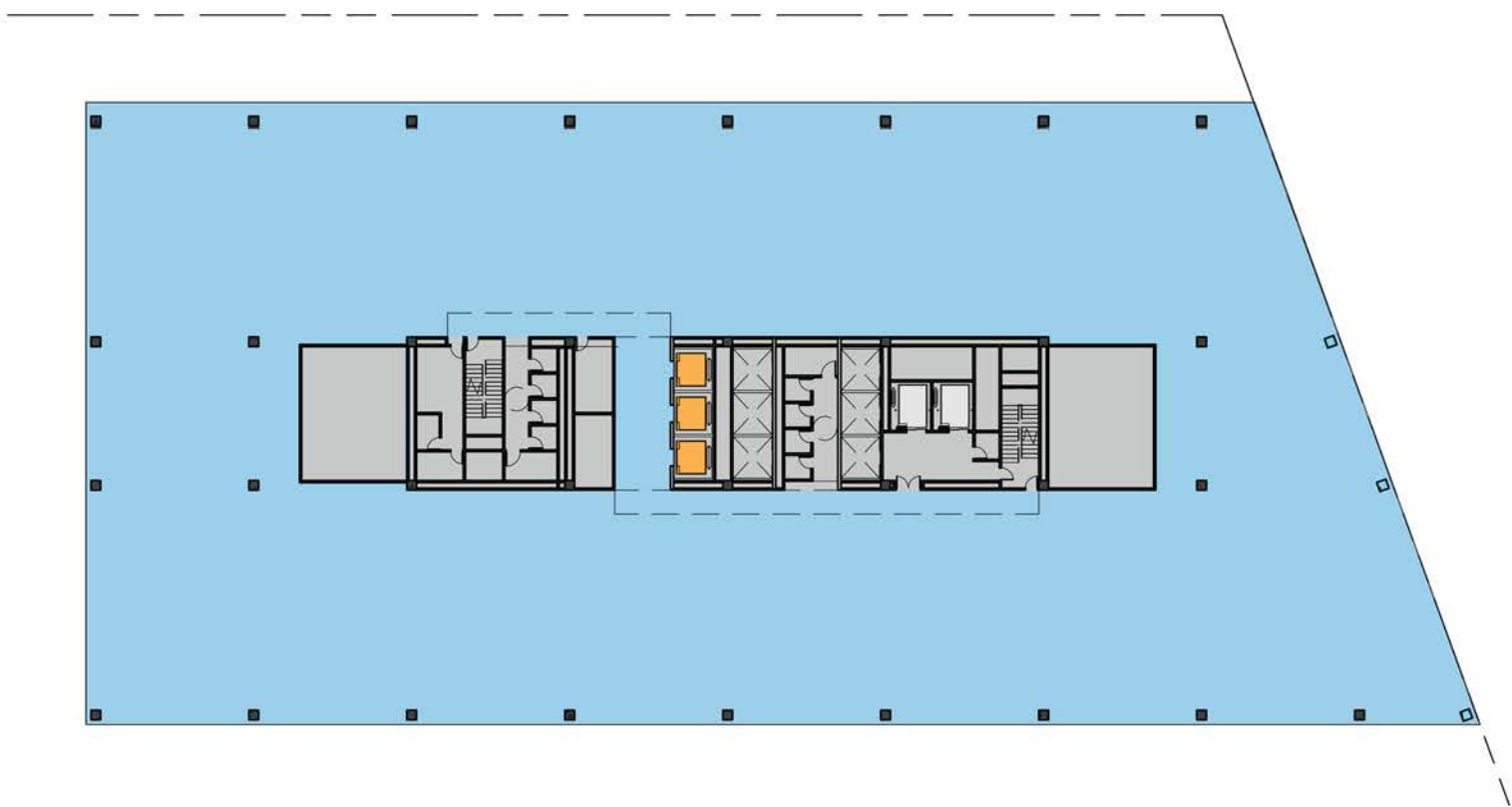
(Intentionally Blank)

FIGURE 1.12B



COMMERCIAL BUILDING C (290 BINNEY STREET)

FIGURE 1.12C



- Commercial
- Potential Terrace / Green Roof
- Mechanical / BOH

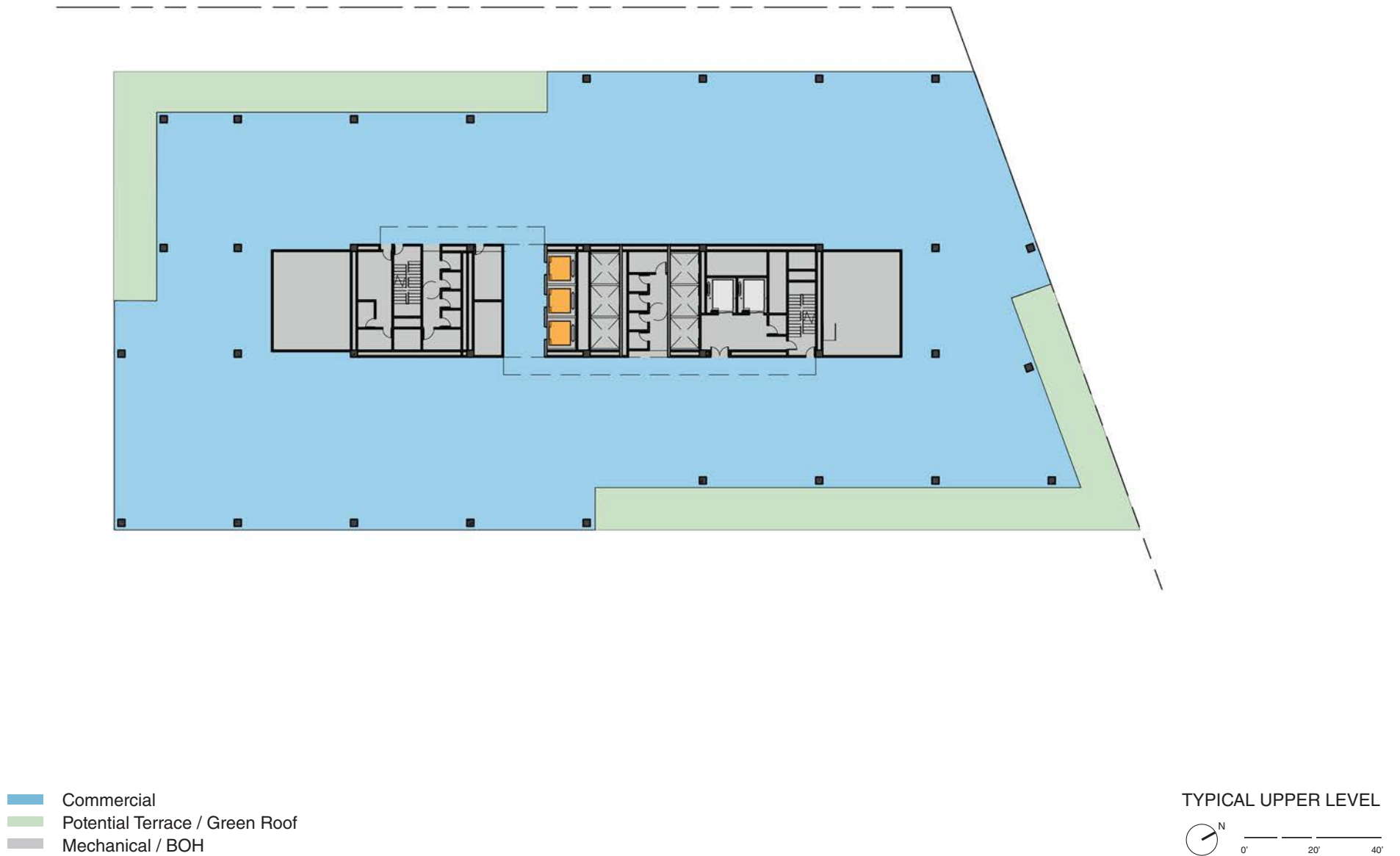
TYPICAL LOWER LEVEL

N

0' 20' 40'

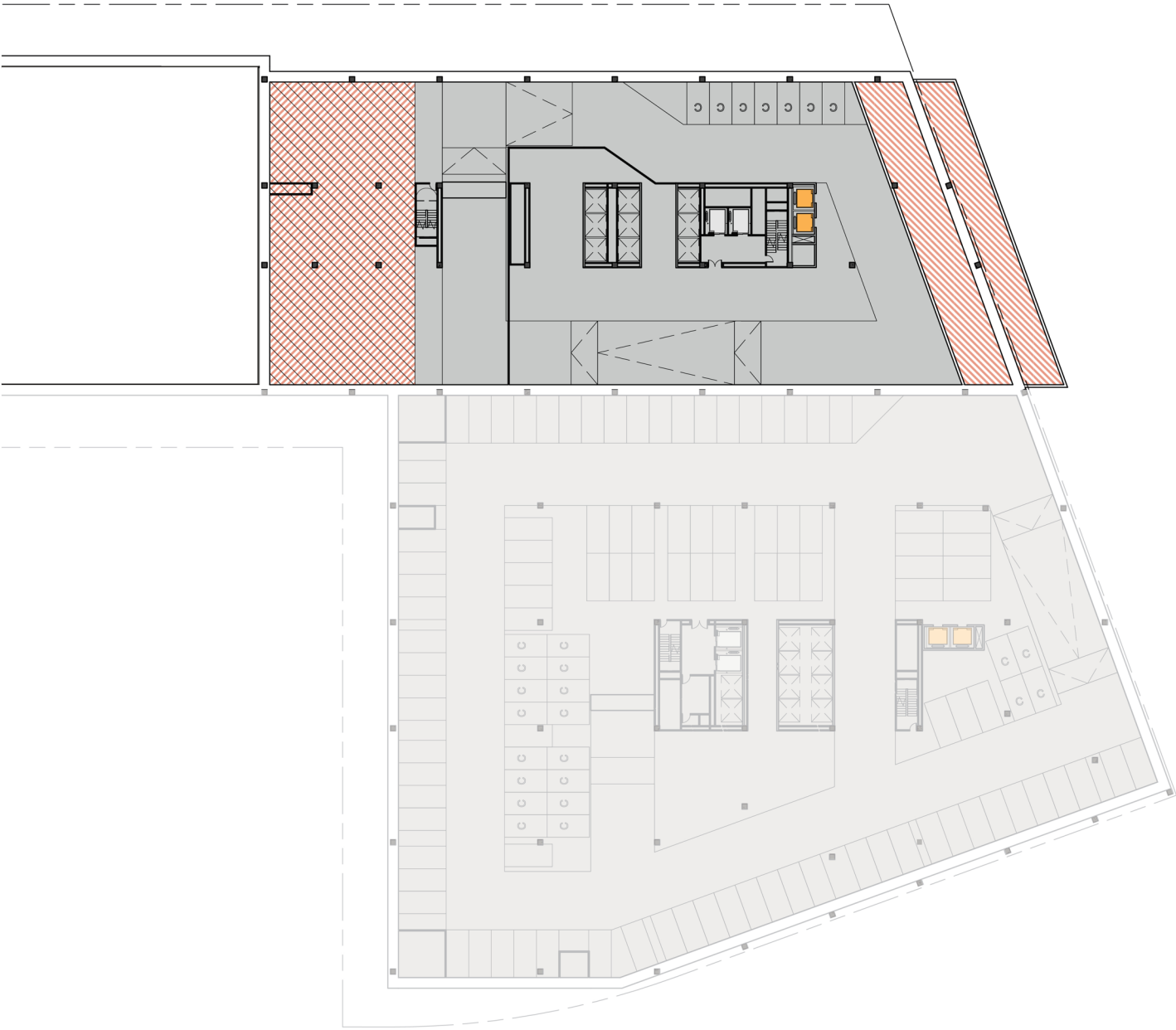
COMMERCIAL BUILDING C (290 BINNEY STREET)

FIGURE 1.12D



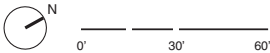
COMMERCIAL BUILDING C (290 BINNEY STREET)

FIGURE 1.12E



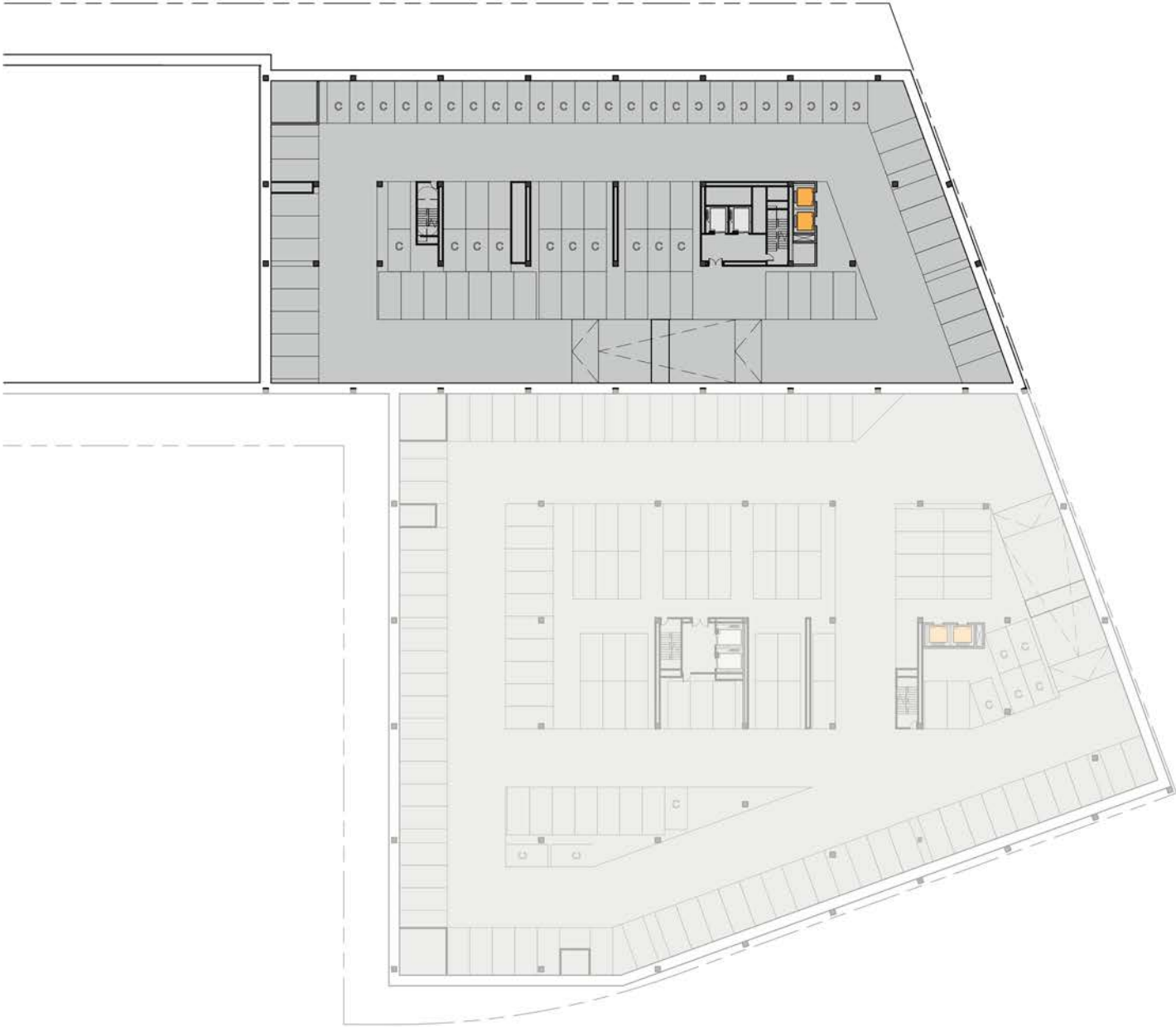
PARKING STALLS - 60
374 STALLS TOTAL

LEVEL B1



COMMERCIAL BUILDING C (290 BINNEY STREET)

FIGURE 1.12F

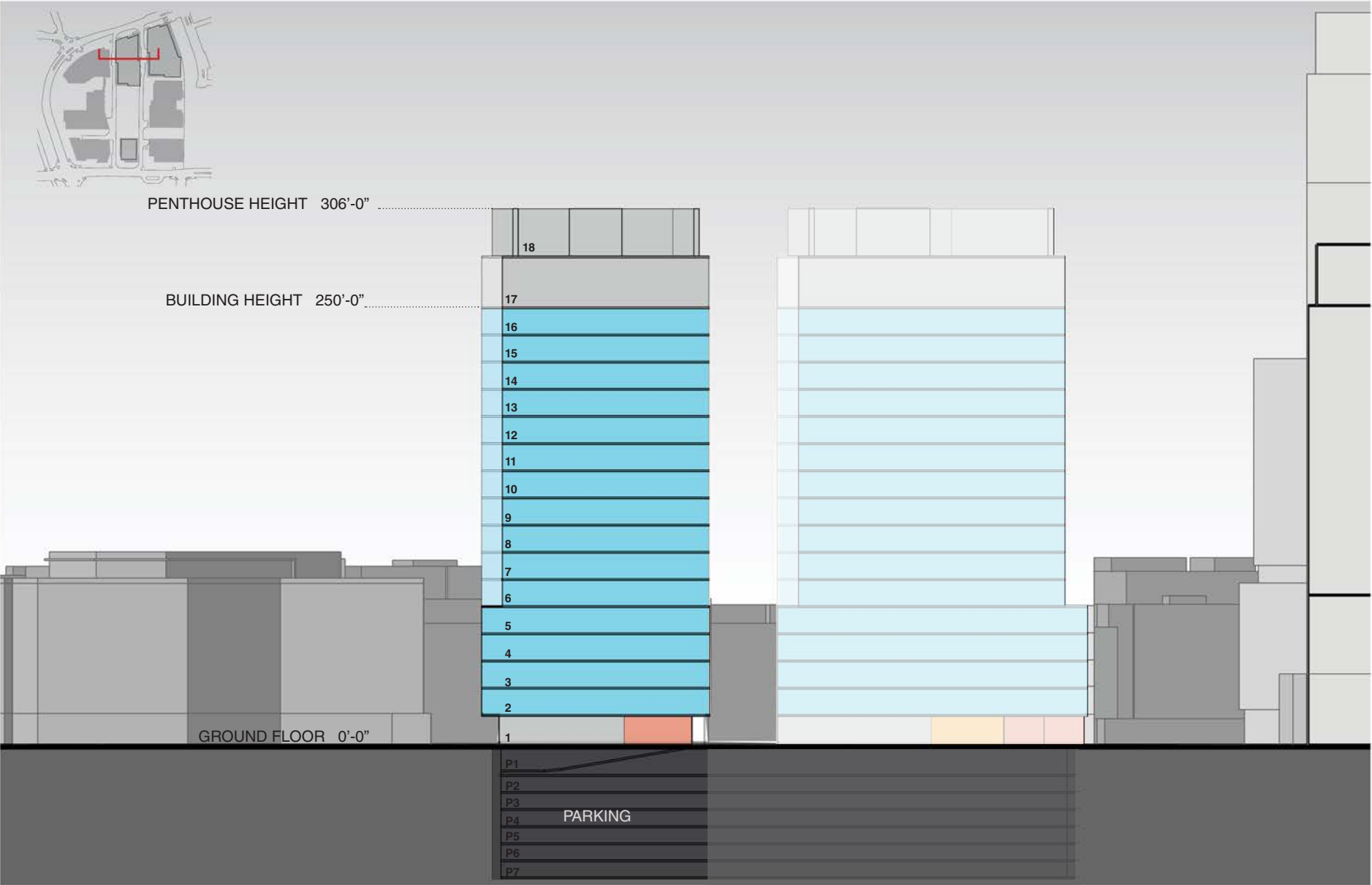


PARKING STALLS - 78 TYPICAL
374 STALLS TOTAL



COMMERCIAL BUILDING C (290 BINNEY STREET) - SECTION A-A'

FIGURE 1.12G



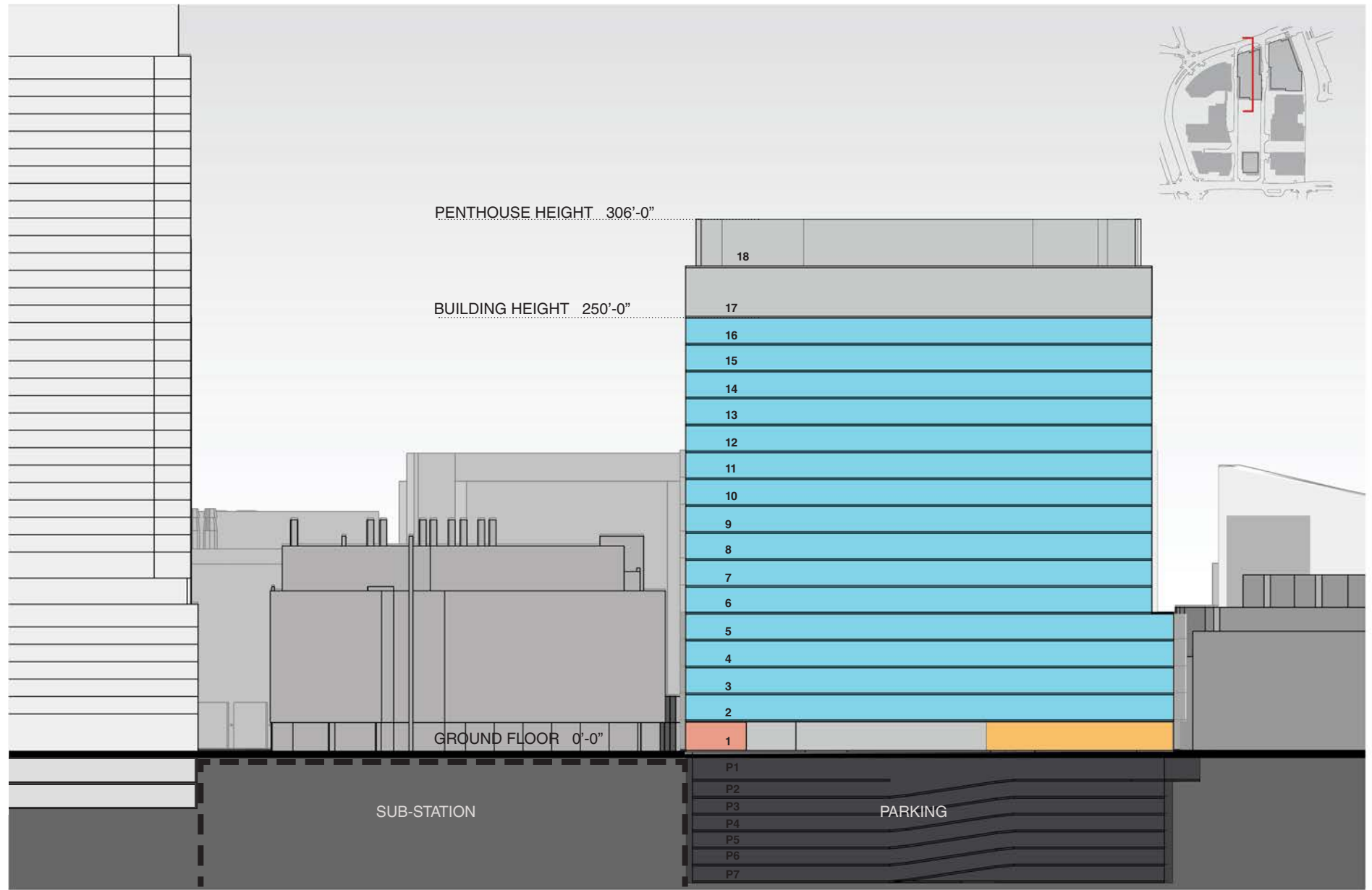
- Commercial
- Lobby
- Active use
- Mechanical / BOH

SECTION A-A'

0' 40' 80'

COMMERCIAL BUILDING C (290 BINNEY STREET) - SECTION B-B'

FIGURE 1.12H



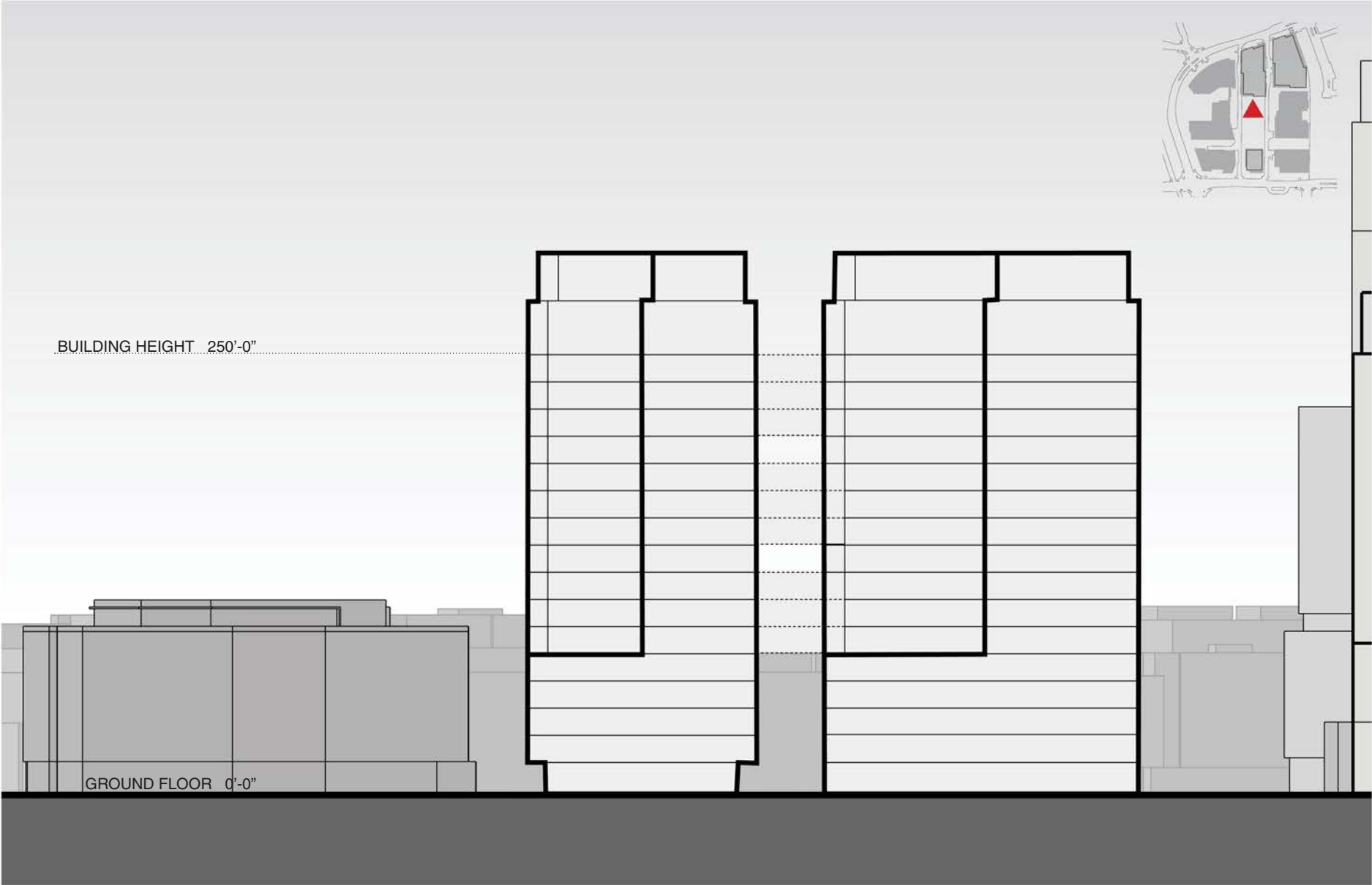
- Commercial
- Lobby
- Active use
- Mechanical / BOH

SECTION B-B'

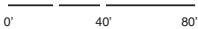
0' 40' 80'

COMMERCIAL BUILDING C (290 BINNEY STREET)

FIGURE 1.121

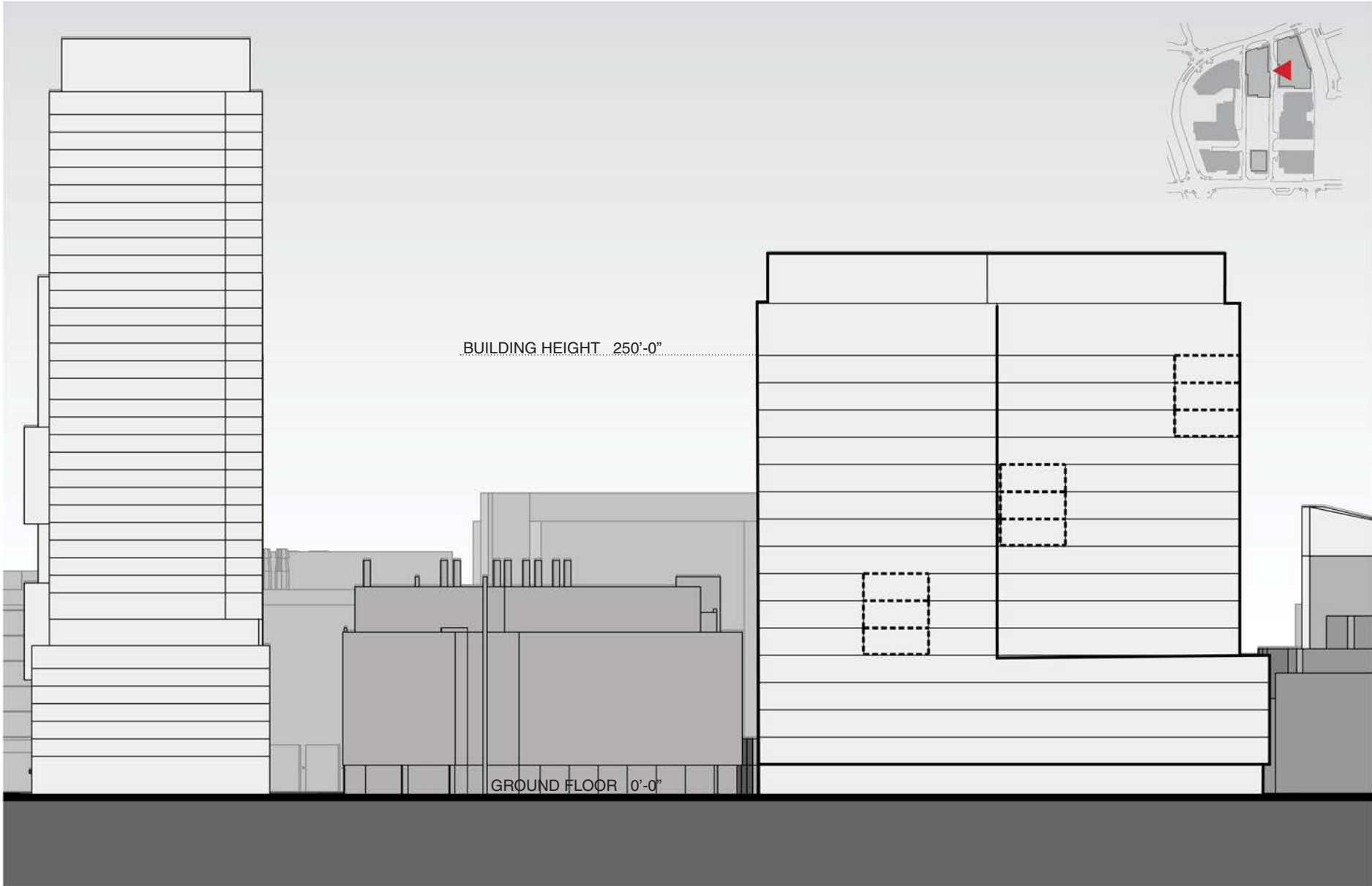


SOUTH ELEVATION

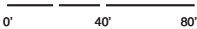


COMMERCIAL BUILDING C (290 BINNEY STREET)

FIGURE 1.12J

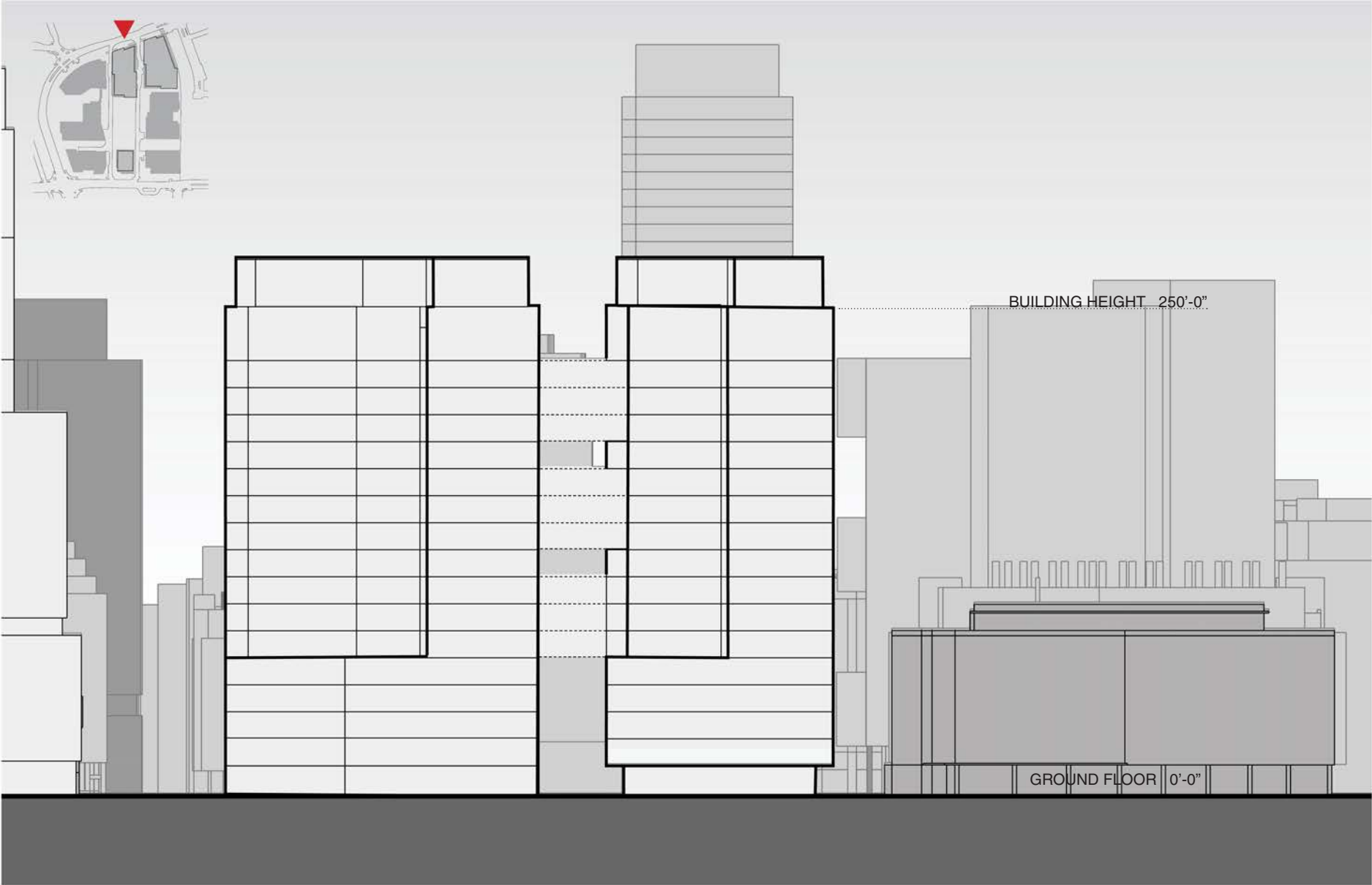


EAST ELEVATION



COMMERCIAL BUILDING C (290 BINNEY STREET)

FIGURE 1.12K

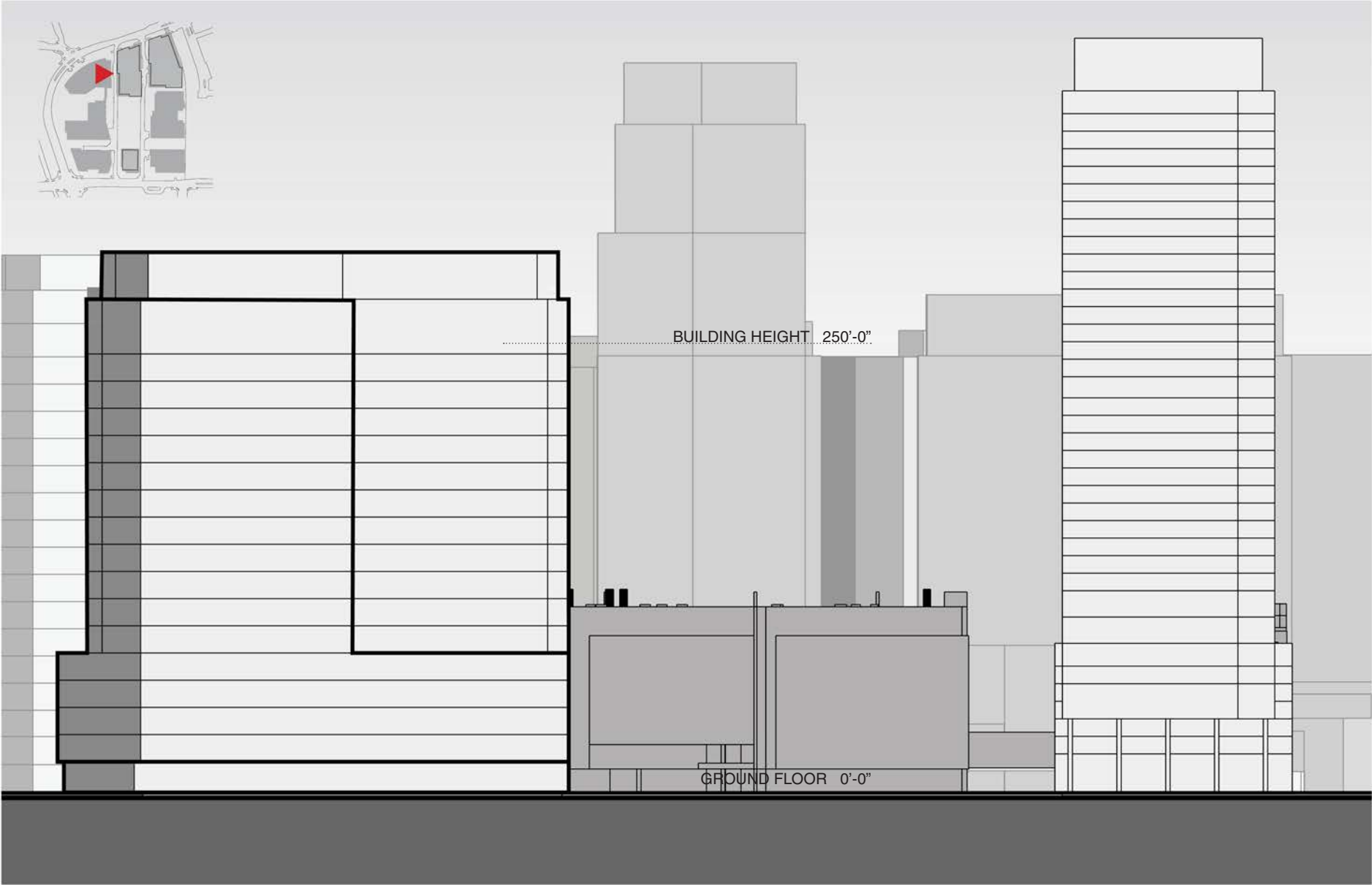


NORTH ELEVATION

0' 40' 80'

COMMERCIAL BUILDING C (290 BINNEY STREET)

FIGURE 1.12L



WEST ELEVATION

0' 40' 80'

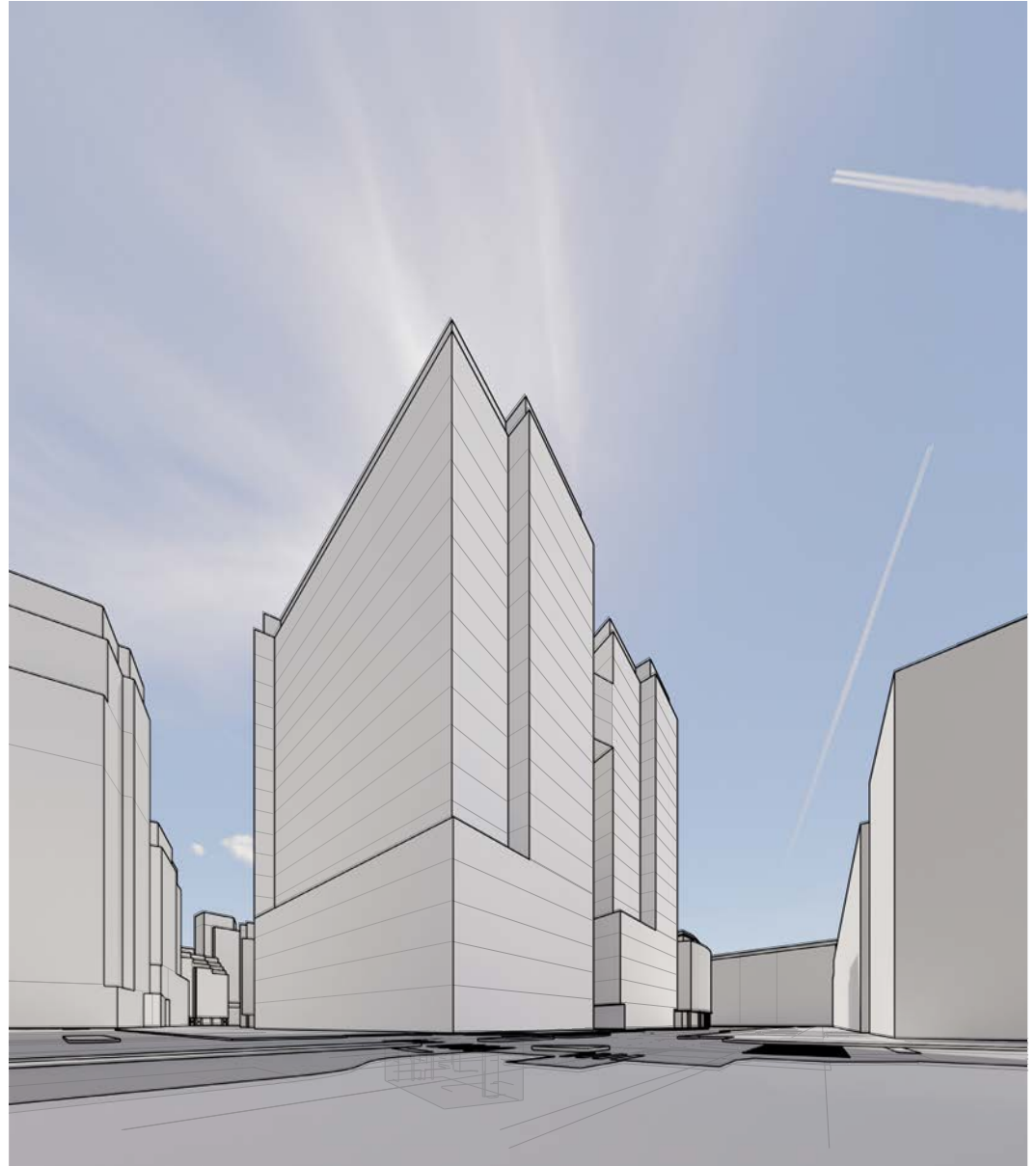
DEVELOPMENT COMPONENTS

COMMERCIAL BUILDING D (250 BINNEY STREET)

PROJECT SUMMARY

The project at 250 Binney Street (“Commercial Building D,” or “Commercial East”) is proposed to be a commercial office/laboratory building meeting the requirements of Article 14 in the Zoning Ordinance. 250 Binney will replace an existing manufacturing/lab building of approximately 62,576 GFA distributed over two stories. The site comprises approximately 53,996 square feet of land, and is bordered by the tree-lined Sixth Street Connector to the east, 115 Broadway Street to the south, the existing Blue Garage to the west, and Binney Street to the north. Commercial Building D will contain a total GFA of approximately 450,576 SF of net new commercial and retail GFA (including 388,000 of utility GFA, and 62,576 of reconstructed existing GFA), and will be up to seventeen floors plus a mechanical penthouse. Total height will be up to 250'-0” to the last occupied floor as defined under zoning.

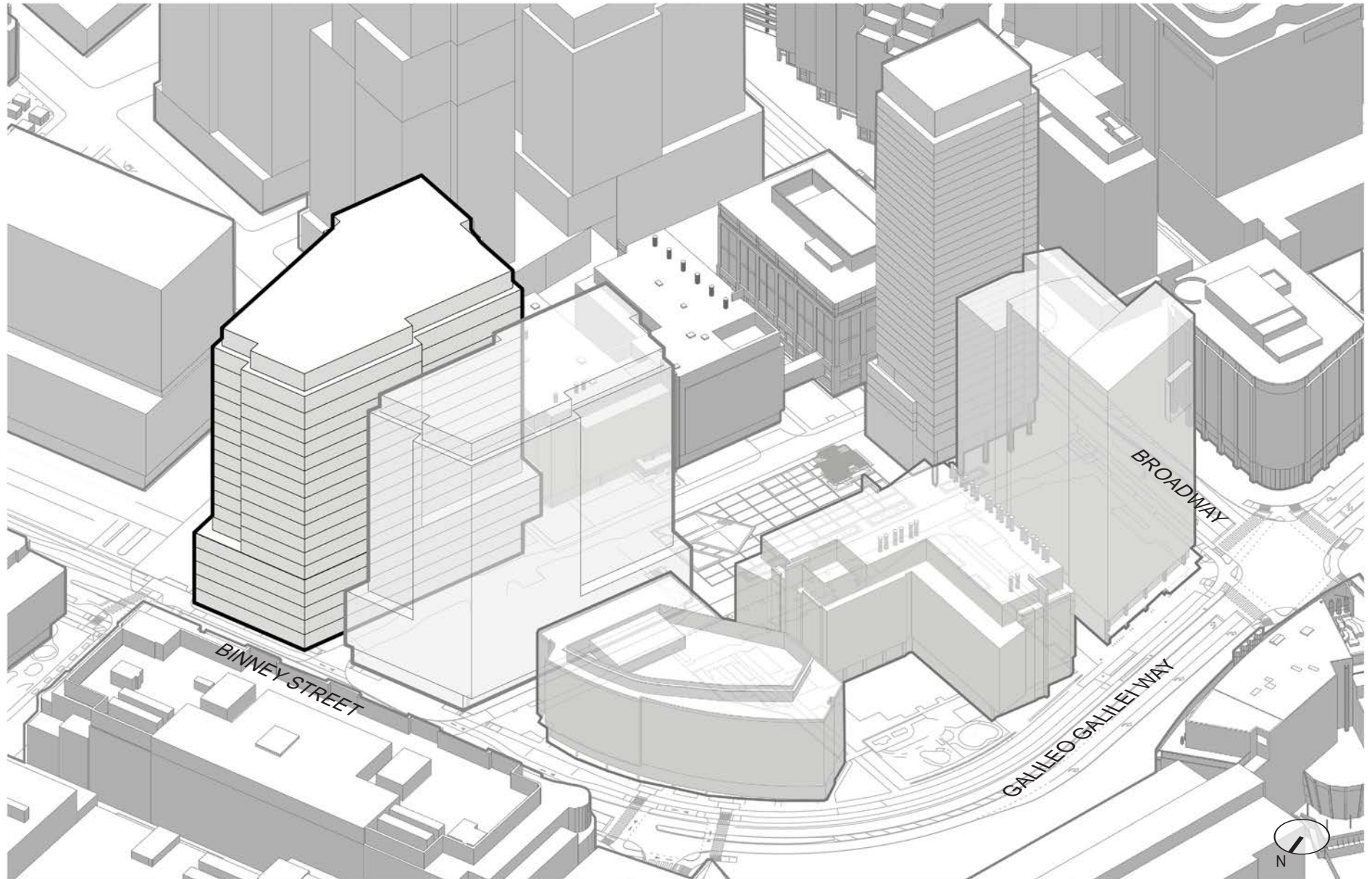
Commercial Building D will build on the valuable public realm improvements envisioned as part of this Concept Plan Amendment #2. Specifically, the configuration of the new building is expected to open up pedestrian connections between the adjacent Sixth Street Connector and the Volpe Parcel along its southern edge. This promises to further enhance the intra-block porosity expected with the demolition of the Blue Garage, as well as build greater intra-parcel connectivity between the North Parcel and Volpe. As with the adjacent Commercial Building C at 290 Binney Street, Commercial Building D is also expected to contribute substantially to activating the East Service Drive as part of the reconceptualization of pedestrian, cyclist, and vehicle circulation adjacent to 135 Broadway, 290 Binney, 250 Binney, and the new Center Plaza open space.



PERSPECTIVE VIEW FROM MAIN STREET LOOKING WEST (CONCEPTUAL MASSING SUBJECT TO CHANGE DURING DESIGN REVIEW)

COMMERCIAL BUILDING D (250 BINNEY STREET)

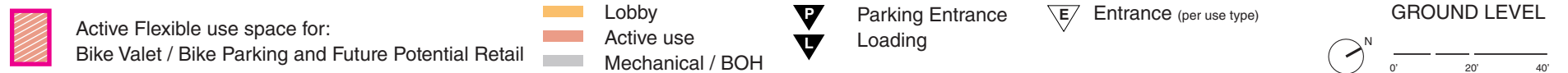
FIGURE 1.13A



(Intentionally Blank)

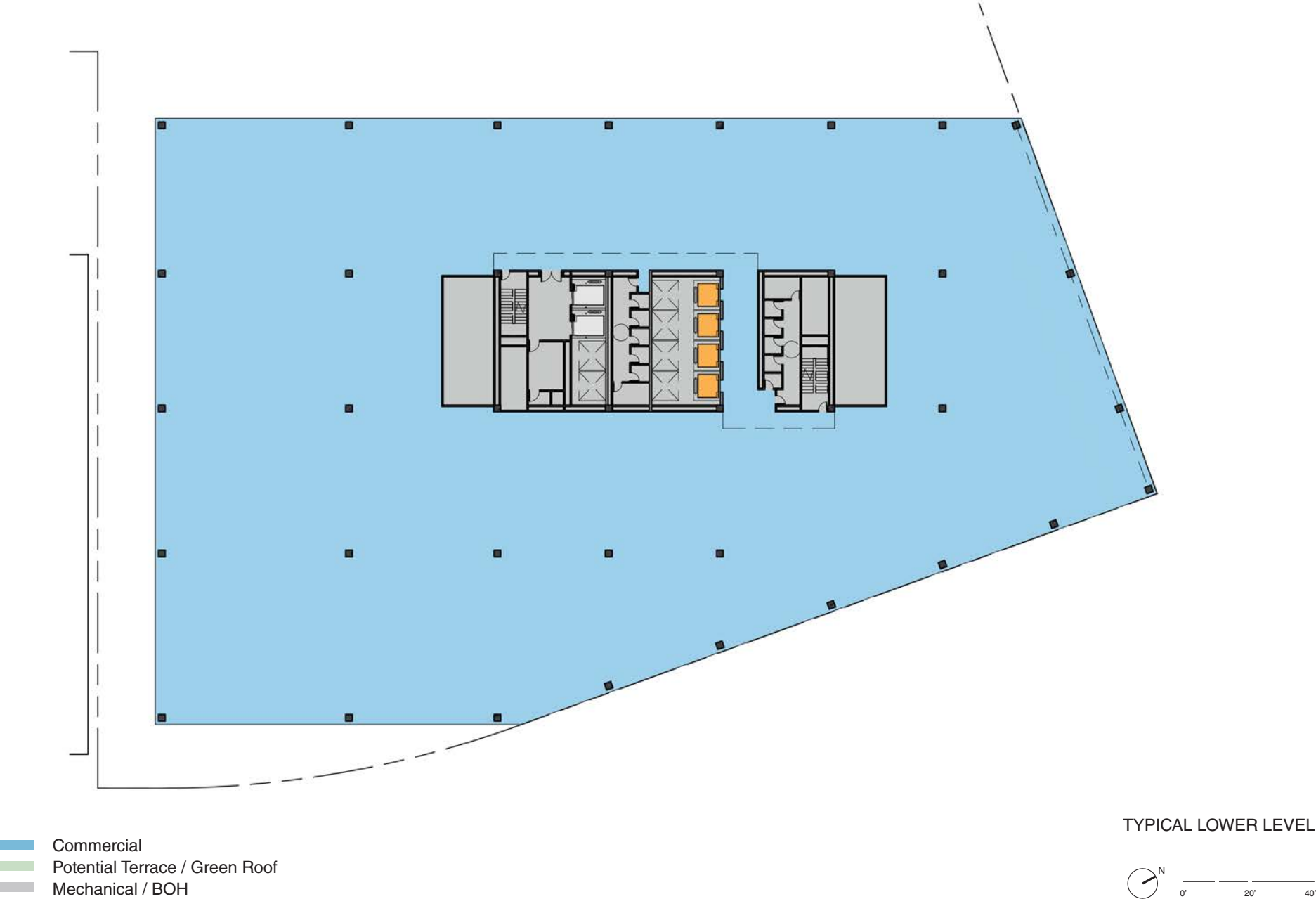
COMMERCIAL BUILDING D (250 BINNEY STREET)

FIGURE 1.13B



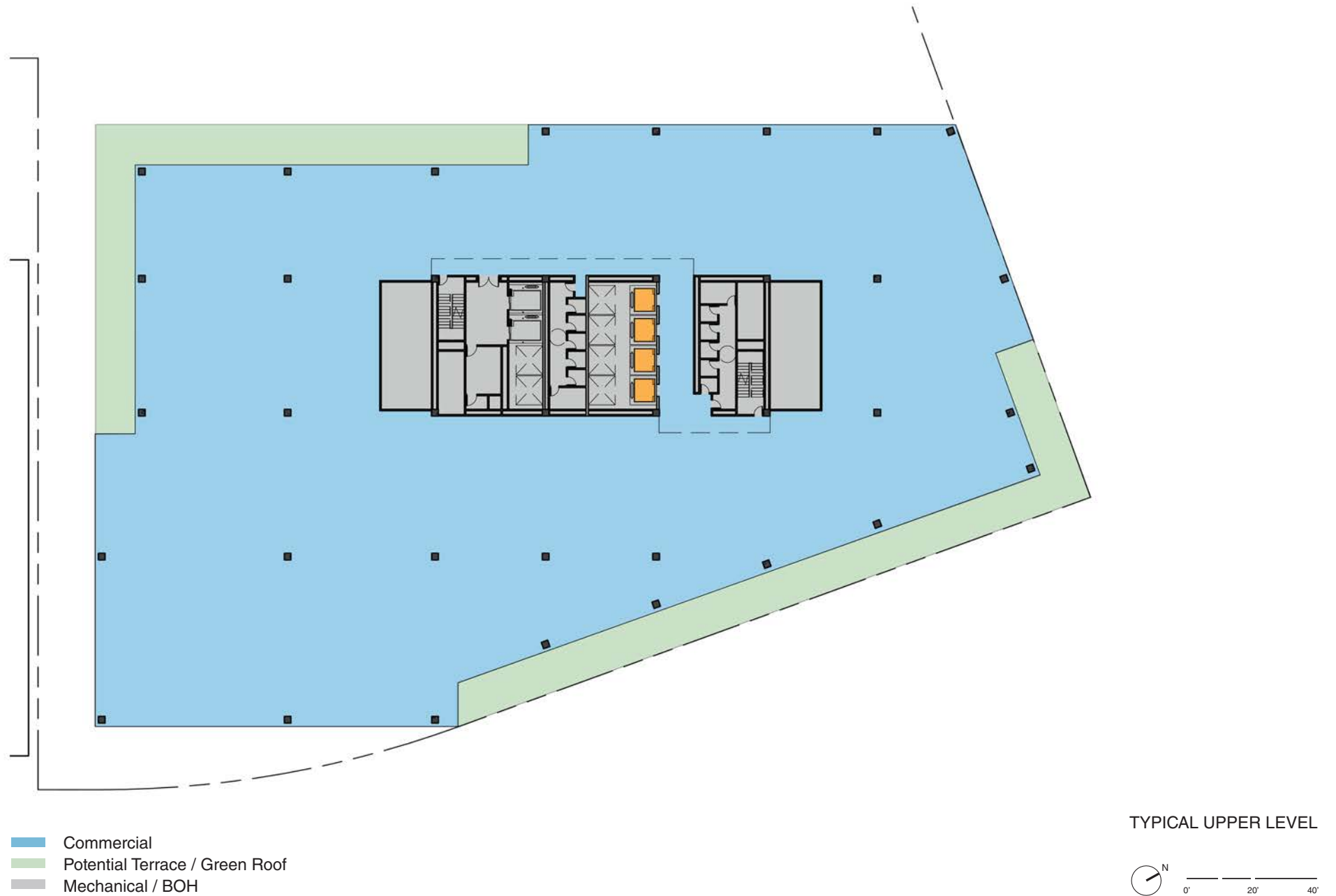
COMMERCIAL BUILDING D (250 BINNEY STREET)

FIGURE 1.13C



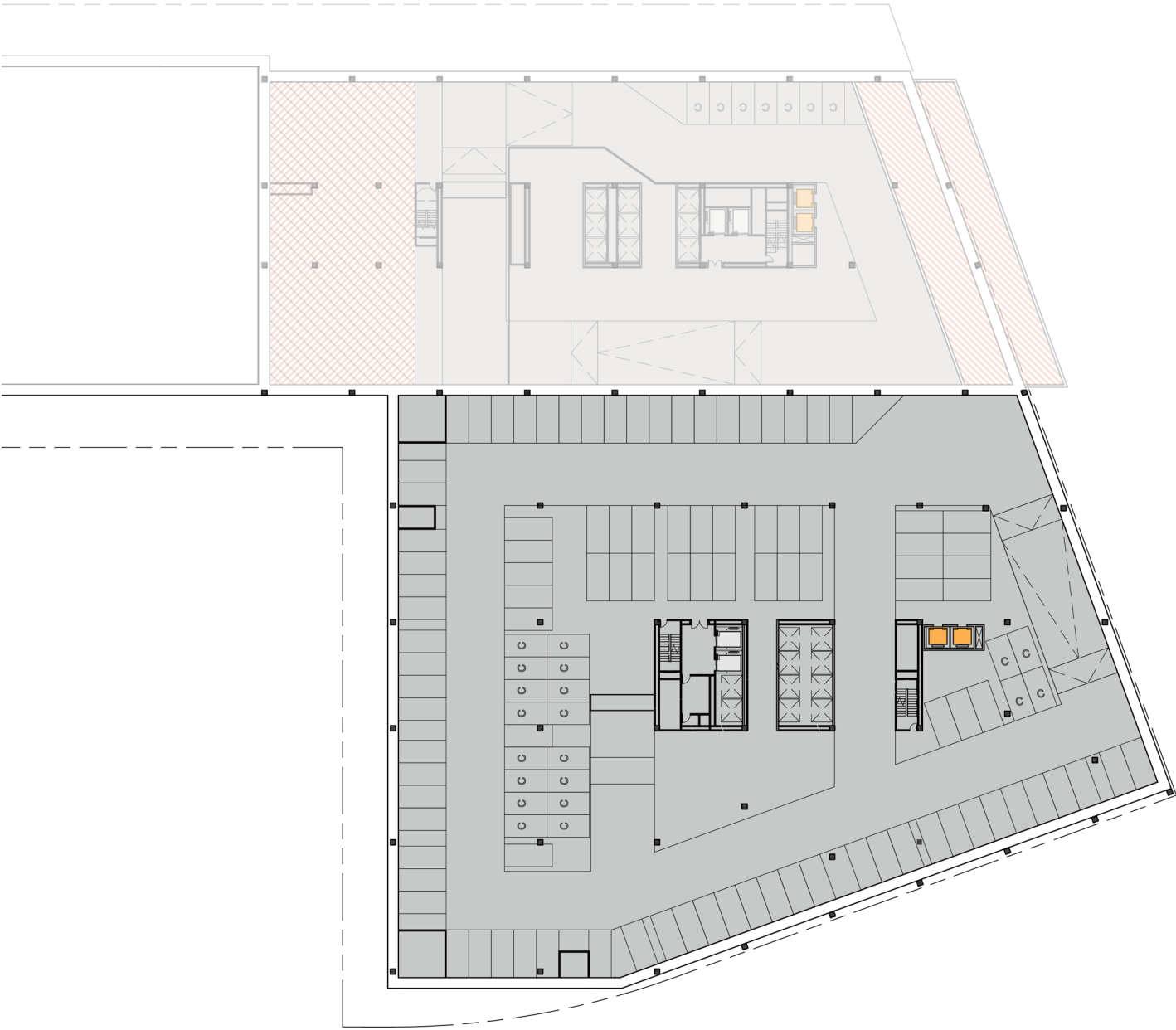
COMMERCIAL BUILDING D (250 BINNEY STREET)

FIGURE 1.13D



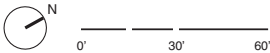
COMMERCIAL BUILDING D (250 BINNEY STREET)

FIGURE 1.13E



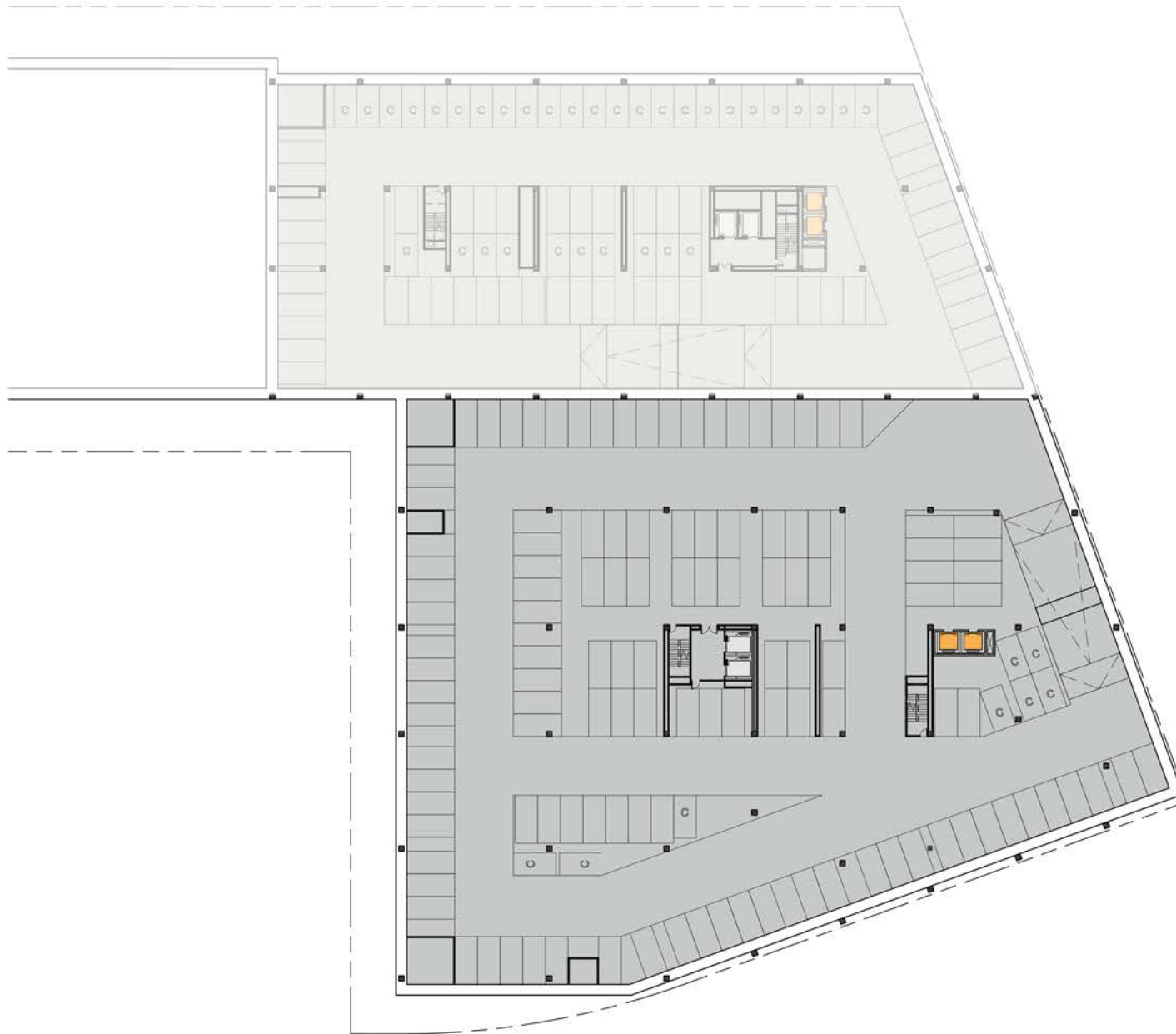
PARKING STALLS - 60
374 STALLS TOTAL

LEVEL B1



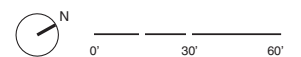
COMMERCIAL BUILDING D (250 BINNEY STREET)

FIGURE 1.13F



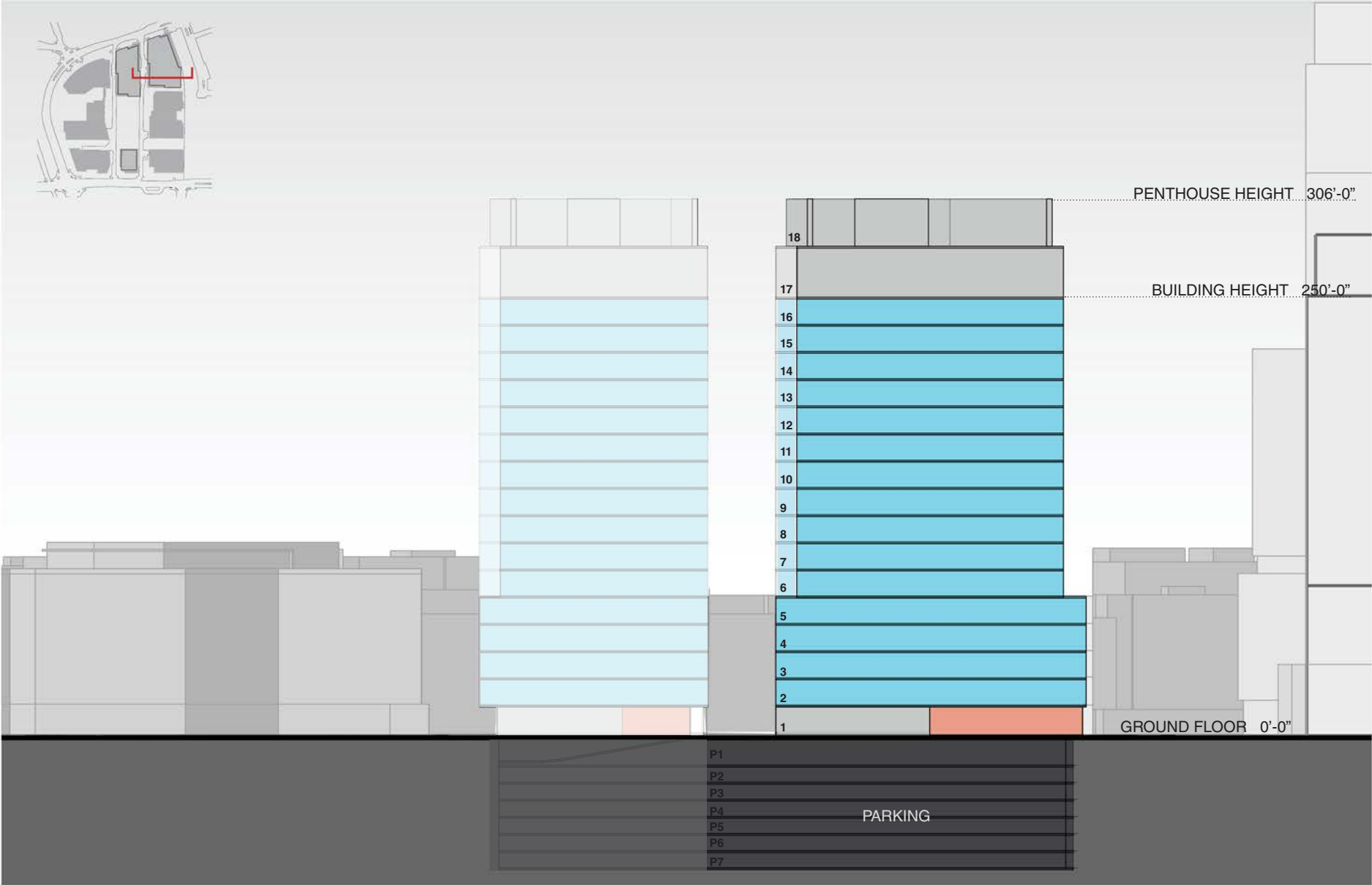
PARKING STALLS - 78 TYPICAL
374 STALLS TOTAL

TYPICAL LEVELS B2-B7



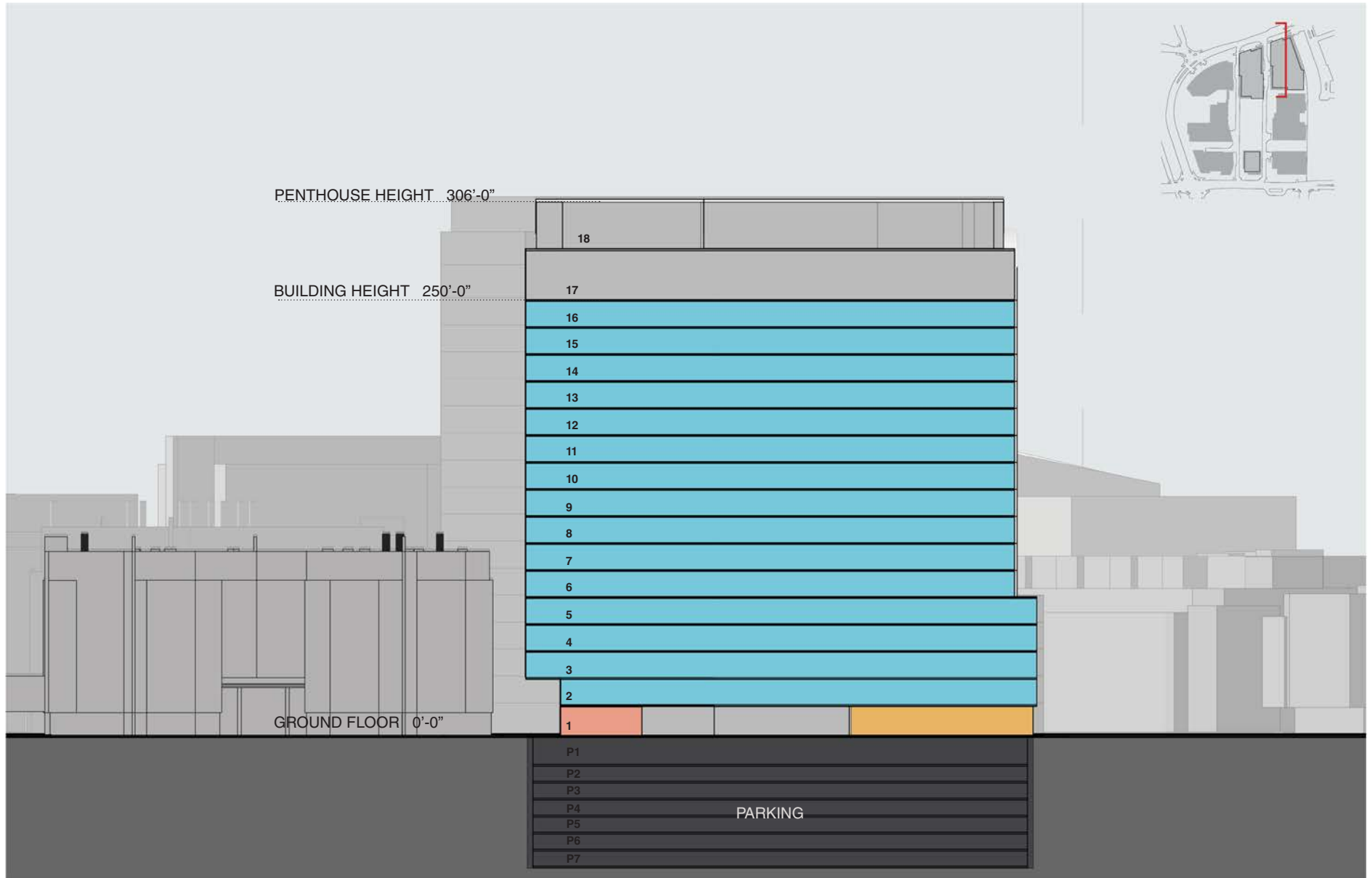
COMMERCIAL BUILDING D (250 BINNEY STREET)

FIGURE 1.13G



COMMERCIAL BUILDING D (250 BINNEY STREET)

FIGURE 1.13H



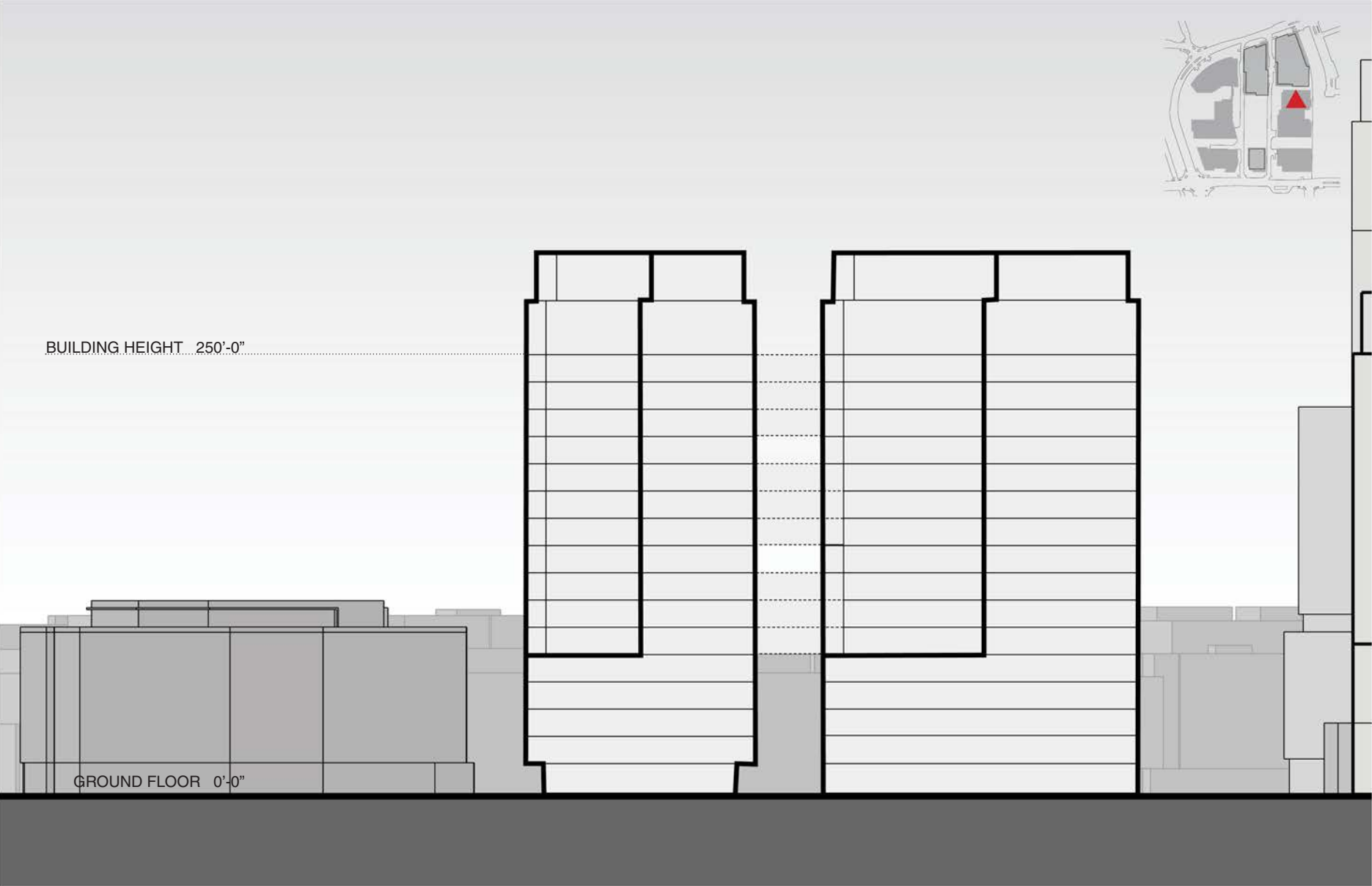
- Commercial
- Lobby
- Active use
- Mechanical / BOH

SECTION B-B'

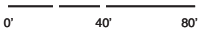
0' 40' 80'

COMMERCIAL BUILDING D (250 BINNEY STREET)

FIGURE 1.131

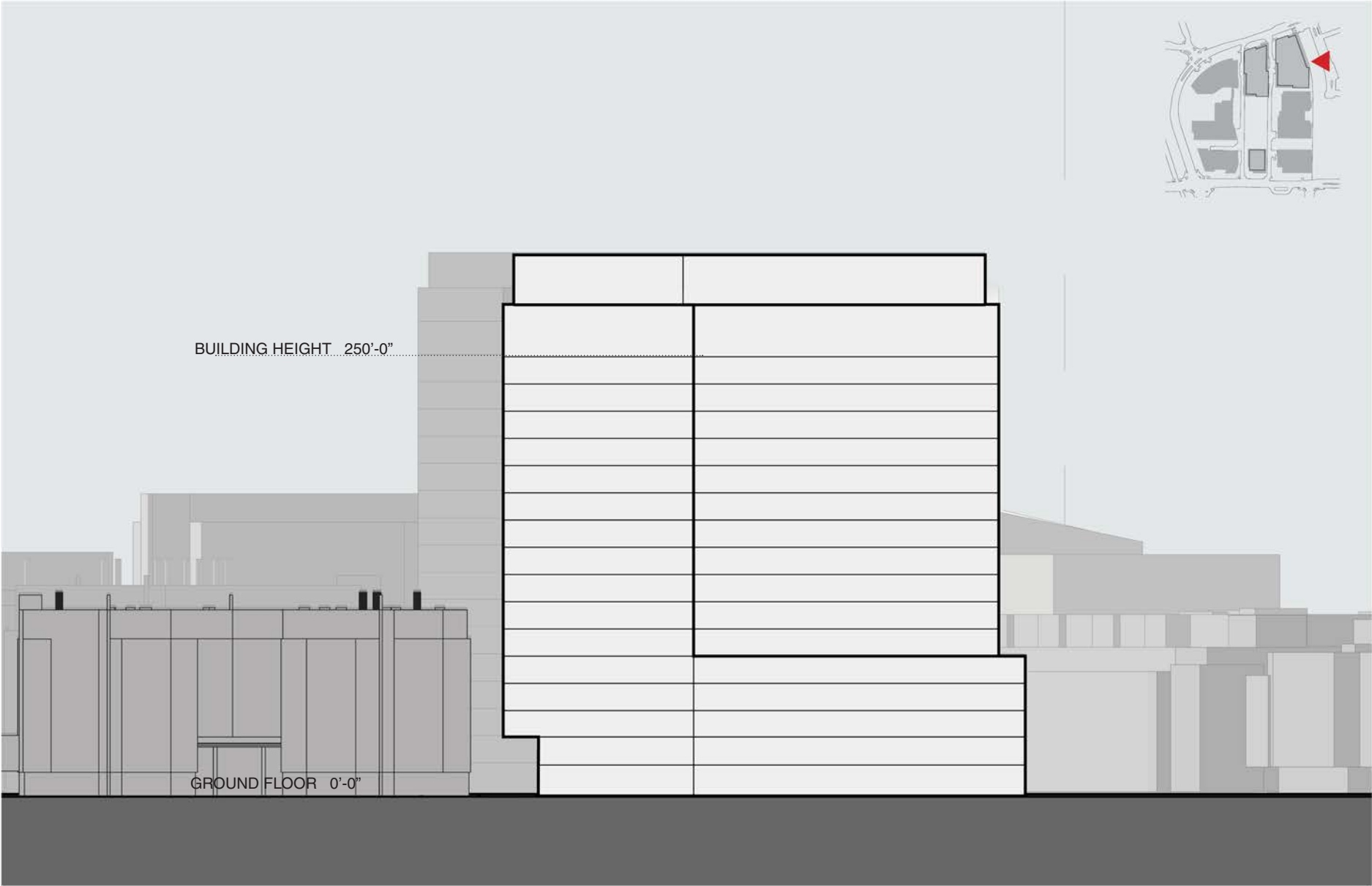


SOUTH ELEVATION

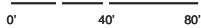


COMMERCIAL BUILDING D (250 BINNEY STREET)

FIGURE 1.13J

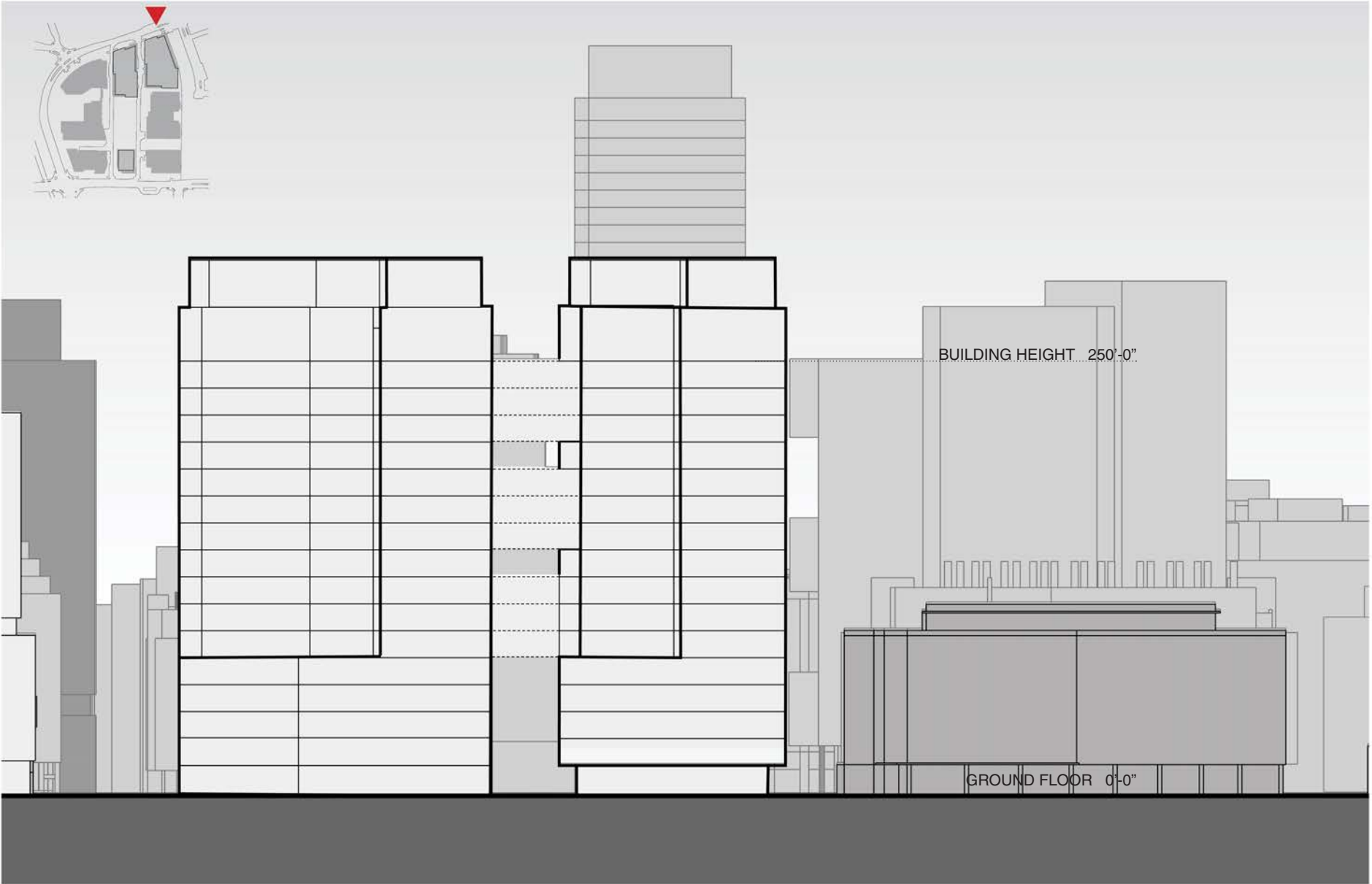


EAST ELEVATION



COMMERCIAL BUILDING D (250 BINNEY STREET)

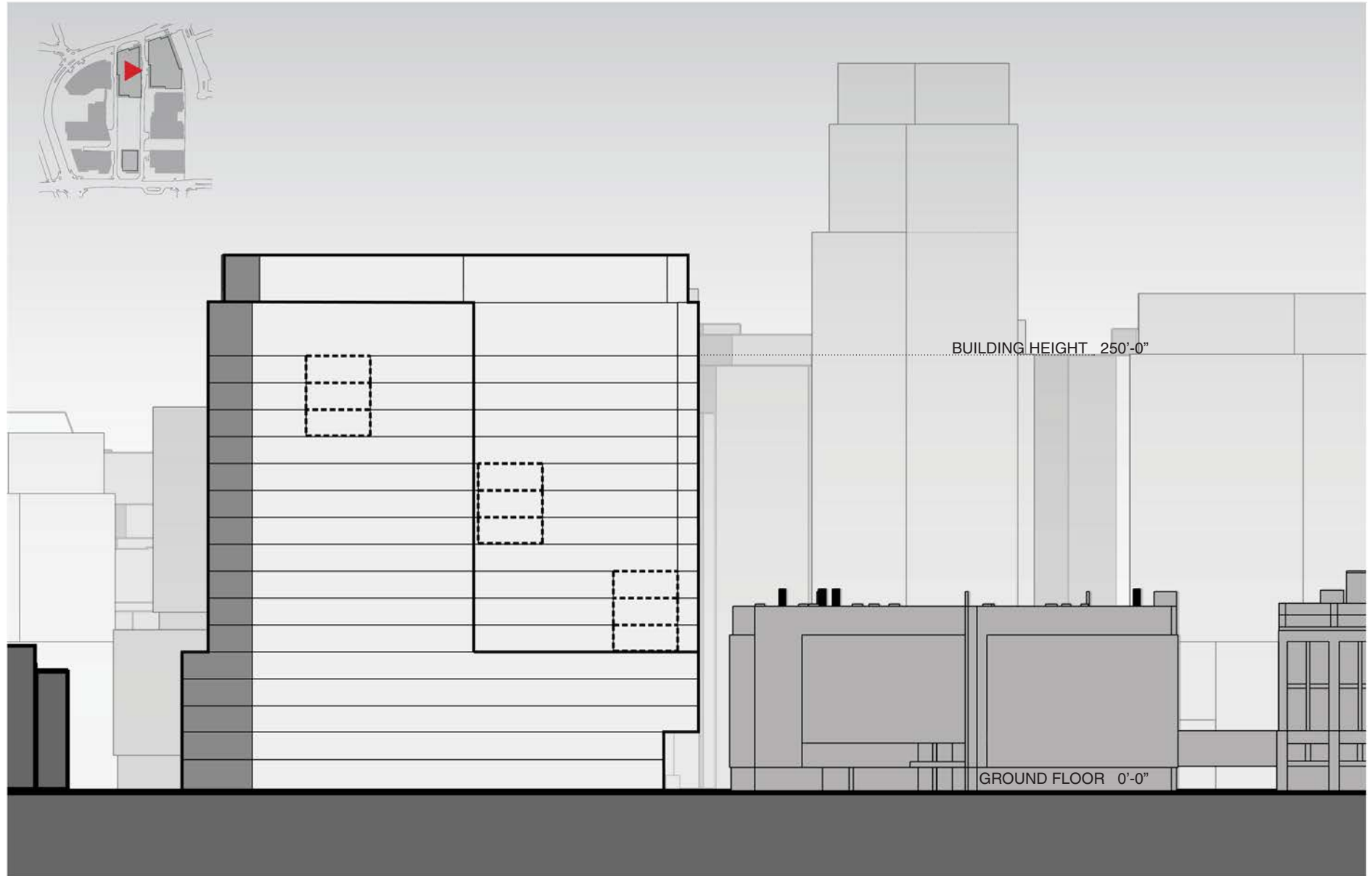
FIGURE 1.13K



NORTH ELEVATION

COMMERCIAL BUILDING D (250 BINNEY STREET)

FIGURE 1.13L



WEST ELEVATION

0' 40' 80'

DEVELOPMENT COMPONENTS

INNOVATION SPACE CONVERSION (255 MAIN STREET, 325 MAIN STREET AND 80 BROADWAY)

PROJECT SUMMARY

The project at 255 Main Street hosts the market rate and below market rate innovation space in a manner consistent with the requirements of Article 14. The market rate space is operated by the CIC and the below market rate space is operated by a third party manager who will lease co working, classroom and event space to nonprofits focused on providing technology education.

The proposed conversion will have a total GFA of approximately 105,200 phased with the development GFA of Commercial Buildings at 145 Broadway and 325 Main Street Respectively. The Applicant has delivered the Innovation Space conversation at 255 Main Street associated with Phase 1. The remaining Phase 2 Innovation Space plan will be delivered at 325 Main Street and 80 Broadway concurrently with Commercial Building B, which anticipates a Certificate of Occupancy in Q2 of 2022.

The anticipated market rate uses include business incubators, small research laboratories, office space for startups, non-profits and entrepreneurs, and facilities necessary for testing early stage products and prototypes. The below market space will include tech education focused nonprofits. The prominent location, re purposed space, and below market rents will help facilitate and guarantee the future of the innovation ecosystem that has contributed to the vitality of Cambridge.



BELOW MARKET SPACE OPERATION DIAGRAM

Figure 1.14 shows a conceptual Operation Plan for the below market space and a phasing and delivery plan for the market and below market Innovation Space overall.

1. Owns space at economic risk



2. Licensee operates space for share of revenue



3. Non profits* serve their target clients



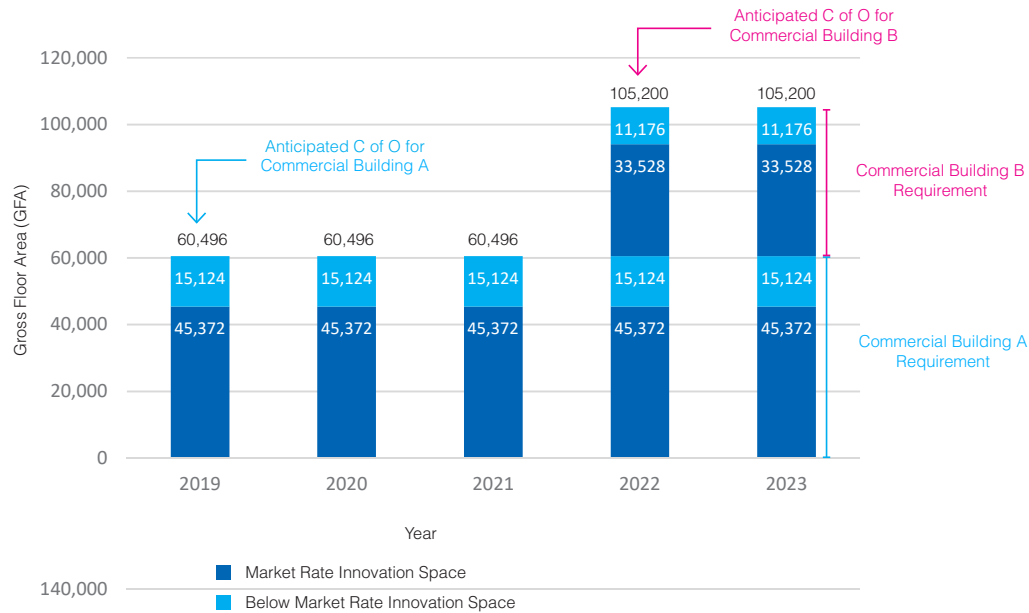
Governance Board Chooses Non Profits Tenants**



1. *Non profits represented here as of 2020
2. ** Governance Board to be composed of applicable stakeholders
3. Images from: link-kendall.org / cic.com

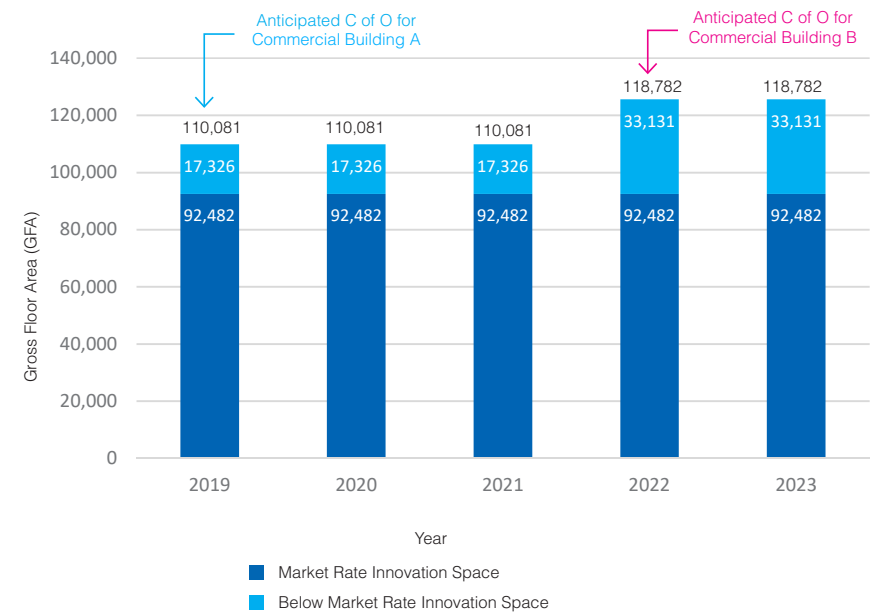
FIGURE 1.14

REQUIRED INNOVATION SPACE DELIVERY

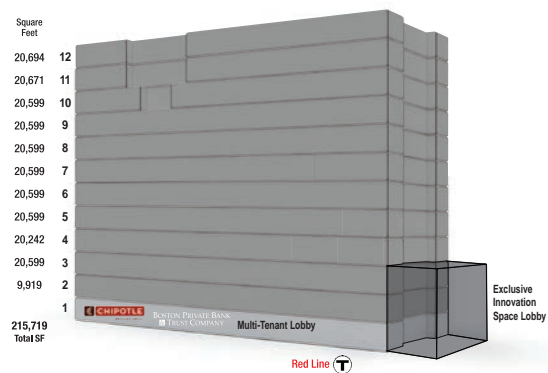


PLANNED INNOVATION SPACE DELIVERY

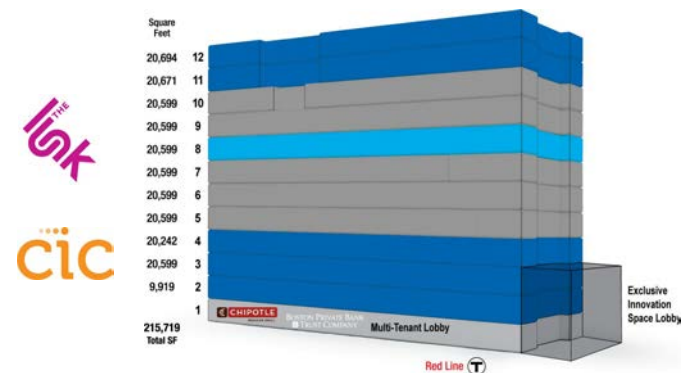
FIGURE 1.14



255 MAIN STREET– EXISTING



255 MAIN STREET– STACKING



1. Phasing and percentage of Innovation space will be in conjunction with the GFA of Commercial Buildings A and B Respectively

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2. REGULATORY CONTEXT



2.0 INTRODUCTION

The following sections address the zoning requirements and describe how the Project complies with those requirements.. This section also outlines the anticipated review and approval process for the Concept Plan Amendment and the individual Project Components as the design advances through Design Review Submission. Lastly, this section outlines the criteria for approval pursuant to Sections 12.35.3(3) and 19.25 of the Zoning Ordinance (as required by Section 14.32.2.2 of the Zoning Ordinance),, and consistency with the KSURP.

CHAPTER UPDATES

The following section summarizes refinements to this Chapter since the Concept Plan Amendment #1.

Building Height: The Project proposes the construction of a single residential building with a maximum height of 400 feet along Broadway, and two commercial buildings with a maximum height of 250 feet along Binney Street (as permitted by the recent amendments to the MXD Zoning and KSURP).

Retail/Active Ground Floor Uses: The Project will result in a net increase of enhanced retail GFA through the construction of new ground-level retail/active uses in Commercial Building C and Commercial Building D, which will better activate the public realm, as well as the new cross-block connections that will promote pedestrian connectivity through the North Parcel and with the Volpe development to the east.

Open Space: With the demolition and relocation of the Blue Garage below-grade, the Project proposes the construction of approximately 45,000 square feet of new open space, an increase of more than 15,000 square feet compared to the Concept Plan Amendment #1. The new open space and pedestrian realm improvements will include a new central open space known as “Center Plaza”, which will contribute to a vibrant public realm, foster new cross-block connections and promote pedestrian connectivity through the North Parcel, and to between the Volpe development to the east. The new open space and public realm improvements will serve the residents and workers in the MXD, and the general public alike. Completion of the proposed modifications to the Amendment#1 Concept Plan shall result in approximately 302,919 square feet of Public Open Space in the MXD district (subject to Eversource rights to access the electrical substation sited below), exceeding the minimum of 100,000 square feet required by Section 14.42.

Parking: To accommodate the electrical substation, the approximately 1,170 existing above-grade parking spaces associated with the Blue Garage will be relocated below-grade into two, connected parking garages situated beneath Commercial Building C and Commercial Building D. The Project also proposes up to an additional 414 vehicle parking spaces to be accommodated within the two garages. Please refer to Section 5.5 for a detailed summary of the Applicant's approach to accommodating vehicle parking needs via minor additions of new parking and adoption of a managed parking strategy to service existing and proposed commercial buildings.

Bike Parking: The Applicant is proposing to implement a commercial bicycle valet to service the majority of anticipated demand for bicycle parking from the Residential Building, as well as Commercial Buildings C and D. Acknowledging the unique approach to bicycle parking being proposed as part of this plan, in accordance with Article 6.108.1 the Applicant therefore intends to seek a modification of bicycle parking requirements via special permit. The implications of applying these minimum bicycle parking requirements to the Project have been determined by applying the ratios established by the City of Cambridge Bicycle Parking Guide, shown in Table 10 of the TIS Update Memo #2 in Appendix B.

2.1 ZONING REQUIREMENTS

This table summarizes the key zoning requirements and demonstrates how the Project aims to comply with these requirements. Sections of the document are referenced for further details.

CATEGORY	ZONING REQUIREMENT	EXISTING / UNDER CONSTRUCTION	PROPOSED	DOCUMENT REF.
14.33: LOT DENSITY LIMITATION	NO MAXIMUM FLOOR AREA RATIO FOR ANY PROJECT UTILIZING INFILL GFA (INCLUDING UTILITY PROJECT GFA).	COMMERCIAL BUILDING A: 5.25 FAR COMMERCIAL BUILDING B: N/A	RESIDENTIAL BUILDING SOUTH: N/A COMMERCIAL BUILDING C: N/A COMMERCIAL BUILDING D: N/A	DIMENSIONAL FORMS
14.34: MAXIMUM BUILDING HEIGHT	UP TO 250 FEET	250 FEET (COMMERCIAL BUILDING A) 250 FEET (COMMERCIAL BUILDING B)	250 FEET (COMMERCIAL BUILDING C) 250 FEET (COMMERCIAL BUILDING D)	TABLE 1-1
	UP TO 400 FEET FOR NO MORE THAN ONE (1) MIXED-USE/ RESIDENTIAL BUILDINGS	N/A	400 FEET (RESIDENTIAL BUILDING SOUTH)	TABLE 1-1
14.32.5: INNOVATION SPACE	MINIMUM OF 10% OF OFFICE AND BIOTECH MANUFACTURING USES (NOTE: EXCLUDES UTILITY PROJECT GFA)	105,200 GFA	N/A	SECTION 1.3.2
	EXISTING GFA WITHIN THE DISTRICT CAN BE CONVERTED	INNOVATION SPACE CONVERSION AT 255 MAIN STREET COMPLETE	N/A	
14.36: AFFORDABLE HOUSING	AT LEAST 5% OF THE TOTAL FLOOR AREA DEVOTED TO MULTI-FAMILY RESIDENTIAL SHALL BE DEVOTED TO MIDDLE INCOME HOUSING	N/A	20,000 GFA	SECTION 2.1.1
	NO LESS THAN 20% OF THE TOTAL FLOOR AREA DEVOTED TO MULTI-FAMILY RESIDENTIAL SHALL BE DEVOTED TO AFFORDABLE UNITS	N/A	80,000 GFA	
14.37: DWELLING UNITS	A MINIMUM 5% OF RESIDENTIAL GFA SHALL BE DEVOTED TO UNITS OF 3-BEDROOMS OR MORE	N/A	20,000 GFA	
14.38: ACTIVE GROUND FLOORS	GROUND FLOOR OF BUILDINGS OF 50,000 SF OR MORE MUST BE OCCUPIED BY RETAIL AND CONSUMER SERVICE USES OR ACTIVE PUBLIC GATHERING SPACE (WHETHER OPEN OR CLOSED) ALONG A MINIMUM 75% OF FRONTAGE; PROVIDED, HOWEVER, THAT THE REQUIREMENT SHALL BE 40% FOR ANY BUILDING WITH A FAÇADE LENGTH OF ONE HUNDRED (100) FEET OR LESS ALONG SUCH FRONTAGE ⁵	8,700 GFA NET NEW	9,000 GFA NET NEW	SECTION 4.2 FOR FURTHER DETAILS
		40,000 GFA EXISTING/ RECONSTRUCTED	N/A	
14.42: DISTRICT PUBLIC OPEN SPACE	MINIMUM 100,000 SF WITHIN THE DISTRICT RESERVED OR DESIGNATED AS PUBLIC OPEN SPACE	REFER TO CHAPTER 3, OPEN SPACE		SECTION 3.2 FOR FURTHER DETAILS
	MINIMUM OF 15% OF TOTAL LAND AREA WITHIN THE MXD DISTRICT DESIGNATED OR RESERVED AS PUBLIC OR PRIVATE OPEN SPACE			

TABLE 2-1 ZONING COMPLIANCE SUMMARY

CATEGORY	ZONING REQUIREMENT	EXISTING / UNDER CONSTRUCTION	PROPOSED	DOCUMENT REF.
14.43: PROJECT-BASED OPEN SPACE	CONTRIBUTE TO THE OPEN SPACE NETWORK OF THE DISTRICT, PER SECTION 403 OF THE KSURP	REFER TO CHAPTER 3, OPEN SPACE		SECTION 3.1
14.71.3: DISTRICT PUBLIC OPEN SPACE – AMES STREET DISTRICT	MEET DISTRICT PUBLIC OPEN SPACE REQUIREMENT (SECTION 14.42), AND MAINTAIN A MINIMUM OF 53,000 SQUARE FEET OF PUBLIC OPEN SPACE WITHIN THE AMES STREET DISTRICT	70,540 SF OF PUBLIC OPEN SPACE	N/A	SECTION 3.1
14.52: PARKING	MAX 0.9 /1,000 SF COMMERCIAL 1,414,200 ² GFA 1,273 SPACES MAX 0.5 SPACE/1,000 SF RETAIL 17,500 GFA 9 SPACES MIN 0.25 SPACE/DWELLING UNIT 465 UNITS 116 SPACES MAX 0.75 SPACE/DWELLING UNIT 465 UNITS 349 SPACES TOTAL MAXIMUM PARKING 1,631 SPACES TOTAL MINIMUM PARKING 1,398 SPACES	UP TO 1,042 SPACES ³		SECTION 5.5
14.52: BIKE PARKING	LONG-TERM 0.3 SPACES/1,000 SF OFFICE 939,180 ² GFA 281 SPACES 0.22 SPACES/1,000 SF R&D 475,020 GFA 104 SPACES 0.1 SPACES/1,000 SF RETAIL 17,700 GFA 2 SPACES 1.05 SPACES PER DWELLING UNIT ⁴ 465 UNITS 487 SPACES TOTAL LONG-TERM BIKE PARKING 875 SPACES	COMMERCIAL BLDG.A 134 SPACES COMMERCIAL BLDG. B 108 SPACES	RESIDENTIAL BLDG. SOUTH 20 SPACES ⁵ COMMERCIAL BLDG. C & D 400-610 SPACES ⁵	TABLE 5-1 SECTION 5.3 FOR FURTHER DETAILS
	SHORT-TERM 0.06 SPACES/1,000 SF OFFICE 939,180 ² GFA 56 SPACES 0.06 SPACES/1,000 SF R&D 475,020 GFA 29 SPACES 0.6 SPACES/1,000 SF RETAIL 17,700 GFA 11 SPACES 0.10 SPACES PER DWELLING UNIT 465 UNITS 47 SPACES TOTAL SHORT-TERM BIKE PARKING 143 SPACES	COMMERCIAL BLDG.A 34 SPACES COMMERCIAL BLDG.B 47 SPACES	RESIDENTIAL BLDG SOUTH 12 SPACES ⁵ COMMERCIAL BLDG. C & D 24 SPACES ⁵	TABLE 5-1 SECTION 5.3 FOR FURTHER DETAILS
14.53: LOADING REQUIREMENTS	SUFFICIENT OFF-STREET LOADING TO MEET NEEDS OF USERS	COMMERCIAL BUILDING A 3 BAYS* COMMERCIAL BUILDING B 3 BAYS* *(ONE TRASH)	RESIDENTIAL BUILDING SOUTH 2 BAYS COMMERCIAL BUILDING C 3 BAYS* COMMERCIAL BUILDING D 3 BAYS* *(ONE TRASH)	SECTION 5.6

1. Active Ground Floor Uses can include retail uses and active public gathering space (whether open or enclosed) where that ground floor fronts Main Street, Broadway or Ames Street, per Article 14.38 of the Cambridge Zoning Ordinance.

2. Excludes 14,000 GFA dedicated to Broad Institute Office Conversion.

3. The Applicant is proposing to accommodate these spaces across Commercial Building A the existing Green and Yellow Garages, and in below-grade parking to be constructed under Commercial Buildings C and D. As approved by the Concept plan Amendment #1 Commercial Building A will accommodate 457 total spaces, the Green Garage will accommodate 804 total spaces, and the Yellow Garage will accommodate 734 total spaces. The approximately 1,170 existing above-grade parking spaces associated with the Blue Garage will be relocated below-grade into two, connected parking garages situated beneath Commercial Building C and Commercial Building D that will accommodate a total of 1,584 spaces. Concept Plan Amendment #2 proposes a net addition of 414 spaces, and a total addition of 1,042 spaces since the Original Concept Plan was approved.

4. Per schedule in Section 6.107.2 of the Zoning Ordinance the first 20 units in a building are subject to a ratio of 1.00 spaces per dwelling unit.

5. The Applicant intends to satisfy bicycle parking demand from the Residential Building South, Commercial Building C and Commercial Building D via a commercial bicycle valet. In accordance with Article 6.108.1 the Applicant therefore intends to seek a modification of bicycle parking requirements via special permit. To complement the services of the envisioned bicycle valet, the Applicant also seeks to deliver approximately 20 traditional long-term bicycle parking spaces within the Residential Building South and 12 short-term bicycle parking spaces for Residential Building South, Commercial Building C, and Commercial Building D. The range of valet spaces illustrated (400-600) conveys the changing maximum capacities of the valet from its temporary premises within Commercial Building C to its permanent location within Commercial Building D. The Applicant also anticipates that the proposed bicycle valet will be able to offer short-term bicycle parking, subject to capacity utilization trends. The implications of applying the minimum bicycle parking requirements established by the City of Cambridge Bicycle Parking Guide to the Project are shown in Table 10 of the TIS Update Memo #2, Appendix B."

2.1.1 HOUSING PROGRAM

This Concept Plan Amendment #2 does not request any changes to the amount of approved residential GFA. Consistent with the Approved Concept Plan, the Project is proposing the addition of 420,000 GFA of residential development, consisting of 400,000 SF of Infill GFA and 20,000 SF of GFA attributable to middle-income housing that is excluded from the calculation of Aggregate GFA under Section 14.32.6(5) of the Zoning Ordinance. In addition, a prior letter of commitment stipulating the incorporation of condominium units has been subsequently replaced, allowing the Applicant to deliver the aforementioned residential density via rental units exclusively. This addition of residential GFA will contribute to the housing needs of the City through the delivery of up to 465 units, offering a broad spectrum of residential units ranging in size, type and affordability.

The Project will meet the requirements under the Zoning Ordinance. This includes a minimum of twenty percent (20%) of residential Infill GFA dedicated to affordable units, a minimum of five percent (5%) of residential Infill GFA dedicated to middle-income units, and a minimum of five percent (5%) of the residential Infill GFA dedicated to three-bedroom units. These commitments contribute to the City of Cambridge's goal of creating more housing product in the Kendall Square area, across a range of sizes and affordability. To ensure the Project's housing component is accessible and welcoming to all, the Applicant intends to pursue appropriate DEI training for maintenance, security, and property management teams as well as ensure that all residents enjoy access to amenities and available programming. The Applicant will also seek to identify and mitigate barriers to the housing qualification process.

AFFORDABLE HOUSING

Concept Plan Amendment #2 will deliver 80,000 SF of GFA dedicated to affordable housing. This represents twenty percent (20%) of the residential Infill GFA and will create approximately 90-100 units. This will be delivered entirely in a single phase within Residential Building South.

MIDDLE INCOME HOUSING

Concept Plan Amendment #2 will deliver 20,000 SF of GFA dedicated to middle-income housing. This represents five percent (5%) of residential Infill GFA and will contribute approximately 20-25 units. This will be entirely delivered in a single phase within Residential Building South.

THREE BEDROOM UNITS

The Concept Plan Amendment will continue to deliver a minimum of 20,000 GFA as three-bedroom units, equivalent to five percent (5%) of the residential Infill GFA and will contribute approximately 20-25 units. All three-bedroom units up to the five percent (5%) threshold will be devoted to middle-income and affordable uses. These units are designed as larger units to accommodate families with children and are intended to further the City's goal of providing affordable family-sized accommodations for lower income levels.

TABLE 2-2 SUMMARY OF HOUSING PROGRAM

	RESIDENTIAL BUILDING SOUTH	UNIT RANGES
<i>Affordable Housing</i>		
TOTAL Affordable Housing	84,000	90-100 Units
<i>Market Rate Housing</i>		
TOTAL Market Rate Housing	316,000	300-355 Units
<i>Middle Income Housing - GFA EXEMPT</i>		
TOTAL Middle Income Housing	21,000	20-25 Units
<i>Residential GFA</i>		
TOTAL Residential GFA	420,000	Up to 465 Units

2.1.2 CAMBRIDGE OUTDOOR LIGHTING ORDINANCE

Since the Concept Plan Amendment #1 was approved, the City has adopted an Outdoor Lighting Ordinance to regulate outdoor lighting in the City to allow the safe use and enjoyment of outdoor areas while mitigation potential nuisance. The Project will comply with the Outdoor Lighting Ordinance and will explore outdoor lighting that promotes the safe use and enjoyment of outdoor areas, mitigates light trespass and glare to abutters and the public at large, reduces light pollution, and promotes energy conservation.

2.2 REVIEW AND APPROVAL PROCESS

Concept Plan Amendment #2 is being submitted to the Planning Board and the CRA Board as a Major Amendment to the Approved Concept Plan, and therefore this application shall be subject to all of the same notice and hearing requirements as would be applicable to a new Special Permit. Under the Concept Plan Amendment #2, the Planning Board and the CRA Board shall consider the substance of the proposed changes (and not review the entirety of the Original Concept Plan) where proposed changes do not constitute a substantial alteration to the intent, purpose and substance of the Special Permit.

This Concept Plan Amendment seeks to amend the Special Permit for the entire Project, but still allows for specific design review of each of the remaining three proposed Project Components at the appropriate junctures in the future. Accordingly, the information presented within this Concept Plan Amendment #2 provides narratives and supporting graphical materials that address the public realm, open space, design guidelines and urban design context along with the massing of each of the Project Components.

As described in the Zoning Ordinance, a Design Review Submission will continue to be submitted for each Project Component, and its associated public improvements addressing specific design criteria, that seeks to supplement the conceptual design elements described within the Approved Concept Plan. The Design Review Submission seeks to develop upon the revised design guidelines provided in this Concept Plan Amendment #2, and provide specific details about the individual Project Components appropriate for review and approval jointly by the Planning Board and the CRA Board.

Table 2-4 presents the anticipated sequence and general detail of information submitted with each component piece of the Special Permit:

SPECIAL PERMIT SUBMISSION INFORMATION PLAN				
	Submission 3	Submission 4	Submission 5	Submission 6
	INFILL DEVELOPMENT CONCEPT PLAN AMENDMENT #2	DESIGN REVIEW COMMERCIAL BUILDING C	DESIGN REVIEW RESIDEN- TIAL BUILDING SOUTH	DESIGN REVIEW COMMERCIAL BUILDING D
Transportation	X			
Ped. Circulation	X			
Concept Open Space	X			
Final Open Space		X	X	X
Bike Parking	X	X	X	X
Vehicle Parking	X	X		X
Loading	X	X		X
Retail Planning	X			
Stormwater	X			
Shadow Analysis	X	X	X	X
Noise	X			
Wind – Wind Tunnel	X	X	X	X
Sustainability	X	X	X	X
Building Design		X	X	X

TABLE 2-4 ARTICLE 14 FILING STRATEGY

2.3 FINDINGS AND APPROVAL

The currently proposed amendment is being submitted to the Planning Board as a Major Amendment, meaning that this Concept Plan Amendment #2 shall be considered an original application for a Special Permit to construct a Planned Unit Development (PUD), and shall be subject to the procedures specified in Sections 12.34 through 12.36 of the Zoning Ordinance. This section has been restated and updated, where applicable to demonstrate that Concept Plan Amendment #2 complies with all applicable review requirements.

As described in Section 14.32.2.2 of the Zoning Ordinance, the Planning Board shall grant a special permit approving a Concept Plan upon determining that the Project identified within the plan meets the criteria for approval of a PUD set forth in Section 12.35.3(3) of the Zoning Ordinance and the criteria for approval of a Project Review Special Permit set forth in Section 19.25 of the Zoning Ordinance. In making its findings, the Planning Board shall consider the objectives set forth in the Kendall Square Final Report of the K2C2 Planning Study (the “K2 Guidelines”) and the Volpe Working Group’s Planning & Design Principles dated July 20, 2017 (the “Volpe Guidelines”). The approval of a Concept Plan shall serve to meet any applicable project review requirements of Article 19.000. No additional Project Review Special Permit shall be required for any new development identified within an approved Concept Plan and only design review shall take place for each specific Project Component

2.3.1 CONFORMANCE WITH ARTICLE 12.35.3(3)

Section 12.35.3.3 of the Zoning Ordinance provides that:

Approval of the Development Proposal shall be granted only upon determination that the Development Proposal provides benefits to the City which outweigh its adverse effects. In making this determination the decision-making authority shall consider the following:

QUALITY OF SITE DESIGN

This Concept Plan Amendment #2 continues to present a vision that reflects the unique needs and interests of the people who live, work, connect and innovate within Kendall Square. The Project will comply with the MXD Zoning and KSURP (as each of the same have been recently amended). At the heart of the Project Change lies the delivery of critical energy infrastructure essential to supporting electrical service not only for businesses and residents of the

MXD, but the broader Cambridge community. Moreover, the unique approach of constructing this infrastructure below grade promises to substantially advance key public realm improvements, including the construction of Center Plaza and new cross-block pedestrian connections—all while satisfying urgent market demand for additional commercial space in Kendall Square, a hotbed of the global life sciences sector. In sum, this Concept Plan Amendment #2 grants the Applicant the opportunity to make important adaptations to market conditions while delivering a unique public benefit alongside urban design strategies tailored to build on the MXD’s notable success.

For details on this refer to Section 3, Open Space, Section 4, Retail Plan and Section 10, Design Guidelines.

TRAFFIC FLOW AND SAFETY

A Traffic Impact Study (TIS) was developed and certified by the City of Cambridge Traffic, Parking and Transportation Department (TP&T) on July 14, 2016. Refer to Section 5, Transportation, and Appendix B for more details.

The Applicant has prepared an update to the approved TIS for Concept Plan Amendment #2 (TIS Update #2). TIS Update #2 provides an updated trip generation analysis and comparison, as well as an updated parking analysis, to reflect the Project detailed in Chapter 1, Development Plan, and Table 1-1.

ADEQUACY OF UTILITIES AND OTHER PUBLIC WORKS

City utilities are generally adequate to support the Project. Section 6, Infrastructure, details the existing and proposed utility infrastructure, and specific infrastructure improvements and services associated with the Project. This section also details measures that the Applicant will take to reduce the impacts of the Project on the existing utility systems.

IMPACT ON EXISTING PUBLIC FACILITIES WITHIN THE CITY

It is not anticipated that the Project will have a significant impact on City services. The proposed buildings contained in the Project will meet all applicable codes at the time of building construction.

DELIVERY OF PUBLIC BENEFIT

The Project is proposing to deliver significant public benefits, as outlined throughout this Concept Plan and highlighted below:

- Up to 465 units of new, diverse housing across a broad spectrum of unit type, size and affordability;

- 1,414,200 GFA of new commercial office space;
- Relocation and construction of a below-grade Eversource electrical substation from its previously-envisioned Fulkerson Street location to the MXD, that will serve the Cambridge community and improve the resilience of the area electrical grid for decades to come;
- Relocation of the 1,170 existing above-grade parking spaces associated with the Blue Garage into two, connected parking garages situated beneath Commercial Building C and Commercial Building D;
- Construction of the new approximately 30,000 square foot Center Plaza that will contribute to a vibrant public realm, foster new cross-block connections and promote pedestrian connectivity through the North Parcel, and to between the Volpe development to the east;
- New and enhanced open space and streetscapes along Broadway, Binney and Main Streets;
- Activation of Binney Street through 8,700 GFA of new ground floor retail/active use, as well as the addition of two commercial lobbies that will encourage pedestrian activity throughout the day;
- Activation of Broadway Street through 700 GFA of new ground floor retail/active use, and the addition of a residential lobby;
- Enhancement of the Main Street retail corridor through approximately 40,000 GFA of reconstructed ground floor and second floor retail/active use;
- Delivery of approximately 105,200 gross square feet of new innovation space conversion with Commercial A and Commercial B;
- Generate substantial new annual real estate taxes revenue for the City, as well as additional income and sales tax revenues generated through the influx of new workers and residents; and
- Provide a series of enhancements that will encourage alternative modes of transportation, through the addition of new covered and secure long-term and short-term bicycle parking spaces, and the enhancement of pedestrian and bicycle connections.
- The Project will deliver aesthetic and functional upgrades to the MBTA Red Line Outbound Headhouse.

2.3.2 CONFORMANCE WITH ARTICLE 19.25

The following section demonstrates that the Project conforms with Article 19.25: Review Criteria.

TRAFFIC IMPACT FINDINGS

A TIS was developed for the Project that is consistent with Section IV, Guidelines for Presenting Information to the Planning Board of the City of Cambridge Transportation Impact Study Guidelines, Sixth Revision dated November 28, 2011. The TIS, dated June 23, 2016, was Certified by the TP&T on July 14, 2016.

The Applicant has prepared TIS Update #2 as an update to the TIS for Concept Plan Amendment #2. The TIS Update #2 technical memorandum provides an updated trip generation analysis and comparison, as well as an updated parking analysis, to reflect the Project detailed in Section 1, Development Plan, and Table 1-1. Refer to Appendix B for a copy of the TIS Update #2.

TRAFFIC IMPACT INDICATORS

The analysis done in the TIS (as augmented by TIS Update #2) identifies identified impacts that the Project will have on the transportation network and is used by the City to identify possible mitigation to offset these impacts. Based on the TIS analysis, the Project has been evaluated within the context of the Planning Board Criteria to determine if the Project has any potential adverse transportation impacts. The Planning Board Criteria evaluates the Project's vehicular trip generation, impact to intersection level of service and queuing, as well as increase of volume on residential streets. In addition, pedestrian and bicycle conditions are considered. A discussion of the criteria set forth by the Planning Board and a summary of Planning Board Criteria Performance is presented in the TIS update.

Exceeding one or more of the criteria is indicative of a potentially adverse impact on the City's transportation network. However, the Planning Board will consider mitigation efforts, their anticipated effectiveness, and other information that identifies a reduction in adverse transportation impacts. The TIS analysis demonstrated that the Project had 57 criteria exceedances out of a possible 449 data entries. Refer to Section 5.2 for a description of proposed transit mitigation projects and program options being considered to enhance transit services in Kendall Square.

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3. OPEN SPACE PLAN

3.0 INTRODUCTION

The public realm in the redevelopment area of the North Parcel between Broadway and Binney Street consists of the newly proposed Center Plaza, The Kitty Knox/Loughrey Bike and Pedestrian path (6th Street Connector), two East West Pedestrian Connectors on the East side of the site and one East West Pedestrian Connector on the West side of the site. Streetscapes include Broadway, Binney Street and Galileo Galilei Way as well as the associated raised cycle track and public space improvements included as part of the 2016 IDCP development plan which are now partially complete and under construction.

The site plan in general and the proposed Center Plaza require the modification and replacement of the open spaces located on the south (Broadway) and north (Galileo) sides of the Blue Garage. These open spaces have existing covenants that expire in 9 years (from 2021) and this proposal requires that these covenants be modified to allow for the substation relocation to incorporate the substation under the Center Plaza and reconfigured site plan proposed as part of Concept Plan Amendment #2. The combined square footage of these two existing privately-owned open spaces (approximately 21,785 square feet) will be consolidated into one larger open space called Center Plaza (approximately 30,000 square feet) resulting in a public space with more programming and design options able to complement the broader network of parks and open spaces throughout Kendall Square.

The proposed buildings and related areas of the public realm are designed to enhance pedestrian connectivity through increased porosity and the establishment of clear desire lines to convey people through the larger MXD parcels. As further described below, the Project has been modified to accommodate the relocation of an electrical substation from its previously-envisioned Fulkerson Street location to a below-grade site within the MXD. Re-siting this electrical substation will require the demolition of the existing above-grade parking structure at the center of the North Parcel known as the “Blue Garage,” as well as extensive excavation to house the new facility below grade. The unique approach of constructing this infrastructure below grade provides the opportunity to advance key public realm improvements, including the construction of the Center Plaza open space, redesign of the two easternmost East-West Pedestrian Connectors, and to reimagine the East and West Service Drives. Further, this will allow the now contemplated Fulkerson site to be envisioned for a new use more favorable than electrical infrastructure.

Since Concept Plan Amendment #1 was approved, the Applicant has completed construction of the commercial space, ground floor retail and public realm improvements associated with Commercial Building A (Phase 1). Improvements delivered as a component of Phase 1 include a new bicycle path paralleling the Sixth Street Connector separating pedestrian and bike traffic on this well used route, and an enhanced westernmost East-West Pedestrian Connector. The streetscape along Broadway and Galileo Galilei associated with Commercial Building A at 145 Broadway has been transformed and expanded to accommodate new active ground floor uses.

Additionally, since Concept Plan Amendment #1 was approved, Commercial Building B and its associated public realm improvements have commenced on the Kendall Roof Garden, MBTA Redline Head house reconstruction, associated I&I infrastructure

and the completion of the raised cycle track along Galileo and Broadway. Commercial Building B will further enhance and enliven the public realm in multiple ways, including a redesigned ground and second floor retail edge along Main Street and the building’s east facade, directly abutting Kendall Plaza, thus enhancing the pedestrian experience at the street level and further enlivening the Plaza. In addition, the Project will create a new pedestrian connection from Kendall Plaza up to the Kendall Roof Garden through a combination of publicly accessible stairs and an elevator, providing an opportunity for multi-level public space and potential programming as well as increased visual interest on Kendall Plaza. Further, Commercial Building B will provide enhanced access from Pioneer Way through the ground floor retail portion of the building to facilitate pedestrian connection between Ames Street and the Kendall Plaza, enhance neighborhood connectivity and permeability and to enliven the proposed retail. While all improvements are underway, forecasted completion has been impacted due to delays associated with Covid-19 and the ongoing re sequencing required to accommodate the MXD substation siting proposal. Timing and status of these improvements have been communicated to City Staff and the applicant will discuss further in public hearings associated with this proposal.

CHAPTER UPDATES

The following section summarizes minor refinements to this Chapter since the Approved Concept Plan.

District Open Space: With the demolition and relocation of the Blue Garage below-grade, the Project Change proposes the construction of approximately 34,000 square feet of new open space, and approximately 8,000 SF increase compared to Concept Plan Amendment #1. The new open space and pedestrian realm improvements will include a new approximately 30,000 SF Center Plaza, which will contribute to a vibrant public realm, foster new cross-block connections and promote pedestrian connectivity through the North Parcel, and to the Volpe development to the east. The project requires the modification and replacement of the open spaces located in the South (Broadway) and North (Galileo) sides of the Blue Garage.

Public Realm/Streetscape Improvements: The demolition of the Blue Garage and the construction of the Center Plaza presents the opportunity to modify the character of the service drives to emphasize a pedestrian character through the use of flush grades, broad crosswalks, traffic calming sidewalk expansions (see NE side of 145 Broadway) and paving material that clearly indicates a mixed modal condition. Based on the heavily trafficked Kitty Knox / Loughrey Walkway to the East of the site, the West Service drive has been identified as the primary service drive to emphasize North South pedestrian circulation. The service drives will be designed to allow for critical and existing utility uses including lay-by space for buses and delivery vehicles, ride share vehicles and automobile circulation.

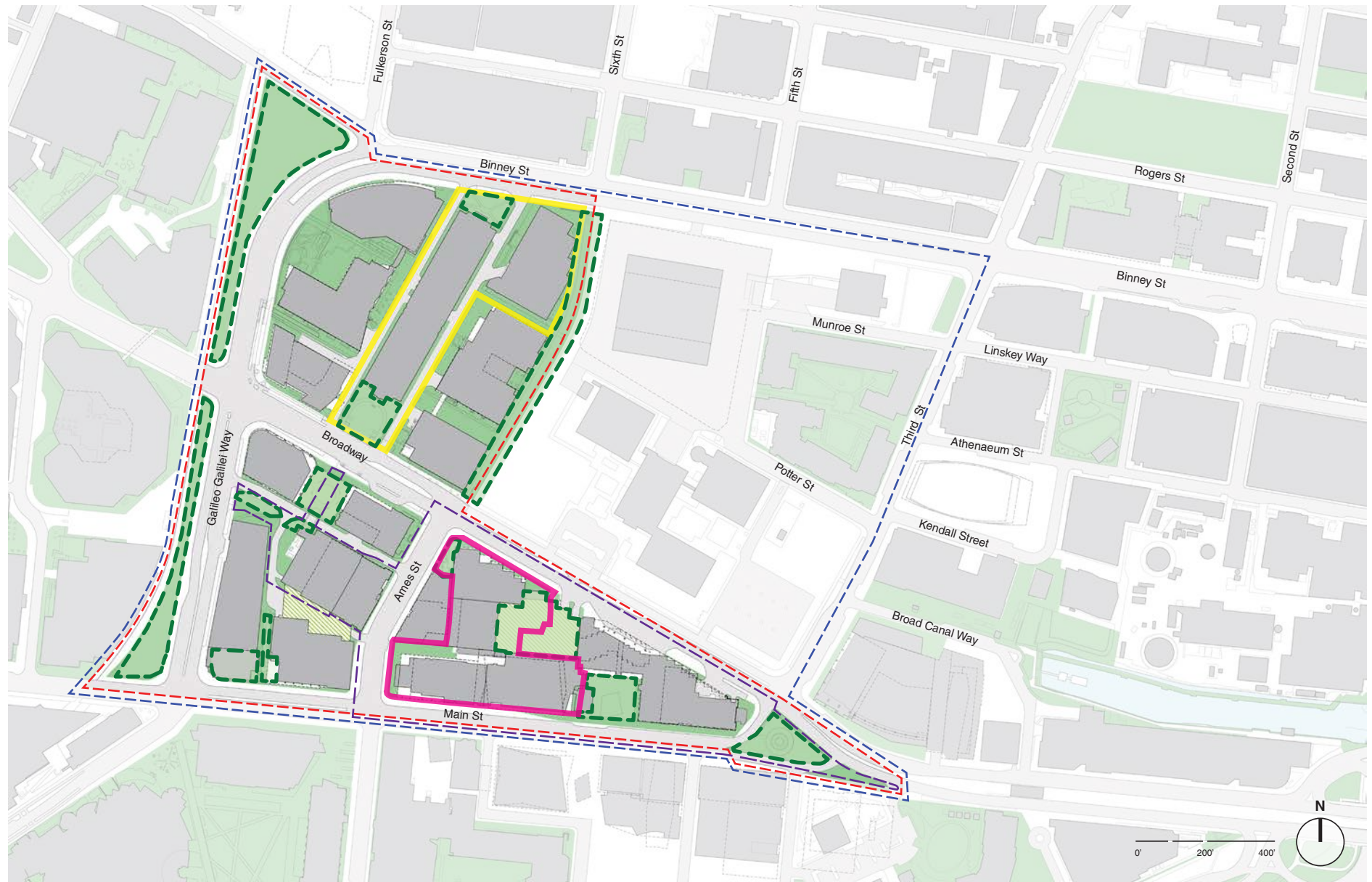
Tree Protection/Mitigation: Additional Information has been added to Section 3.6 on trees related to Project changes on the North Parcel.

3.1 EXISTING OPEN SPACE

DEFINITION OF OPEN SPACE

Open spaces, as described in this document, and reinforced by Article 14, are described in the following ways:

1. Portion of a lot or other area of land associated with and adjacent to a building for a group of buildings in relation to which it serves to provide light and air, or scenic, recreational or similar purposes. Such space shall, in general, be available for entry and use by the occupants of the building(s) with which it is associated, and at times to the general public, but may include a limited proportion of space so located and treated as to enhance the amenity of development by providing landscape features, screening or buffering for the occupants or neighbors or a general appearance of openness. Open space shall include parks, plazas, lawns, landscaped areas, decorative plantings, pedestrian ways as listed in Section 14.45 of the Zoning Ordinance, active and passive recreational areas, including playgrounds and swimming pools.
2. Parks, gardens and plazas reserved for public use and enjoyment as guaranteed through one or more of the following:
 - Retention by the CRA.
 - Dedication to and acceptance by the City or other public entity.
 - Easements or deed restrictions over such land sufficient to ensure its perpetual reservation for public open space purposes.
 - Dedication, by covenant or comparable legal instrument to the community use of the residents, lessees and visitors to the MXD District for reasonable amounts of time on a regular basis.
 - Lease agreements of 99 years or longer from the private developer or owner to the City or other public entity.
3. Open space on the development lot. Some or all of this required open space may be designated and also serve as open space.
4. Pocket parks, bike paths and enhanced planting zones created through modification of roadways as part of the ALTA cycle track.
5. Circulation elements including stairs, elevators, elevated plazas or pathways used to enhance connection to and between publicly accessible spaces.
6. Spaces that are not considered as open spaces, as described in this document and reinforced by the Zoning Ordinance are:
 - Streets, parking lots, driveways, service roads, loading areas, and areas normally inaccessible to pedestrian circulation beneath pedestrian bridges, decks or shopping bridges.



- Existing open space on grade
- Existing open space above grade
- Open Space/Park

- Project Boundary Amendment #1
- Project Boundary Amendment #2

- MXD Boundary
- KSURP Boundary
- Ames Street District ASD

3.1 EXISTING OPEN SPACE

EXISTING MXD PARCEL AREAS & OPEN SPACE CALCULATION

EXISTING MXD DEVELOPABLE PARCEL AREA (P)		
P2		445,825
P3		229,558
P4		257,824
LOUGHREY WALKWAY (WITHIN MXD)		19,569
GRAND JUNCTION + BINNEY ST PARK		77,361
TOTAL EXISTING MXD AREA (±SF)		1,010,596

EXISTING OPEN SPACE (OS) TOTALS		
P2		148,825
P3		77,429
P4		141,247
LOUGHREY WALKWAY (WITHIN MXD)		19,569
GRAND JUNCTION + BINNEY ST PARK		77,361
TOTAL EXISTING MXD OS (±SF)		462,021

EXISTING OPEN SPACE (OS) TOTALS		
(BROADWAY PARK)@BLUE GARAGE		13,970
(BINNEY PARK)@BLUE GARAGE		7,815
KENDALL SQUARE ROOFTOP GARDEN	ASD	25,340
KENDALL PLAZA	ASD	14,372
GALAXY PARK	ASD	18,664
75 AMES ST OPEN SPACE	ASD	6,867
DANIEL LEWIN PARK (CENTER ONLY)	ASD	5,297
DANIEL LEWIN PARK (WEST)		4,955
DANIEL LEWIN PARK (EAST)		7,341
ORIGINAL BROAD OPEN SPACE (7CC)		5022
WHITEHEAD PLAZA		10,930
GRAND JUNCTION		27,300
BINNEY STREET PARK		50,061
LOUGHREY WALKWAY (WITHIN MXD)		19,569
LOUGHREY WALKWAY (OUTSIDE OF MXD)		19,790
TOTAL EXISTING PUBLIC OS (±SF)		237,293

REQUIRED

100K
100,000

15% OF TOTAL MXD AREA

151,585

AMES STREET DISTRICT*

53,000

PROVIDED

TOTAL EXISTING PUBLIC OPEN SPACE

237,293±SF

TOTAL EXISTING OPEN SPACE

462,021±SF

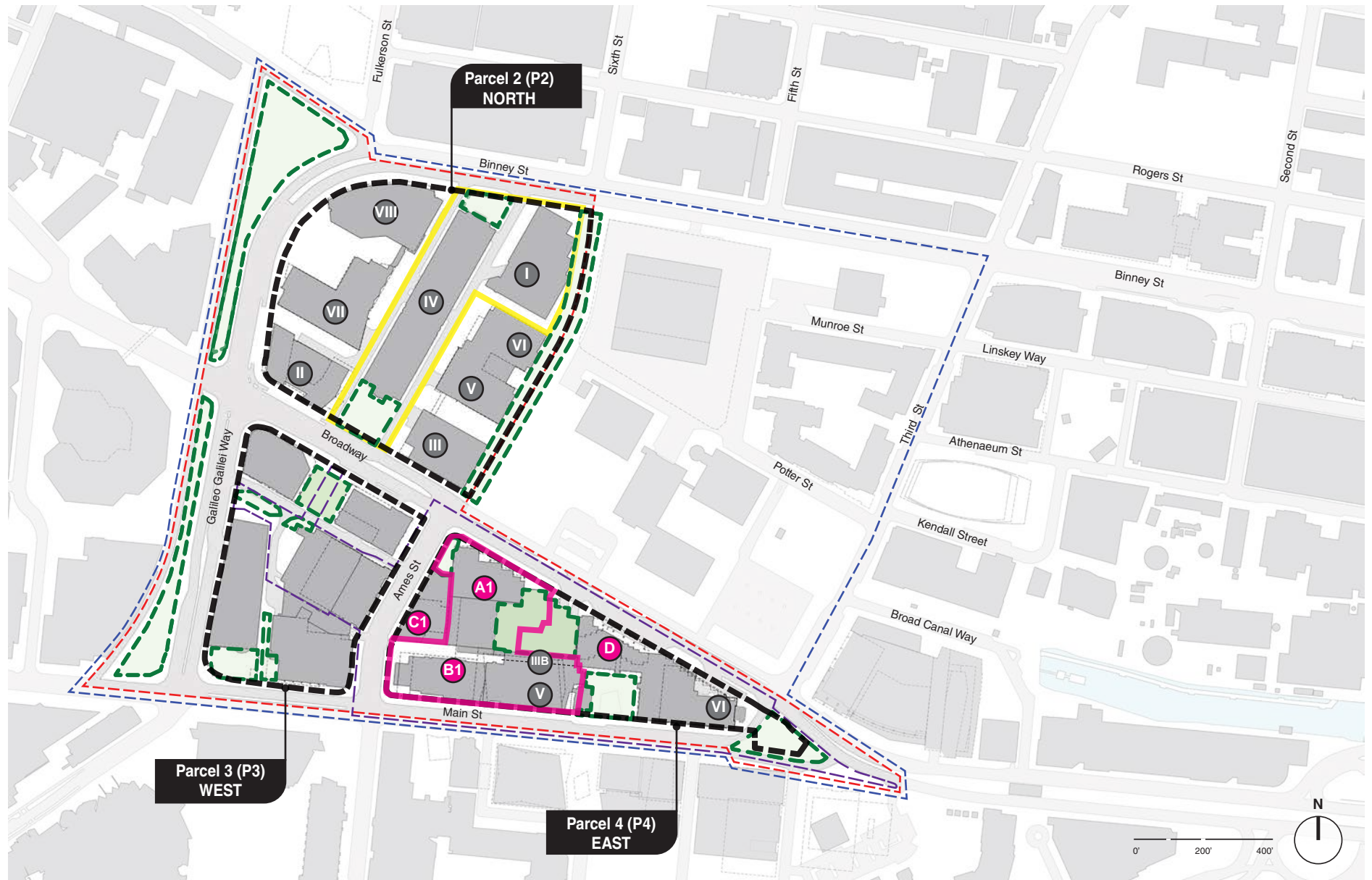
OPEN SPACE

70,540±SF

REQUIRED OPEN SPACE VS. PROVIDED OPEN SPACE

SOURCES

1. CAD/Alta survey
2. Exhibit A Development Area Map. CRA Document. March 18, 1982.
3. Exhibit A Development Area Map. CRA Document. May 25, 1979.
4. CRA's KSURP Open Space Accounting. June, 2015
5. Kendall Center Open Space Parcels 2, 3, and 4. July 31, 2015.
6. North Parcel Consolidation Plan. April 11, 2017.
7. Ames Street District Open Space. July 25 2018.
8. CRA Privately Owned Public Spaces in the Kendall Square MXD District
<https://www.cambridgeredevelopment.org/pops/>



3.2 PROPOSED OPEN SPACE

OPEN SPACE OBJECTIVES

The landscape and open space in the MXD District is intended to function as a complete system within the broader Cambridge park and open space network that embraces, integrates and embodies inclusive and accessible design, environmental sustainability, and multi purpose activation informed by the broader context of proximate open spaces. Further, the open space responds to the aspiration of transforming the MXD from a largely commercial district to a vibrant mixed use district that appeals broadly to the needs of the resident, academic, and innovation communities.

With the demolition and relocation of the Blue Garage below-grade, the Project Change will deliver a new approximately 30,000 square feet of new open space atop the roof of the electrical substation, and between Residential Building South and Commercial Building C. The new open space and pedestrian realm improvements will contribute to a vibrant public realm, foster new cross-block connections and promote pedestrian connectivity through the North Parcel, and between the Volpe development to the east. The new open space and public realm improvements will serve the residents and workers in the MXD, and the general public alike.

The current proposal for Center Plaza is informed by A) the CRA Kendall Square Amenities Report; B) Extensive public feedback over the past 18 months including the dialogue on the MXD Co-Urbanize site (<https://courbanize.com/projects/mxdsubstationdevelopment>); and C) The realities of locating a public space on a below grade electrical sub station. The goal of Center Plaza is to create a new and complimentary space with a defined and distinct identity and purpose as opposed to replicating other available open spaces or simply creating an “omni park” of un-cohesive but popular component pieces that are readily available in the immediate area.



- | | | | |
|---|--|--|--|
| ■ Proposed open space | ■ Existing open space on grade | — Project Boundary Amendment #1 | - - - MXD Boundary |
| ■ Proposed open space enhancements | ■ Existing open space above grade | — Project Boundary Amendment #2 | - - - KSURP Boundary |
| ■ Proposed open space under construction | ■ Proposed open space by others | - - - Ames Street District ASD | |

3.2 PROPOSED OPEN SPACE

PROPOSED PARCEL AREA AND OPEN SPACES

EXISTING MXD DEVELOPABLE PARCEL AREA (P)			
	P2		445,825
	P3		229,558
	P4		257,824
	LOUGHREY WALKWAY (WITHIN MXD)		19,569
	GRAND JUNCTION + BINNEY ST PARK		77,361
	TOTAL EXISTING MXD AREA (±SF)		1,010,596

PROPOSED OPEN SPACE (OS) TOTALS			
	P2		151,590
	P3		77,429
	P4		141,247
	LOUGHREY WALKWAY (WITHIN MXD)		19,569
	GRAND JUNCTION + BINNEY ST PARK		77,361
	TOTAL EXISTING MXD OS (±SF)		467,196

EXISTING OPEN SPACE (OS) TOTALS			
	(BROADWAY PARK)@BLUE GARAGE		13,970
	(BINNEY PARK)@BLUE GARAGE		7,815
	P2 ENHANCED OPEN SPACE		64,593
			82,011
	KENDALL SQUARE ROOFTOP GARDEN	ASD	25,340
	ROOFTOP CONNECTOR TERRACES	ASD	5,400
	KENDALL PLAZA	ASD	14,372
	GALAXY PARK	ASD	18,664
	75 AMES ST OPEN SPACE	ASD	6,867
	DANIEL LEWIN PARK (CENTER ONLY)	ASD	5,297
	DANIEL LEWIN PARK (WEST)		4,955
	DANIEL LEWIN PARK (EAST)		7,341
	ORIGINAL BROAD OPEN SPACE (7CC)		5022
	WHITEHEAD PLAZA		10,930
	GRAND JUNCTION		27,300
	BINNEY STREET PARK		50,061
	LOUGHREY WALKWAY (WITHIN MXD)		19,569
	LOUGHREY WALKWAY (OUTSIDE OF MXD)		19,790

	TOTAL PROPOSED PUBLIC OS (±SF)		301,886 302,919
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REQUIRED

100K
100,000

15% OF TOTAL MXD AREA
151,585

AMES STREET DISTRICT*
53,000

PROVIDED

TOTAL PROPOSED PUBLIC OPEN SPACE
~~301,886±SF~~
302,919±SF

TOTAL PROPOSED OPEN SPACE
~~462,021±SF~~
467,196±SF

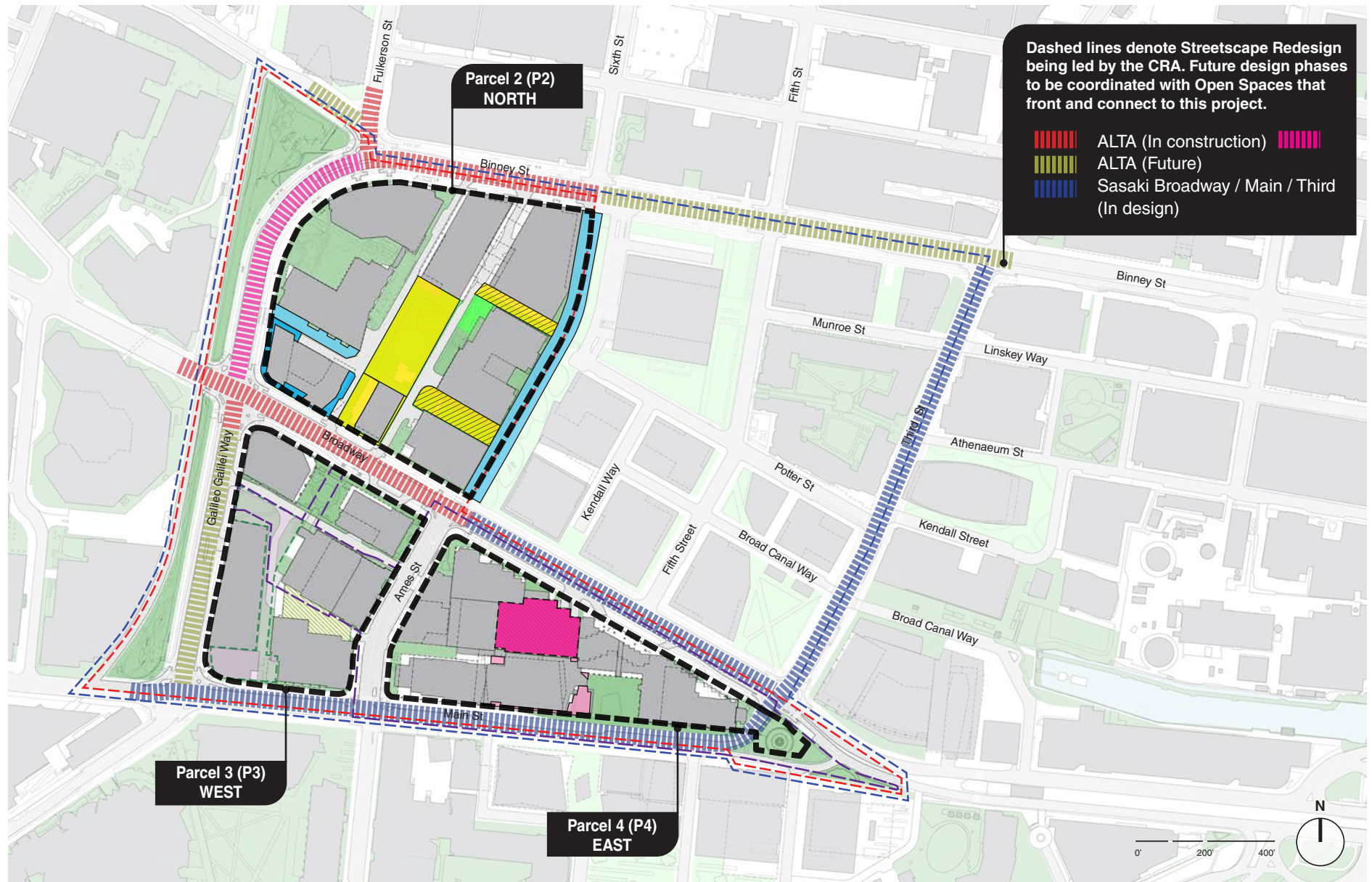
OPEN SPACE
~~70,540±SF~~
75,940±SF

REQUIRED OPEN SPACE VS. PROVIDED OPEN SPACE

SOURCES

1. CAD/Alta survey
2. Exhibit A Development Area Map. CRA Document. March 18, 1982.
3. Exhibit A Development Area Map. CRA Document. May 25, 1979.
4. CRA's KSURP Open Space Accounting. June, 2015
5. Kendall Center Open Space Parcels 2, 3, and 4. July 31, 2015.
6. North Parcel Consolidation Plan. April 11, 2017.
7. Ames Street District Open Space. July 25 2018.
8. CRA Privately Owned Public Spaces in the Kendall Square MXD District
<https://www.cambridgeredevelopment.org/pops/>

Pursuant to City Council Ordinance No. 2020-17, Section 14.33 of the Zoning Ordinance was amended to provide that "...there shall be no maximum floor area ratio for any project utilizing Infill GFA (including Utility Project GFA)." All of the GFA reflected in this application is Infill GFA, and therefore there are no maximum floor area ratio requirements for the buildings described herein.



Commercial Building A

Commercial Building B

Commercial Building C / D
Residential Building South

Phase I. Open Space

Phase I. Enhanced OS.

Phase II. Enhanced OS.

Phase II. Enh. Garden OS.

Phase IV. Open Space

Phase IV Enhanced OS.

Other Potential OS
Enhancement Opportunities

MXD Boundary

KSURP Boundary

Ames Street District ASD

3.2 PROPOSED OPEN SPACE

OPEN SPACE (OS) COMPARISONS AMENDMENT #1 AND AMENDMENT #2

IDCP AMENDMENT #1 OPEN SPACE	
(OS) COMMERCIAL BUILDING A (PHASE I)	
REQUIRED	35,504 ±SF
PROVIDED	54,801 ±SF
145 BROADWAY (OS)	8,114 ±SF
(SW) EW CONNECTOR (EASEMENT C)	7,328 ±SF
6TH ST CONNECTOR (WITHIN MXD)	19,569 ±SF
(OS) COMMERCIAL BUILDING B (PHASE 2)	
REQUIRED	0 (ASD)
PROVIDED	27,501 ±SF
KENDALL SQUARE ROOFTOP GARDEN*	18,789 ±SF
ENHANCED OS PLAZA AREA	2,562 ±SF
ENHANCED OS TERRACE	4,750 ±SF
ENHANCED OS TERRACE (PENDING MBTA)	1,400 ±SF
RESIDENTIAL BUILDING SOUTH (PHASE 2)	
REQUIRED	28,000 ±SF
PROVIDED*	32,070 ±SF
RESIDENTIAL BUILDING NORTH (PHASE 3)	
REQUIRED	5,600 ±SF
PROVIDED*	16,895 ±SF
P2 ENHANCED OPEN SPACE	64,593 ±SF

* Denotes OS calculations made for IDCP AMENDMENT #1 via Lot calculations

* *Denotes OS calculation updates made after IDCP Amendment 2 for 325 Main St Design Review

IDCP AMENDMENT #2 OPEN SPACE	
(OS) COMMERCIAL BUILDING A (PHASE I)	
PROVIDED	54,801 ±SF
(OS) COMMERCIAL BUILDING B (PHASE 2)	
**PROVIDED (UPDATE)	30,790 ±SF
KENDALL SQUARE ROOFTOP GARDEN	25,340 ±SF
ROOFTOP CONNECTOR TERRACES	5,450 ±SF
(OS) COMMERCIAL BUILDING C (PHASE 4)	
(OS) RESIDENTIAL BUILDING SOUTH (PHASE 4)	
PROVIDED	30,000 ±SF
CENTER PLAZA	30,000 ±SF
(OS) COMMERCIAL BUILDING D (PHASE 4)	
PROVIDED	17,000 ±SF
(NE) EW CONNECTOR	7,000 ±SF
(SE) EW CONNECTOR	10,000 ±SF
P2 ENHANCED OPEN SPACE	82,011 ±SF
P2 NET NEW OVER AMD#1	17,418 ±SF

Pursuant to City Council Ordinance No. 2020-17, Section 14.33 of the Zoning Ordinance was amended to provide that "...there shall be no maximum floor area ratio for any project utilizing Infill GFA (including Utility Project GFA)." All of the GFA reflected in this application is Infill GFA, and therefore there are no maximum floor area ratio requirements for the buildings described herein.



Commercial Building A

Commercial Building B
Phase II. see Fig 3.4

Commercial Building C
Residential Building South

Commercial Building D

Phase I. Open Space

Phase II. Enhanced OS.

Phase IV. Open Space

Phase I. Enhanced OS.

Phase II. Enh. Garden OS.

Phase IV. Enhanced OS.

MXD Boundary

KSURP Boundary

Tract/Lot Number

3.2 PROPOSED OPEN SPACE - VISION

CENTER PLAZA

The Center Plaza will be a flexible and seasonally programmable active use space that promotes gathering, performance, sport and play across generations and interests to serve the Cambridge community, with a public space distinct from existing open spaces within the broader open space network.

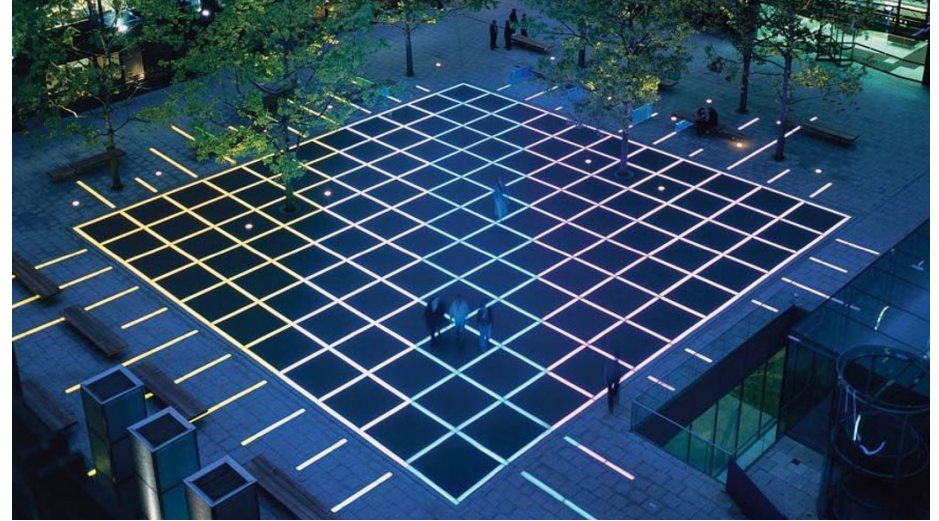
The above vision statement was informed by the following information:

A) The CRA Kendall Square Amenities Report

Based on the above guiding references, The proposed Center Plaza is intended to be a broad and flexible plaza space with seasonal programming to emphasize active uses. The CRA report ultimately identifies that a top priority for Kendall Square is to add new open space where people can meet, play or just get out of the office for a few minutes. The Kendall Square Open Space Survey also identifies more programming, seating and shade, more greenery, and more transportation amenities as unique and unaddressed needs in the existing park and open space infrastructure.

B) Public Feedback

Public feedback has echoed many of the same sentiments expressed about the Kendall Roof Garden redesign with emphasis many desirable, individual components. As is often the case in designing public spaces, there is no perfect consensus around any one idea and suggestions run across a broad range of individual preferences. However, based on the approach outlined above to create a distinct space that works in concert with the broader surrounding open space and multiple public feedback sources, the design of Center Plaza is intended for public active use that allows for accessible cross generational activity opportunities. This points to a design that allows for flexible space programming without single use, prescriptive design features like fixed seating or fixed play structures that prevent other uses across seasons and generations. Instead, Center Plaza is intended to be an open central canvas with defined edges (which can include fixed structures) and scaling elements that allow for multiple, seasonal play opportunities that are broadly appealing. Consider as precedent the frog pond in Boston Common as an ice skating ring in winter and a splash pool in summer. Consider Lawn on D or Starlight Square as flexible gathering spaces with movable furniture that allow for performance as well as activity.



A. FINSBURY AVENUE SQUARE



B. HARVARD PLAZA

FIGURE 3.6



C. PENN STATION PLAZA



E. DC WHARF



D. LAWN ON D



F. NEW ROAD BRIGHTON UK

C) Sub Station Engineering

The Center Plaza is made possible by the opportunity to relocate the Fulkerson substation underground in the North Parcel. Fundamental to this opportunity is the feasibility to construct, operate and maintain critical electrical infrastructure immediately below grade. These include the following necessary considerations:

1. Ventilation for equipment cooling. Center Plaza must accommodate structures that allow for the intake and exhaust of air to cool equipment at a speed and acoustic setting that does not impact the usability of the public space but still serves the CFM requirements of the equipment. Precedent exists for the creation of sculptural scaling elements that can make the Plaza more visually interesting and still serve this critical function. The design of the ventilation equipment is ongoing. Additional details will be provided during Phase 4, which will consist of equipment provision and required construction to outfit and commission the proposed electrical substation beneath the Center Plaza open space by Eversource.

2. Access for Equipment. The shipping dimensions of the largest individual component of substation equipment is presently estimated to be 29 feet x 11 feet x 15 feet with an approximate weight of 153,200 Lbs. Accordingly, an access hatch located on the perimeter of the Center Plaza must be sized accordingly for initial construction and periodic maintenance or emergency use.

3. Human and small equipment Access: The Center Plaza must contain code required ingress and egress via stair and elevators for workers as well as small equipment. The ingress and egress points will require head house or sculptural components on the Center Plaza.

4. Resilience: In addition to locating any vertically accessible element four feet above the projected 100 year flood level as well as integrating infrastructure for deployable flood barriers, any design will have to account for the prevention of leaks via maturing root systems or charged irrigation lines that would introduce water into the electrical equipment.

5. Transmission and Distribution: The station is a component piece of a larger system, not a free standing element. Accordingly, its location, position and constraints are informed by the access of transmission lines via Broadway and distribution lines via Galileo Galilei Way.

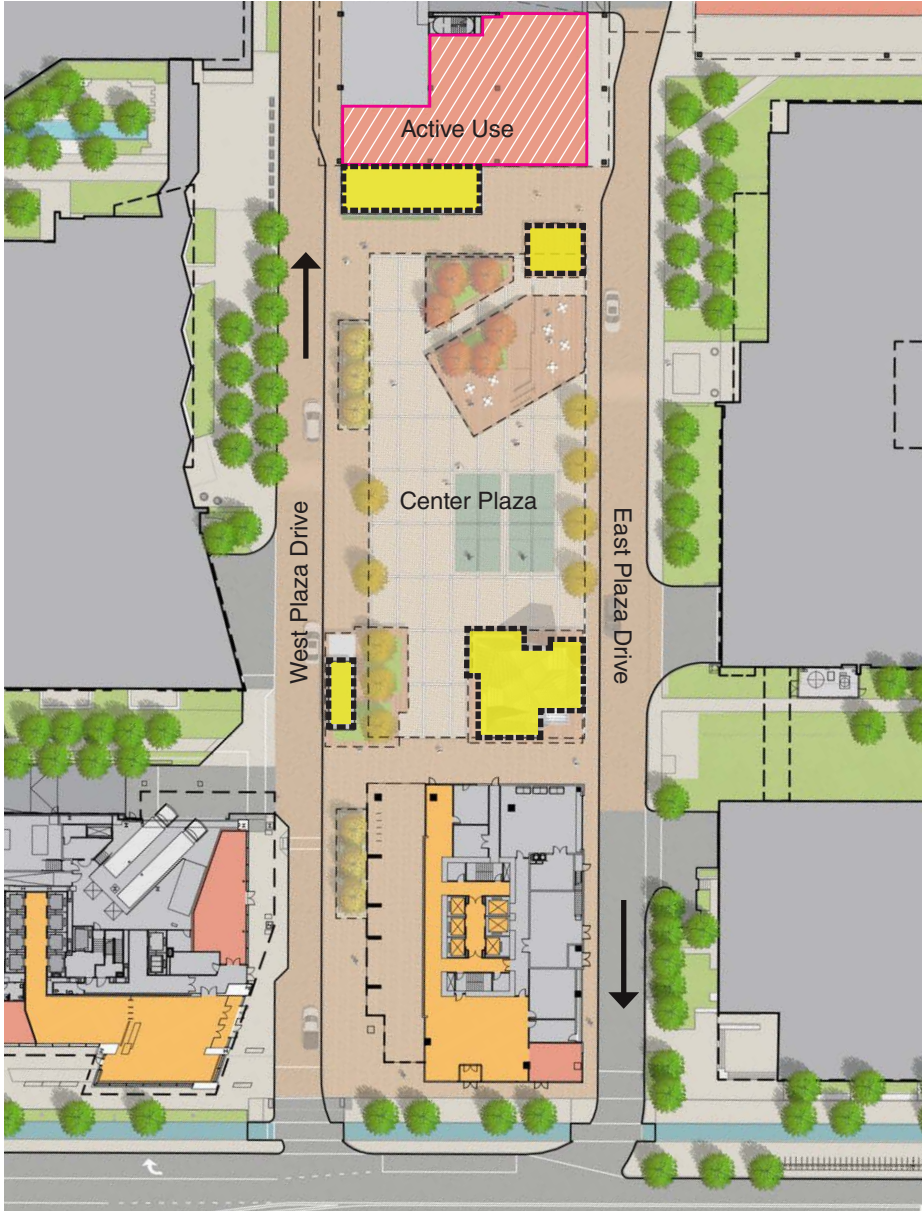
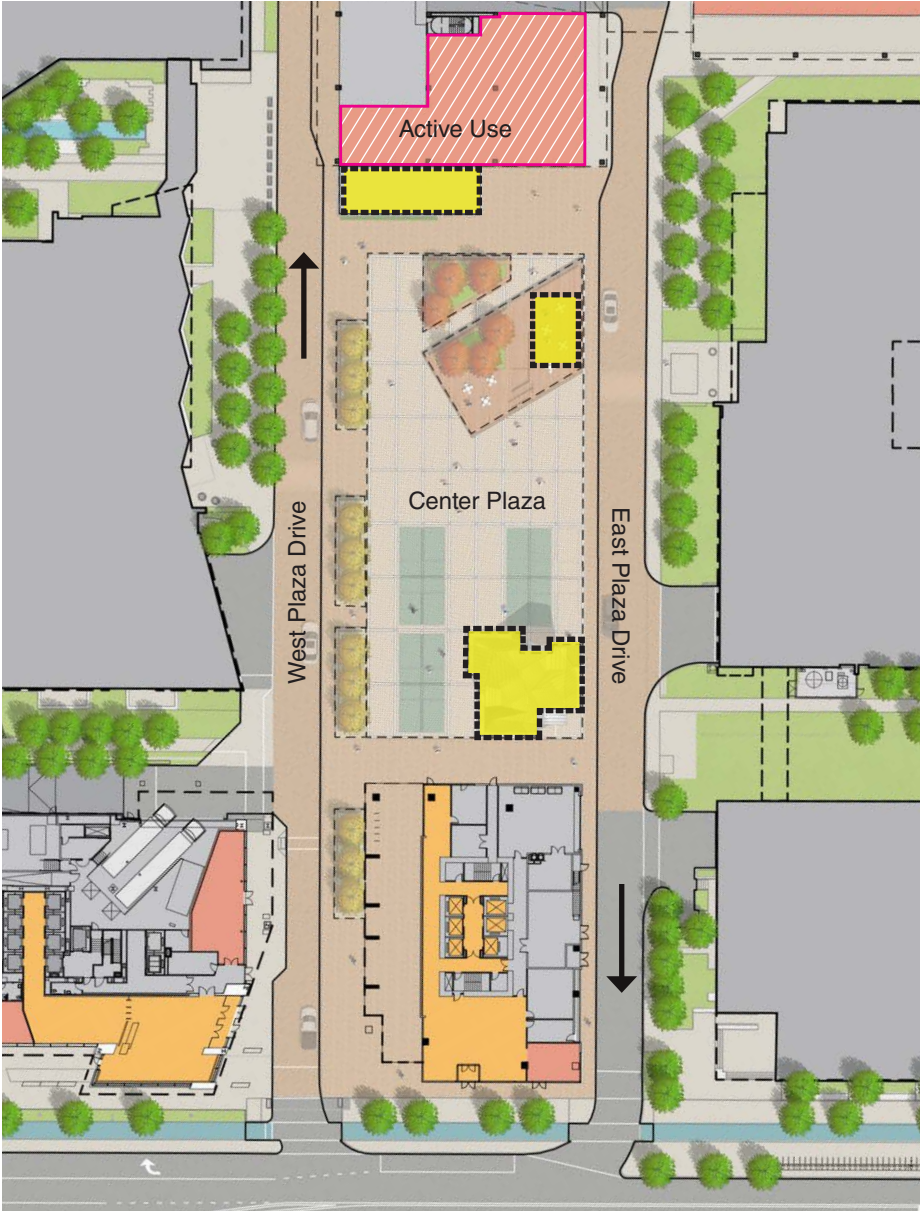
In the course of our study of other below grade stations we remain confident that the vision statement above is more than achievable with the realities of the engineering. However, this proposal should be viewed in the context of the very unique and substantially complicated engineering challenge of the relocation of the Fulkerson substation. Further, design of the station is ongoing and will likely encounter unforeseen constraints and engineering issues that may require changes that will be reflected in future design review submissions for Center Plaza.

A map of the study area showing the location of the Intake Zone and Exhaust Zone. The map is oriented with Broadway on the left and Buxton St on the right. The Intake Zone is a large orange rectangular area in the center, and the Exhaust Zone is a smaller orange rectangular area to its right. Surrounding these zones are various buildings and streets. To the north of the Intake Zone are buildings labeled Akamai, Biogen-8, and Biogen-9. To the south are Biogen/Broad and Biogen-5. To the east of the Exhaust Zone is a building labeled Commercial-East. A scale bar at the bottom right indicates a distance of 50 meters.

Site Perimeter Analysis



FIGURE 3.8



BREATHING TREE CONCEPT

BREATHING TREE CONCEPT 2

 Sub Station Service Element Locations

OPTIONS FOR SUBSTATION EXHAUST AND INTAKE SERVICES

FIGURE 3.9

The below grade substation will be cooled by the use of above-grade ventilation structures connected to fans located below the plaza to bring air into contact with electrical machinery. The separate air intake and exhaust structures have been located with the intake structure located at the south end of the plaza and the exhaust structure located adjacent to the commercial west building on the north side of the plaza. Several options, illustrated here, have been explored for the free standing intake structure that will be located adjacent to the future residential building at the southeast corner of the plaza. Vertical circulation will also need to be considered as represented in the Breathing Tree concept 2.



1. BREATHING TREE CONCEPT

A preferred option is a single structure approximately 35 feet square and approximately 50 high and designed as a sculptural element. This concept of a “breathing tree” is designed with a perforated or latticed screen that allows for air flow and will feature internal lighting to provide a civic beacon at night.

2. CANAL PIERS CONCEPT

A second option references the historic canal with vertical “pilings” that surround the air intake structure and provide seating areas around the perimeter.

3. GALLERY / EXHIBIT CONCEPT

A third option divides the air intake into multiple vents thereby creating three objects that define smaller “urban rooms” and opportunities for interpretive elements or exhibitions within the larger plaza.

CENTER PLAZA VIEW LOOKING NORTH EAST

FIGURE 3.10



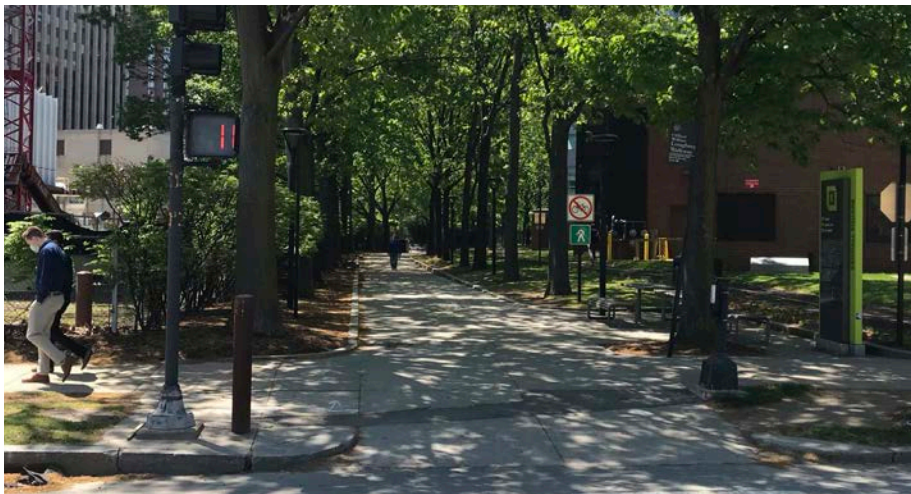


EAST / WEST CONNECTORS

LOUGHREY WALKWAY (SIXTH STREET CONNECTOR)

Concurrent with the completion of Commercial Building A, the applicant delivered improvements to the Sixth Street Connector Pathway by constructing separated pedestrian and bicycle facilities while maintaining and protecting the mature trees along the existing pathway. A new 10' wide bicycle path was constructed in the space between the existing 12.5' path and the buildings to the west. The completed bicycle path (Kittie Knox Bike Path) aligns with paths to the north on Sixth Street and to the south on Ames Street. The completed bike path was set at the existing grade to reduce impacts on the existing tree roots. The East / West Pedestrian Connectors cross the new bike path where a change of material, texture and color serves as a warning to pedestrians crossing the bike path.

At a few selected locations where the grading permits, seating was added between the pedestrian path and bicycle path with crushed stone as a permeable surface. New shade tolerant and drought resistant ground cover plantings were added between the trees and on the Eastern and Western edge of the paths. The lighting was updated with new LED cut off fixtures to enhance safety and the pedestrian experience at night, as well as improve energy efficiency and reduce maintenance costs. The new lights are located in the same location as the existing lights to avoid disturbing the existing tree roots with new conduit.



EAST / WEST PEDESTRIAN CONNECTIONS

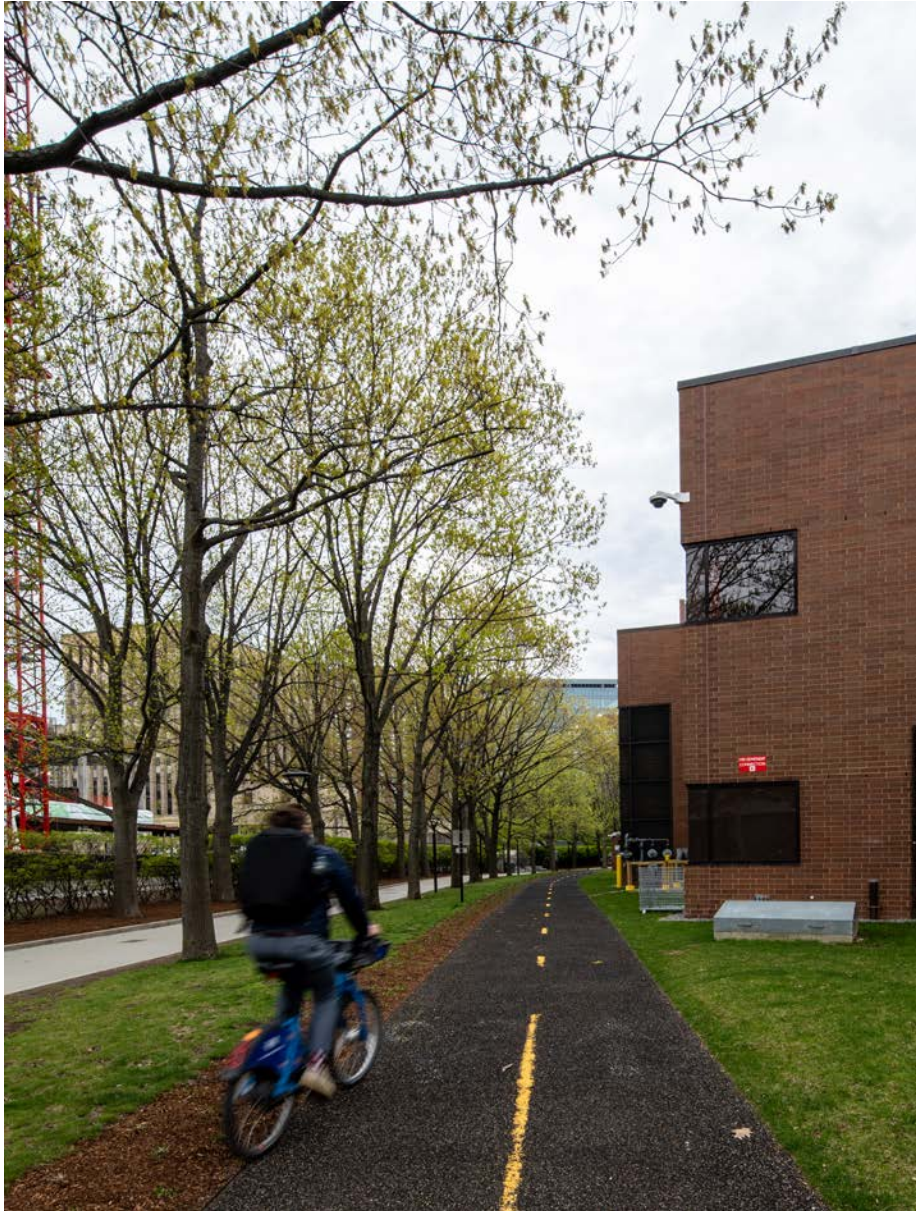
There are three East / West Pedestrian Connectors in the overall Project area. The Southwestern East West Pedestrian Connector was constructed in Phase 1, and creates a link between the West Service Drive and the sidewalk along Galileo Galilei Way.

The Northeastern East / West Pedestrian Connector will be designed to create a new connection between the Center Plaza, the Sixth Street Connector and the Volpe Parcel along its western edge. This promises to further enhance the intra-block porosity expected with the demolition of the Blue Garage, as well as build greater intra-parcel connectivity.

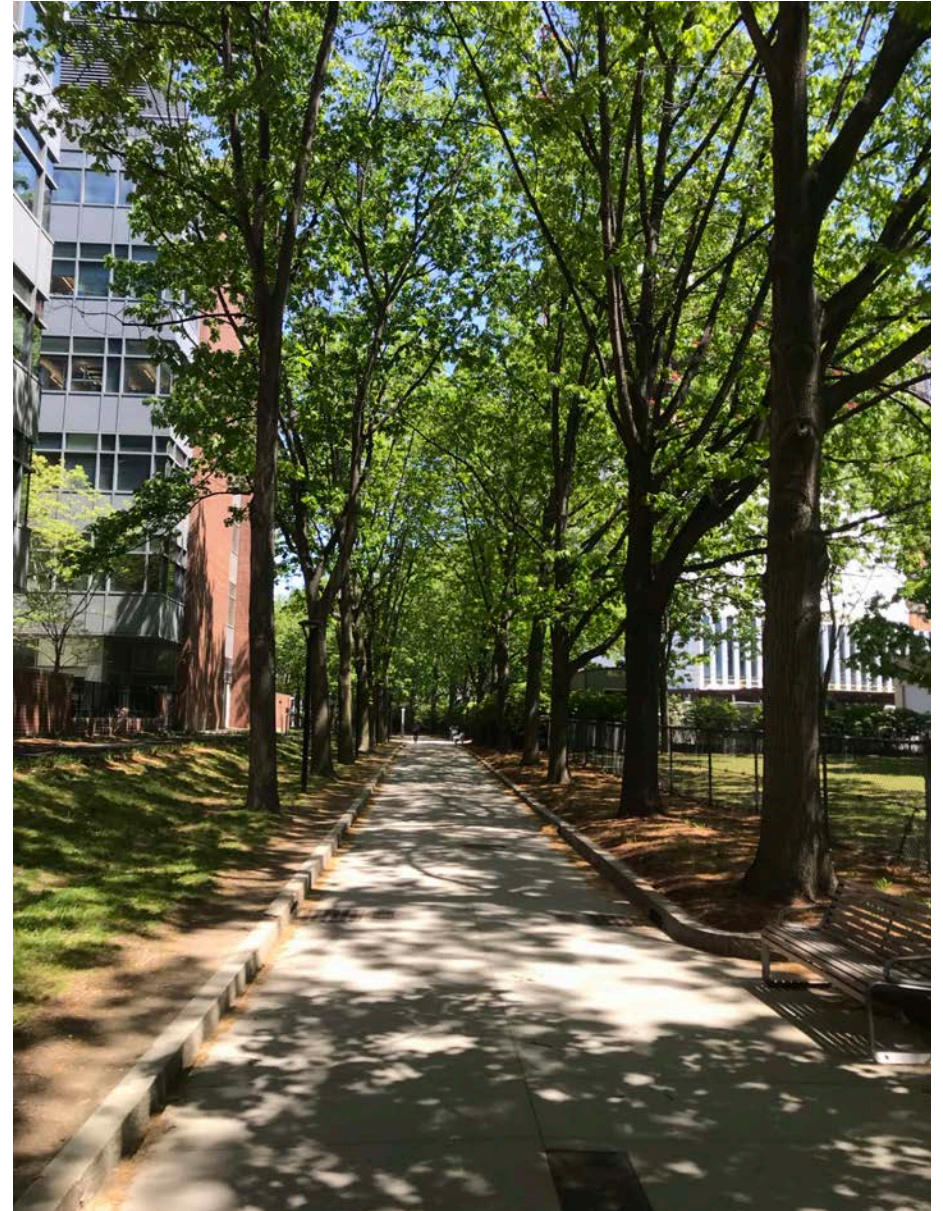
Commercial Building D is expected to open onto the enhanced Northeastern East/West Pedestrian Connector. Upon completion of Commercial Building D, it is anticipated that the proposed bicycle valet would be relocated to expanded facilities within the ground floor of Commercial Building D. The final bicycle valet operations would front the East / West Pedestrian Connector and the Sixth Street Connector. The Applicant also envisions that some active use/retail space in Commercial Building D could be flexible in configuration, and designed with a mutually-supporting bicycle valet and bicycle shop.

The Southeastern East / West Pedestrian Connector will be designed to accommodate short term bicycle parking for the Residential Building South to the west. If possible, linear rain gardens will be water receiving landscapes along the path as one part of the storm water strategy. Further the connector will have a broad and clearly marked pedestrian pathway to reinforce connection to Volpe.

Each of the East / West Pedestrian Connectors will have new LED lighting in cut off fixtures to enhance safety and the pedestrian experience at night, as well as improve energy efficiency and reduce maintenance costs.



LOOKING SOUTH ALONG THE (KITTIE KNOX BIKE PATH)



LOOKING NORTH ALONG THE LOUGHREY WALKWAY

3.2 PROPOSED OPEN SPACE - PLANS

CENTER PLAZA SITE PLAN

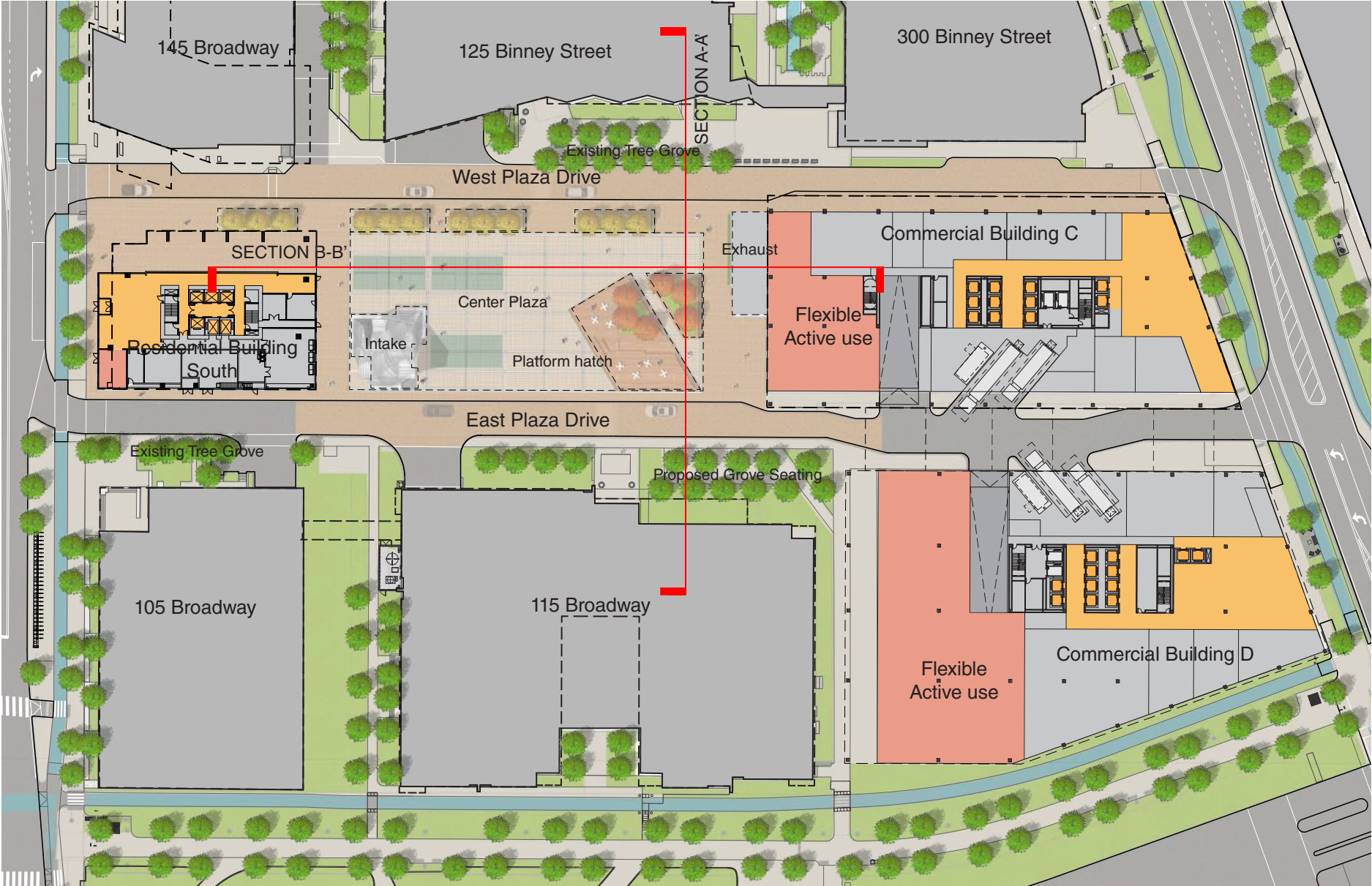


FIGURE 3.13

GROUND LEVEL

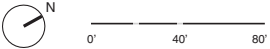
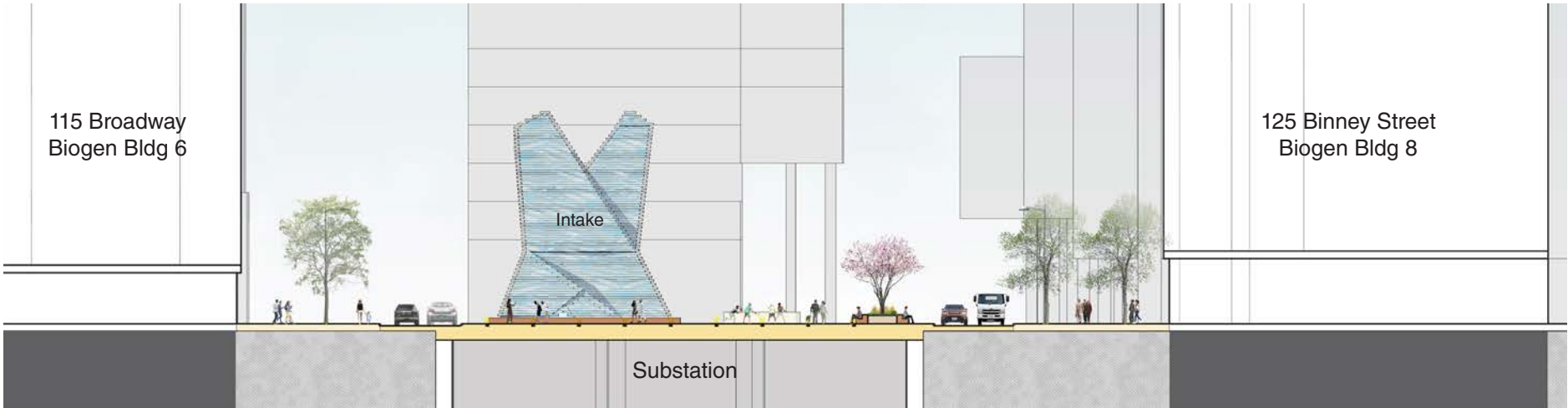


FIGURE 3.14

CENTER PLAZA SECTION A - A' FACING SOUTH



CENTER PLAZA SECTION B - B' FACING EAST

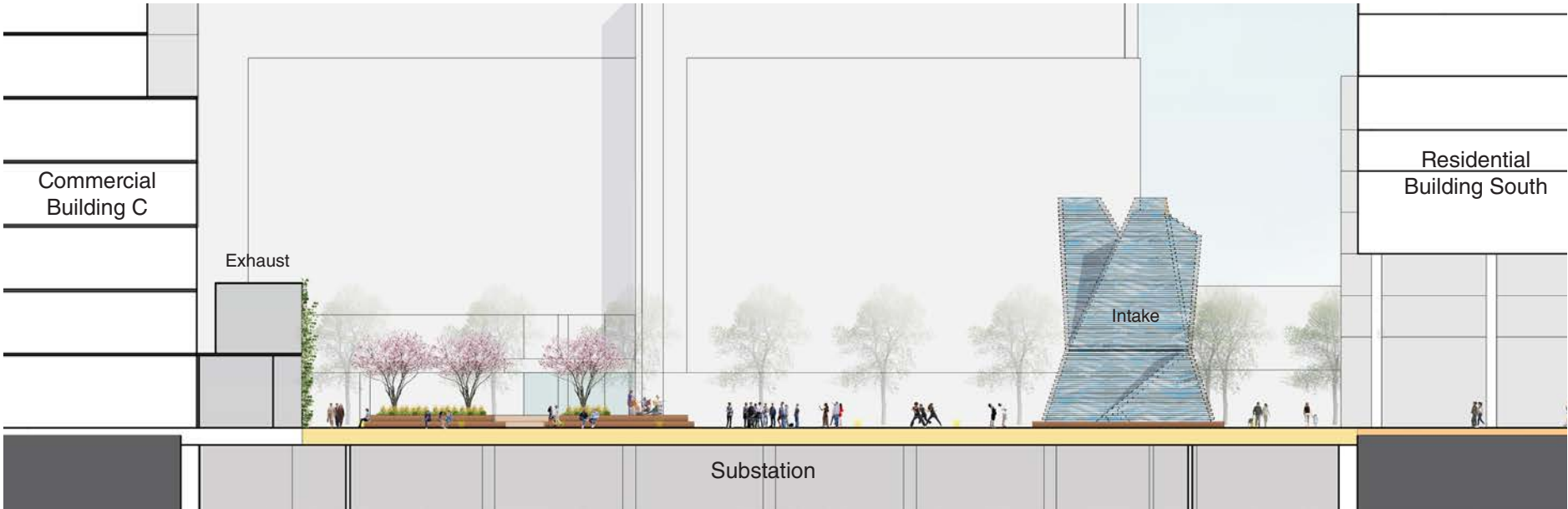


FIGURE 3.15

CENTER PLAZA SECTION B - B' FACING EAST

3.2 OPEN SPACE UNDER CONSTRUCTION - PLANS

KENDALL SQUARE ROOFTOP GARDEN



FIGURE 3.15

325 MAIN STREET (COMMERCIAL BUILDING B)

The streetscape along Main Street in front of the Project was very recently and thoughtfully redesigned and renovated by the City of Cambridge and includes street trees, traditional and sculptural benches, bike parking hitches and other street furniture as documented in the following pages. Per discussions with the Cambridge Department of Public Works, before beginning construction, Commercial Building B will remove and protect the street furniture and remove and replant the existing eight (8) street trees at another appropriate jointly-agreed upon location. At the Project's completion, the street furniture and existing paving will be restored to its current condition and eight (8) replacement street trees will be planted in kind on Main Street.

KENDALL SQUARE ROOFTOP GARDEN

The existing Kendall Roof Garden sits on the roof level of the Green Garage and is accessible to the public via elevators and stairwells on the Garage's north side along Broadway and the Garage's south side off Pioneer Way. With the redevelopment of 325 Main Street, the Project will deliver a new, highly visible and accessible pedestrian connection from Kendall Plaza up to the Kendall Roof Garden through a combination of publicly-accessible stairs, pathways and an elevator. This new feature will not only serve to connect two previously disconnected public spaces, but will also encourage increased public enjoyment of the Kendall Roof Garden. As shown in the following plans and sections, the roof garden has been completely redesigned and reimagined to accommodate a wide range of programming through the day and into the evening hours during the warmer seasons. The new landscape design will functionally divide the roof garden into three general areas: a "living room" area that includes a large digital screen and stage; a kitchen and dining area equipped with the proper infrastructure to serve and prepare food and drinks for large gatherings; and a lawn area with a multi-purpose sports and recreation court.

KENDALL PLAZA

The existing Kendall Plaza was most recently renovated in 2012 and primarily serves as a major circulation element through and around Kendall Square, a connection point between MIT and the surrounding neighborhood and an access point to the MBTA Red Line Outbound Headhouse. The plaza is flanked by retail along its east side, future retail and the MBTA Headhouse on its west side, the Marriott hotel lobby to the North, and Main Street to the South. In addition to serving as a public gathering space for Farmer's markets and other community events, Kendall Plaza features passive green space as well as movable seating, promoting enjoyable public interaction and community engagement. With the redevelopment of 325 Main Street, the Project will significantly upgrade the public experience in Kendall Plaza through a revitalized two-story retail edge along its west side as well as aesthetic and minor functional upgrades to the existing MBTA Outbound Headhouse. Additionally, the Project will create a new pedestrian connection from Kendall Plaza to the Kendall Roof Garden, facilitating public access and enhancing visual and physical connections between these two important public spaces and the visual activation of Kendall Plaza. These improvements will all serve to augment Kendall Plaza's role as a central hub of activity, neighborhood connector and transportation access point, further reinforcing Kendall Plaza as the center of Kendall Square.

3.2.1 PUBLIC PROGRAMMING

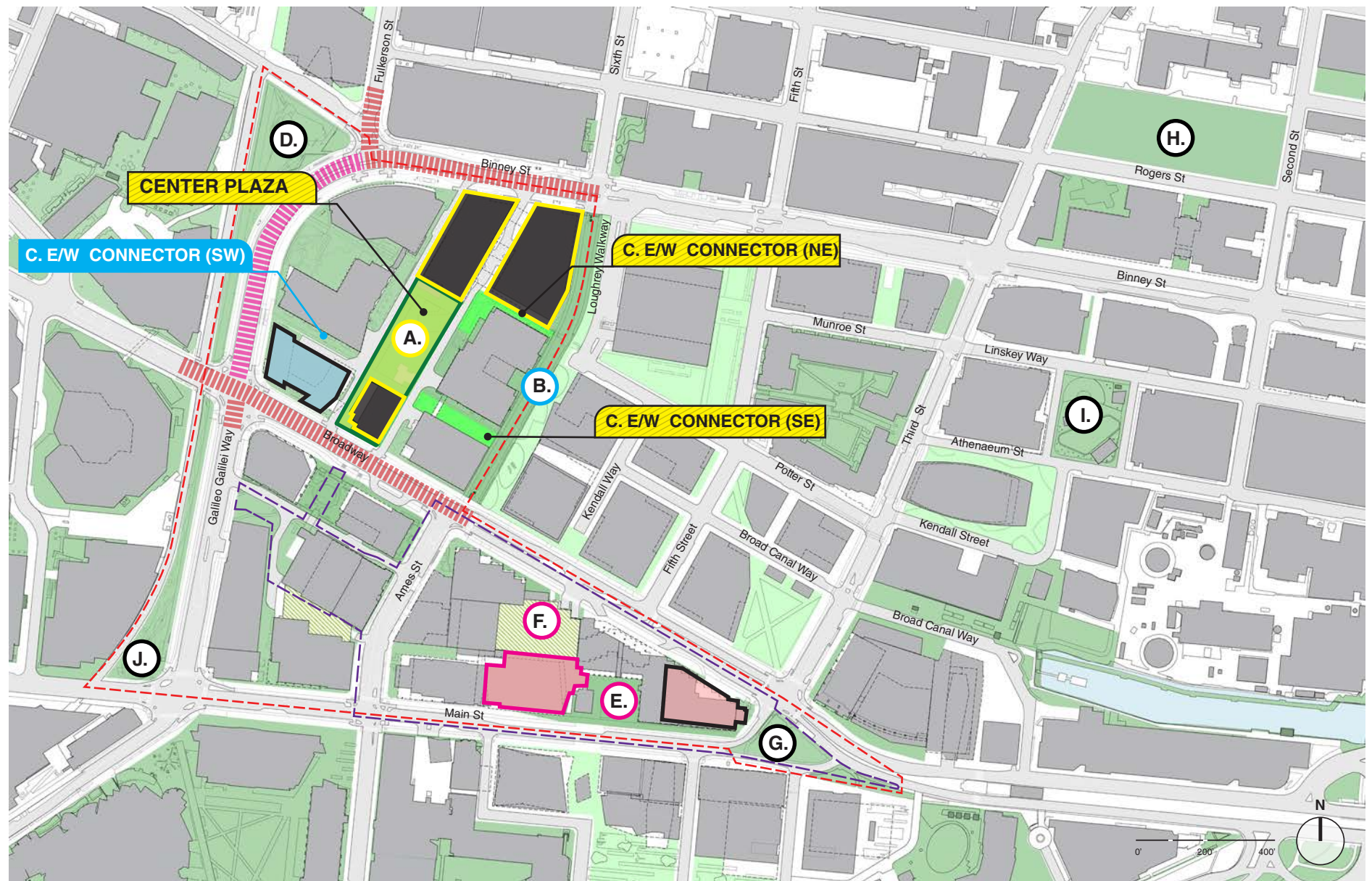
MXD DISTRICT PUBLIC PROGRAMMING

Programming at the existing, recently renovated Kendall Plaza will be enhanced primarily through the re-conception of its western, edge containing more direct retail frontage, an open, vertical connection to the Kendall Roof Garden and aesthetic improvements to the MBTA Outbound Headhouse. Programming opportunities will complement the current programming initiatives that are underway in the MXD District at the Kendall Plaza on Main Street and the Kendall Roof Garden above the Green Garage. Programming in these spaces is focused on creating engaging opportunities for all communities including office workers, residents, students, visitors within Kendall Square to connect and interact. Ongoing events on Kendall Plaza include a seasonal farmer's market on Kendall Plaza, concerts with both Cambridge institution Club Passim and Berklee College of Music, and participatory community art projects and performances with the Community Art Center and the Multicultural Arts Center. In addition, temporary public art installations are sourced annually for the Plaza and include a sidewalk mural in collaboration with the Cambridge Science Festival this spring, as well as an upcoming collaboration with local non-profit Now + There. Programming on the Kendall Roof Garden includes free fitness programming, cooking demonstrations and tastings, urban gardening workshops and available lawn games. Both spaces are programmed with cushions for easy, portable seating and participate in programs through the KSA, including hosting libraries as part of the Kendall Reads promotion. Partnerships with local non-profits enhance activities in these spaces and provide valuable exposure for local community groups and an opportunity for office customers to participate in the community around them.

Consistent with the stated vision for Center Plaza, programming will include the set up and take down of seasonally appropriate active use components which may include pickle ball, basketball, bocce courts, kids play structure, curling (winter), ice sculptures, movable seating, performance infrastructure etc. The nature of what activity is desirable will change but Center Plaza will be designed with defined edges and open central canvas and actively managed in a way that allows for the inevitable evolution and community responsiveness with the underlying goal of activity. To foster equity and inclusion in public programming within these spaces, the Applicant also intends to pursue proper training for maintenance, security, and property management teams, ensuring that these spaces feel welcoming to all.

PUBLIC PROGRAMMING ELEMENTS

		Potential day activity	Potential night activity
A	CENTER PLAZA		
	Temporary Public Art Installations	X	X
	Outdoor Seating (Individual, Small and Larger Groups)	X	X
	Summer Concerts and Performances	X	X
	Public Markets	X	
	Outdoor dining/ movable tables and chairs	X	X
	Seasonal Sport and Games	X	X
	Fountain as Potential Play Amenity	X	
B	LOUGHREY WALKWAY		
	Outdoor Seating (Collaboration Space)	X	
	Kittie Knox Bike Path		
C	E/W-CONNECTORS		
	Outdoor seating (Individual, Small Groups)	X	X
	Bike Parking		
D	BINNEY STREET PARK		
	Dog Run / Seating Bike Path	X	
E	KENDALL PLAZA		
	Outdoor seating (Individual, Small and Larger Groups)	X	X
	Summer Concerts	X	X
	Public Markets	X	
	Temporary Public Art Installations	X	X
	Outdoor dining / Movable table and chairs	X	X
	Community Partner Programming	X	X
F	KENDALL SQUARE ROOFTOP GARDEN		
	Outdoor Seating (Individual, Small Groups)	X	
	Urban Gardening Workshops	X	
	Yoga / Quiet Oasis Space / Reading / Meditation	X	
	Public / Private Programmed Events	X	X
G	GALAXY PARK (POINT PARK)		
	Outdoor Seating and Gathering / Sculpture Park	X	X
H	ROGERS STREET PARK		
	Play Fiend / Event Area / Lawn Slope / Sledding Hill	X	
	Dog Run / Pergola / Water Play/ Sand Play	X	
I	HENRI A. TERMEER SQUARE		
	Outdoor Seating / Play	X	X
J	GRAND JUNCTION		
	Outdoor seating (Individual, Small Groups)	X	X
	Outdoor Seating (Collaboration Space) / Bike Path	X	X



3.3 PEDESTRIAN ACCESS AND CIRCULATION

The proposed enhancements to the pedestrian network and open spaces between Broadway and Binney Street are planned to logically extend to adjacent areas in East Cambridge.

The improvements completed to the Sixth Street Connector during Phase 1 for pedestrians and bicyclists are an extension of pedestrian and bicycle paths on Ames Street to the south and Sixth Street to the north. New active uses at the ground floor of the completed Commercial Building A and the future Residential South Building that front the Broadway streetscape should have a positive impact on east-west pedestrian use. The expanded streetscape at Commercial Building A will accommodate this new pedestrian volume. This east-west pedestrian route along the north side of Broadway could also potentially be further enhanced in the future, if and when 105 Broadway redevelops, which could include an expanded sidewalk and streetscape zone, as well as active ground floor uses. Further eastward, the future redevelopment of the Volpe site could continue this activated street edge on the north side of Broadway.

As a component of the Commercial Building B to be completed in Q2 of 2022, the Project will deliver a new, publicly-accessible and highly visible vertical connection from Kendall Plaza to the Kendall Roof Garden, facilitating access and encouraging increased public enjoyment of these open spaces. In addition, the existing connection from Ames Street to Kendall Plaza (via Pioneer Way and the Commercial Building B ground floor) will be reimaged to create a dynamic and active pedestrian path connected to vibrant retailers.

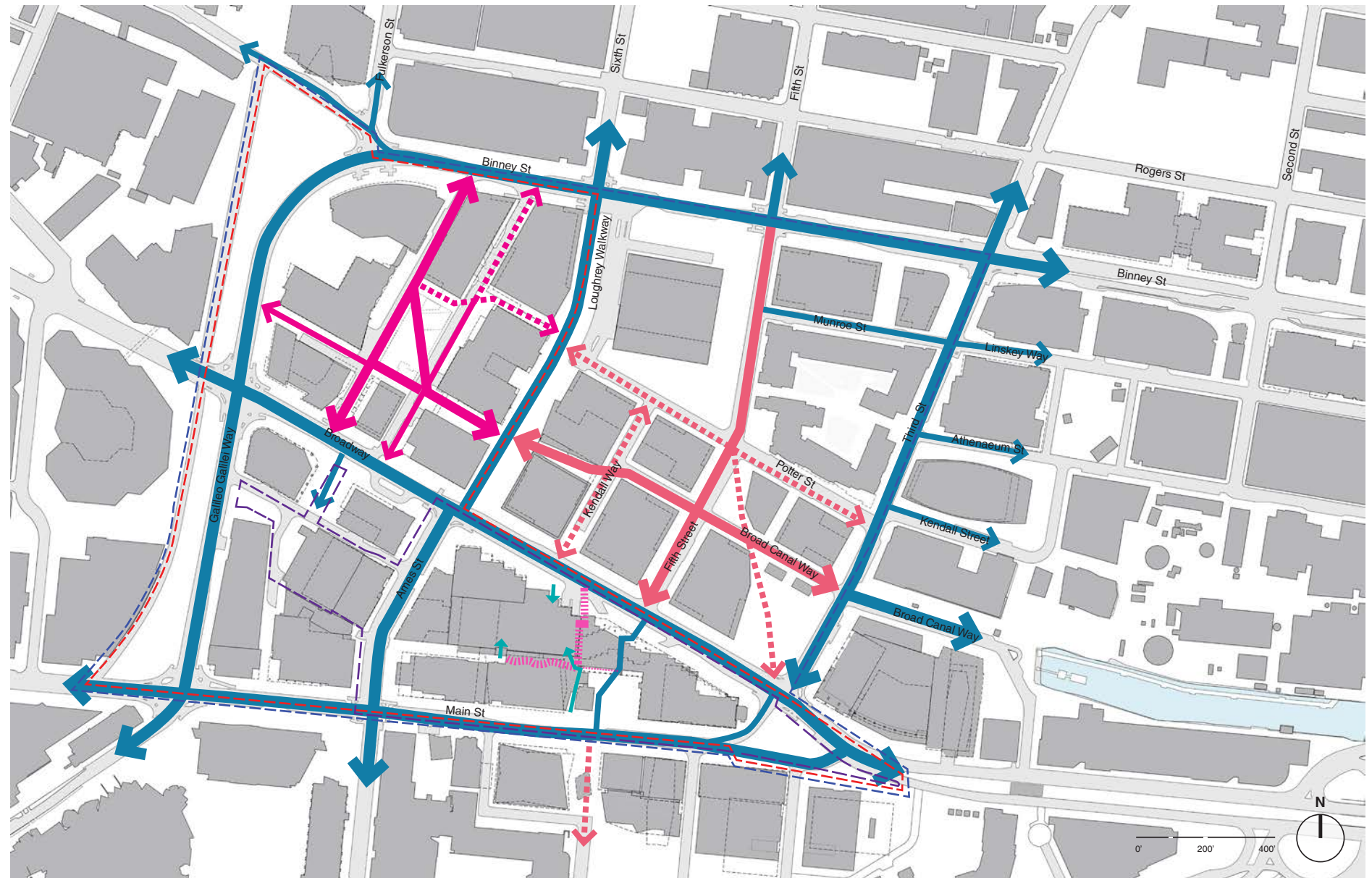
At the heart of the North Parcel lies the anticipated construction of Center Plaza, which will contribute to a vibrant public realm, foster new cross-block connections and promote pedestrian connectivity through the North Parcel, and begin to facilitate the integration of the Volpe site to the MXD District and East Cambridge.

Center Plaza will have defined east-west desire lines supported by flush paving conditions and defined ground marking to clearly allow for uninhibited circulation for those willing to pass through to another destination in the MXD or broader surrounding neighborhood. However, the space is large enough to function as both a circulation and a gathering space. While the edges of Center plaza will be well defined by clearly marked East West circulation path to the south, multi-use Plaza Drives to the East and West, a bike valet and potential future retail to the North. The Center Plaza will remain a flexible canvas for programed activity, games, flexible seating performance and gathering.



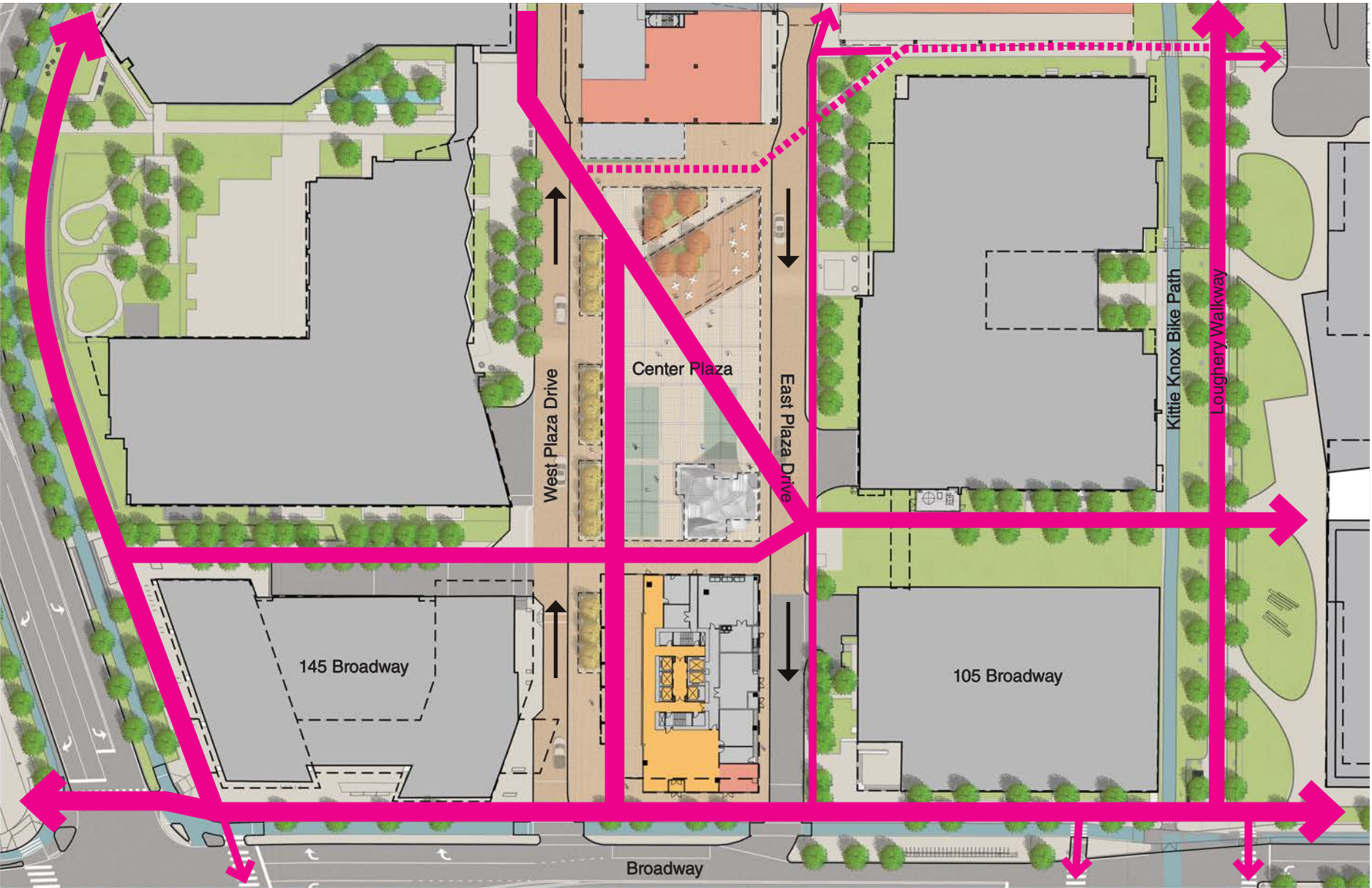
CYCLE TRACK ON BROADWAY

FIGURE 3.8



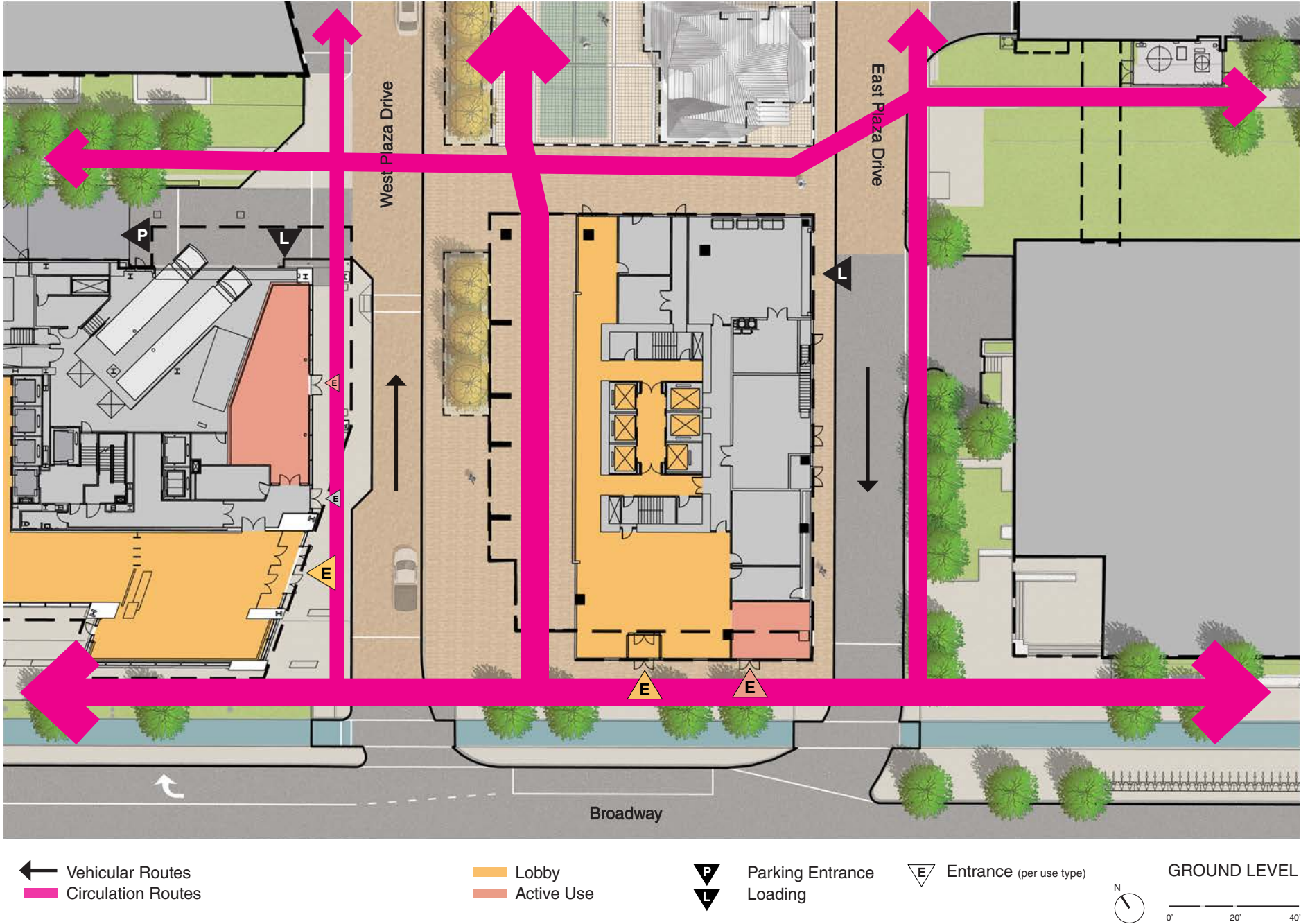
- | | | | |
|--------------------------------|--|-----------------------------|--------------------------|
| Existing Primary Circulation | Proposed Primary Circulation by others | Internal Circulation Route | MXD Boundary |
| Existing Secondary Circulation | Proposed Secondary Circulation by others | Potential Circulation Route | KSURP Boundary |
| Proposed Primary Circulation | | Vertical Circulation | Ames Street District ASD |
| Proposed Secondary Circulation | | | |

(SEE ALSO SECTION 5 FIG 5.2, 5.3, 5.4)



← Vehicular Routes
→ Circulation Routes

GROUND LEVEL
N
0' 40' 80'



3.4 STREETSCAPE / LANDSCAPE IMPROVEMENTS

STREETSCAPES

COMMERCIAL BUILDING A - STREETSCAPE ON BROADWAY AND GALILEO GALILEI WAY

The planting zones along Broadway are aligned in front of Commercial Building A to extend the continuity of the pedestrian walking zones as well as planting along Broadway. Short term bicycle parking is located along the Broadway streetscape framed with low planting. The eastern facade of Commercial Building A is splayed to open up the corner along Broadway at the intersection of the West Service Drive.

EAST AND WEST PLAZA DRIVES (SERVICE DRIVES)

The existing service streets flanking the Blue Garage are designed solely as circulation and loading paths defined by traditional curb heights, narrow East West crossing opportunities and standard paving. The relocation of the Blue Garage and the Construction of the Center Plaza presents the opportunity to modify the character of the service drives to emphasize a pedestrian character.

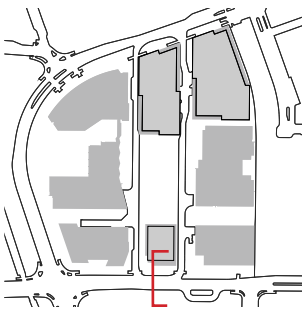
To accommodate the complete reconfiguration of the parcel from a centrally parked commercial zone to porous multi use block, the character of the service drives will emphasize a pedestrian character through the use of flush grades, broad crosswalks, traffic calming sidewalk expansions (see NE side of 145 Broadway) and paving material that clearly indicates a multi modal condition. Based on the heavily trafficked Kitty Knox Bike / Loughrey Walkway to the East of the site, the West Service drive has been identified as the primary service drive to emphasize North South pedestrian circulation. The service drives will be designed to allow for critical and existing utility uses including lay-by space for buses and delivery vehicles, ride share vehicles and automobile circulation.

COMMERCIAL BUILDING B - STREETSCAPE ON MAIN STREET

The existing streetscape at 325 Main Street consists of sidewalks, street trees, seating, bike racks, and other street furniture along Main Street to the South and the MBTA Red Line Outbound Headhouse and some limited retail frontage to the West. The new active ground and second floor retail uses along with the new connector from Kendall Plaza to the Kendall Roof Garden will contribute to both the visual and physical activity of the streetscape, create multi-level public open space, and further activate the existing Kendall Plaza. With the Project, the street edge and existing plantings along Main Street will be revitalized, but without material proposed changes to the character of the existing streetscape, which was recently reimagined and reconstructed by the City of Cambridge.

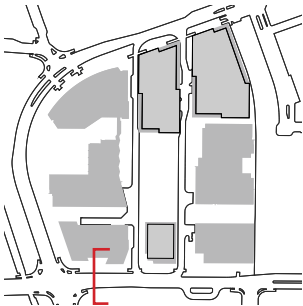
STREET SECTION AT 135 BROADWAY

FIGURE 3.20A



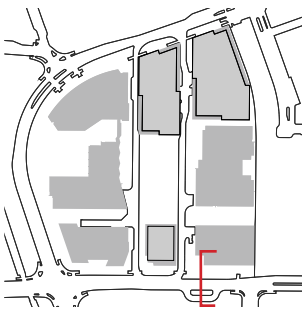
STREET SECTION AT 145 BROADWAY

FIGURE 3.20B



STREET SECTION AT 105 BROADWAY

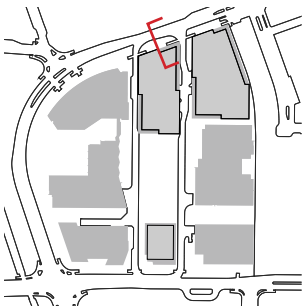
FIGURE 3.20C



3.4 STREETSCAPE / LANDSCAPE IMPROVEMENTS

STREET SECTION AT 290 BINNEY

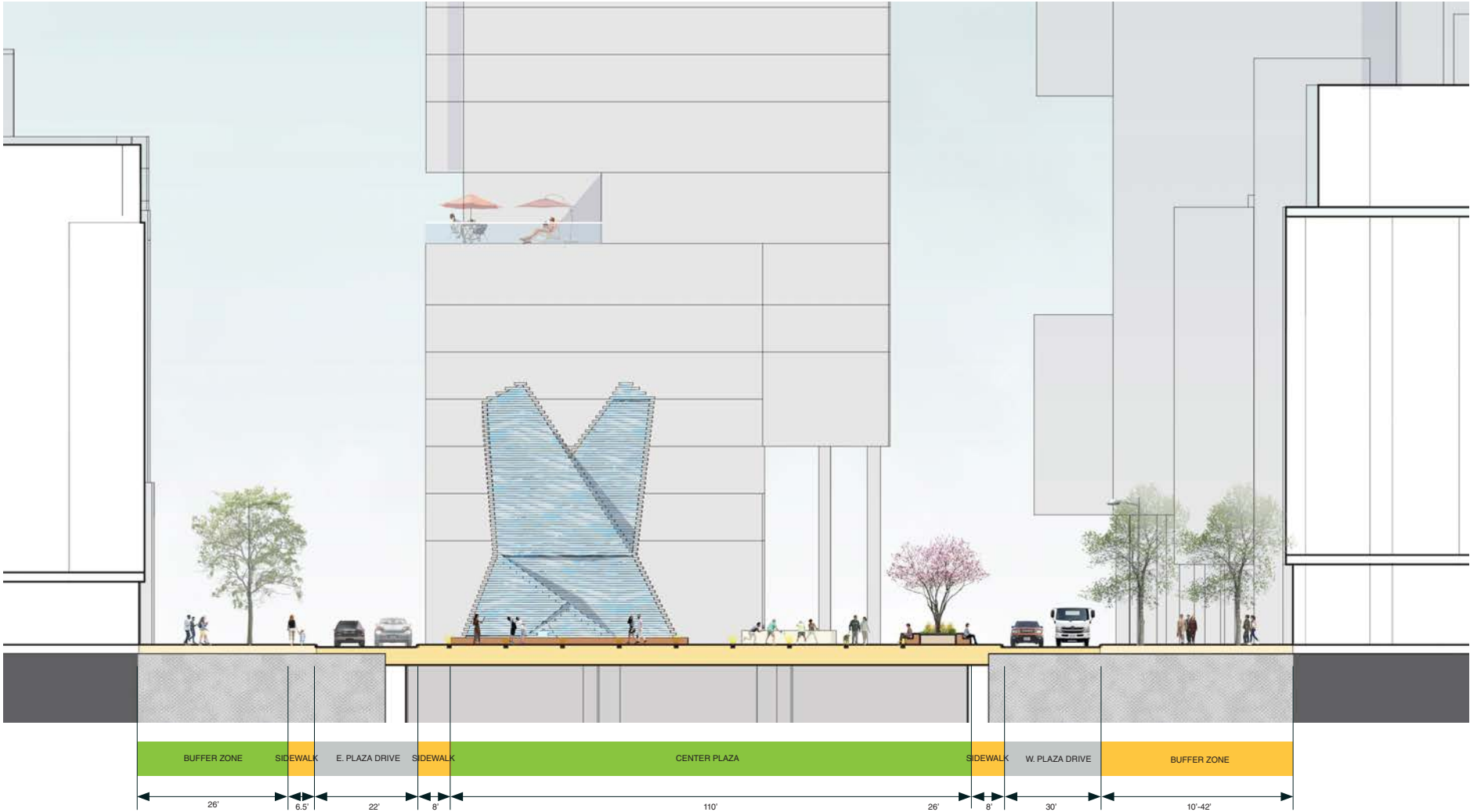
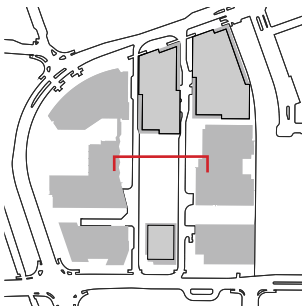
FIGURE 3.20D



FOR ILLUSTRATIVE PURPOSES ONLY AND SUBJECT TO FUTURE COORDINATION WITH THE CITY

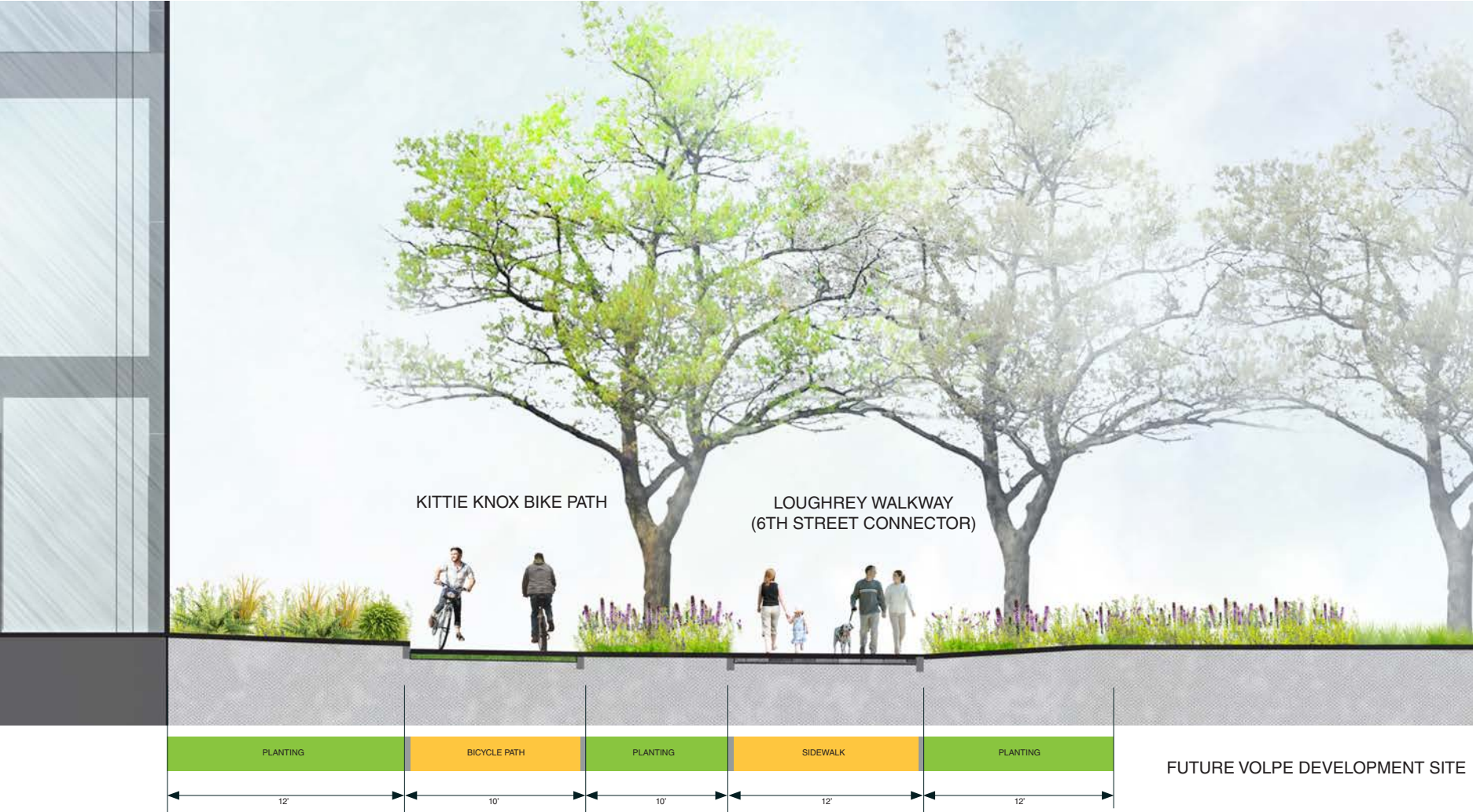
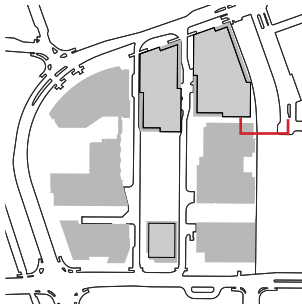
SECTION THROUGH EAST AND WEST PLAZA DRIVE

FIGURE 3.20E



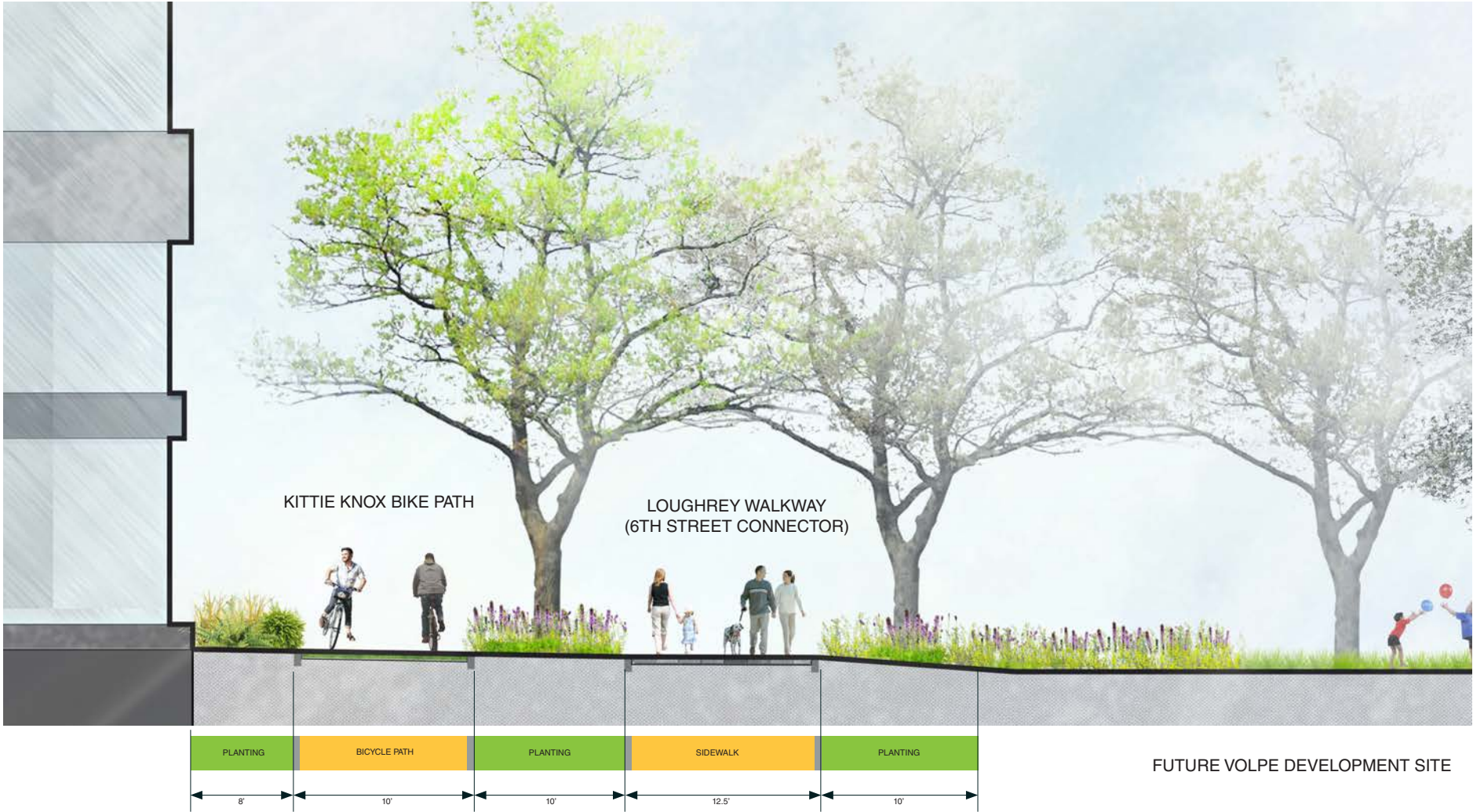
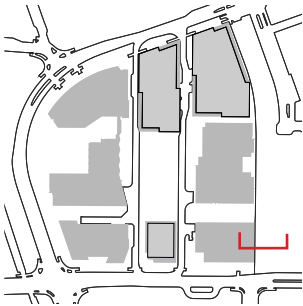
6TH STREET CONNECTOR AT 115 BROADWAY (BIOGEN BLDG 6)

FIGURE 3.20F



6TH STREET CONNECTOR AND 105 BROADWAY (BIOGEN BLDG 10)

FIGURE 3.11G



3.5 WAYFINDING

KENDALL SQUARE IDENTITY BRANDING AND WAYFINDING

The Kendall Square area is in the midst of implementing a new civic wayfinding system, intended to clarify navigation around the area and to enhance its identity as a vibrant, innovative community. This effort, led by the Kendall Square Association (KSA) in partnership with the CRA, is a welcome addition to the community, which has traditionally lacked a comprehensive, district-wide system. Simultaneously, other signage projects, in various stages of completion, create new visual layers and visual complexity. Notably the Biogen campus is revising building and amenity identification, with new freestanding signs, directionals, and building graphics (See image B - Biogen Omloop). Surrounding properties, collectively known as Kendall Center, are likewise in the process of revising building identity, tenant signage, and directories. Visible elements, such as large-scale parking structure graphics, bring more visual stimulation. (See image A - Blue Garage)

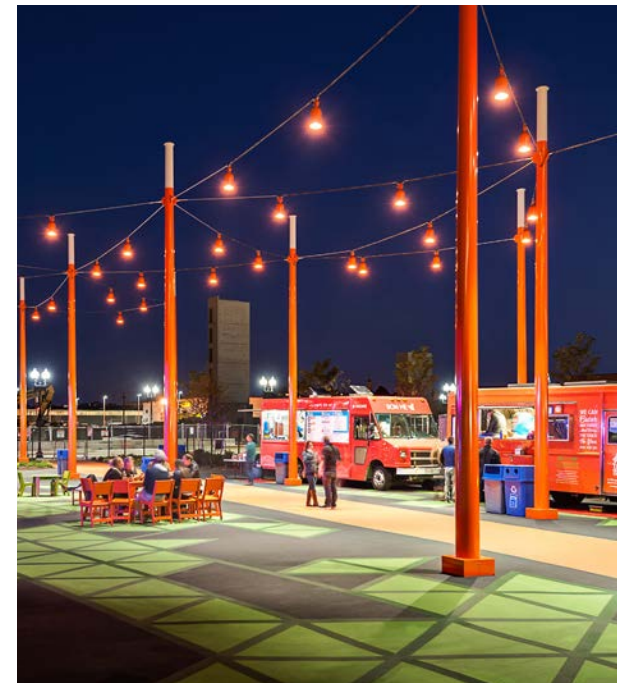
In this context, the Concept Plan will continue to be sensitive to existing and ongoing efforts. As the project develops, it will align with the visual language and messaging of district-wide wayfinding, while enabling individual buildings and tenants to express their identity. The Concept Plan is an opportunity to not only align with, but also to enhance, district-scale wayfinding. Taking visual cues from the KSA system, the Project can welcome visitors to public spaces clearly marking parks and privately-owned park space (POPS) and enliven the 6th Avenue Connector with environmental graphics. There are additional opportunities for storytelling and interpretive elements that introduce pedestrians to the unique culture of the Kendall Square community while maintaining a sense of continuity within the district. (See Image C-Lawn On D)



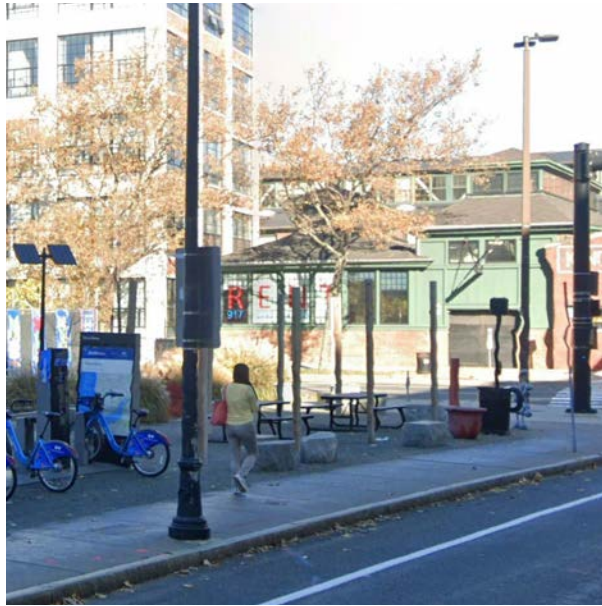
A. SIGN POST IDENTIFICATION



B. BIOGEN OMLOOP



C. LAWN ON D



D. FLEXIBLE CIVIC SPACES



F. RETAIL DIRECTORY



G. ART AS LANDMARK



E. PUBLIC BOOK SHARE



H. CUSTOMIZABLE REALTIME COMMUNITY MESSAGING SIGNS (SOOFA SIGNS)



I. PAINTED MURALS FOR BRAND AND GARAGE IDENTIFICATION

3.5 WAYFINDING

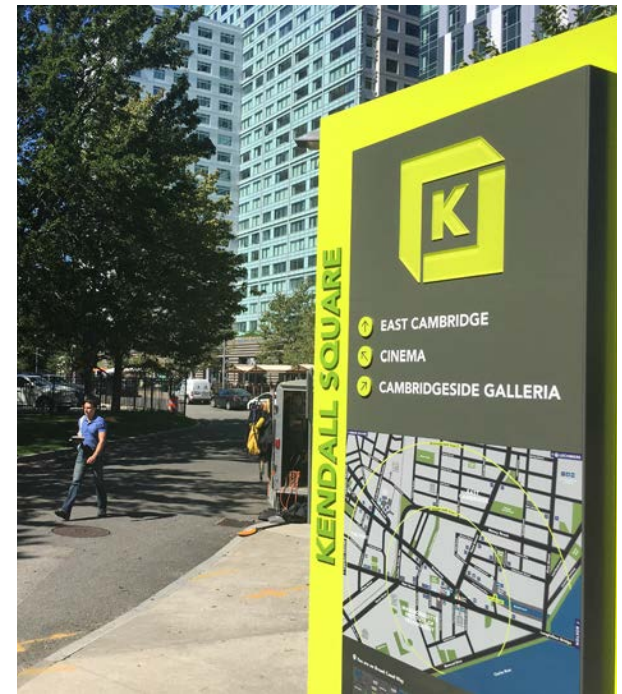
KENDALL SQUARE IDENTITY BRANDING AND WAYFINDING

Figure 3.13 represents an inventory of proposed and existing wayfinding signage in the district. This will provide the basis for recommendations to enhance, remove or consolidate signage. Any new signage will be sensitive to existing visual and urban cues - from streetscape elements to building signs.

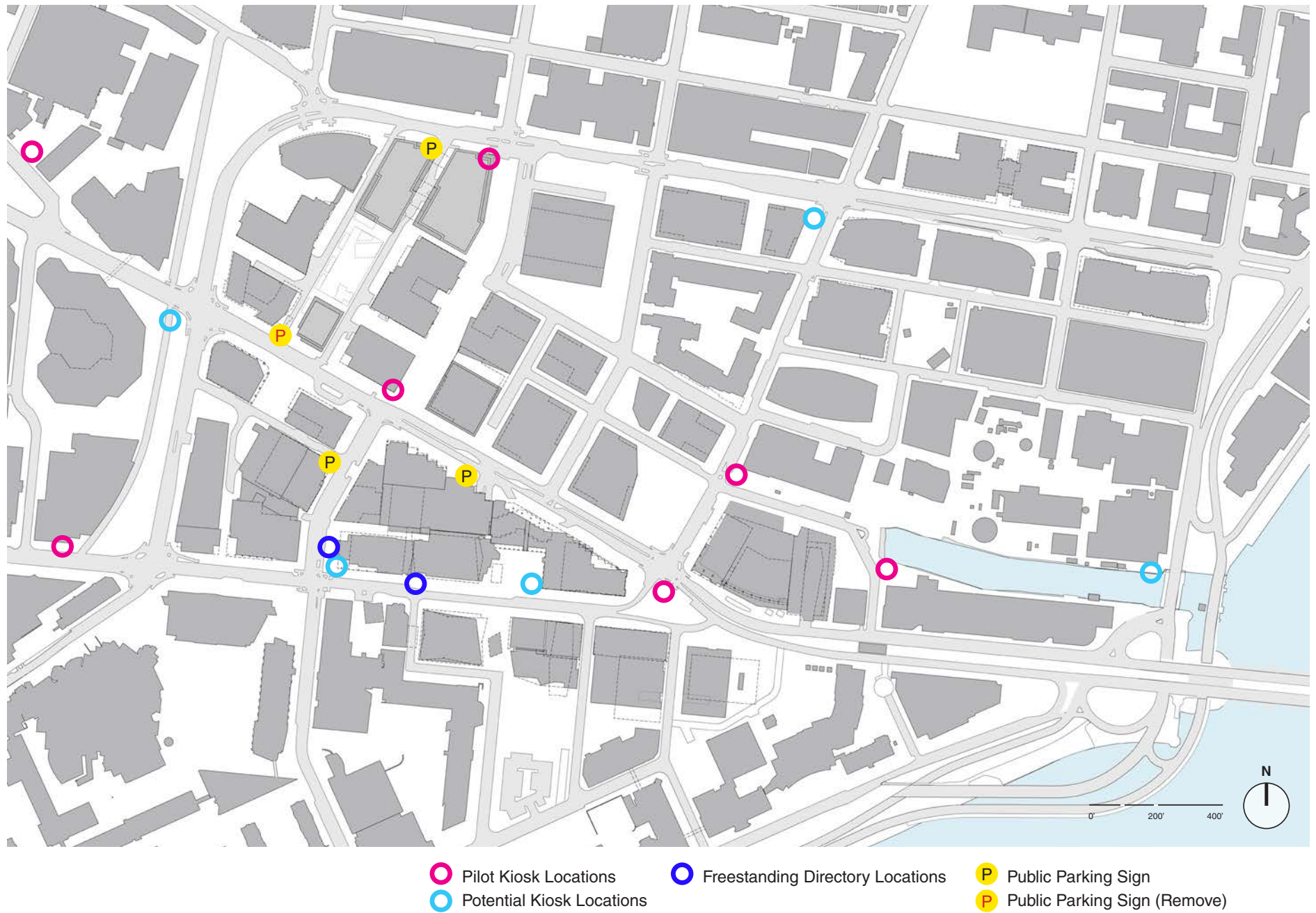
An established set of sign standards and visual guidelines, enable building tenants to maintain consistency throughout the system. As tenants implement components of the system, the guidelines can contribute to overall aesthetic, including both stylistic and material aspects, such as the Kendall Square Association signage (See image A - KSA District Signage). Such a system may also incorporate requirements for individual tenants to maintain and update relevant components, ensuring that the system remains current and functional.

This system is meant to function within established review and approval processes, with oversight from the CRA and KSA. Its intent is to enhance current wayfinding and contribute to a strong, coherent sense of place in Kendall Square.

The Project will also work to implement privately-owned public space (POPS) signage. The CRA and the Cambridge Community Development Department are working together on POPS branding to establish universal citywide signage for privately owned, but publicly beneficial open spaces. These signs will help all residents, employees, and visitors know that a park space is welcoming and open for them to enjoy.



A. KSA DISTRICT SIGNAGE



3.6 TREE MITIGATION AND PROTECTION PLAN

Assessment Overview

The assessment of existing trees on the project site- MXD Parcels 2 and 4, the adjacent Loughrey Walkway (also known as 6th Street Connector), was conducted by Bartlett Tree Experts. Bartlett assessed the conditions of the said trees based on the species, their growing conditions, and the current constraints impacting the trees. The following points were used in considering the conditions and the future viability of the trees on the site:

1. Life span of species
2. Constraints on soil depth
3. Soil compaction
4. Tree canopy competition
5. Insect damage
6. Impact of Projects' design intent

Additional information regarding diameter at breast height (DBH) of trees are referenced in Figures 3.15.

Loughrey Walkway (6th Street Connector)

The red oaks (*Quercus rubra*) along this portion of the site were assessed to be in good condition. The new Kittie Knox Bike Path installed along this corridor was built using flexible porous pavement with an underdrain collection system that drains to leaching basins to promote infiltration of rainwater and maintain aeration of the soils around the existing trees

Bartlett tree experts have reviewed the condition of these trees and determined that they are well established and should adapt to the additional shading created as a result of this project.

Additional information regarding the management of the trees within the 6th Street Connector are located in Figures 3.12, 3.15 and 3.16.

Broadway

The little-leaf lindens (*Tilia cordata*) along Broadway were identified to be in poor condition due to their limited root zone and soil compaction. Five of these trees were removed during the construction of 145 Broadway. The remaining ten of these trees were removed for the construction of the new drainage culvert along the north side of Broadway. Four new honey locusts (*Gleditsia triacanthos*) will be planted in front of 145 Broadway once the culvert work is completed. Four additional honey locusts will be planted in front of 105 Broadway during the construction of the proposed cycle tracks on Broadway.

Galileo Galilei Way

The existing Sycamore (*Platanus occidentalis*) have been protected. An additional sycamore and red oaks have been planted at the corner of Broadway and Galileo Galilei Way. These trees have been identified as being in good condition.

Binney Street

There are six Sycamore (*Platanus occidentalis*) to the north of the Commercial East and West (Tracts IV and I) that are considered to be in good condition.

Tract I

There are four Japanese maple (*Acer japonicum*), seven Cherry (*Prunus serrulata*), three Honey locust (*Gleditsia triacanthos*), and seven Zelkova (*Zelkova serrata*) on this parcel, which are all considered to be in good condition.

Broadway Park

The Japanese Elms (*Zelkova Serrata*) within the existing Broadway Park, in front of the North Garage, were evaluated to be in fair condition, though several of the trees have become constrained due to canopy competition amongst other existing Japanese elm in the area.

Binney Park

The trees to the north of the Blue Garage consist of red maple (*Acer rubrum*) and Austrian pine (*Pinus nigra*). These trees are considered to be in poor condition.

Easement C (Existing Tract II)

The birch trees (*Betula*) north of Commercial Building A were evaluated to be in poor condition. Due to birch trees being an early successional tree species, the trees had lived past their life expectancy. These trees were removed during the construction of 145 Broadway and have been replaced with red oaks (*Quercus rubra*).

Blue Garage

The Red Maples (*Acer rubrum*) and Zelkova serrata along the North Garage were evaluated to be in poor condition, suffering from limited root zone and soil compaction. Due to the red maple trees being an early successional tree species, these trees have lived past their life expectancy.

Main Street

The American Elms (*Ulmus americana*) along Main Street were recently planted as part of a streetscape renovation. Installed tree support systems appear to be supporting the new trees successfully, but trees are still being established. These trees will be removed and relocated permanently at the beginning of construction and replaced in kind with new trees at the end of construction with similar sized American Elms including the same tree support system, structural soil and irrigation.

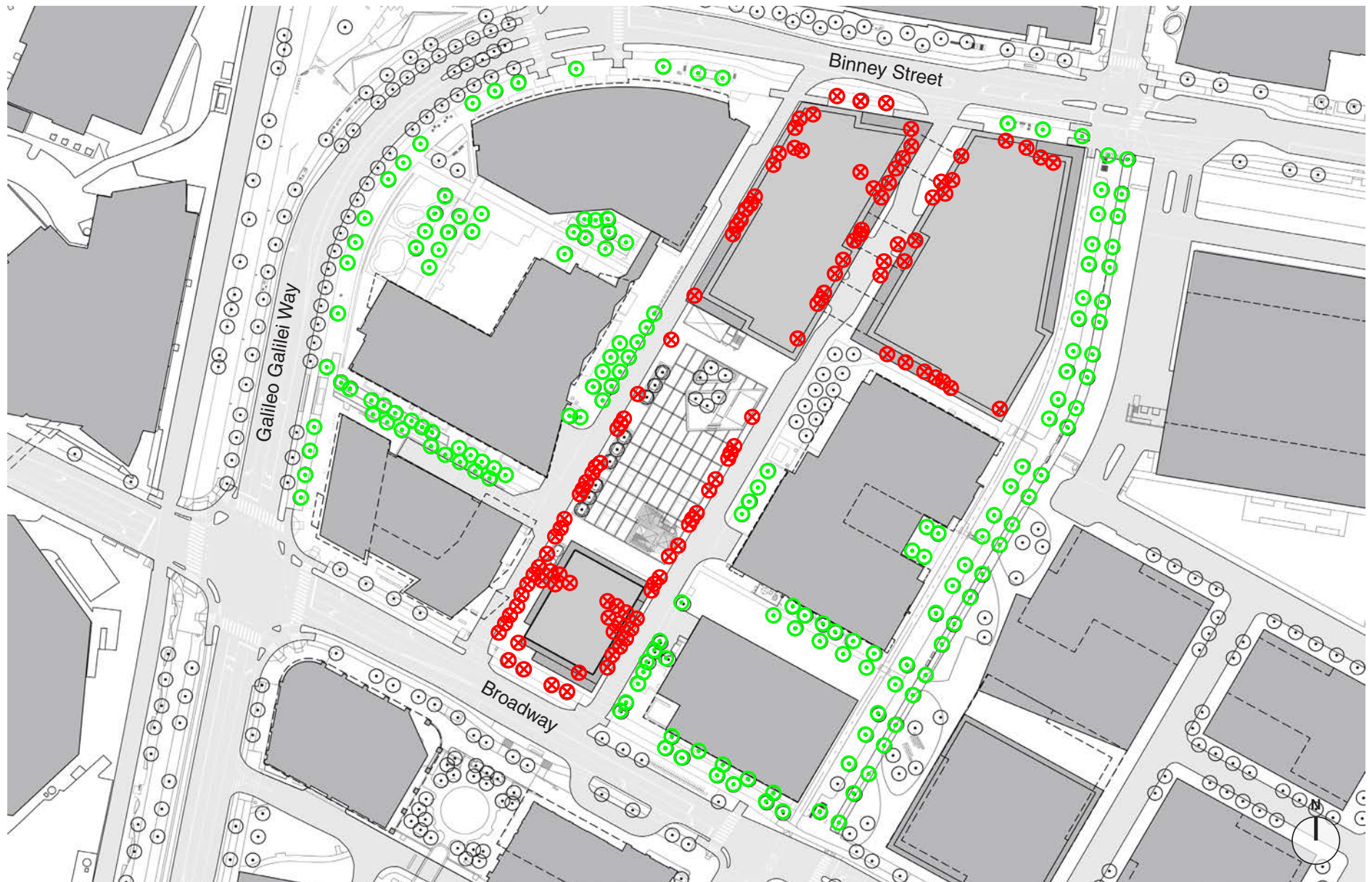
Proposed Trees – General Strategy

Trees being placed in the proposed landscape will be positioned and located for optimal growing conditions. Larger tree spacing between trees, maximum soil volumes and depth will be employed as part of the design solution. At constrained soil conditions, structural soil will be deemed suitable for use.

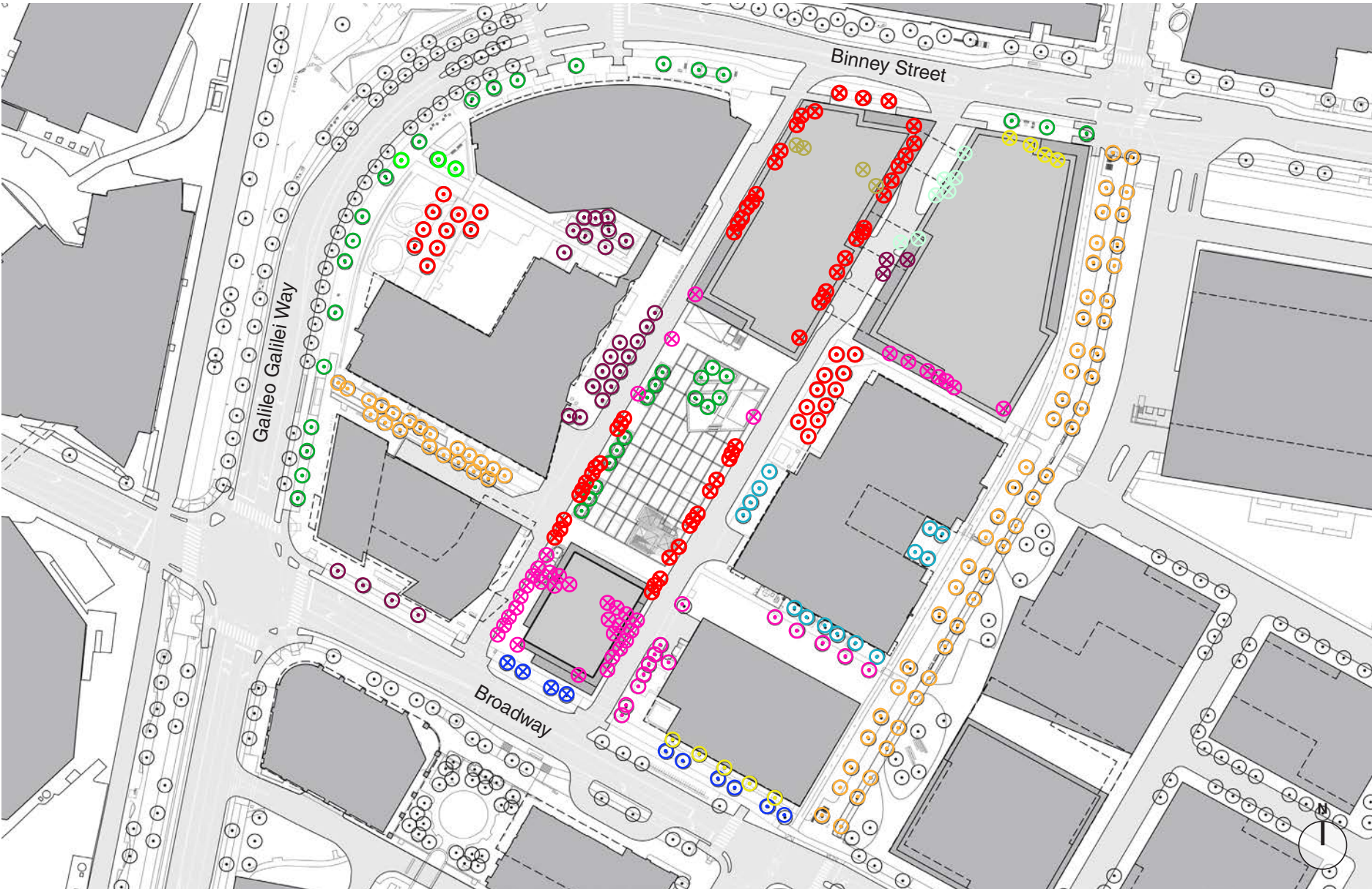
3.6 TREE MITIGATION AND PROTECTION PLAN

TREE PROTECTION PLAN

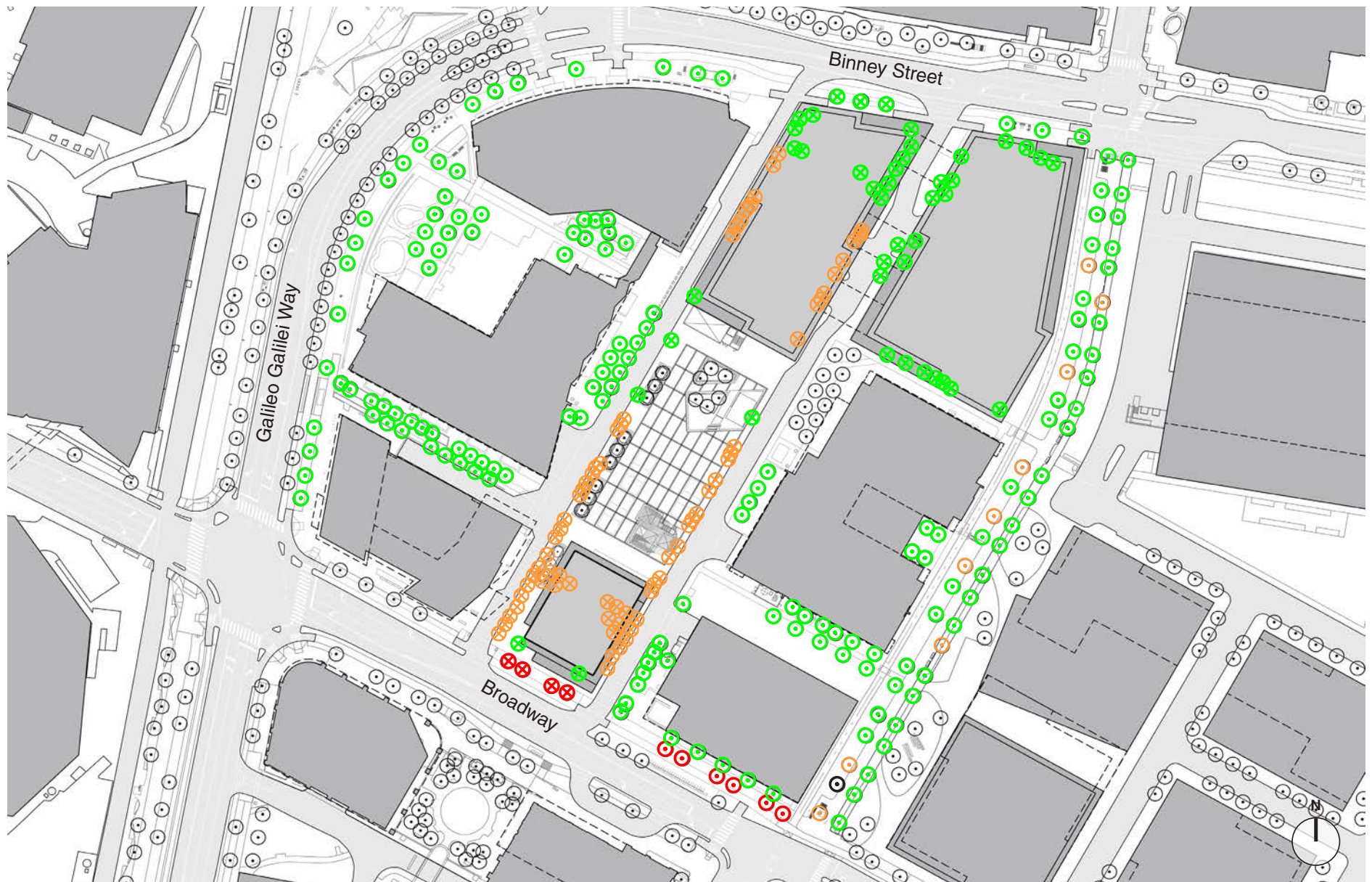
FIGURE 3.12

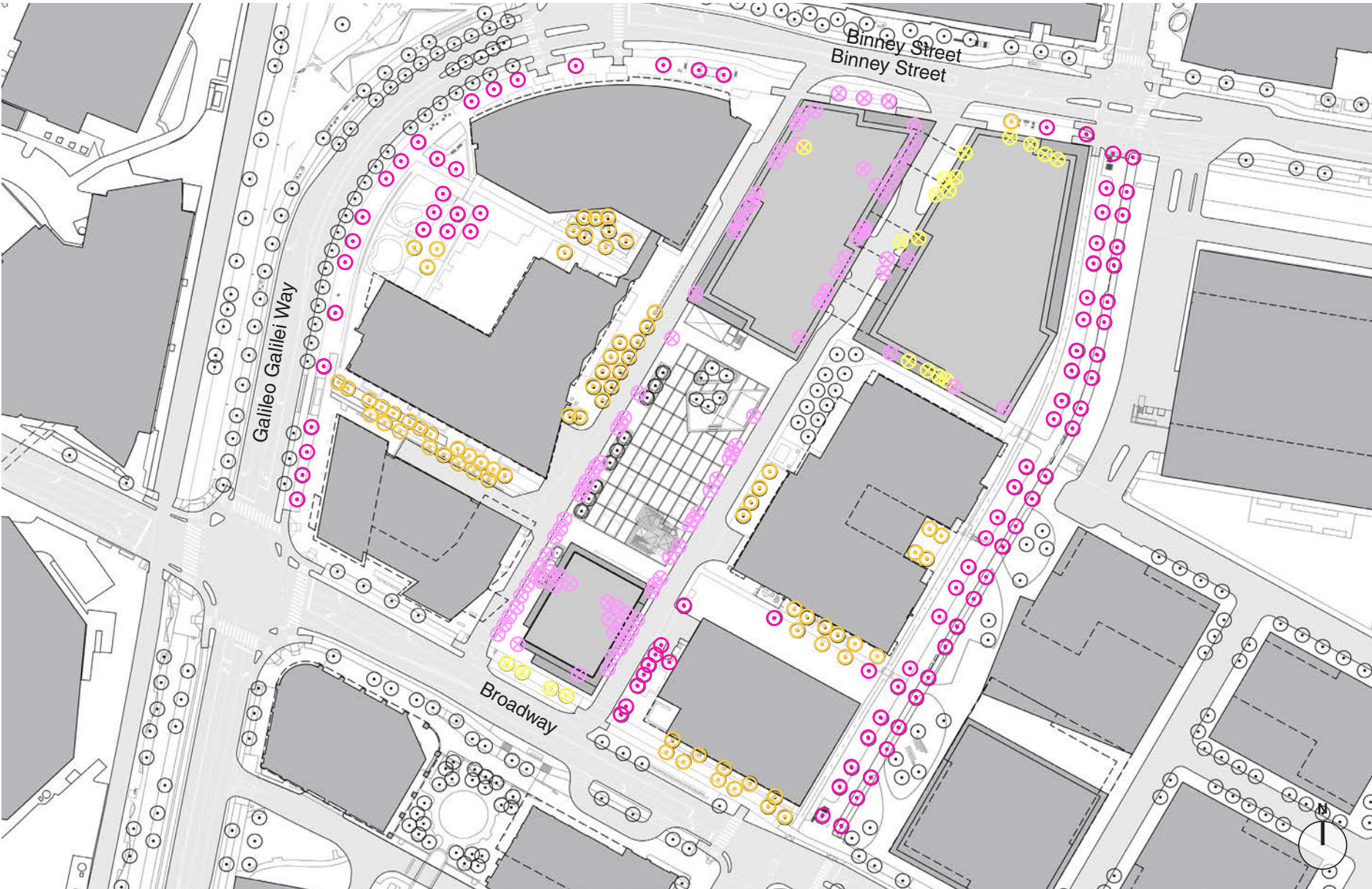


- Trees for Protection
- Trees for Removal

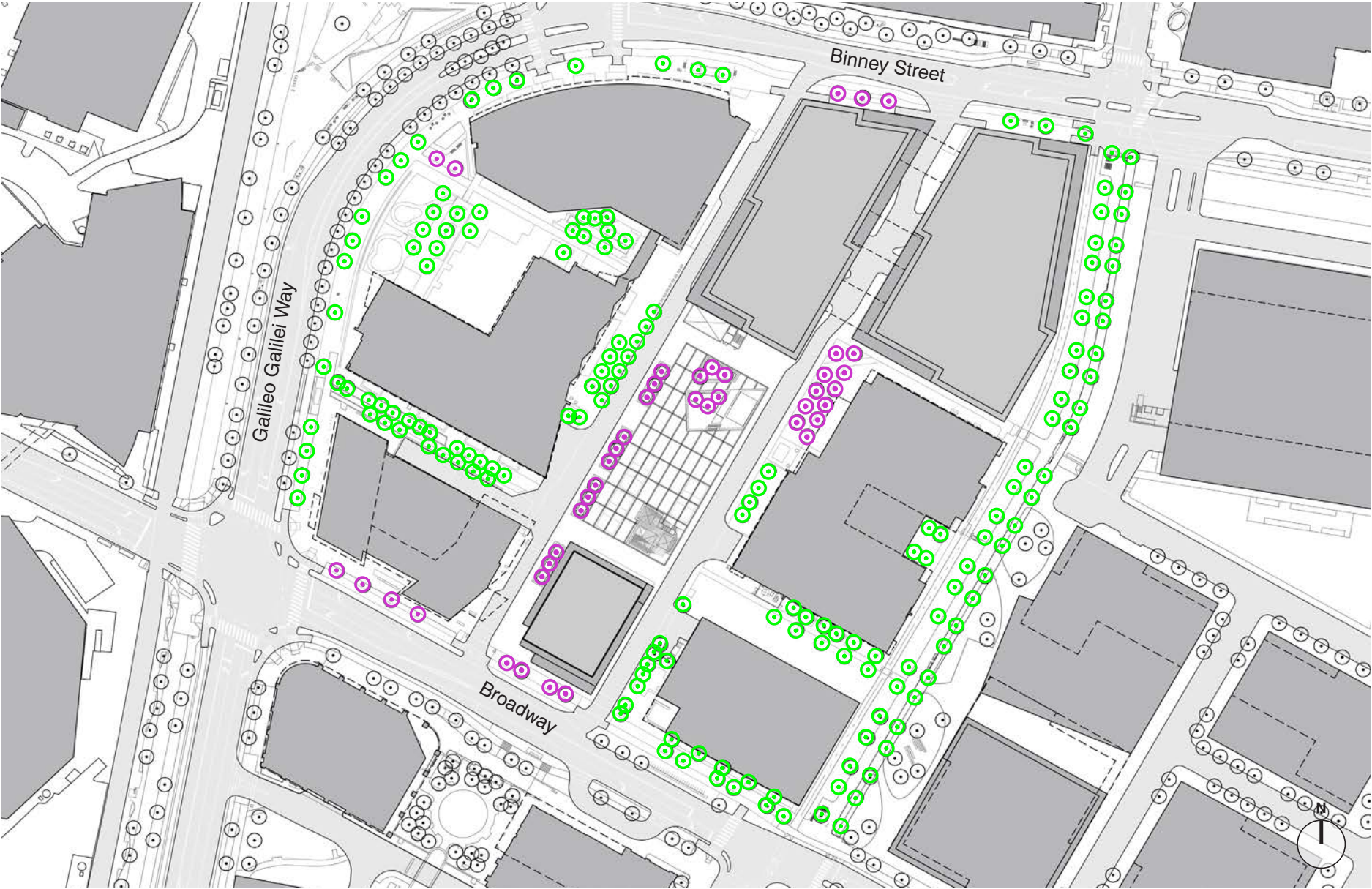


- | | | | |
|--|---|---|--|
| ■ Acer rubrum (Red Maple) | ■ Gleditsia triacanthos (Honey Locust) | ■ Zelkova serrata (Zelkova) | ■ Pinus nigra (Austrian Pine) |
| ■ Acer japonicum (Japanese Maple) | ■ Betula papyrifera (White Birch) | ■ Tilia cordata (Little-Leaf Linden) | ■ Malus coronaria (Crabapple) |
| ■ Quercus rubra (Red Oak) | ■ Crataegus crus-galli (Thornless Hawthorne) | ■ Platanus occidentalis (Sycamore) | ■ Prunus serrulata (Cherry) |





- Significant Tree to Remain (Trees with a DBH of 8" or higher)
- Removal of Significant Tree (Trees with a DBH of 8" or higher)
- Tree to Remain (DBH of Lower than 8")
- Removal of Tree (DBH of Lower than 8")



■ Trees for Protection
■ Proposed Trees
 INFILL DEVELOPMENT CONCEPT PLAN

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4. RETAIL PLAN

4.0 INTRODUCTION

Though under long-term pressure from e-commerce and substantially disrupted by the COVID-19 pandemic—ongoing at the time of this writing—the Applicant expects active use and retail space to play a role in framing and enlivening the new public spaces and streetscapes created as part of this Concept Plan Amendment #2. The ground floors of all of the buildings proposed will contain some capability to flexibly accommodate active uses, including retail where appropriate.

The following goals will be pursued when designing the active use/retail program:

- Locating active use and retail in visible well-traveled areas that will help ensure its viability.
- Examining the broader market mix of current and proposed active uses/retail in Kendall Square to ensure that potential ground floor uses are complementary of existing offerings.
- Identifying retailers that can serve the diverse, 24/7 needs that come with a mixture of residential and commercial development from convenience and consumer service retail to place making dining offerings.
- Selecting retailers with a viable business model and material operational experience.
- Creating a retail program consistent with the requirements of Article 14.

In order to realize the goals above, the Project as a whole must contemplate how to position retail and active ground floor uses so as to ensure that they benefit as much as possible from new public space as well as new and existing pedestrian and cyclist access corridors. This important design guideline will help reinforce the City's chosen retail corridors along Broadway and Main Street, and create a dynamic and enlivened streetscape.

Further, the potential program needs to reflect the existing and newly proposed retail in other projects in Kendall Square to minimize programmatic redundancy and potential market conflicts. While the Applicant aspires to a diversity of retail uses consistent with public feedback, the ultimate tenancy for retail spaces will likely be food and service oriented retail based on the evolution of online commerce accelerated by the pandemic and available retail operators.

CHAPTER UPDATES

The following section summarizes minor refinements to this Chapter since the Approved Concept Plan.

Existing Retail: The existing retail analysis has been updated to reflect the completion of Commercial Building A, as well as the construction of Commercial Building B -each of which will bring additional retail opportunities, including but not limited to quick casual restaurants, coffee shops, entertainment retail, innovation space, and service retail, including a florist.

Future Retail: As a component of the Project Change, Residential Building South, Commercial Building C and Commercial Building D will all collectively possess the ground floor flexibility to accommodate active uses and retail where appropriate. Residential Building South will host approximately 700 SF of active use/retail GFA on its ground floor to activate Broadway Street, as well as draw passing pedestrians and cyclists towards the contemplated Center Plaza open space situated behind Residential Building South. The Applicant also plans the distribution of up to approximately 8,300 SF of ground floor active use or retail GFA between Commercial Building C and Commercial Building D so as to activate the northeast edge of the proposed Center Plaza open space. The majority of this space may be required for a bike valet to meet City of Cambridge requirements and may include some complementary bike oriented service retail.

Street Activation Approach: From a street activation standpoint, the ground floor of Residential Building South will benefit considerably from its frontage on Broadway Street and its proximity to the busy intersection of Broadway and Ames Street. Considering the pedestrian traffic between the Kendall/MIT Red Line Station and the development contemplated as part of this Concept Plan Amendment #2, Residential Building South is positioned to serve as a key “gateway” to the North Parcel in general, as well as the reimagined Center Plaza open space.

4.1 EXISTING RETAIL

On account of the COVID-19 pandemic, the current status and future condition of Kendall Square retail is more uncertain than at any time in recent memory. While a select group of retail operators are continuing to see success, many have been compelled to permanently close their doors as a result of the financial difficulties occasioned by the pandemic. Consequently, an appraisal of the Kendall Square retail market must possess considerable humility and by default be anchored by those establishments which have survived thus far or which have concrete plans to commence operations in the near future.

Refer to Figure 4.1, Existing District Retail.

1. MAIN STREET

Today, the area along Main Street in proximity to the Kendall Square MBTA Red Line stop is primarily composed of small service retailers, as well as a mix of restaurant, bars and a mix of fast casual offerings split between local retailers and national chains. These restaurants are defined by a diversity of culinary offerings that serve the local neighborhood and visitors alike. In addition, Kendall Square features both boutique and national hotels. The MIT COOP bookstore--formerly located on the ground floor and basement levels of the former 325 Main Street building--is expected to remain in its current temporary relocation premises at 80 Broadway until Commercial Building B is complete, at which point the MIT COOP will return to 325 Main Street at a reduced size reflective of the evolution of space requirements in the textbook industry.

2. AMES STREET RETAIL

The completion of 88 Ames Street has brought additional quick casual restaurants, coffee shops, a bank, and a florist, additive to the offerings of Sebastian's Cafe, Dumpling Daughter, Vester, and meadhall, which exist today along Ames Street.

3. THIRD STREET AND BROAD CANAL WAY

This developing retail area features a mix of restaurants with abundant outdoor seating situated along a landscaped plaza.

4. ONE KENDALL SQUARE

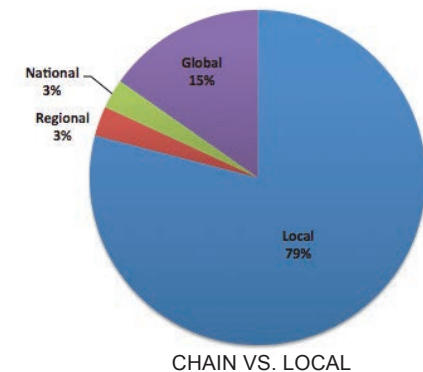
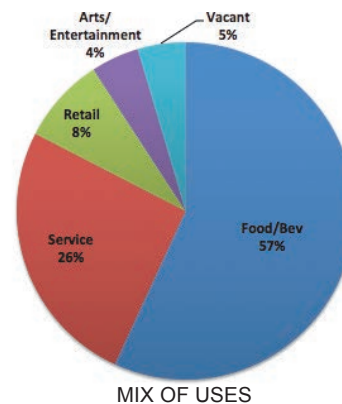
The area around the mixed use One Kendall Square project includes a movie theater, mix of restaurants and a brew pub.

5. CAMBRIDGESIDE GALLERIA (SEE FIG 4.3)

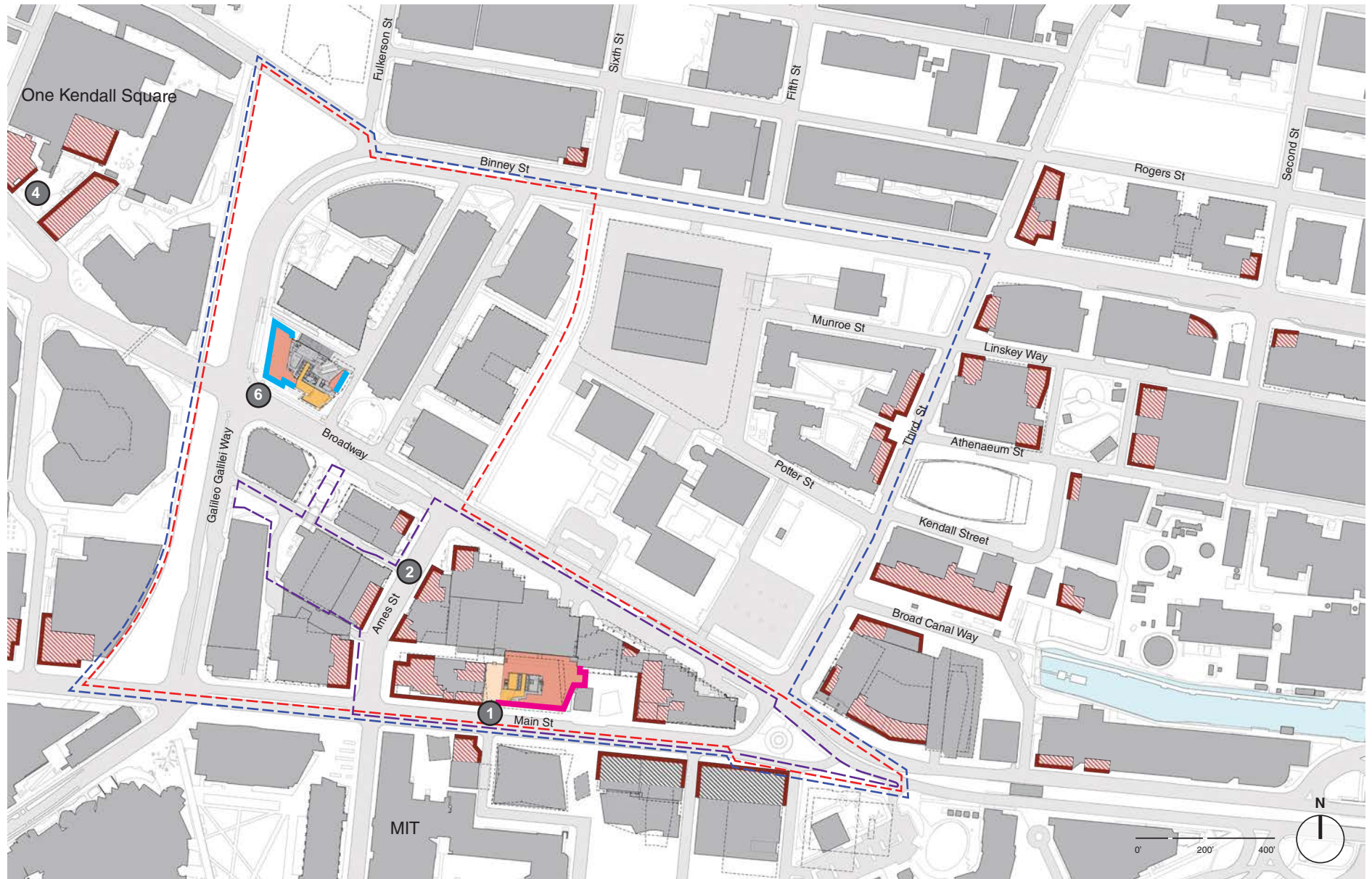
The nearby Cambridge side Galleria is a traditional anchored retail mall with established national chains offering apparel, electronics, consumer goods and fast casual dining. The mall is undergoing a re-conception that will integrate future commercial lab and office space but still include some retail operators.

6. BROADWAY AND BINNEY STREET

The Completion of Commercial Building A at 145 Broadway has brought a Sweet Greens restaurant to the MXD and a Core Power Yoga gym. As described in Section 4.2, Commercial Building A has additional capacity to accommodate additional active/retail uses, including a restaurant or bar, or dry good uses that is ideally situated to help activate the future open space.



*The graphics and analysis above are provided by Graffito SP



- | | | | |
|-----------------------------|--|-------------------------|--------------------------|
| Proposed Project Retail | Existing Retail | Future Potential Retail | MXD Boundary |
| Proposed Project Active use | Proposed Retail / Active use by others | | KSURP Boundary |
| Project Retail Complete | Project Retail Under Construction | | Ames Street District ASD |

4.2 FUTURE RETAIL PLAN

4.2.1 TARGET RETAIL OPPORTUNITIES BY BUILDING:

The following descriptions of potential retail and active use space attempts to offer context to the future retail program for long range planning purposes. The market conditions, retail concepts and needs of the Cambridge community will evolve between the time of this submission and the delivery of physical, ready to lease, retail space.

Refer to Figure 4.2, Future Retail Plan.

1. COMMERCIAL BUILDING B (325 MAIN STREET)

The redeveloped 325 Main Street building contains approximately 40,000 GFA of retail square footage, all or the majority of which will be located on the ground and second floors that could be subdivided in a variety of ways. A portion of the retail square footage will remain at one level below ground. With approximately half of the available square footage located on the ground and second levels, the frontage along both Main Street and the Kendall Plaza will be activated and offer opportunities for multiple retail entrances as well as retailers of varying size and type. An existing pedestrian connection from Kendall Plaza to Pioneer Way will be maintained through the ground floor, but could be reimagined if the retail programming followed a more “market-like” permeable model increasingly seen in urban areas. Potential uses could include restaurants, entertainment/sporting venues and/or bars, including fast casual dining options, as well as consumer service retail and dry goods. The MIT COOP bookstore currently located on the ground floor and basement levels of the 325 Main Street building will be temporarily relocated to 80 Broadway in early 2019 to accommodate the building’s redevelopment and will return once the new building is complete, at a reduced size reflective of the evolution of the space requirements of the textbook industry. Refer to Figure 4.2, Future Retail

2. COMMERCIAL BUILDING C (290 BINNEY STREET)

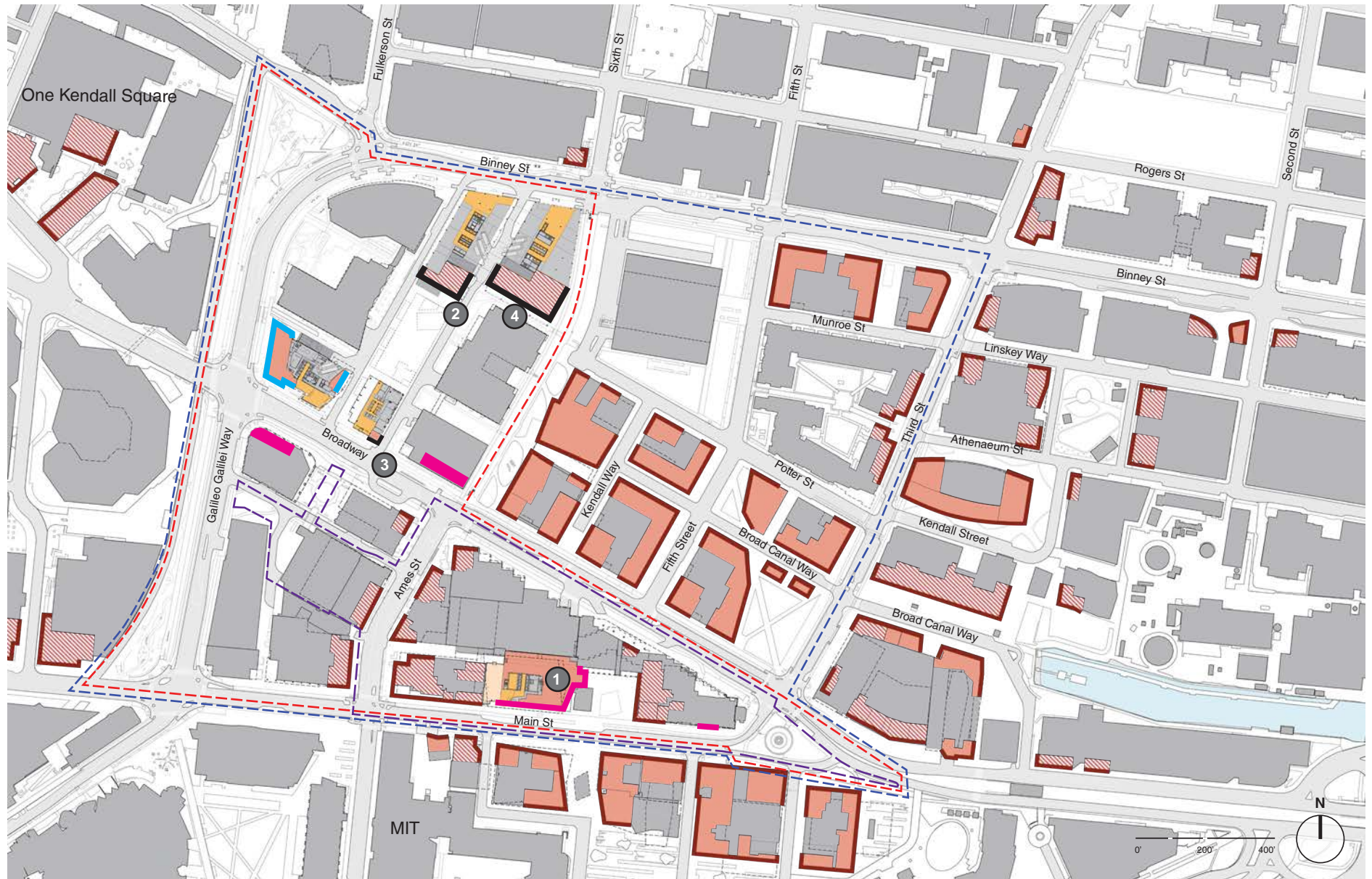
Commercial Building C will contain the capacity to host a single active use space of approximately 2,500 SF in size within the southeast corner of the building, adjacent to the northeast edge of the envisioned Center Plaza open space. The retail space would likely be maintained as a single suite, flexible in configuration and designed with the bike shop/valet use in mind, as this represents the most likely location for this operation—critical as it is to this Concept Plan Amendment #2’s transportation strategy. Seamless communication between this active use suite and the exterior will therefore be emphasized as the design of this Project component advances.

3. RESIDENTIAL BUILDING (135 BROADWAY)

Residential Building South will contain approximately 700 SF of active use/retail GFA on its ground floor to activate Broadway Street, as well as draw passing pedestrians and cyclists towards the contemplated Center Plaza open space situated behind Residential Building South.

4. COMMERCIAL BUILDING D (250 BINNEY STREET)

Commercial Building D will contain approximately 5,800 SF of active/retail GFA on its ground floor that could accommodate multiple or single tenants. Poised at a junction between the northernmost East West Pedestrian Connector linking the Sixth Street Pedestrian Connector to the Center Plaza open space, this contiguous suite presents a significant opportunity for activation. Moreover, as with the companion active use space located within Commercial Building C across the East Service Drive, there is a strong possibility that it could ultimately be utilized to support the combined bike shop/bike valet operation intended to simultaneously activate the open space and provide critical support for cyclists among Project residents and tenants.



- | | | | |
|-----------------------------|--|-------------------------|--------------------------|
| Proposed Project Retail | Existing Retail | Future Potential Retail | MXD Boundary |
| Proposed Project Active use | Proposed Retail / Active use by others | | KSURP Boundary |
| Project Retail Complete | Project Retail Under Construction | | Ames Street District ASD |

4.2.2 IMPLEMENTATION AND POINT OF CONTACT

The Applicant initially designates Ian Hatch, Project Manager Development, as the point of contact for monitoring and implementation of retail planning. He can be reached at ihatch@bxp.com.

4.2.3 INCENTIVES FOR LOCAL RETAIL

In an effort to ensure the goals outlined above and the requirements outlined in Article 14 for local and independent retailers, the Applicant may consider certain economic incentives depending on market conditions and the location of the space. The following economic incentives may be explored and included in a lease with a desirable local or independent retailer:

- Rent that is set below the market rent for national chains;
- Flexible initial lease durations and extension options;
- Tenant Improvement allowances; and
- Using a percentage of sales structure as part of the total rent.

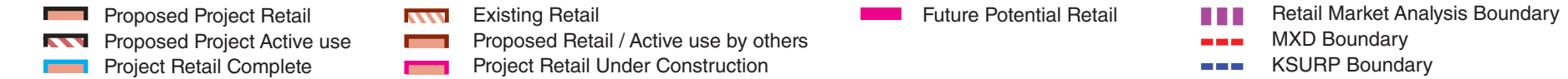
4.2.4 MONITORING

The Applicant will meet annually with the CRA and at least twice each year after the issuance of a building permit to discuss the retail market, new retail concepts, emerging local and independent retailers, and general leasing activity.

4.3 ECONOMIC FEASIBILITY

RETAIL MARKET OVERVIEW

The economics of retail have undeniably experienced considerable changes over the past 18 months that will take some time to fully understand. The need for social distance during the pandemic accelerated the considerable trend of online shopping for dry goods as well as groceries. Many established Kendall operators have permanently closed. Further, the proliferation of food delivery services and “Virtual Kitchens”, some operators are focusing almost exclusively on delivery based sales. However, the addition of new office and residential space via NOMA and SOMA as well as the completion of 325 Main street and future residential and commercial projects associated with this proposal will allow for a dense population of residents and office/lab workers that, combines with the student population of MIT and residents in adjacent neighborhoods will likely allow for a thriving environment for food and service retailers in the future.



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5. TRANSPORTATION

5.0 INTRODUCTION

This section describes the existing and proposed transportation conditions surrounding the Project Site and presents an overview of the Transportation Analyses conducted to assess potential traffic impacts associated with the Project. The original Transportation Impact Study (TIS) was submitted to the City of Cambridge Traffic, Parking, and Transportation (TP&T) Department on June 23, 2016 and certified as complete and reliable on July 14, 2016. In January 2017, an update to the transportation analysis was submitted that reflected changes in the proposed development program, which were documented by TP&T in a memo to the Planning Board dated January 11, 2017, in support of the Planning Board and the CRA Board's approval of the Special Permit for the Project. The Notice of Decision (PB #315) approving the Original Concept plan was approved by the Planning Board and the CRA Board on January 17, 2017, and recorded with the City Clerk's Office on March 20, 2017.

On September 18, 2018, an update to the TIS ("TIS Update #1") was submitted to the City's TP&T Department providing an updated trip generation analysis and comparison, as well as an updated parking analysis, to reflect the development program documented in the Concept Plan Amendment #1. The TIS Update #1 memorandum focused on the updated trip generation and parking analysis changes due to an increase in the residential program and the shifting of approved commercial GFA associated with Commercial Building B from 250 Binney Street, to 325 Main Street. The overall development GFA did not change compared to the Original Concept Plan. TP&T documented the changes with final recommendations for the Concept Plan Amendment #1 in a memo to the Planning Board on November 27, 2018. Concept Plan Amendment #1 was approved by the Planning Board and the CRA Board on December 4, 2018.

On June 25, 2021 a second update to the Certified TIS(TIS Update #2) was submitted to the City's TP&T Department providing an updated trip generation analysis and comparison, as well as an updated parking analysis, to reflect the development program documented in Section 1.4 of the Concept Plan Amendment #2. The Planning Board Special Permit Criteria was also re-evaluated based on the current development program.

Refer to Appendix B for a copy of the TIS Update #1 memo from July 16th, 2018, and the most recent TIS Update Memo #2.

CHAPTER UPDATES

The following section summarizes minor refinements to this Chapter since the Approved Concept Plan.

- **The Kendall Square Transit Enhancement Program (KSTEP):** This Chapter provides an update on the KSTEP, including an overview of the first two pilot projects that have received KSTEP funding.
- **Bicycle Parking:** The Project aims to deliver the majority of bicycle parking via implementation of a commercial bike valet calibrated to service demand from the Residential Building, Commercial Building C, and Commercial Building D.
- **Vehicle Parking:** The approximately 1,170 existing above-grade parking spaces associated with the existing Blue Garage will be relocated below-grade into two, connected parking garages situated beneath Commercial Building C and Commercial Building D that will be accessible from the East Service Drive. Concept Plan Amendment #2 proposes up to an additional 414 vehicle parking spaces to be accommodated within the two garages to support the additional commercial GFA as well as the Residential South Building. This results in a net total addition of 1,042 spaces since the Original Concept Plan was approved, and total future parking supply of 3,750 spaces.
- **Transportation Demand Management (TDM):** This Chapter provides an update on TDM and mitigation measures that have been completed since the Concept Plan Amendment #1 was approved in 2019, and TMD measures that will be completed prior to the issuance of a certificate of occupancy for Commercial Building B.

5.1 CERTIFIED TIS OVERVIEW

As required by Section 14.32.2.1(5) of the zoning ordinance, a TIS was prepared for the Project in conformance with Section IV, “Guidelines for Presenting Information to the Planning Board” of the City of Cambridge “Transportation Impact Study Guidelines,” Sixth Revision dated November 28, 2011. The TIS responds to the Scoping Letter dated May 19, 2016 issued by the TP&T Department in response to a Request for Scoping dated April 19, 2016. The TIS document consists of three components, as follows:

- Introduction and Project Overview, describing the framework in which the transportation component of this Project was evaluated;
- Transportation Impact Study, presenting the technical information and analysis results as required under the guidelines; and
- Planning Board Special Permit Criteria, summarizing the evaluation of the Project as defined under the guidelines.

The TIS includes inventories of physical and operational conditions in the study area including roadways, intersections, crosswalks, sidewalks, on-street and off-street parking, transit facilities, and land uses. Transportation data is presented, including automatic traffic recorder counts, intersection turning movement counts, pedestrian and bicycle counts, vehicle crash data, and transit service data. Traffic volumes were evaluated for a 2016 Theoretical Existing Condition, a 2016 Build Condition, and a 2021 Build Scenario Loading that include future background growth and other developments, as well as Project trips, and off-site roadway improvements. The required TIS Summary Sheets and Planning Board Criteria Performance Summary are included in Appendix B. The TIS analysis identified impacts that the Project will have on the transportation network and is used by the City to identify possible mitigation to offset these impacts. Applicant, the CRA and the City are continuing the process of developing and discussing the mitigation program associated with this Project. The TIS identified policies and programs that could potentially be implemented as Project mitigation.

The TIS Update #2 report was submitted to the City’s TP&T Department on June 25, 2021 providing an updated trip generation analysis and comparison, as well as an updated parking analysis to reflect the current development program as documented in Section 1.4. The Planning Board Special Permit Criteria was also re-evaluated based on the current development program. Refer to Appendix B of the Concept Plan Amendment for a copy of the full TIS Update #2 report.

5.2 KENDALL SQUARE TRANSIT ENHANCEMENT PROGRAM (KSTEP) TDM PLAN

The CRA and Applicant remain focused, as they have been throughout the development of Kendall Center, on preserving and enhancing the favorable transportation mode split in Kendall Square that has played such an important role in the successful redevelopment of the KSURP area. It is acknowledged and well-documented that approximately 70 percent of all trip making in Kendall Square utilizes transit, walking, biking, shuttle and carpool. This remarkable factor is at the core of the opportunity for the Project. The importance of preserving and enhancing this condition cannot be overstated and is central to the CRA's plans for expansion of the KSURP.

The KSTEP grew out of the MEPA review process for the amendment of the KSURP, and is an important mitigation component of the 2015 Single Environmental Impact Report (EIR), which preceded the approval of the KSURP Amendment 10, MXD Zoning and Original Concept Plan documents. In that EIR, KSTEP was a way to prepare for transit ridership created by new development, by funding projects that improve transit capacity.

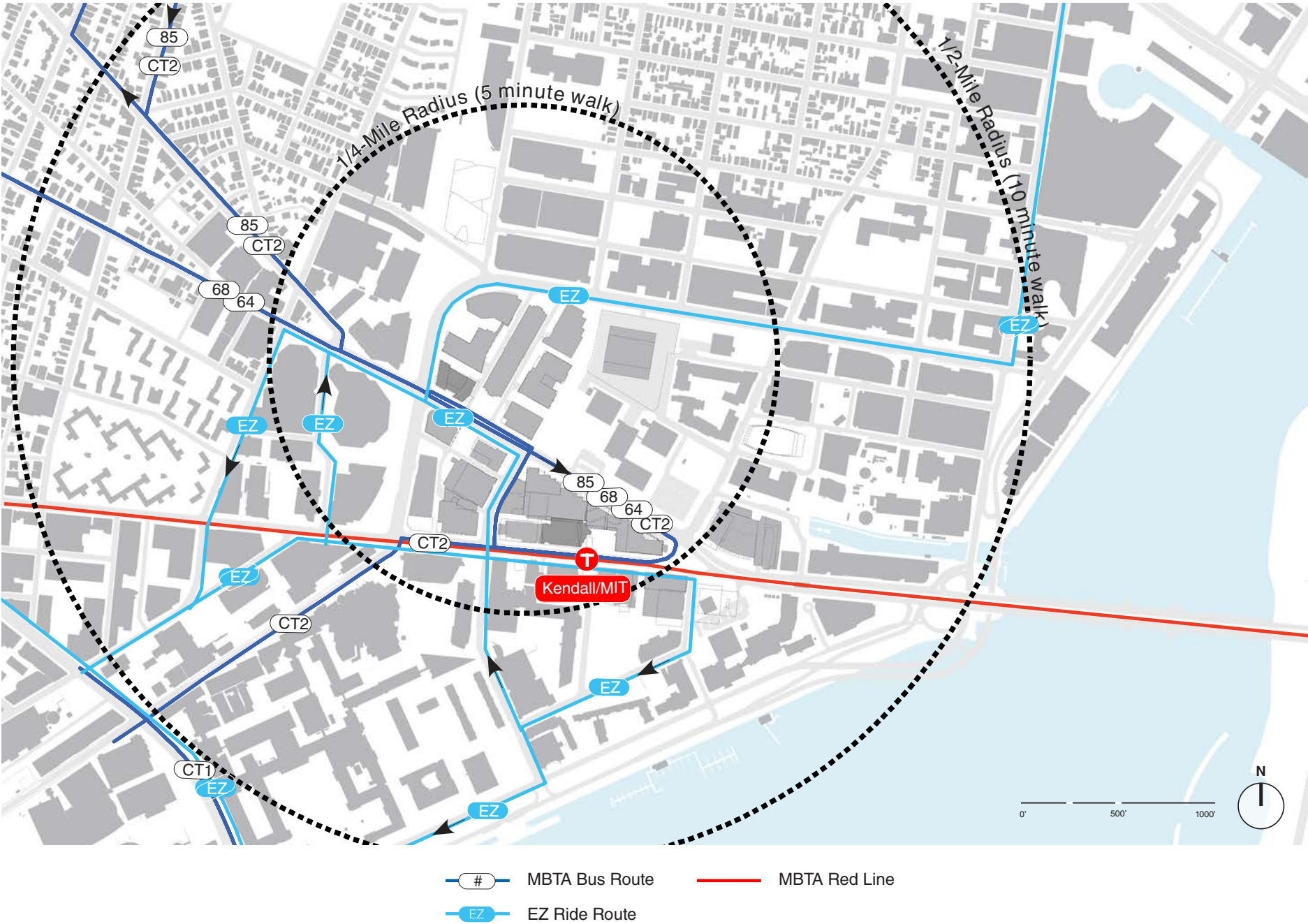
Since the Original Concept Plan was approved, a Memorandum of Understanding (MOU) was executed on May 9, 2017 between the CRA, MassDOT and the MBTA, together with Applicant and the City, as a mechanism to identify and implement appropriate transit improvements consistent with the KSTEP. The MOU established the Working Group, (formalized in 2019 through the execution of the KSTEP governance documents) and includes the CRA, Applicant, the MBTA, MassDOT and other stakeholders as may be designated to develop recommendations for funding allocation toward transit capital improvements, expanded service, or other programs (collectively referred to as projects). As provided in the MOU, the funding for the KSTEP Fund was provided through an initial payment in the sum of six million dollars (\$6,000,000). The MOU established general language regarding disbursement of the funds at the direction of the CRA Board, with approval by the Cambridge City Manager. Funding decisions will be guided by the initiatives recommended by the Kendall Square Mobility Task Force and Transport Kendall report.

There are currently two pilot projects underway that have received KSTEP funding which include:

- 500 Main Street Bus Shelter: KSTEP funds are being used to construct a new bus shelter at 500 Main Street in Kendall Square. It is anticipated that construction of the bus shelter will be completed by Q3 of 2021.
- KSURP Bus Service Improvement Planning: KSTEP funds are being used to conduct a study that is analyzing and developing design concepts for bus priority measures along Broadway and Main Street in Kendall Square, considering streetscape infrastructure, lane markings, and/or traffic signal optimization such as transit traffic signal priority systems at intersections. This study is underway and is anticipated to be completed by Q3 of 2021.

Moving forward the CRA and the Working Group will continue to consider a variety of transit mitigation projects and program options which could receive KSTEP funding, including:

- MBTA Red Line Kendall Station Improvements: Immediate operating and capital improvements to the existing transit infrastructure at Kendall Station, including station capacity and egress, Kendall Square transit information, communications and way-finding, Red Line ticketing, climate change adaptation/resiliency, bus and bicycle connectivity, and overall station functionality and appearance.
- Kendall Station / Kendall Square Connection Enhancements: Capital support for improving existing or new ground transportation via non-MBTA shuttles and/or MBTA buses or Bus Rapid Transit (BRT) aimed at facilitating access to and from Kendall Square.
- MBTA Red Line Service Modernization and Improvements: Signal, track and other technology improvements designed to increase capacity and reliability especially at peak-of-the-peak including enhancing headways (time between service) and other improvements that will positively impact the quality of transit service and the customer experience.
- Long-Range Feasibility Investigations Planning for and potential capital investment toward new public transit services.



5.3 ACCESS AND CIRCULATION

As currently planned, the re-siting of a proposed Eversource electrical substation will require demolition of the existing above-grade Blue Garage at the center of the North Parcel to house the new facility below grade. The East and West Service drives running parallel to the existing Blue Garage will continue to provide vehicle access and egress off Broadway and Binney Street. The West Service Drive currently provides access to the parking garage and loading dock for Commercial Building A. The approximately 1,170 existing above-grade parking spaces associated with the Blue Garage will be relocated below-grade into two, connected parking garages situated beneath Commercial Building C and Commercial Building D that will be accessible

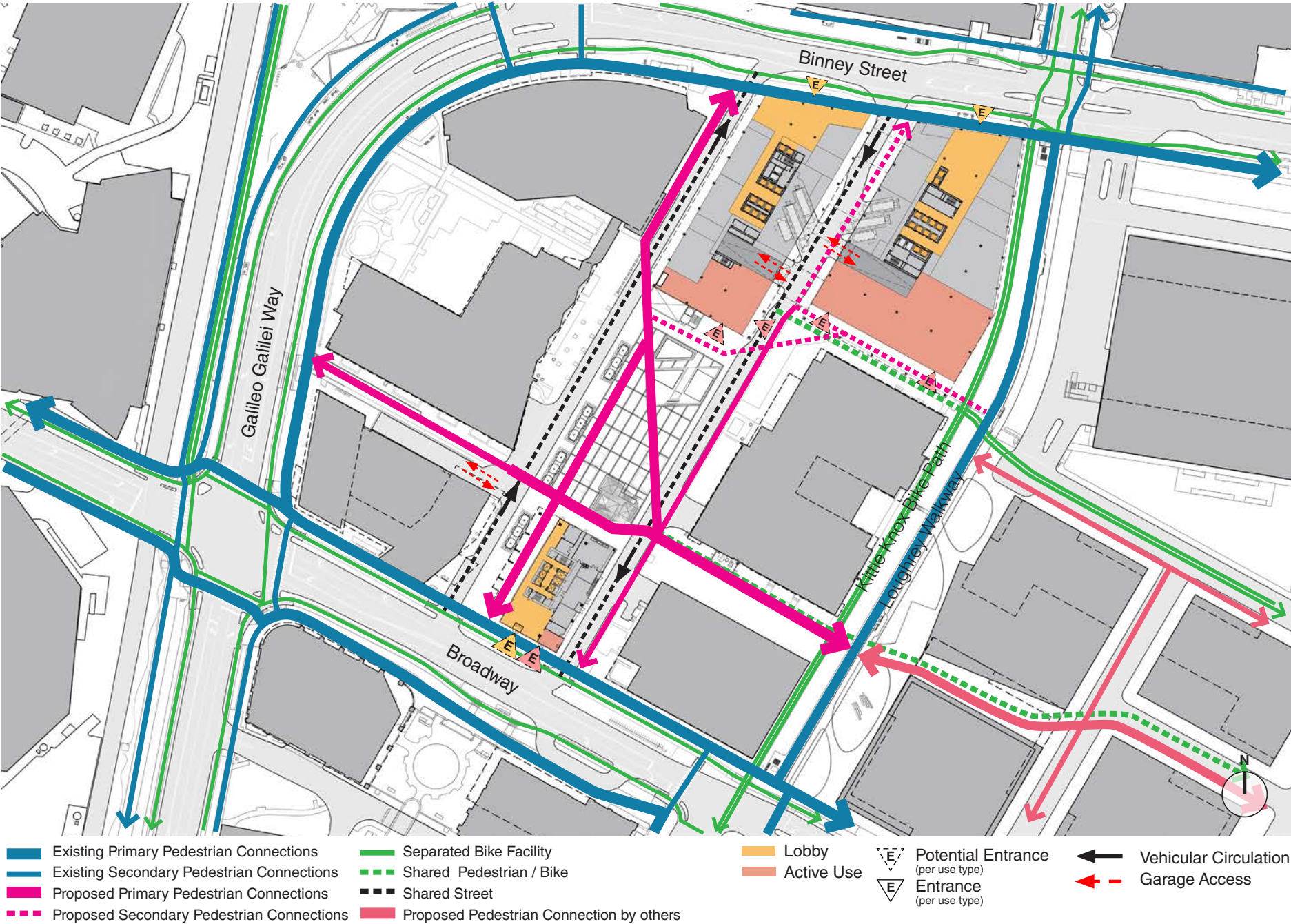
from the East Service Drive. The Project also proposes up to an additional 414 vehicle parking spaces to be accommodated within the two garages to support the additional commercial GFA as well as the Residential South Building. As currently planned, the East Service Drive will provide access to loading and service for the Residential South Building, and both Commercial Buildings C and D. Pedestrian access to the Residential Building South will be provided via a main entry along Broadway. Similarly, pedestrian access to Commercial Building C and Commercial Building D will be provided along Binney Street. Refer to Figure 5.2 for a vehicular, bicycle and pedestrian access and circulation plan.

TABLE 5-1 PROPOSED BICYCLE PARKING

PROPOSED BICYCLE PARKING SUMMARY			
PROJECT COMPONENT	STATUS	LONG-TERM SPACES PROPOSED	SHORT-TERM SPACES PROPOSED
COMMERCIAL BUILDING A	COMPLETE	134 ¹	34 ¹
COMMERCIAL BUILDING B	UNDER CONSTRUCTION	108 ¹	47 ¹
RESIDENTIAL BUILDING SOUTH	PLANNED	20 ²	12 ²
COMMERCIAL BUILDING C	PLANNED	420-610 ²	12 ²
COMMERCIAL BUILDING D	PLANNED		12 ²
TOTAL		682-872²	117²

1. Reflects as-built bicycle parking for Commercial Building A, and approved bicycle parking for Commercial Building B, which is currently under construction.

2. The Applicant intends to satisfy bicycle parking demand from the Residential Building South, Commercial Building C and Commercial Building D via a commercial bicycle valet. In accordance with Article 6.108.1 the Applicant therefore intends to seek a modification of bicycle parking requirements via special permit. To complement the services of the envisioned bicycle valet, the Applicant also seeks to deliver approximately 20 traditional long-term bicycle parking spaces within the Residential Building South and 12 short-term bicycle parking spaces for Residential Building South, Commercial Building C, and Commercial Building D. The range of valet spaces illustrated (400-600) conveys the changing maximum capacities of the valet from its temporary premises within Commercial Building C to its permanent location within Commercial Building D. The Applicant also anticipates that the proposed bicycle valet will be able to offer short-term bicycle parking, subject to capacity utilization trends. The implications of applying the minimum bicycle parking requirements established by the City of Cambridge Bicycle Parking Guide to the Project are shown in Table 10 of the TIS Update Memo #2, Appendix B."



5.3.1 BICYCLE ACCOMMODATIONS

As part of Concept Plan Amendment #2 the Applicant is proposing to implement a commercial bicycle valet to service the majority of anticipated demand for bicycle parking from the Residential Building, as well as Commercial Buildings C and D. Acknowledging the unique approach to bicycle parking being proposed as part of this plan, in accordance with Article 6.108.1 the Applicant therefore intends to seek a modification of bicycle parking requirements via special permit. The implications of applying this tailored bicycle parking approach are shown in Table 5-2. Consistent with Section 14.52.6.2 the Applicant will submit a Bicycle Parking Plan to accompany submission of Concept Plan Amendment #2.

Figure 5.3 depicts the MXD bike parking plans locations, and Figure 5.4 depicts bike parking locations for Residential Building South and Commercial Buildings C and D.

In light of the proposed phasing plan for Commercial Building C and Commercial Building D, the proposed bicycle valet will be temporarily located within ground floorspace in Commercial Building C fronting the proposed Center Plaza public open space prior to the completion of Commercial Building D. While quantity estimates remain subject to change, this space is projected to possess the capacity to park up to approximately 400 bikes. Under Zoning, as documented in the TIS Memo #2 in Appendix B, Residential South and Commercial Building C would be required to provide 592 long-term spaces, and 75 short-term spaces in aggregate in the absence of a special permit modification. This valet facility would be envisaged to support both the Residential Building and Commercial Building C prior to the construction of Commercial Building D. Upon completion of Commercial Building D, the Applicant anticipates relocating the bicycle valet to expanded permanent facilities within the ground floor of Commercial Building D. Intended to serve the Residential Building, Commercial Building C and Commercial Building D, these permanent operations would front the 6th Street Connector, which includes a dedicated bicycle path constructed as part of Commercial Building A.. While quantity estimates remain subject to change, it is projected that these new premises will support parking of up to 610 bikes at a time. Under Zoning, as documented in the TIS Memo #2 in Appendix B, Residential South, Commercial Building C and Commercial Building D would be required to provide 688 long-term spaces, and 101 short-term spaces in aggregate in the absence of a special permit modification. It is expected that this permanent valet facility will have the ability to service both long and short-term demand, subject to capacity utilization trends. Moreover, the Applicant envisions that some active use space in Commercial Building D could be flexible in configuration, and designed with a mutually-supporting bicycle valet and bicycle shop use in mind. Space formerly dedicated to bicycle valet operations in Commercial Building C would then be dedicated to another active use or possibly retail as appropriate.

To complement the services of the envisioned bicycle valet, the Applicant also anticipates targeted production of “traditional” short and long-term bicycle parking facilities. Short-term facilities integrated into the new proposed urban plan for the North Parcel (including areas adjacent to Residential Building South and Commercial Buildings C and D) represent a key opportunity for realizing this vision. Moreover, the Applicant also intends to deliver long-term bicycle parking within the proposed Residential Building. While the operations of the proposed bicycle valet are liable to cover the vast majority of bicycle parking needs, residents are the most likely constituency to desire alternative arrangements and the Applicant is therefore seeking to deliver approximately 20 traditional long-term bicycle parking spaces within the Residential Building.

In support of Residential Building South, and Commercial Buildings C and D, approximately 36 new short-term spaces will be accommodated throughout the North Parcel focusing on the areas near retail and lobby entrances on Binney Street and Broadway. Different options for the locations of the short-term bicycle parking will be discussed with the City. All installed bicycle racks outside of bicycle valet facilities (short- and long-term) will be compliant with required standards. To accommodate the envisioned campus bicycle parking plan, however, the Applicant is proposing modification of long-term bicycle parking quantity and siting requirements, short-term bicycle parking quantity and siting requirements, and bicycle rack design, layout, and primary access standards. The Applicant submits that by enabling a campus bicycle valet facility to serve the proposed North Parcel development program contemplated in Concept Plan Amendment #2, these modifications will ultimately allow for a superior level of service for cyclists, and comparable bicycle parking availability to what is typically required despite otherwise-binding site constraints.



- | | | | |
|--|---------------------------------|--|-------------------------------|
| Existing Short Term Bike Parking | Existing Long Term Bike Parking | Bluebikes Existing Locations | Bluebikes for Relocation |
| Proposed Short Term Bike Parking | Proposed Long Term Bike Parking | Bluebikes Proposed Potential Locations | Bluebikes Proposed Relocation |
| Proposed Short Term Bike Parking by others | Within Parking Structure | | |



Active Flexible use space for:
Bike Valet / Bike Parking and Future Potential Retail

- Existing Short Term Bike Parking
- Proposed Short Term Bike Parking
- Proposed Short Term Bike Parking by others

- Bluebikes Existing Locations
- Bluebikes Proposed Relocation
- Bluebikes Proposed Potential Locations

5.4 TRAFFIC DEMAND MANAGEMENT PLAN

The proposed TDM measures aim to reduce drive-alone trips, or single occupancy vehicles (SOVs), by encouraging employees, residents and visitors to use alternative modes of transportation. Overall, the goal of the proposed TDM Plan is to reduce the use SOVs by encouraging carpooling and van pooling, bicycle commuting and walking, and increased use of the Kendall Square public transportation system by employees and residents.

The following TDM measures were completed concurrent with the issuance of the Certificate of Occupancy for Commercial Building A:

- Provided the initial \$6 million payment for the KSTEP Fund.
- 100% Design Plans for reconstruction of Binney Street and Galileo Galilei Way between the Sixth Street and Broadway, including improvements at the intersection of Galileo Galilei Way/Broadway and respective approaches of Galileo Galilei Way;.
- 100% Design Plans for reconstruction of Broadway between Ames Street and Galileo Galilei Way.
- Improved the Sixth Street Connector Pathway by providing separated pedestrian and bicycle facilities while maintaining the mature trees along the existing pathway.
- Installed wayfinding and real-time transit screens in the Commercial Building A lobby and the Marriott plaza.
- Joined the Charles River Transportation Management Association (TMA); and
- Finance the purchase and installation of two (2) 19 dock Bluebikes Stations.

The following TDM measures will be completed prior to the issuance of a certificate of occupancy for Commercial Building B:

- The Applicant should construct no more than \$400,000 in improvements to the MBTA Red Line Outbound Station on the north side of Main Street.
- Fund one large (i.e., 23-dock) Bluebikes system to further support the public bicycle sharing system in Kendall Square and mitigate the impacts of additional development at 325 Main Street.

- Implement a real-time parking availability system within the Applicant's commercial parking facilities, in coordination and as approved by TP&T, the CDD and the CRA.
- Implement a parking management practice or plan that permits parkers to pay by the day, instead of monthly, to encourage commuters not to drive every day, and shall offer this or a comparable program to tenants of the MXD.
- Provide real-time transit screens in the in Commercial Building B lobby.

TDM measures specific to the residential component, are identified below:

- Make available a minimum of 10 car-sharing parking spaces for a vehicle-sharing company. As demand dictates additional car-sharing vehicles will be added over time. Provide additional designated car-sharing parking spaces within and/or nearby by KSURP parking garages, if deemed feasible. (These are designated and priority spaces for car-sharing users arriving for short-periods of time which is different than car-sharing spaces that "live" in the parking garages.
- Provide electric vehicle (EV) charging stations (1 EV space per 100 auto parking spaces) and preferential parking to alternative fuel vehicles, as dictated by the market.
- Offer each adult member of each household (up to 2) upon move-in a Charlie Card valued at the cost of a 50 percent bus/subway pass (subject to fare increases) for three consecutive months. This benefit will end after 3 months for the household and begins anew upon unit turnover.
- Offer each adult member of each household (up to 2) upon move-in a 1- year Gold-Level Bluebikes membership. This benefit will end after one year for the household and begins anew upon unit turnover.
- Provide air pumps and other bike tools in the bicycle storage room.
- Join the Charles River Transportation Management Association (TMA)
- Provide free EZRide Shuttle sticker for each adult member of each household each year.
- Charge parking (market rate) separately from the residential rent, in order to remind tenants how much they pay for parking. The Permittee shall provide the summary of on-site parking fees to the TP&T.
- Either install a real-time multi-modal transportation display screen to help

people decide which mode to choose for each trip (transit, carsharing vehicle, Bluebikes bike share, etc.), or establish a transportation information center located in an area that is central, visible, convenient, and equally accessible to all residents and visitors. The center will feature information on:

- Available pedestrian and bicycle facilities in the vicinity of the site
- MBTA maps, schedules, and fares
- Area shuttle map and schedule, if one exists
- “Getting Around in Cambridge” map and other CitySmart materials (available at the Cambridge Community Development office)
- Location of bicycle parking
- Bluebikes regional bikeshare system
- Carsharing
- Ride-matching
- Other pertinent transportation information
- Designate a Transportation Coordinator (TC) for each residential building or the site to manage the TDM program. The TC will also oversee the marketing and promotion of transportation options to all residents at the site in a variety of ways:
- Posting information in a prominent location in the building and on the Project’s website, social media, and property newsletters.
- Responding to individual requests for information in person and via phone and email.
- Performing annual transportation surveys.
- Require the TC to compile and distribute up-to-date information explaining all transportation options to all new residents as part of their New Resident Packet. The packets will contain information on both the range of options available to any building manager programs to support the use of these options and will include:
 - Available pedestrian and bicycle facilities in the vicinity of the site
 - MBTA maps, schedules, and fares
 - Area shuttle map and schedule, if one exists
 - “Getting Around in Cambridge” map and other CitySmart materials

- Location of bicycle parking
- Bluebikes regional bikeshare system
- Carsharing
- Ride-matching
- Other pertinent transportation information
- Require that the TC will be on-site during a minimum of two (2) hours per week and will be available during other times to residents via email and telephone. Email and phone information for the TC will be posted in the transportation information center.

5.4.1 PROPOSED TRAFFIC MONITORING

The CRA has been conducting an annual traffic study and analysis of Kendall Square for the past 20 years, in compliance with the 1994 Section 61 findings. In 2020, the CRA published an updated transportation report of the monitoring program to reflect the evolution of Cambridge’s transportation priorities in the complex multi-modal urban environment of Kendall Square. The improved study reported on vehicular traffic counts, as well as more holistically reporting on multi-modal data, including counts for bicycles including bikeshare, transit and bus services, crash data, as well as travel behavior. The report included transportation and development data for the KSURP area, as well as for the broader Kendall Square neighborhood.

Specific changes to the report include:

- Updated scope to include the broader Kendall Square neighborhood
- Analysis of PTDM data to assess transportation travel behavior and mode share
- Data on ridership and service for both subway and bus services in Kendall Square
- Boarding information from the EZRide shuttle
- KSURP parking garage data collection and analysis
- Bicycle counts at cordon locations and analysis of bikeshare data
- Crash data analysis
- Curbside use analysis for Main Street and Broadway

5.5 PARKING

As constructed, Commercial Building A can accommodate 457 total spaces through efficient self parking and the provision of managed/valet parking spaces. As approved by the Concept plan Amendment #1 the Green Garage will accommodate 824 total spaces, and the Yellow Garage will accommodate 885 total spaces. The approximately 1,170 existing above-grade parking spaces associated with the Blue Garage will be relocated below-grade into two, connected parking garages situated beneath Commercial Building C and Commercial Building D that will accommodate up to a total of 1,584 spaces. Concept Plan Amendment #2 proposes a net addition of up to 414 spaces to be accommodated within the two garages to support the additional commercial GFA as well as the Residential Building South. This results in a net total addition of 1,042 spaces since the Original Concept Plan was approved, which at that time included 2,708 existing parking spaces. Figure 5.5 and Table 5-2 summarizes the existing and future parking supply in the area.

A shared vehicle parking analysis was conducted for the TIS to understand the Project's ability to share new parking spaces and possibly reduce the overall number of spaces built. In addition, the analysis was expanded to include the entire KSURP development to understand the shared parking ability this area has. As indicated above, the KSURP currently supplies 3,336 parking spaces in four garages, and with the construction of the Project, 414 vehicle spaces will be added to the KSURP area. This brings the number of total parking spaces to approximately 3,750 spaces. This new total supply is below the original maximum approved 4,300 vehicle parking spaces under the 1977 FEIR.

The shared parking analysis was conducted using three different methodologies as requested by TP&T. The first methodology shows the required number of spaces by zoning. The second methodology calculated parking demand by employee density. And the third methodology uses actual garage utilization information and usage for the KSURP garages and from nearby PTDM transportation monitoring reports to create a shared parking analysis demonstrating the peak shared parking demand for the Project. Detailed descriptions and tables for these analyses are presented in the TIS Update #2, Appendix B. The updated shared parking analysis shows that the future parking supply may yield a small peak shortage of 115 spaces, however with the implementation of the outlined TDM strategies, it is anticipated that parking supply will sufficiently serve the parking demand of the Project. The analysis also indicated that the overall parking demand within the KSURP area will be able to provide enough parking for the area residents, tenants and visitors with the proposed TDM measures and close monitoring of each garage.

TABLE 5-2 FUTURE PARKING SUPPLY IN THE KSURP AREA

Project Component/Garage	2016 Existing Parking	2018 Proposed Parking	Proposed New Parking for Since Amendment#1	Future Parking
135 Broadway Residences/Blue Garage	1,170	1,170 ²	(-1,170)	0
Yellow Garage	734	885	0	885
Green Garage	804	824	0	824
145 Broadway Office Building	0	457	0	457
325 Main Street Commercial Building	0	0	0	0
Commercial Buildings C and D	0	0	+1,584	1,584
Total	2,708¹	3,336	+414	3,750

¹ In 2016 when the Original Concept Plan was approved the KSURP supplied 2,708 existing parking spaces in three garages.

² The Concept Plan Amendment #1 contemplated a loss of approximately 215 spaces in the Blue Garage to accommodate the construction of the Residential North and Residential South buildings. With the demolition and relocation of the Blue Garage below-grade to accommodate the Eversource electrical substation, Concept Plan Amendment #2 will preserve and relocate all 1,170 existing spaces below-grade.

5.5.1 LONG-TERM PARKING MONITORING PROGRAM

All parking facilities are monitored daily to ensure monthly cardholders are parking in the appropriate garages and transient parkers are dispersed efficiently among the three garages. Tenants of the area are provided a limited number of parking passes, as outlined in each individual lease, and are charged the full monthly cardholder price. Other employees or visitors without monthly passes are subject to the daily rates, up to \$40.00 per day.

New tenants of the Project will negotiate the number of parking permits (without exceeding the zoning maximum of 0.90 spaces per 1,000 KSF) and the specified amount will be within the individual lease. All new monthly parking passes will be charged the full monthly rate. This will encourage more employees to take alternative modes of transportation and reduce the number of monthly parkers parking in the area on a regular basis.

Residential parkers will be provided the opportunity to buy a monthly parking pass at full price. This will encourage a low auto-ownership rate and could further reduce the demand for parking in the area.

A portion of the existing parking demand is from transient users. It is assumed that these users are comprised of employees who do not buy a monthly pass, visitors to area businesses and retail customers. These specific users would therefore be classified as infrequent users of the garage.

PRICING STRATEGY

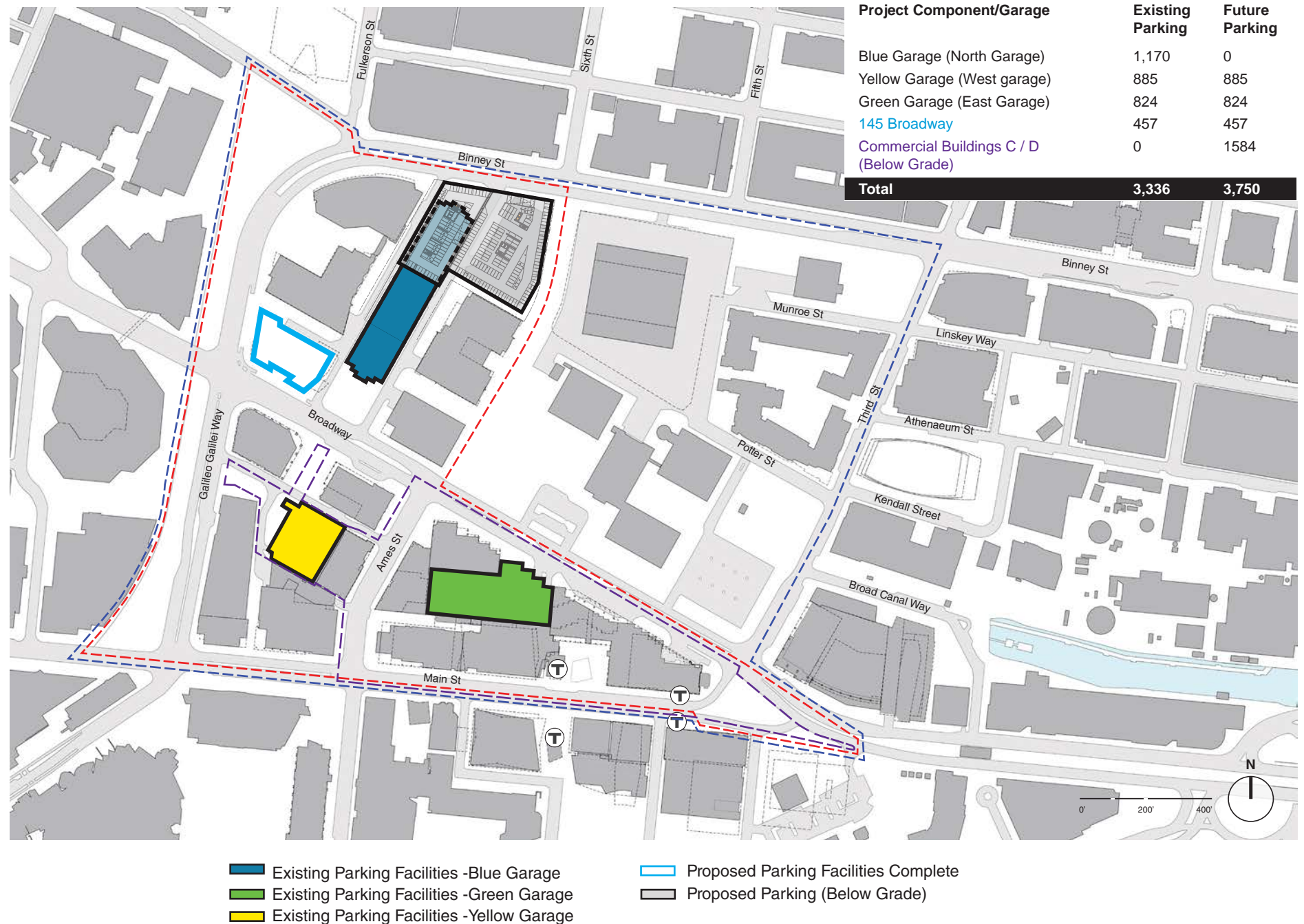
Currently the Kendall Center garages have a time-sensitive pricing strategy that discourages driving and parking in the area. A monthly cardholder pays up to \$400.00 per month for a space within the Kendall Center garages and a transient parker pays up to \$42.00 per day. It should be noted that the three garages have some of the highest parking rates in the immediate area with other garages having all-day parking for \$23.00 to \$30.00. Based on a recent survey (last week) we found that a couple of the garages in the area are charging \$45.00/day.

Due to the increasing parking demand within the area, the Applicant and other stakeholders are in discussions about implementing new pricing strategies to further discourage vehicle trips to the area. While pre-existing contractual parking obligations likely to be hosted in the new proposed parking facilities beneath Commercial Buildings C and D must be honored, it is understood that new forward contracts for parking are required to be indexed to daily usage.

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OFF-STREET PARKING

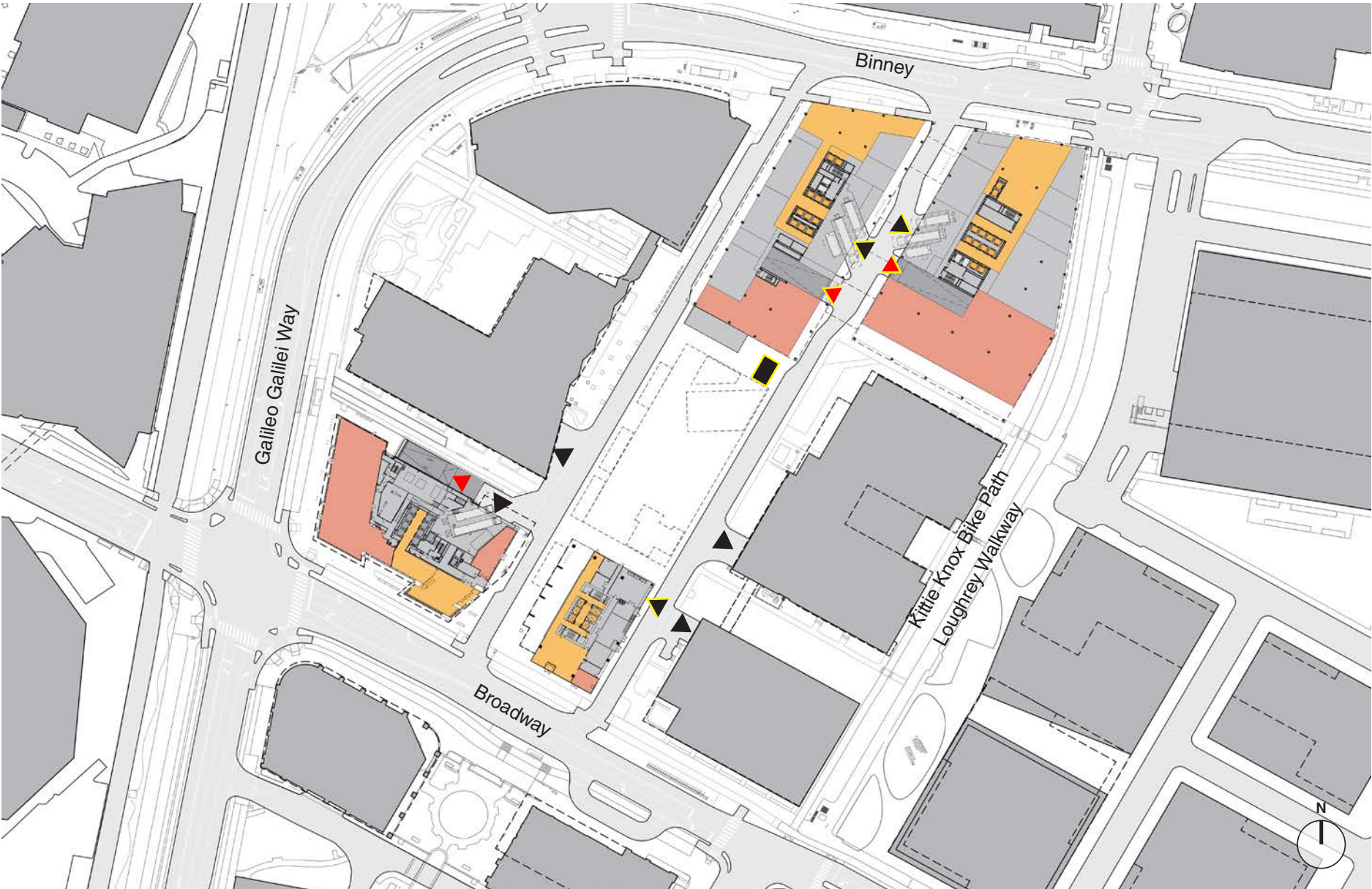
FIGURE 5.5



5.6 SERVICE AND LOADING

PROPOSED SERVICE AND LOADING PLAN: RESIDENTIAL BUILDING SOUTH / COMMERCIAL BUILDING C / COMMERCIAL BUILDING D

FIGURE 5.6



- Project Parking Entrance
- Project Loading Dock
- Project Service Area
- Existing Parking Entrance
- Existing Loading Dock

All service and loading will be conducted within the Project site, accessed from existing service drives between Broadway and Binney Street.

5.7 PROPOSED PEDESTRIAN ACCESS, SAFETY, AND STREETSCAPE IMPROVEMENTS

As discussed previously, the KSURP area provides excellent pedestrian accommodations, including sidewalks on all study area roadways and crosswalks at all study area intersections. The City is ahead of many other communities in utilizing pedestrian countdown timers with Leading Pedestrian Interval (LPI) programming and many of the signalized intersections within the District have pedestrian countdown timers with such technology.

Both the CRA and Applicant are committed to creating a cohesive integrated network of open spaces and connecting pathways while improving pedestrian safety, access and circulation within the KSURP area. The CRA and Applicant will work in conjunction with the City to identify areas of improvement.

The following measures have been completed since the Concept Plan Amendment #1 was approved in 2019:

- Improve the Sixth Street Connector by increasing driver awareness of the pedestrian crossing with advanced warning signs. In addition, this connection should be studied in connection with the Sixth Street Connector Pathway improvements, possibly improving upon or enhancing the existing HAWK system or other pedestrian crossing systems. The Project proposes to redesign the Sixth Street Connector Pathway to provide separated pedestrian and bicycle facilities while maintaining the mature trees along the existing pathway. Implement LPI programming at study area intersection.
- 100% Design Plans for reconstruction of Binney Street and Galileo Galilei Way between Sixth Street and Broadway, including improvements at the intersection of Galileo Galilei Way/Broadway and respective approaches.
- 100% Design Plans for reconstruction of Broadway between Ames Street and Galileo Galilei Way.
- Reconfiguration of sidewalk and addition of cycle track on Ames Street

The following measures will be completed prior to the issuance of a certificate of occupancy for Commercial Building B:

- Enhance the Main Street streetscape in front of the proposed Commercial Building B.
- Provide a new pedestrian connection between Kendall Plaza and the Kendall Roof Garden.
- Creation of public lobby between 325 and 355 Main Street
- Addition of porous, ground floor retail fronting Kendall Plaza and Main Street capable of facilitating multiple through block connections

The Applicant and the CRA will continue to consider the following general measures to be implemented in association with future phases of the Project:

- Provide additional pedestrian countdown timers at study area intersections.
- Implement LPI programming at study area intersections.
- Review all pedestrian crossings within the KSURP boundaries to assess their potential for sidewalks “bulb-outs”, raised crossings, pedestrian refuge islands, Rectangular Rapid Flashing Beacons (RRFB’s), re-aligned non-apex ramps and/or other treatments to enhance the comfort and visibility of crosswalks.
- Enhance the Broadway streetscape from Ames Street to Galileo Galilei Way.
- Improve pedestrian safety by enhancing lighting along sidewalks and pathways for safer pedestrian accommodations.
- Enhance open spaces with multiple outdoor connections to buildings within the KSURP area.

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6.0 INTRODUCTION

This chapter details the existing and proposed utility infrastructure that will service the Project. In addition to presenting the existing infrastructure and outlining early discussions with the City of Cambridge, the anticipated utility demands and impact on the local infrastructure is discussed. Early phases of the Concept Plan include investments by the City in the local infrastructure to improve utility capacity for development. The Applicant will implement measures to reduce impacts of the proposed infill development on the existing utility systems. These include employing a district-wide stormwater management approach to reduce the stormwater effluent off-site, mitigating Infiltration and Inflow (I/I) in the sewer system to increase available capacity for new wastewater flows, and applying water conservation measures to reduce demands on the potable water system.

CHAPTER UPDATES

The following section summarizes minor refinements to this Section since the Concept Plan Amendment #1.

- **Stormwater:** The existing and proposed stormwater calculations have been updated to reflect as-built conditions associated with Commercial Building A at 145 Broadway, and the proposed conditions associated with Commercial Building B at 325 Main Street. In addition, the proposed district stormwater management approach has been updated to eliminate permeable pavers, but will continue to explore the use of green roofs, landscaped areas, and subsurface infiltration to manage stormwater as detailed in the Figures herein.
- **Sanitary Sewer/Domestic Water:** The existing and proposed sanitary sewer and domestic water calculations have been updated to reflect the under construction conditions at Commercial Building B at 325 Main Street, and the proposed conditions associated with Residential Building South at 135 Broadway, Commercial Building C at 290 Binney Street, and Commercial Building D at 250 Binney Street.
- **Vulnerability Assessment:** The vulnerability assessment has been expanded to include projected flood elevations along Binney Street, Broadway Street and Main Street. While not a component of the Project, the relocation of the Eversource electrical substation will serve the Cambridge community and improve the resilience of the area electrical grid for decades to come.

6.1 EXISTING INFRASTRUCTURE

6.1.1 STORMWATER

The existing MXD District is a densely developed, predominantly impervious urban area. The majority of the roadways in the area have separated storm drainage utilities for private and public stormwater runoff conveyance. The Cambridge Department of Public Works (CDPW) owns and maintains the extensive system of catch basins, manholes, and drain pipes. The District's catchment area drains to the Lower Charles River Basin via a 54-inch drain outfall at Broad Canal Way.

The Project will be required to meet the stormwater management standards of both the CDPW and the Massachusetts Department of Environmental Protection (DEP). To evaluate the proposed hydrologic conditions, an existing condition model was created in Hydro CAD as a baseline for evaluation. Table 6-1 shows the impervious and pervious land covers in the existing condition, as well as the resulting runoff rate and volume for the 2-year design storm.

The following is a list of existing storm drain services that are located adjacent to each project Component, which are also shown in Table 6-1.

Commercial Building A (145 Broadway):

- 54-inch main in Broadway (Construction is underway to replace 54-inch main with a 4.5' x 6.5' culvert)
- 30-inch main in Galileo Galilei Way

Commercial Building B (325 Main Street):

- 21-inch main in Main Street
- 18-inch main in Main Street

Residential Building South (Blue Garage):

- 54-inch main in Broadway (Construction is underway to replace 54-inch main with a 4.5' x 6.5' culvert)
- 18-inch service in East Service Drive
- 24-inch service in West Service Drive

Commercial Building C (290 Binney Street):

- 24-inch main in Binney Street
- 18-inch service in East Service Drive
- 12-inch service in West Service Drive

Commercial Building D (250 Binney Street):

- 24-inch main in Binney Street
- 18-inch service in East Service Drive
- 24-inch main in Pedestrian Way

Project Component	Existing Site Impervious Area (SF)	Existing Site Pervious Area (SF)	Existing Site Runoff Rate 2-year, 24-hour Design Storm (CFS)	Existing Site Runoff Volume 2-year, 24-hour Design Storm (AF)
Phase 1 Commercial Building A	27,707	10,155	2.09	0.164
Phase 2 Commercial Building B	28,823	0	2.03	0.150
Phase 3 Residential Building South	6,398	10,273	1.04	0.061
Phase 3 Commercial Building C	23,350	9,293	2.40	0.147
Phase 4 Commercial Building D	45,947	8,883	4.24	0.267
TOTAL	132,225	38,604	11.80	0.789

TABLE 6-1 EXISTING SITE HYDROLOGY

6.1.2 SANITARY SEWER

The District is serviced by several separated sewer systems, as well as a large combined sewer main, as shown in Figure 6.1. The CDPW owns and maintains the local sanitary sewer system, which discharge to the Massachusetts Water Resources Authority (MWRA) conveyance system to the Deer Island Wastewater Treatment Plant. Wastewater flows from the Project will travel northeasterly by CDPW gravity flow sanitary sewer mains to the MWRA's system located in Cardinal Medeiros Avenue. During dry-weather conditions, the gravity mains in the area have sufficient capacity to support the Project. During wet weather conditions, some capacity issues arise as I/I takes capacity in the system from the wastewater. This will be mitigated through a program to remove I/I relative to the estimated wastewater generation of the Project.

The following is a list of the existing sanitary sewer mains adjacent to each Project Component:

Commercial Building A (145 Broadway):

- 21-inch main in Broadway
- 24-inch main in Galileo Galilei Way

Commercial Building B (325 Main Street):

- 10-inch main in Main Street
- 18-inch main in Main Street

Residential Building South (Blue Garage):

- 21-inch main in Broadway

Commercial Building C North (290 Binney Street):

- 30-inch main in Binney Street
- 98-inch combined sewer main in Binney Street

Commercial Building D North (250 Binney Street):

- 30-inch main in Binney Street
- 98-inch combined sewer main in Binney Street

6.1.3 DOMESTIC WATER

Domestic water and fire protection services in the District provided by infrastructure owned and maintained by the Cambridge Water Department (CWD) are shown in Figure 6.2. There are several transmission and local supply lines throughout the neighborhood to service the various Project components. The local supply system generally has high flow rates, but has water pressure that is typically lower than that required for tall developments. Booster pumps may be required to achieve nominal pressure in the domestic water and fire protection services for each Project component

The following is a list of the existing water mains adjacent to each Project Component:

Commercial Building A (145 Broadway):

- 16-inch main in Broadway
- 30-inch main in Broadway
- 16-inch main in Galileo Galilei Way

Commercial Building B (325 Main Street):

- 12-inch main in Main Street
- 12-inch main in Main Street

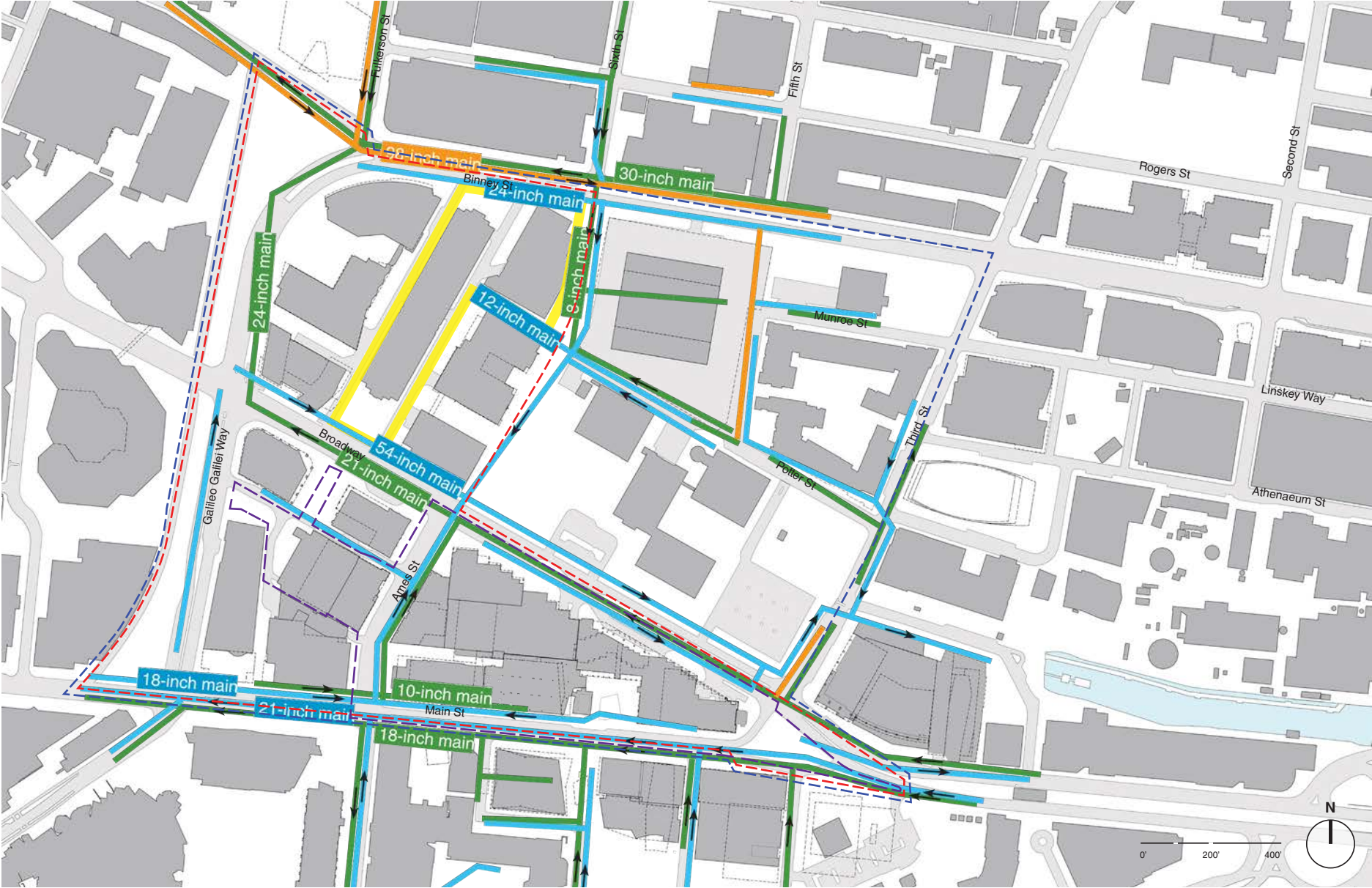
Residential Building South (Blue Garage):

- 16-inch main in Broadway
- 30-inch main in Broadway

Residential Building North (Blue Garage):

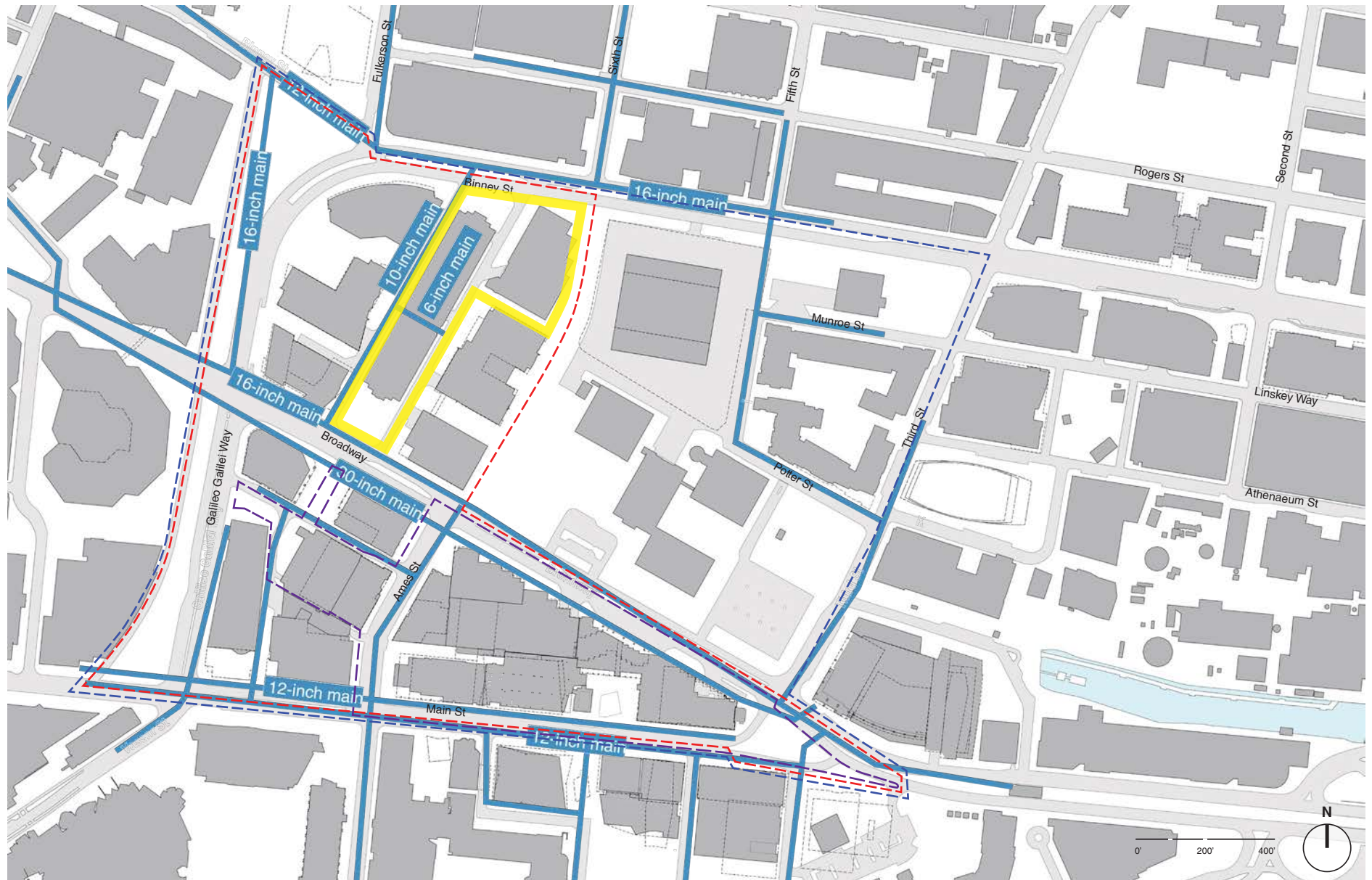
- 16-inch main in Binney Street
- 12-inch main in Binney Street

In addition, there are several water and fire protection services, which serve the existing buildings in the District. Services that are intended to remain active will be protected during the construction phase of this Project. There is also an existing private hydrant that is serviced by a water line running under the Blue Garage. This line will be maintained as part of this Project, and the CDW will be allowed unrestricted access to the line and hydrant at all times.



- Existing Sanitary Sewer System
- Existing Storm Drain
- Existing Combined Sewer
- Project Boundary

- MXD Boundary
- KSURP Boundary
- Ames Street District ASD



- Existing Water System
- Project Boundary

- - - MXD Boundary
- - - KSURP Boundary
- - - Ames Street District ASD

6.2 PROPOSED INFRASTRUCTURE IMPROVEMENTS

6.2.1 STORMWATER IMPROVEMENTS

In addition to reviewing and approving any new private connections to existing infrastructure, the CDPW reviews and approves the stormwater management strategies of larger developments in the City. CDPW requires that new projects mitigate stormwater such that the peak rate and volume of stormwater runoff in the post-development condition during a 25-year design storm are equal to or lower than that of the pre-development condition for the 2-year design storm. In the existing condition, there are no stormwater management systems implemented throughout the Project Site that reduce the peak rate or total volume of runoff. Therefore, the Project will greatly improve stormwater contributions to the CDPW stormwater infrastructure by meeting the required mitigation thresholds.

To improve the quality, rate, and volume of runoff from the Project, the Applicant has designed preliminary stormwater management systems, which meet the City's requirements. As an infill project, there is limited opportunity to expand ground level landscaping to improve the hydrologic condition.

Therefore, the Applicant is exploring the use of green roofs to reduce the percentage of impervious cover for the Project. In addition, the Applicant is proposing an integrated stormwater management system for the Project that includes subsurface infiltration systems. The site at Commercial Building B introduces many challenges to infiltrate, including limited site area and the location adjacent to the MBTA red line tunnel and the City's right-of-way. Infiltration will be designed to the extent feasible at this location and will be supplemented by internal stormwater holding tanks. By applying this approach, the Applicant will meet or exceed the required stormwater mitigation standards set forth by the City of Cambridge and DEP. Table 6-2 provides the conceptual stormwater management system proposed for each Project Component. Figure 6.3A and Figure 6.3B provide a graphic display of the integrated stormwater management approach from this Project.

PROJECT COMPONENT	PROPOSED SITE IMPERVIOUS AREA (SF)	PROPOSED SITE PVIOUS AREA (SF) ¹	INFILTRATION SYSTEM CAPACITY (CF) ²	PROPOSED SITE RUNOFF RATE 25-YEAR, 24-HOUR DESIGN STORM (CFS)	PROPOSED SITE RUNOFF VOLUME 25-YEAR, 24-HOUR DESIGN STORM (AF)
Phase 1 Commercial Building A	27,707	10,155	2,106	2.00	0.164
Phase 2 Commercial Building B	28,823	0	5,926	2.15	0.227
Phase 3 Residential Building South	12,459	4,212	1,600	0.82	0.168
Phase 3 Commercial Building C	32,643	0	2,800	2.24	0.366
Phase 4 Commercial Building D	54,830	0	4,750	4.12	0.615
TOTAL	156,462	14,367	17,218	11.33	1.540

1. Green roofs included in proposed site pervious area

TABLE 6-2 PROPOSED SITE HYDROLOGY

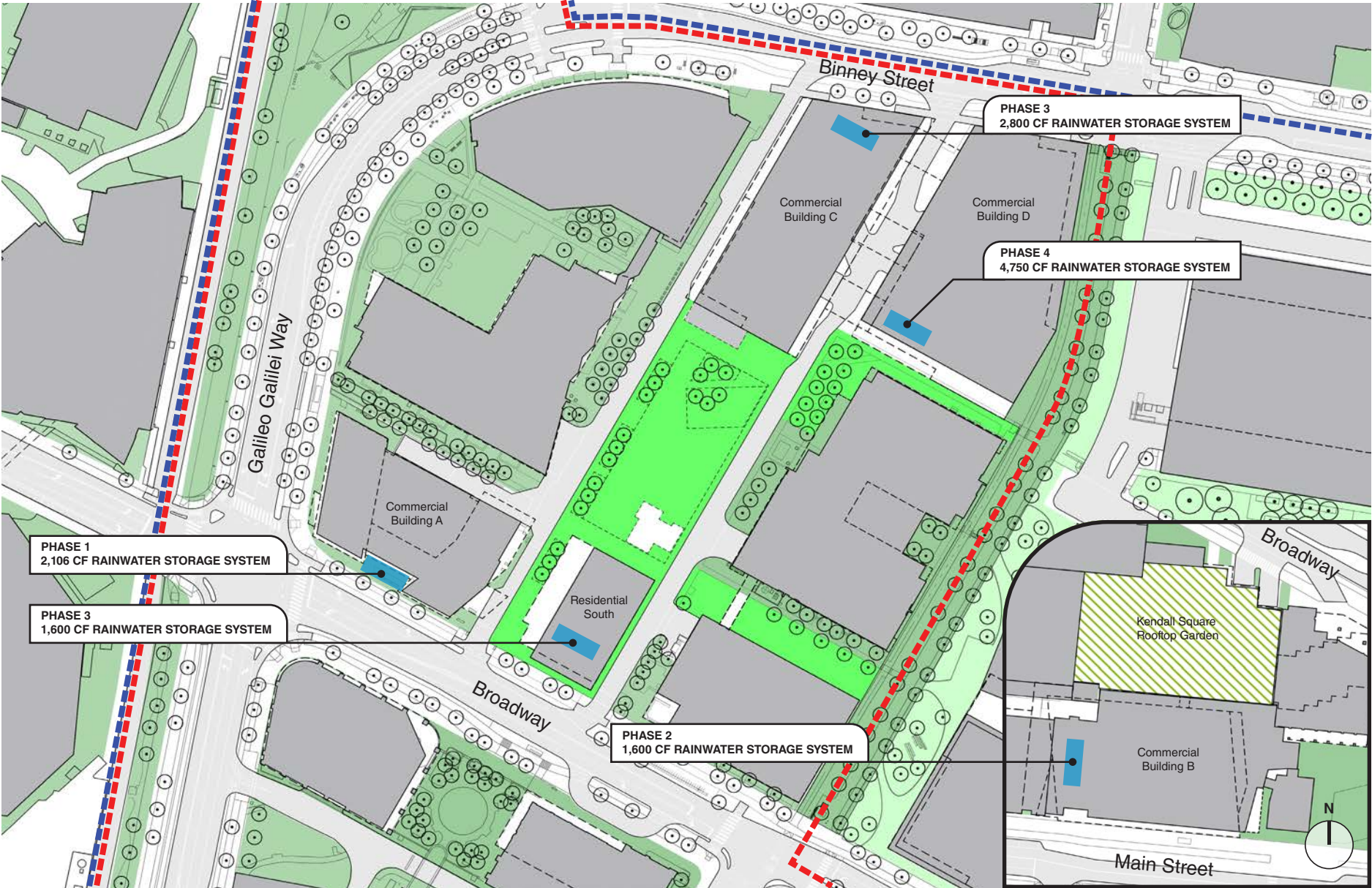
In addition to mitigating runoff flow rates and volumes, the Applicant is responsible for reducing the Phosphorus loads from the Project Site to the CDPW stormwater infrastructure to comply with the Lower Charles River Total Phosphorus Total Maximum Daily Load (TMDL) that requires the removal of 80 percent of Total Phosphorus. Applicant has developed several methods for reducing the Total Phosphorus. These include non-structural methods, increased landscape coverage and green roof installation, enhanced street sweeping program, on-site catch basin cleaning program, and an enhanced organic waste and leaf litter collection program for fall months. These methods can reduce Phosphorus export rates by up to 17 percent according to Attachment 2 of Appendix F of the Massachusetts Small MS4 General Permit (MS4). These nonstructural, Phosphorus pretreatment strategies will supplement the infiltration based, filter cartridge, or tank based structural treatment systems. Subsurface infiltration structures are the most effective means for removing Phosphorus from the Project Site, as well as reducing peak rate and total discharge of runoff off-Site.

Site and building roof runoff will be directed to the subsurface infiltration systems or rainwater detention/reuse tanks. In order to meet the stormwater peak rate requirements, set by the CDPW, the infiltration systems are designed to hold and infiltrate over 1-inch of runoff from the contributing area. A 1-inch treatment capacity will reduce phosphorus loads by 92 percent from the impervious contributing area. The entire Project Site area will drain to a structural Phosphorus mitigation measure sized to remove at least 80 percent of Total Phosphorus and therefore it is expected that the Project will meet the required DEP reduction targets.

6.2.2 SANITARY SEWER

Table 6-3 details the current wastewater generation estimate based on the DEP Sewer Connection and Extension Regulations, 310 CMR 15.203.f by building use with the latest KSRP building program. The Project is estimated to generate 196,152 of net new wastewater relative to the existing condition. As required by the CDPW, each Project component will have a sanitary holding tank capable of retaining the 8-hour peak sanitary flow from the building. The volume of each sanitary holding tank will be coordinated with the CDPW. In addition, all drainage from enclosed vehicular parking and loading will be treated with an MWRA approved gas/oil separator. If a portion of Project's program includes restaurant use, then a grease trap will be installed to pretreat kitchen wastewater effluent, thereby minimizing the potential impact to the CDPW sanitary sewer system.

The City of Cambridge is required to remove I/I from its sanitary sewer system by the MADEP in an effort to reduce and eliminate the potential for Combined Sewer Overflows (CSOs) to Massachusetts waterways. The CDPW is responsible for coordinating I/I removal for developments in Cambridge that generate greater than 15,000 GPD of wastewater, at a ratio of 4 gallons of I/I per GPD of wastewater. As such, the Applicant will coordinate an I/I removal plan with the CDPW before the individual buildings are occupied. Table 6-4 shows the estimated I/I removal for each project Component based on the estimated wastewater generation, which totals 784,608 gallons. The Applicant has previously completed an I/I removal project for the CDPW in 2019 titled "East Cambridge Sewer Separation". The completed work removed 269,969 GPD of I/I mitigation. The Applicant is currently constructing a culvert in Broadway for future I/I mitigation titled "Kendall Culvert". The final I/I removal volumes will be determined at the Design Review stage for each building and in consultation with CDPW.



- Open Spaces
- Green Roofs
- Infiltration System

PARCEL 4 - 325 MAIN ST- STORMWATER MANAGEMENT

Locations of rainwater storage systems are subject to change depending on site logistics

TABLE 6-3 ESTIMATED WASTEWATER GENERATION FOR THE PROJECT

COMPONENT ¹	USE	QUANTITY	FLOW RATE (GPD)	SEWAGE GENERATION (GPD)
New Project-Related Sewage Generation				
Phase 1 Commercial Building A	Office	432,914	75/1,000 sf	32,469
	Retail	2,872	50/1,000 sf	144
	Restaurant	207	35/seat	7,245
<i>Commercial Building A Total</i>				39,858
Phase 2 Commercial Building B	Office	345,423	75/1,000 sf	25,906
	Retail	20,000	50/1,000 sf	1,000
	Restaurant	500	35/seat	17,500
<i>Commercial Building B Total</i>				44,406
Phase 3 Residential Building South	Residential	635	110/bdrm	69,850
<i>Residential South Total</i>				69,850
Phase 3 Commercial Building C	Office	409,500	75/1,000 sf	30,712
	Retail	2,500	50/1,000 sf	125
<i>Commercial Building C Total</i>				30,837
Phase 4 Commercial Building D	Office	444,776	75/1,000 sf	33,358
	Retail	5,800	50/1,000 sf	290
<i>Commercial Building D Total</i>				33,648
Broad Institute Office Conversion	Office	14,000	75/1,000 sf	1,050
<i>Broad Institute Total</i>				1,050
Total New Project-Related Sewage Generation				219,649
Existing Sewage Generation to be Removed				
145 Broadway	Commercial	(78,636)	(75/1,000 sf)	(5,898)
325 Main Street	Commercial	(74,901)	(75/1,000 sf)	(5,618)
	Retail	(30,956)	(50/1,000 sf)	(1,548)
	Restaurant	(164)	(35/seat)	(5,740)
250 Binney Street	Commercial	(62,576)	(75/1,000 sf)	(4,693)
Total New Project-Related Sewage Generation				219,649
Net New Wastewater Generation				196,152

TABLE 6-4 CURRENT PROJECT I/I REMOVAL BY PROJECT COMPONENT

PROJECT COMPONENT ¹	NET NEW WASTEWATER GENERATION (GPD)	I/I REMOVAL REQUIREMENTS (GALLONS)
Phase 1 Commercial Building A Net New	33,960	135,840
Phase 2 Commercial Building B Net New	31,500	126,000
Phase 3 Residential Bldg. South Total	69,850	279,400
Phase 3 Commercial Building C	30,837	123,348
Phase 4 Commercial Building D	28,955	115,820
Broad Institute Office Conversion	1,050	4,200
Total	151,332	605,328

1. I/I removal is not required for the Innovation Space Conversion because it will generate the same amount of wastewater as the existing office space.

gpd = gallons per day

bdrm = bedroom

* assumes 25 sf per seat

**assumes 1.5 bedrooms per unit

1. The Innovation Space Conversion component is not included because it will generate the same amount of wastewater as the existing office space.

6.2.3 DOMESTIC WATER

During the MEPA review process, the CWD provided initial confirmation that the local water infrastructure should have sufficient capacity to serve the Project. The water demand for each Project component is initially estimated by applying a 10% consumption factor to the wastewater generation estimate. Therefore, the estimated Project water demand over the existing condition is equal to 215,767 GPD. The estimate for each Project Component is shown in Table 6-5. As discussed in Section 8, Sustainability, to meet the Project's sustainability goals, water conservation measures will be implemented for each Project Component to greatly reduce the water demand. Preliminary discussions with the CWD during the MEPA review process did not elucidate any capacity issues in the District to serve the Project for both domestic water and fire protection services. The Applicant will evaluate the need for domestic and fire protection booster pumps to compensate for any deficiencies in the water pressure in the water mains adjacent to each Project component. Hydrant flow tests conducted in the field will be used to make this evaluation. Where possible, redundant domestic water and fire protection services will be connected to a separate supply main, otherwise isolation valves will be installed to ensure that domestic water and fire protection services are not interrupted by isolated service issues. All existing domestic water and fire protection service lines that require removal will be cut and capped at the main, as required by the CWD.

TABLE 6-5 ESTIMATED WATER DEMAND BY PROJECT COMPONENT

PROJECT COMPONENT ¹	WATER DEMAND (GPD)
Phase 1 Commercial Building A Net New	37,356
Phase 2 Commercial Building B Net New	34,650
Phase 3 Residential Bldg. South Total	76,835
Phase 3 Commercial Building C Net New	33,921
Phase 4 Commercial Building D Net New	31,850
Broad Institute Office Conversion	1,155
Total Water Demand	215,767

1. The Innovation Space Conversion component is not included because it will have the same potable water demand as the existing office space

6.3 VULNERABILITY ASSESSMENT

The Applicant has coordinated with the City of Cambridge to identify the capacity issues in the stormwater infrastructure serving the District. The Applicant is particularly concerned with the potential for inland flooding due to stormwater system surcharges, especially in context with the expected changes in precipitation patterns and sea level rise and storm surge. Using the City's latest flood modeling projections, the Applicant has identified the target finished floor elevations (FFE) that would reduce the risk of the Project being impacted by sea level rise/storm surge flooding, and precipitation based from the 2070 100-year storm event. For Commercial Building A, Commercial Building C and Residential Building South, the 100-year flooding event projected for the year 2070 is approximately El. 20.20 Cambridge City Base (CCB). For Commercial Building B, the 2070 100-year flood event projection is approximately El. 20.30 CCB. According to the City's flood projections, Commercial Building D is not vulnerable to sea level rise/storm surge or precipitation based flooding from the 2070 100-year storm event.

The DPW recommends that building finish floor elevations be designed to the 2070 10-year flooding event projections, while being designed to recover from the 2070 100-year flooding elevations. The ability to recover was defined as locating critical infrastructure susceptible to flood damage above the 2070 elevation. These elevations do not take into consideration a precipitation event occurring concurrently with a storm surge event. For the 10-year storm with the impacts of climate change in 2070, minor flooding is expected in Broadway at Galileo Galilei Way, and along Main Street, and stormwater infrastructure will have limited capacity for increased flows. The flooding will be greatly exacerbated during a concurrent storm surge event propagating through the stormwater system. The Applicant will work with the City to review and confirm the appropriate FFE prior to design review for each Project component.

The Applicant intends to design all Project components to meet or exceed the recommended planning flood elevations. Figure 6.4 shows the recommended design flood elevations for the 2070 100-year design events as they relate to the existing topography. To account for the probability of a concurrent precipitation event with storm surge propagation in stormwater infrastructure, the Applicant will study additional resiliency measures. These measures may include oversized stormwater conveyance infrastructure, backflow preventers on effluent stormwater pipes, watertight internal gravity piping to the second floor, and the district wide stormwater management strategies, which greatly reduce the rate and volume of site stormwater effluent providing capacity for runoff from the remaining catchment area.

As flooding is expected to worsen over time, the Applicant will continuously review the latest design recommendations and literature to determine if/when portable flood protection systems, such as Portadam or the Aquafence Flood Barrier System, should be implemented on-site to increase the Project's resiliency. Similarly, the sanitary sewer system is expected to experience greater capacity issues from I/I with changes in precipitation patterns. To mitigate risk from sanitary sewer surcharge, backflow preventers will be installed on building sewer laterals, internal gravity piping will be watertight to the second floor, offline sanitary holding tanks will hold building wastewater during surcharge conditions, and the Project will address I/I as outlined in Section 6.2.2.

Minor flooding is expected along Main Street, but is not anticipated to impact the Kendall Plaza or the MBTA Redline Outbound Headhouse. The Applicant is committed to working with the MBTA to explore and improve the resiliency of the MBTA Redline Outbound Headhouse to flooding. The Applicant will explore potential measures to assist the MBTA with making its transit facilities in the KSURP area more resilient to inland flooding due to extreme precipitation. Conceptual, potential measures aimed at making the Kendall Square station more resilient to flooding could include trench drains with greater capacity than the existing systems, which could be installed at all entrances to the station to redirect more runoff from the area away from staircases to the station platforms. A more intensive, but effective means of flood protection would be mobile flood barriers. These walls can be stored by the MBTA on-site for use when flooding from extreme storm events are predicted. The flood barriers could be installed at station entrances around ground level utility vaults and adjacent to air intake/exhaust to greatly minimize the potential for flooding to effect operations of the station.

At the request of the City of Cambridge, and in response to growing demand for electricity in Cambridge the Project accommodates the relocation of an electrical an Eversource electrical substation. Re-siting this electrical substation is required to accommodate growth in Kendall Square, but will serve the Cambridge community and improve the resilience of the area electrical grid for decades to come.



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An aerial photograph of a city grid, likely New York City, is shown in a light yellow, semi-transparent style. The grid of streets and building footprints is visible across the entire background. Overlaid on the right side of the image is the text "7. ENVIRONMENTAL IMPACTS" in a bold, black, sans-serif font.

7. ENVIRONMENTAL IMPACTS

7.0 INTRODUCTION

This section presents an updated summary of the existing environmental conditions in the vicinity of the Project Site and the potential changes that may occur as a result of the Project. The goal of the Project continues to be to better utilize the Project Site and complement adjacent uses while minimizing potential adverse environmental impacts to the greatest extent feasible.

As discussed in more detail below, the Project-related impacts, which are to be expected in urban development of this scale, are counterbalanced by the significant public benefits for the adjacent neighborhoods and the City. The following sections identify Project impacts and discuss steps that have been or will be taken through design and management to avoid, minimize and/or mitigate adverse effects.

Where the current state of the design allows, this Concept Plan Amendment #2 provides an updated assessment of the following Project impacts:

- Pedestrian Wind
- Shadow
- Noise
- Exhaust Re-Entrainment Review

CHAPTER UPDATES

The following section summarizes minor refinements to this Chapter since the Concept Plan Amendment #1.

- **Pedestrian Wind:** The Master Plan wind tunnel study should be considered a baseline with the understanding that each individual building's design review submission will include an update to the baseline for comparative purposes. Accordingly, any undesirable wind conditions that are presented here are not proposed as final but are shown as a starting point with which to better inform the designs of each building and their associated public realm improvements. Further, in the case of the North Parcel, the streetscape plantings were not included in the baseline study. It is expected that the inclusion of the associated landscape featured will have a material beneficial impact on winter wind mitigation. Future design review packages for Residential Building South, Commercial Building C and Commercial Building D will have the benefit of landscape design information.

- **Shadow:** The shadow analyses have been updated to reflect the Project, which includes construction of the consolidated 38-story Residential Building South at 135 Binney Street, the 17-story Commercial Building C at 290 Binney Street, and the 17-story Commercial Building D at 290 Binney Street. Additionally, considering the construction of Commercial Buildings C and D, the MIT Volpe Center Redevelopment buildings are now included as background. Commercial Building A at 145 Broadway (construction complete) is shown as “existing shadow” and is not included in the description of net new shadow associated with the three remaining Project components. Since this Concept Plan Amendment #2 proposes modifications only to the development program on the North Parcel, this section does not include an updated shadow study for Commercial Building B, which was studied extensively during Concept Plan Amendment #1.
- **Noise:** The construction of the Residential Building South at 135 Broadway, the Commercial Building C at 290 Binney Street, and the Commercial Building D at 250 Binney Street on the North Parcel is consistent with the previously contemplated noise monitoring that analyzed existing ambient sound levels associated with the existing daytime and nighttime activities and mechanical equipment along the south and north side of the existing Blue Garage. Section 7.3 demonstrates that the Project will continue to comply with the City of Cambridge's noise control ordinance (Municipal Code, Chapter 8.16).
- **Exhaust Re-Entrainment Review:** The Project, and more specifically the construction of the consolidated Residential Building South at 135 Broadway is consistent with the exhaust re-entrainment review that was documented in the Concept Plan Amendment #1. Recommendations to mitigate predicted air impacts specific to Residential Building South from existing exhaust stacks will be considered as this Project Component advances through design review.

7.1 WIND

7.1.1 INTRODUCTION

Since the Concept Plan Amendment #1 was approved in 2018, Rowan Williams Davies & Irwin Inc. (RWDI) was retained by the Applicant to complete a quantitative pedestrian level wind assessment for the Project Change. The objective of this assessment is to assess the potential effect of the Project on pedestrian-level wind conditions around the Project Site, and to provide recommendations for minimizing any potential adverse effects if necessary.

The Master Plan wind tunnel study presented herein should be considered a baseline with the understanding that each individual building's Design Review submission will include an update to the baseline for comparative purposes. Accordingly, undesirable wind conditions that are presented in the Concept Plan Amendment #2 are not proposed as final, but are shown as a starting point with which to better inform the designs of each building and their associated public realm improvements.

Further, in the case of the North Parcel, the streetscape plantings were not included in the baseline study. It is expected that the inclusion of the associated landscape features will have a material impact on winter wind mitigation. Future Design Review packages will have the benefit of landscape design information.

RWDI #2101718 April 13, 2021

7.1.2 SITE AND BUILDING INFORMATION

Since issuing the pedestrian wind results documented in the Concept Plan Amendment #1, the Project has been modified to include the 38-story Residential Building South at 135 Binney Street, the 17-story Commercial Building C at 290 Binney Street, and the 17-story Commercial Building D at 290 Binney Street. Since the Concept Plan Amendment #1 was approved the Applicant has also completed construction of the commercial space and ground floor retail associated with the Commercial Building A (Phase I) at 135 Broadway. For the purposes of this analysis, Commercial Building A is included in the existing configuration. Because no changes are proposed to Commercial Building B at 325 Main Street (the East Parcel), the updated pedestrian wind comfort assessment focuses entirely on the North Parcel as defined below.

- North Parcel: Consists of the completed Commercial Building A at 145 Broadway, and the construction of the Residential Building South (400 feet) at 135 Broadway, the Commercial Building C at 290 Binney Street (250 feet), and the Commercial Building D at 250 Binney Street (250 feet).

The following conditions were simulated for the North Parcel:

- Existing Configuration: includes all existing buildings, (including Commercial Building A) and approved buildings within the immediate Project area; and
- Proposed Configuration: includes the proposed Project components, and all existing buildings within the immediate Project area.
- Future Configuration: includes the proposed Project components, and all existing and approved buildings within the immediate Project area.

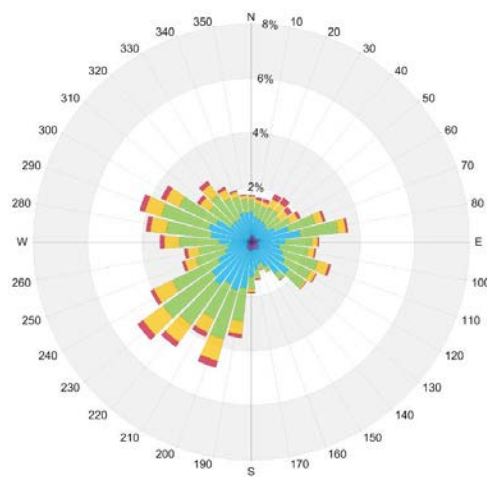
7.1.3 METEOROLOGICAL DATA

The analysis was completed for two main periods of the year, namely the summer months (May to October) and winter months (November to April). Meteorological data from Boston Logan International Airport for the period from 1990 to 2019 were used as reference for wind conditions in the region.

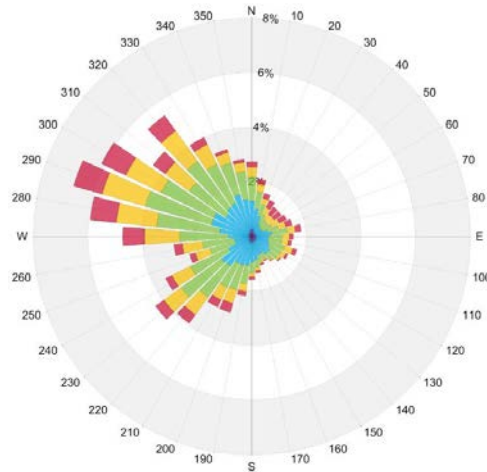
The distributions of wind frequency and directionality for summer and winter seasons are shown in the wind roses in Figure 7.1. In general, winds from the southwest and west-northwest directions are predominant in the summer. In the winter, the predominant of winds are generally from the west through the northwest.

Strong winds of a mean speed greater than 20 mph measured at the airport (red bands) occur more often in the winter than the summer and are predominantly from the southwest, northwest and northeast quadrants.

Wind Speed (mph)	Probability (%)	
	Summer	Winter
Calm	2.7	2.3
1-5	8.3	6.1
6-10	36.1	27.7
11-15	36.2	34.2
16-20	12.8	18.7
>20	3.9	11.0



Summer (May – October)



Winter (November – April)

FIGURE 7.1 DIRECTIONAL DISTRIBUTION OF WINDS APPROACHING BOSTON LOGAN INTERNATIONAL AIRPORT BETWEEN 1990 AND 2019

7.1.4 PEDESTRIAN WIND CRITERIA

The RWDI wind comfort criteria deal with both pedestrian safety and comfort, as they relate to the force of the wind. 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.

Safety: Pedestrian safety is linked to excessive gust wind speeds that can adversely affect a pedestrian's balance and footing. If strong winds that can affect a person's balance occur more than 0.1 percent of the time or 9 hours per year, the wind conditions are considered severe.

Comfort: Wind conditions are considered suitable for sitting, standing, strolling or walking if the wind speeds corresponding to the respective categories are expected for at least four out of five days (80% of the time).

- **Sitting:** Calm or light breezes desired for outdoor seating areas where one can read a paper without having it blown away.
- **Standing:** Gentle breezes suitable for main building entrances and bus stops.
- **Strolling:** Moderate winds that would be appropriate for window shopping and strolling along a downtown street, plaza or park.
- **Walking:** Relatively high speeds that can be tolerated if one's objective is to walk, run or cycle without lingering.
- **Uncomfortable:** None of the above comfort categories are satisfied.

Wind control measures are typically required at locations where winds are either rated as uncomfortable or exceed the wind safety criterion.

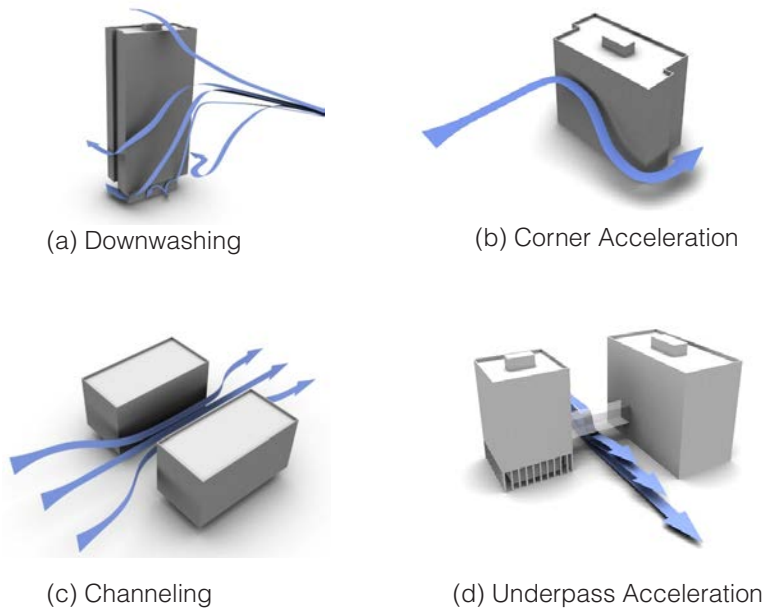
These criteria for wind forces represent average wind tolerance. They are sometimes subjective and regional differences in wind climate and thermal conditions as well as variations in age, health, clothing, etc. can also affect people's perception of the wind climate.

Pedestrians on walkways and parking lots will be active and wind speeds comfortable for walking or strolling are appropriate during the summer and winter. Lower wind speeds comfortable for standing are desired at building entrances where people are apt to linger. On playgrounds, sitting areas and other amenity spaces, low wind speeds comfortable for sitting or standing are desired during the summer. In the winter, wind conditions in these areas may not be of a serious concern due to limited usage and therefore higher wind activity may be acceptable.

7.1.5 PEDESTRIAN WIND CONDITIONS

Figures 7.4-7.9 graphically depict the predicted mean speed and estimated wind comfort conditions at each wind measurement location based on the modeled annual winds for the Existing and Future Configurations. Typically, summer and fall winds tend to be somewhat more comfortable than annual winds while winter and spring winds are somewhat less comfortable than annual winds. The following summary of pedestrian wind comfort is based on annual winds for each simulated condition.

FIGURE 7.2 - GENERIC WIND FLOW PATTERNS



EXISTING CONFIGURATION



FIGURE 7.3A WIND TUNNEL STUDY MODEL - EXISTING CONFIGURATION

PROPOSED CONFIGURATION



FIGURE 7.3B WIND TUNNEL STUDY MODEL - PROPOSED CONFIGURATION WITH GSA MASSING

*Based on approved massing for Commercial Building A, and a conceptual massing for Residential Building South, which is subject to design review.



FIGURE 7.3C WIND TUNNEL STUDY MODEL - PROPOSED CONFIGURATION WITH VOLPE DEVELOPMENT

*No ALTA Improvements or street trees shown on Broadway or Galileo Galilei Way

EXISTING CONFIGURATION
SUMMER

NORTH PARCEL

Under the Existing Configuration, mean wind speeds at most of the on-site locations in the summer are generally comfortable for their intended use, including strolling or better. At off-site locations surrounding the Project Site, mean wind speeds in the summer are generally comfortable for their intended use, which includes standing or better. There are no uncomfortable conditions, or conditions that exceed the effective gust speed safety criterion predicted either on-site or off-site during the summer and under the Existing Configuration. Refer to Figure 7.4

PROPOSED CONFIGURATION
SUMMER

NORTH PARCEL

Under the Proposed Configuration, mean wind speeds at most of the on-site locations in the summer are expected to be generally comfortable for their intended use, which includes strolling or better. Wind conditions generally comfortable for sitting or standing are predicted at the Commercial Building A entrances, at the entrances to the Residential Building South, at the entrances to Commercial Buildings C and D, and at Center Plaza. At off-site locations surrounding the Project components, mean wind speeds in the summer are generally comfortable for their intended use, which includes standing or better. There are no uncomfortable conditions, or conditions that exceed the effective gust speed safety criterion predicted either on-site or off-site during the summer under the Proposed Configuration. Refer to Figure 7.6.

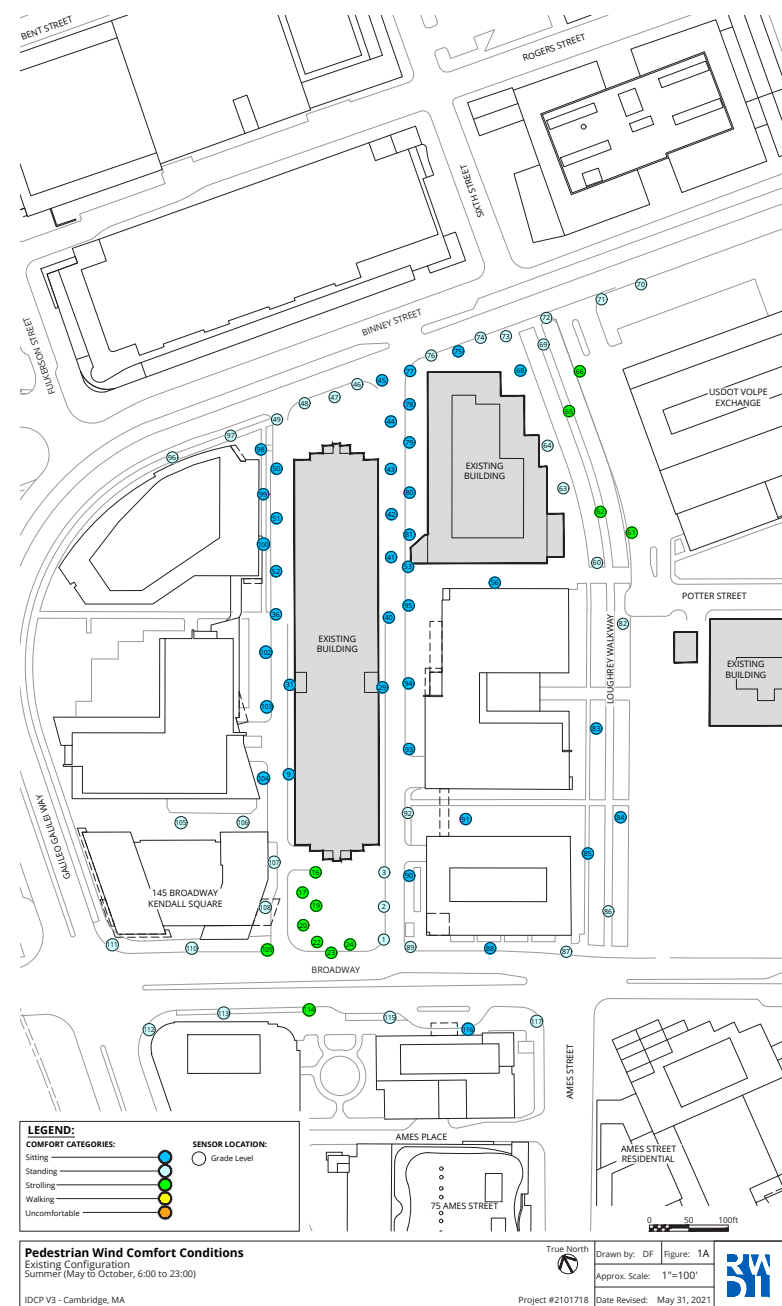


FIGURE 7.4 – PEDESTRIAN WIND COMFORT CONDITIONS
(NORTH PARCEL, EXISTING/SUMMER)

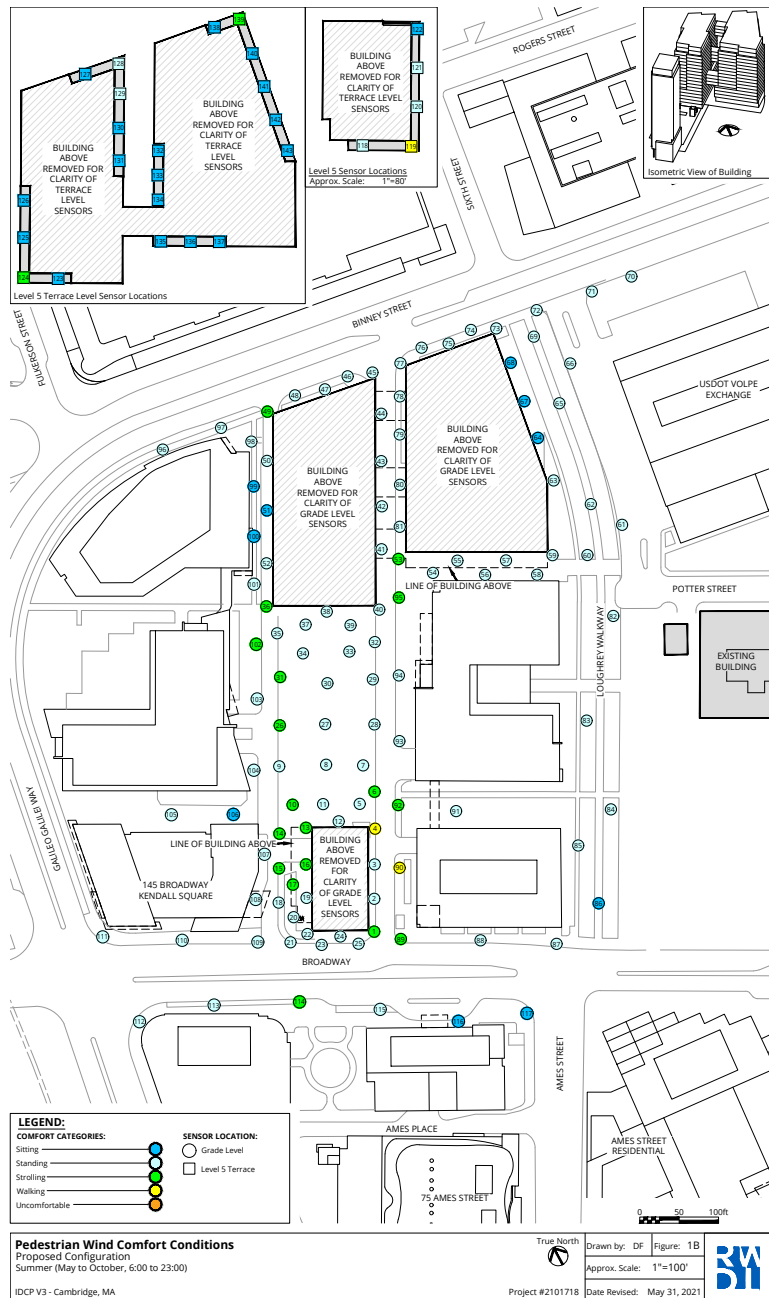


FIGURE 7.5 – PEDESTRIAN WIND COMFORT CONDITIONS
 (NORTH PARCEL, PROPOSED/SUMMER)
 (WITH GSA BUILDING)

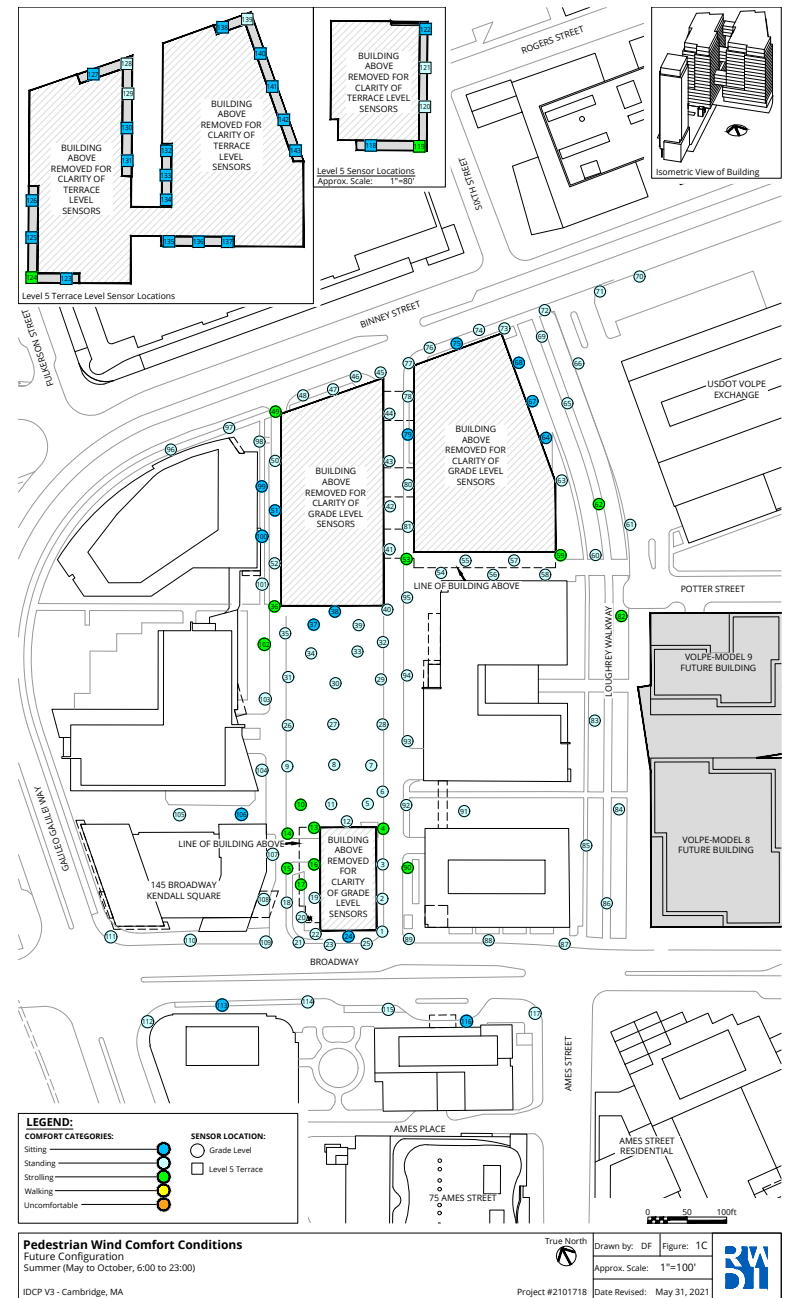


FIGURE 7.6 – PEDESTRIAN WIND COMFORT CONDITIONS
 (NORTH PARCEL, PROPOSED/SUMMER)
 (WITH PROPOSED VOLPE DEVELOPMENT)

EXISTING CONFIGURATION

WINTER

NORTH PARCEL

Under the Existing Configuration, mean wind speeds at most of the on-site locations in the winter are generally comfortable for their intended use, including walking or better. At off-site locations surrounding the Project components, mean wind speeds in the winter are generally comfortable for their intended use, including walking, strolling or better. There are no locations that exceed the effective gust speed safety criterion predicted either on-site or off-site during the winter under the Existing Configuration. Refer to Figure 7.7

PROPOSED CONFIGURATION

WINTER

NORTH PARCEL

Under the Proposed Configuration, mean wind speeds at most of the on-site locations in the winter are expected to be generally comfortable for their intended use, which includes strolling or better, with the exception of two (2) locations where uncomfortable conditions are predicted at the corner of Binney Street and West Service Drive (Location 49), and at the southwest corner of Commercial Building D along the East Service Drive (Location 53). Wind conditions generally comfortable for standing or better are predicted at the entrance to Commercial Building A, at the entrance to the Residential Building South, at entrances to Commercial Buildings C and Commercial Building D, and Center Plaza. At off-site locations surrounding the Project components, mean wind speeds in the winter are generally comfortable for their intended use, including walking or better, with the exception of two (2) uncomfortable condition which are predicted along the West Service Drive (Location 90) and along the East Service Drive (Location 102). There are no conditions that exceed the effective gust speed safety criterion predicted either on-site or off-site during the winter under the Proposed Configuration.

The following conditions are a baseline that will inform the designs of the Residential Building South, Commercial Building C, Commercial Building D and Center Plaza, and will mitigate “Uncomfortable” sensor points. The information shown in this Concept Plan Amendment #2 is not proposed as a permanent condition. Changes in mass and ground plane from future Design Review will change the wind sensor outcomes. Refer to Figure 7.9

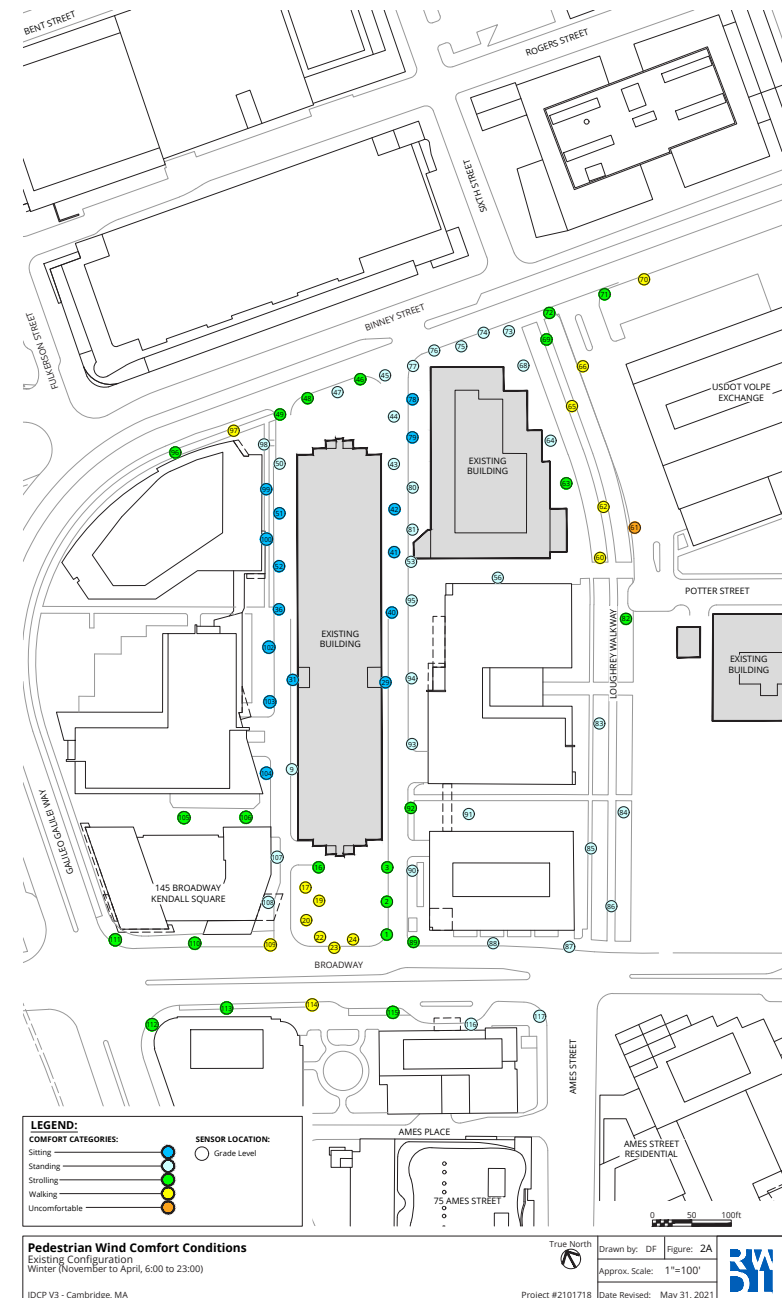


FIGURE 7.7 – PEDESTRIAN WIND COMFORT CONDITIONS
(NORTH PARCEL, EXISTING/WINTER)

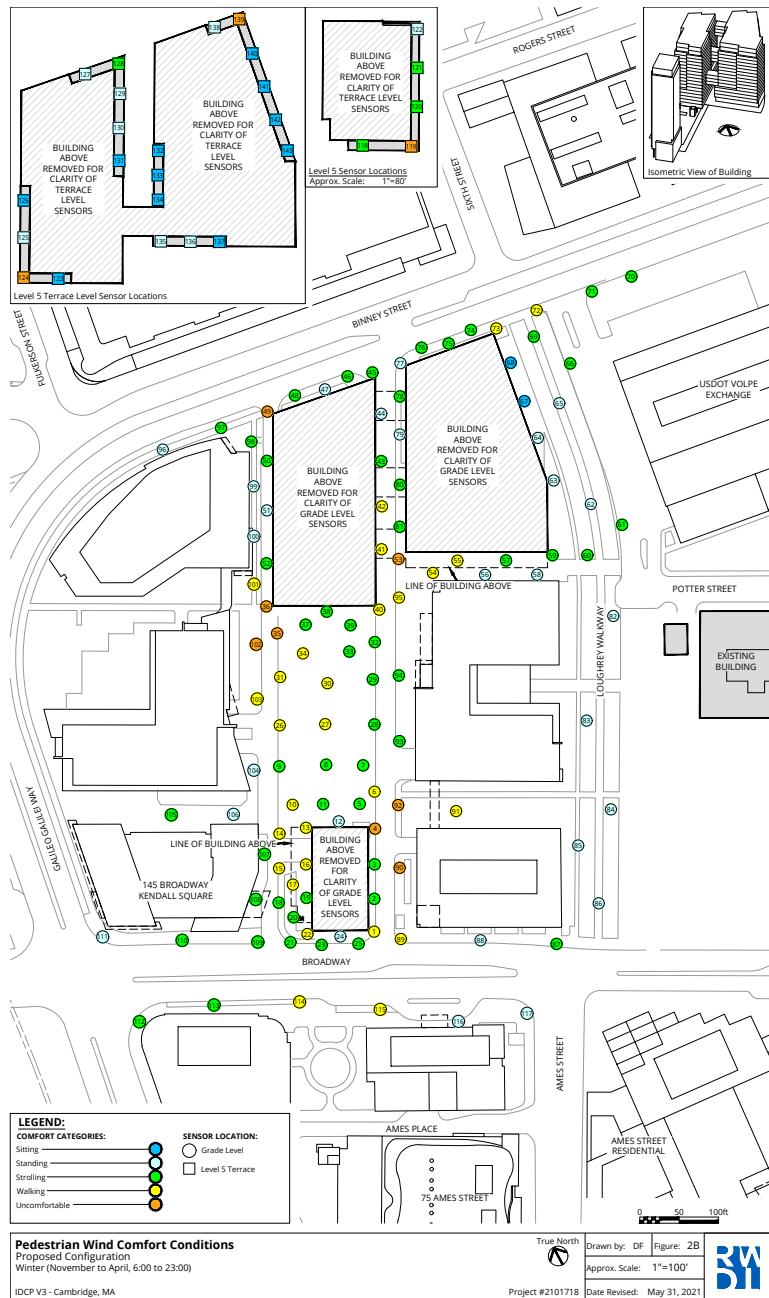


FIGURE 7.8 – PEDESTRIAN WIND COMFORT CONDITIONS
 (NORTH PARCEL, PROPOSED/WINTER)
 (WITH GSA BUILDING)

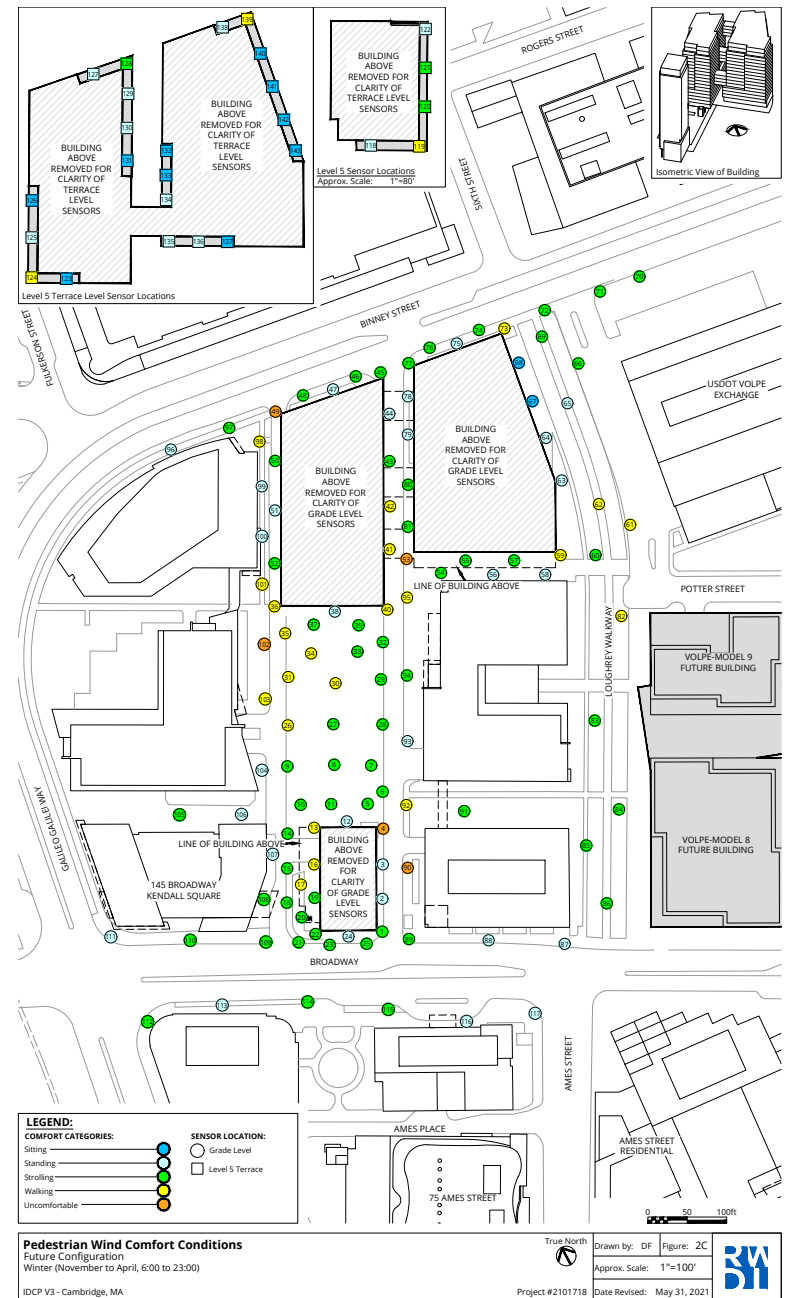


FIGURE 7.9 – PEDESTRIAN WIND COMFORT CONDITIONS
 (NORTH PARCEL, PROPOSED/WINTER)
 (WITH PROPOSED VOLPE DEVELOPMENT)

7.2 SHADOW STUDIES

The illustrations in the following section have been updated to present the estimated net new shadow (shown in orange) as a result of the Project for the times of 9:00 AM, 12:00 PM, and 3:00 PM during the Summer and Winter Solstices, and Spring/Fall Equinox. The net new shadow depicted falls both on the ground plane and on rooftops. Based on the shadow studies, the Project creates a modest amount of net new shadow commensurate with urban development of this scale.

Shadow Analysis Methodology

The shadow analyses have been updated to reflect the Project Change, which includes the consolidated 38-story Residential Building South at 135 Binney Street, and the construction the 17-story Commercial Building C at 290 Binney Street, and the 17-story Commercial Building D at 290 Binney Street. Since the Concept Plan Amendment #1 was approved in 2018, the Applicant completed construction of the commercial space and ground floor retail associated with the Commercial Building A (Phase 1) at 145 Broadway, and has commenced construction of the commercial space and retail uses associated with the Commercial Building B (Phase 2). For the purposes of this analysis, in order to isolate shadow related to the three as of yet unconstructed Project components, the shadow impacts associated with Commercial Building A and Commercial Building B are now shown as “existing shadow” and are not included in the description of net new shadow associated with the three remaining Project components. Additionally, considering the construction of Commercial Buildings C and D, the MIT Volpe Center Redevelopment buildings are now included as background.

Figures 7.10A-C summarize the methodology used to capture the resultant new shadow cast by the Project Components. For this purpose, March 21st at 9:00 AM is used as an example of the studies to follow. The estimated “net new shadow” is created by capturing the “difference” between the existing shadow (Figure 7.10A) and the proposed shadow (Figure 7.10B). The difference, or the net new shadow (Figure 7.10C), is shown in orange in the subsequent composite studies.



FIGURE 7.10A - MARCH 21, 9:00 AM (EXISTING CONDITION)

- RS Residential South
- CC Commercial Building C
- CD Commercial Building D



FIGURE 7.10B - MARCH 21, 9:00 AM (PROPOSED CONDITION)



FIGURE 7.10C - MARCH 21, 9:00 AM (THE DIFFERENCE IN SHADOW)

EQUINOX

Equinox (March 21 & September 21 EST)

March 21 and September 21 are the Spring and Fall Equinoxes, respectively, when the length of daytime and nighttime are equal. The net new shadow for these conditions are depicted at the right. At 9:00 AM, the Residential Building South will cast net new shadow towards the west-northwest that will fall on the rooftop of Commercial Building A. Commercial Buildings C and D will cast net new shadow to the west-northwest that will fall across Binney Street. At 12:00 PM, the sun is in the south-southeasterly sky and shadows are cast towards the north-northwest. The majority of new shadow from the Residential Building South fall within the Project Site, with some new shadow cast onto the West Service Drive. At noon, net new shadows from Commercial Buildings C and D fall onto the East and West Service Drives, and onto Binney Street. At 3:00 PM, the sun is in the southwestern sky and shadows are cast to the northeast. The Residential Building South is expected to cast some net new shadow within the Project Site, with some new shadow cast on the East Service Drive. Commercial Buildings C and D will cast net new shadow to the north-northeast across Binney Street, along the northern end of the 6th Street Connector, and onto the adjacent Volpe parcel.



FIGURE 7.11A - MARCH 21, 9:00 AM

RS Residential South
CC Commercial Building C
CD Commercial Building D



EQUINOX MARCH 21 & SEPTEMBER 21 (EST)



FIGURE 7.11B - MARCH 21, 12:00 PM



FIGURE 7.11C - MARCH 21, 3:00 PM

- | | | | | |
|-----------------|---------------------------------|-----------------------|--------------------|---------------------------------------|
| New Shadow | New Shadow over open space | Commercial Building A | Volpe Shadows | Open space (related to project study) |
| Existing Shadow | Existing Shadow over open space | Commercial Building B | Proposed Buildings | |

SUMMER SOLSTICE

Summer Solstice (June 21 EST)

June 21 is the summer solstice and the longest day of the year where the sun is highest in the sky. On this day, the Project casts the least amount of net new shadow, the majority of which is cast within the Project Site. At 9:00AM, net new shadows associated with the Residential South Building are cast to the west, and largely fall within the Project Site. Commercial Building C casts net new shadow within the Project Site, and onto the east Service Drive. Commercial Building D casts net new shadow to the west onto the rooftops of existing buildings, and onto an incremental portion of Galileo Galilei Way. At 12:00 PM, the sun is high in the southern sky and casts the shortest shadows of the day towards the north-northeast. The majority of new shadow from the Residential South Building falls within the Project Site on the East Service Drive and the rooftop of existing buildings. At noon, Commercial Buildings C and D will cast some net new shadow on to the East Service Drive and onto Binney Street. At 3:00 PM, the sun is in the western sky and shadows are cast towards the east-northeast. The majority of new shadow from the Residential Building South falls within the Project Site onto the East Service Drive and the rooftop of existing buildings. Commercial Buildings C and D will cast some net new shadow on to the East Service Drive, Binney Street, the Sixth Street Connector, and the adjacent Volpe Parcel.

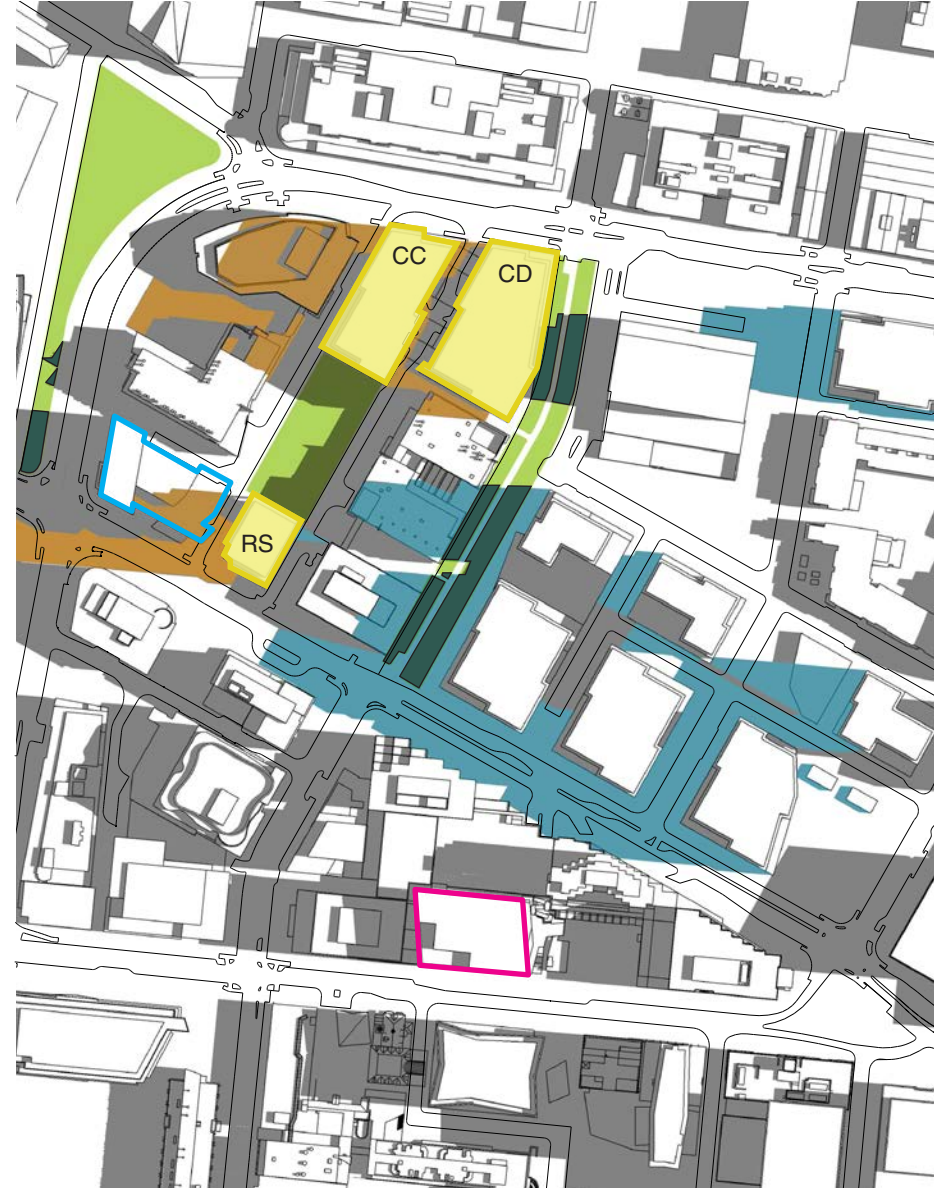


FIGURE 7.12A - JUNE 21, 9:00 AM

RS	Residential South
CC	Commercial Building C
CD	Commercial Building D



SUMMER SOLSTICE JUNE 21 (EST)

FIG. 7.12



FIGURE 7.12B - JUNE 21, 12:00 PM



FIGURE 7.12C - JUNE 21, 3:00 PM

- | | | | | |
|-----------------|---------------------------------|-----------------------|--------------------|---------------------------------------|
| New Shadow | New Shadow over open space | Commercial Building A | Volpe Shadows | Open space (related to project study) |
| Existing Shadow | Existing Shadow over open space | Commercial Building B | Proposed Buildings | |

FALL

October 21 EST

At 9:00 AM, the sun is low in the southeast sky resulting in long shadows to the northwest. The Residential Building South will net new cast shadows to the west-northwest onto an incremental portion of the West Service Drive, and onto the rooftop of Commercial Building A. Commercial Buildings C and D will cast limited net new shadow onto Binney Street and Galileo Galilei Way. At 12:00 PM, the sun is in the southern sky and shadows will be cast nearly due north. The Residential Building South will cast incremental net new shadow onto the East Service Drive, and onto a sliver of Galileo Galilei Way. At noon, the Commercial Buildings C and D will cast net new shadows onto the West and East Service Drives, onto Binney Street, and onto the existing buildings across Binney Street. At 3:00 PM, shadows cast from the Project are long, and extend in the northeast direction. Net new shadows from the Residential Building South fall onto the East Service Drive. Commercial Buildings C and D are expected to cast net new shadow onto the West and East Service Drives, onto Binney Street, onto the existing buildings across Binney Street and onto the northern corner of the adjacent Volpe Parcel.

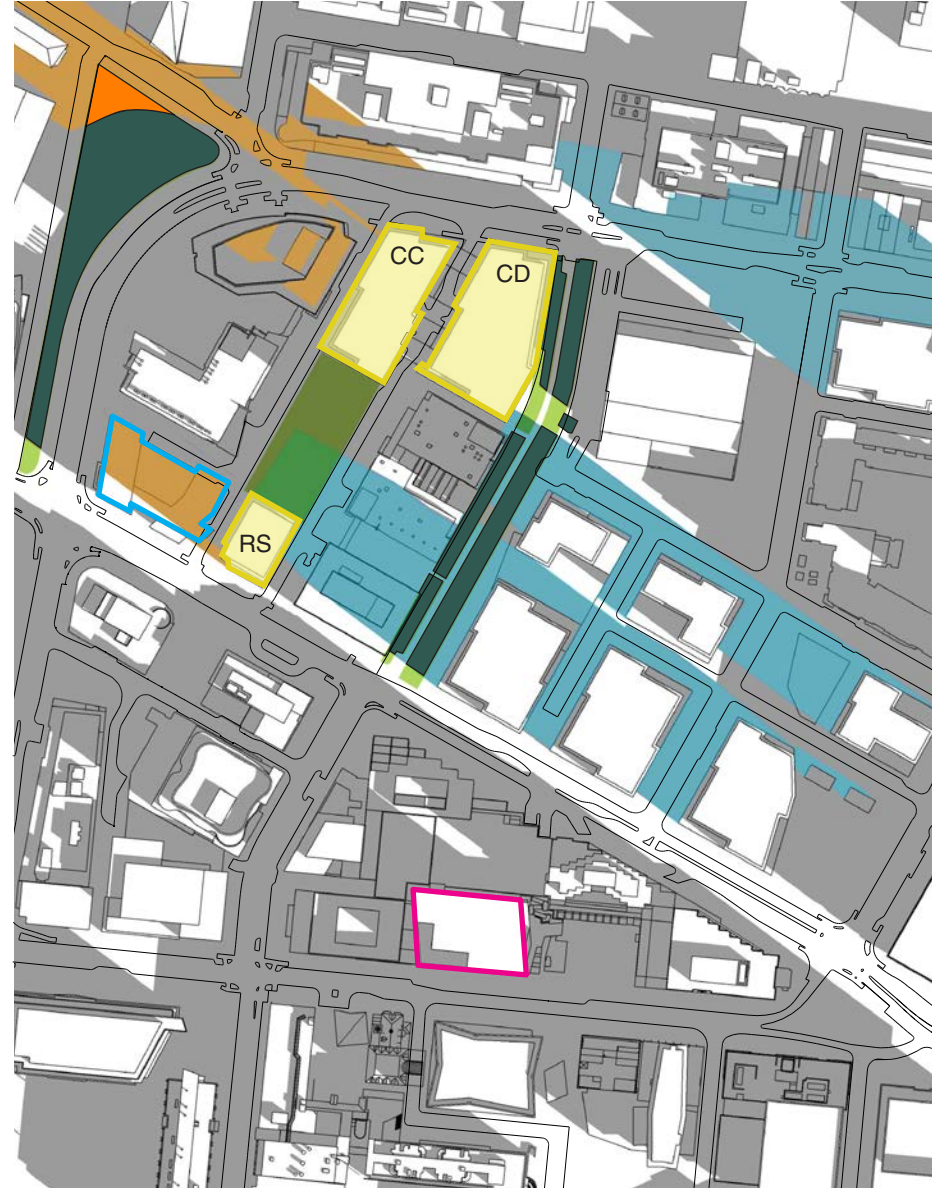


FIGURE 7.13A – OCT 21, 9:00 AM

RS	Residential South
CC	Commercial Building C
CD	Commercial Building D





FIGURE 7.13B - OCT 21, 12:00 PM

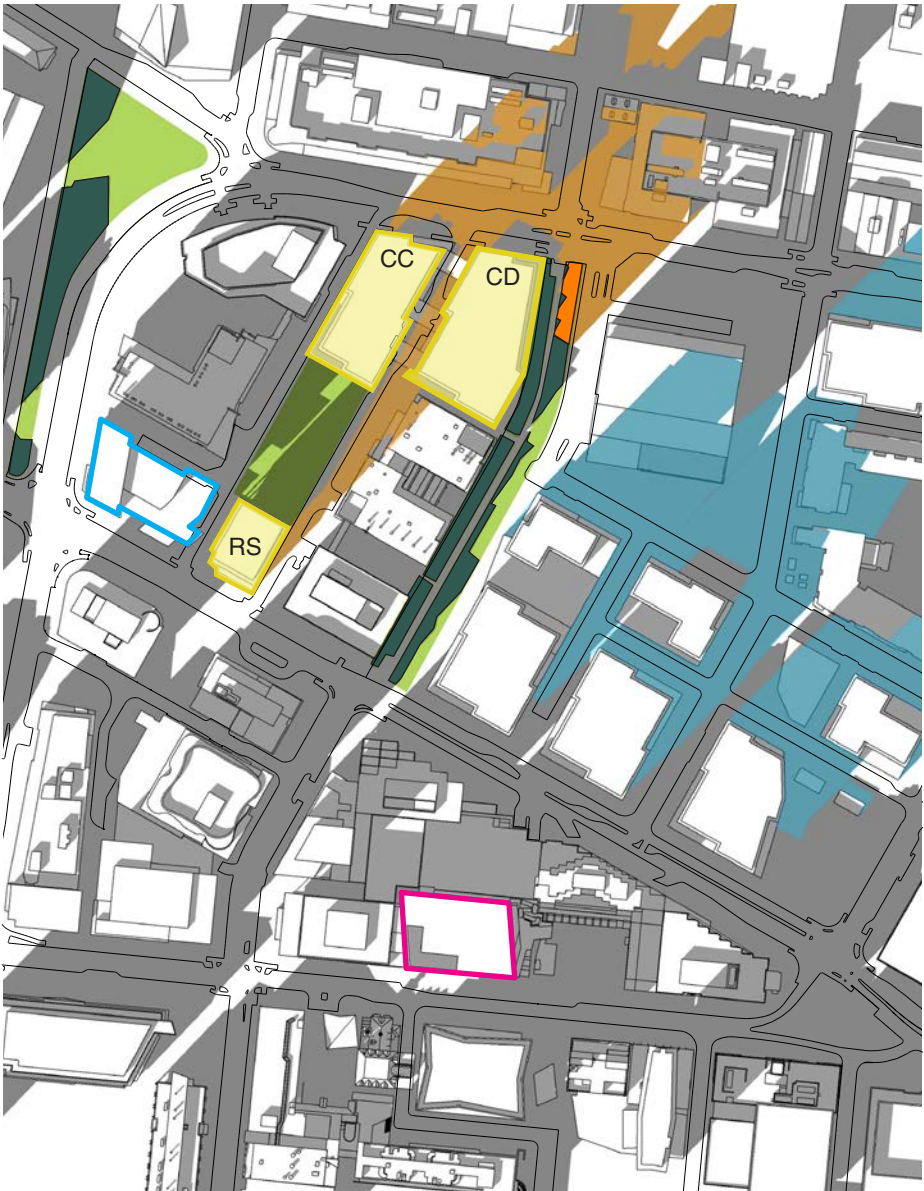


FIGURE 7.13C - OCT21, 3:00 PM

- | | | | | |
|-----------------|---------------------------------|-----------------------|--------------------|---------------------------------------|
| New Shadow | New Shadow over open space | Commercial Building A | Volpe Shadows | Open space (related to project study) |
| Existing Shadow | Existing Shadow over open space | Commercial Building B | Proposed Buildings | |

WINTER SOLSTICE

Winter Solstice (December 21 EST)

December 21 is the winter solstice and the shortest day of the year, where the sun is low in the sky. Therefore, Cambridge experiences the longest shadows of the year on this day, and many of the adjacent sidewalks and public spaces are already subsumed in existing shadow. At 9:00 AM, the sun is low in the southeast sky resulting in long shadows to the northwest. At this time net new shadows cast by the Project are largely covered by existing shadows. At 12:00 PM, the Project will create new shadow primarily over building rooftops to the north, however Commercial Buildings C and D will cast limited net new shadow onto Binney Street. At 3:00 PM, the sun is low in the southwest sky and the existing landscape is heavily covered in existing shadow. At this time net new shadows cast by the Project are largely covered by existing shadows.



FIGURE 7.14A - DECEMBER 21, 9:00 AM

- RS Residential South
- CC Commercial Building C
- CD Commercial Building D



FIGURE 7.14B - DECEMBER 21, 12:00 PM



FIGURE 7.14C - DECEMBER 21, 3:00 PM

- | | | | | |
|-----------------|----------------------------|-----------------------|---------------|---------------------------------------|
| New Shadow | New Shadow over open space | Commercial Building A | Volpe Shadows | Open space (related to project study) |
| Existing Shadow | Commercial Building B | Proposed Buildings | | |

7.3 NOISE

The noise impact assessment evaluated the potential noise impacts associated with the Project's activities, including mechanical equipment and loading activities. This section discusses the fundamentals of noise, noise impact criteria, noise analysis methodology, and potential noise impacts. Noise monitoring was previously conducted to determine existing ambient sound levels.

The Project includes the construction of the Residential Building South at 135 Broadway, Commercial Building C at 290 Binney Street (250 feet), and Commercial Building D at 250 Binney Street, all of which are located on the North Parcel. The locations of the proposed Project components are consistent with the previously contemplated noise assessment that analyzed existing ambient sound levels associated with the existing daytime and nighttime activities and mechanical equipment along the south and north side of the existing Blue Garage (refer to Figure 7.16 – Receptor Locations). This section demonstrates that the Project will continue to comply with City of Cambridge's noise control ordinance (Municipal Code, Chapter 8.16).

7.3.1 FUNDAMENTALS OF NOISE

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

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

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

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

The human ear does not perceive sound levels from each frequency as equally loud. To compensate for this phenomenon in perception, a frequency filter known as A weighted [dB(A)] is used to evaluate environmental noise levels. Table 7-1 presents a list of common outdoor and indoor sound levels.

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

- L90 is the sound level which is exceeded for 90 percent of the time during the time period. The L90 is generally considered to be the ambient or background sound level.

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

TABLE 7-1 COMMON OUTDOOR AND INDOOR SOUND LEVELS

7.3.2 METHODOLOGY

The noise analysis evaluated the potential noise impacts associated with the Project's mechanical equipment and loading/service activities. The noise analysis included measurements of existing ambient background sound levels and a qualitative evaluation of potential noise impacts associated with the proposed mechanical equipment (e.g., energy recovery units, cooling towers, etc.) and loading activities. The study area was evaluated and sensitive receptor locations in the vicinity of the Project were identified and examined. The site layout and building design, as it relates to the loading area and management of deliveries at the Project Site were also considered. The analysis considered sound level reductions due to distance, proposed building design, and obstructions from surrounding structures.

Receptor Locations

The noise analysis included an evaluation of the study area to identify nearby sensitive receptor locations, which typically include areas of sleep and areas of outdoor activities that may be sensitive to noise. The noise analysis identified eight nearby sensitive receptor locations in the vicinity of the Project. As shown on Figure 7.15, the receptor locations include the following:

- R1 – Residence Inn Hotel;
- R2 – Marriott Hotel;
- R3 – Eastgate Apartments;
- R4 – Lofts at Kendall Square Apartments;
- R5 – Pedestrian Walkway (connecting Broadway and Binney St); and
- R6 – Public green space south of Cambridge Center garage.
- R7 – The Kendall Hotel
- R8 – SOMA Residential Building (Building #4)

These receptor locations, selected based on land use considerations, represent the most sensitive locations in the vicinity of the Project Site.

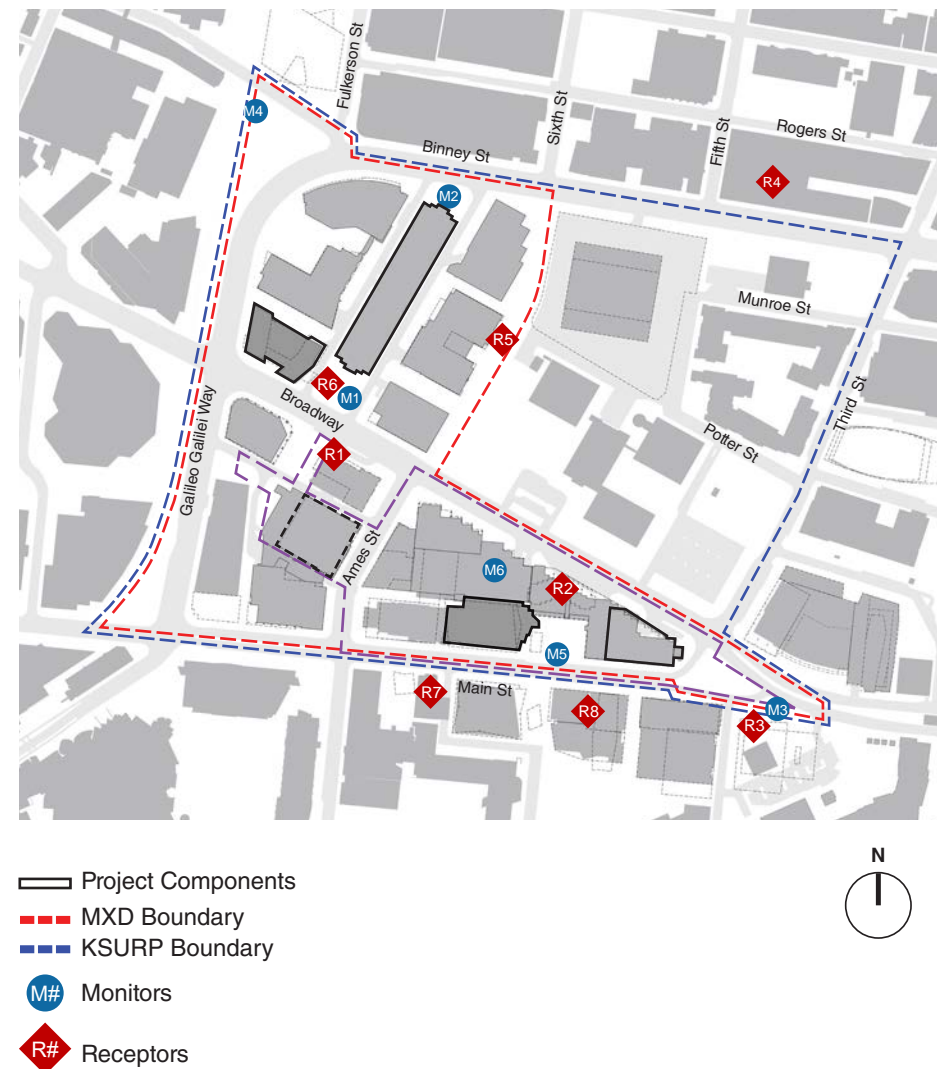


FIGURE 7.15 - RECEPTOR LOCATIONS

7.3.3 CITY OF CAMBRIDGE NOISE IMPACT STANDARDS

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

The noise standards are provided under Chapter 8.16 of the City of Cambridge Municipal Code (Noise Ordinance). These standards establish maximum allowable sound levels based upon the land use affected by the proposed development. Table 7-2 summarizes the maximum allowable sound levels that should not be exceeded. For a residential zoning district, the maximum noise level affecting residential uses shall not exceed the Residential Noise

Standard. The single number equivalent noise standard for a residential use is 60 dB(A) for daytime periods (7:00 AM to 6:00 PM) and 50 dB(A) during other times of the day.

The City of Cambridge noise control regulation considers construction sound levels to be an impact to residential land uses if the L10 sound level is in excess of 75 dB(A) or the Lmax sound level is in excess of 86 dB(A) measured at the lot of the affected property.

Octave Band Center Frequency (Hz)	Residential Area		Residential in Industrial		Commercial Area	Industry Area
	Daytime	Other Times	Daytime	Other Times	Anytime	Anytime
31.5	76	68	79	72	79	83
63	75	67	78	71	78	82
125	69	69	69	69	69	69
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	50	65	55	65	70

Source: City of Cambridge Municipal Code, Chapter 8.16, Table 8.16.060E.

TABLE 7-2 CITY OF CAMBRIDGE NOISE STANDARDS BY ZONING DISTRICT

7.3.4 EXISTING NOISE CONDITIONS

Existing sound level measurements were conducted using Type 1 sound analyzers (Larson Davis 831 and SoundExpert LxT) to establish existing ambient conditions. Measurements were conducted during the weekday daytime period (approximately 9:00 AM to 11:00 AM) and late-night period (1:00 AM to 3:00 AM) in the vicinity of the Project Site on July 21, 2016. Supplemental measurements were conducted during the daytime (1:00 PM to 3:00 PM) on April 9th, 2018 and during the late-night period (1:00 AM to 3:00 AM) on April 10th, 2018. The monitoring program consists of five short-term monitoring locations, as shown in Figure 7.15. In addition, a 24-hr measurement was conducted in an open lot located at the corner of Binney Street and Fulkerson Street (M4). During the daytime period, the measured sound levels data under existing conditions were composed of noise from construction activities and vehicles

on local roadways, such as Binney Street, Broadway, and Main Street. The nighttime period sound levels were generally associated with mechanical equipment from nearby buildings. The existing measured sound level data are presented in Table 7-3. The measured L90 sound levels range from approximately 56 dB(A) to 64 dB(A) during the daytime period and from 53 dB(A) to 59 dB(A) during the nighttime period. The result of the noise monitoring program indicates that the daytime sound levels within the study area are currently exceeding the City of Cambridge's daytime standard of 60 dB(A) along Broadway and Main Street. The existing sound levels during the nighttime period exceed the City's nighttime standard of 50 dB(A) for residential use at all evaluated locations.

Monitoring Location	City of Cambridge Residential District Noise Standard*		Measured L90 Sound Levels	
	Daytime	Nighttime	Daytime	Nighttime
M1 – Broadway	60	50	62	59
M2 – Binney Street	60	50	60	59
M3 – Broadway/Main Street	60	50	58	55
M4 – Lot at Binney St/Fulkerson St	60	50	60	58
M5 – Main Street	60	50	64	53
M6 – Green Garage	60	50	56	53

TABLE 7-3 EXISTING AMBIENT SOUND LEVELS, DB(A)

7.3.5 FUTURE NOISE CONDITIONS

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

MECHANICAL EQUIPMENT

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

- Emergency generators
- Air handling units
- Exhaust fans;
- Chillers; and
- CEnergy recovery units

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

In addition to being located within acoustical screening walls or within a penthouse, the mechanical systems would be strategically located on the rooftop, utilizing the height of the proposed buildings in providing noise attenuation. Noise attenuation could be achieved by the Project's building design as the heights of the Project's buildings are similar or greater than the height of nearby sensitive receptors. The rooftops of the Project's buildings will serve as a barrier and break the direct line of exposure between the noise sources and nearby sensitive receptors. With the proposed mechanical equipment located on the rooftop or within a penthouse, the sound levels associated with the Project's mechanical equipment are expected to be negligible at the surrounding sensitive receptor locations. With greater distances and impeding building structures, receptors located further away from the Project are expected to experience lower sound levels associated with the Project's noise sources.

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

Service and Loading Activities

Off-street designated loading areas will be provided for loading and service activities associated with the Project. The loading areas will be located within the ground level of the proposed buildings, with the exception of Commercial Building B, which is serviced from a below-grade loading dock, accessed from Broadway. The loading dock activities will be managed so that service and loading operations do not impact traffic circulation on the adjacent local roadways. Since loading and service activities will be enclosed within the proposed buildings and operations will be managed, noise impacts to nearby sensitive receptor locations are expected to be negligible.

Impact on Proposed Residential Use

The results of the noise monitoring program indicate existing exterior sound levels exceed the City's noise standards. Noise attenuation measures are limited since the Project consists of one multi-level residential building, and noise walls are not a feasible measure for receptors at high heights. The Project will consider measures to minimize the impacts to interior sound levels even though the City's noise ordinance does not provide interior noise standards.

The proposed buildings will be designed to incorporate building materials with the appropriate sound transmission class to minimize the impacts to the interior sound levels of the proposed residential units. Substantial sound level reductions are considered achievable since general construction material typically provides 20 decibels of attenuation. The building design would consider restricting exposure to exterior noise environment, such as limiting operable windows or balconies and providing central climate control systems.

Construction Activity

The construction activity associated with the Project may temporarily increase nearby sound levels due to the use of heavy machinery. Heavy machinery is expected to be used intermittently throughout the Project's construction phases, typically during daytime periods. The construction activities that will generate the highest sound levels may include demolition, site excavation and grading, and construction of the foundation for the proposed buildings. A construction management program will be developed with the City for each phase of the Project to ensure that the applicable noise regulation is met.

The Project will implement mitigation measures to reduce or minimize noise from construction activities. Construction vehicles and equipment would be required to maintain their original engine noise control equipment specific mitigation measures may include the following:

- Construction equipment would be required to have installed and properly operating appropriate noise muffler systems.
- Appropriate traffic management techniques would be implemented during the construction period would mitigate roadway traffic noise impact.
- Proper operation and maintenance, and prohibition of excessive idling of construction equipment engines, would be required.

Therefore, construction noise levels are proposed to be mitigated to the greatest extent possible.

Conclusion of Noise Impact Assessment

The noise analysis evaluated the sound levels associated with the Project. This analysis determined that the sensitive receptor locations in the vicinity of the Project Site currently experience sound levels exceeding the City's daytime and nighttime noise standards. Due to the anticipated location of the proposed equipment within screening walls on the rooftop, the sound levels associated with the Project's mechanical equipment are expected to have no adverse noise impacts at nearby sensitive receptor locations. While impacts of emergency generators are also expected to be negligible, a separate MassDEP permitting process will allow for further review of this equipment at a later date. The Project is designed such that the loading areas will be enclosed, which will attenuate sound levels associated with the loading activities. As a result of the preliminary design, the Project's operations will have no adverse noise impacts at nearby sensitive receptor locations.

The noise evaluation demonstrates that the existing ambient sound levels exceed the City's noise standards. As a result, the design of the Residential Building South will incorporate sufficient acoustical material with the appropriate sound transmission class rating to minimize impacts to interior sound levels within the residential units.

7.4 EXHAUST RE-ENTRAINTMENT REVIEW

The Project Change proposes to consolidate the approved residential GFA formerly located at 135 Broadway (Residential Building South) and 290 Binney Street (Residential Building North) into one residential building located at 135 Broadway. The total residential GFA located in the Residential Building South will be consistent with Concept Plan Amendment #1, however the building will be up to 38 floors, which is an increase in four floors compared to the massing analyzed in the Concept Plan Amendment #1.

The location of the current Residential Building South is consistent with the location analyzed in the Concept Plan Amendment #1, which is nearby existing and proposed laboratory buildings. Previously, the Applicant had engaged RWDI to evaluate the potential air quality impacts that neighboring laboratory buildings might have on the Residential Building South among other Project components. To mitigate predicted air impacts on the Residential Building South from existing exhaust stacks the analysis recommended locating the air intakes at the roof level along the southern, Broadway facing building facade. The additional building height proposed should result in a positive impact on minimum dilution levels. If operable windows are used, the analysis also recommended that the building mechanical systems should be capable of maintaining a slight positive pressure to avoid drawing in air from the stacks. The Residential Building South Massing depicted in this Concept Plan Amendment #2 is conceptual, however as the Project component advances through design review these recommendation will be considered.

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The background image shows an outdoor market scene with several white tents set up on a paved area. People are walking around and interacting at the stalls. One stall has a sign that says "CHAMPIONS" and another says "SWISSBÄKERS". A sign for "SWEET ROASTED NUTS" is also visible. The entire image is covered with a semi-transparent yellow overlay.

8. SUSTAINABILITY PLAN

8.0 INTRODUCTION

This section presents the Project's overall approach to sustainability and addresses the specific areas of the topic, per Article 14.74.

CHAPTER UPDATES

The following section summarizes minor refinements to this Chapter since the Concept Plan Amendment #1. There have been no significant changes to the Project's sustainability approach since the Concept Plan Amendment #1.

- **Commercial Building A:** Since the Concept Plan Amendment #1 was approved Commercial Building A was certified as New England's first LEED v4 Platinum building.
- **LEED V4 Gold:** In accordance with Article 22.20, all the remaining Project Components (Commercial Building B, Residential Building South, Commercial Building C and Commercial Building D), are being designed to achieve a Version 4 Leadership in Energy and Environmental Design (LEED®) Gold level or better.
- **Preliminary Energy and Greenhouse Gas Study:** The preliminary energy analysis and GHG study have been updated to reflect the as-built conditions associated with Commercial Building A at 145 Broadway, and the proposed conditions associated with Commercial Building B at 325 Main Street. Additionally, the results have been updated to reflect the most recent energy analysis for the proposed Residential Building South at 135 Broadway, Commercial Building C at 290 Binney Street, and Commercial Building D at 250 Binney Street.

8.1 APPROACH TO SUSTAINABILITY

Sustainable principles are integral to the Project's design. Viewed through a land use planning lens, the sustainability approach includes repurposing previously developed land rather than building on untouched land, as well as locating new development within a high-density urban area with excellent access to public transportation, pedestrian circulation systems and a robust bicycle network. New commercial and residential space will be located on previously developed sites which will allow the Project to achieve energy savings associated with lower embodied energy and reduced Greenhouse Gas (GHG) emissions through the construction process.

A key component of the Project Change includes the demolition of the existing Blue Garage to accommodate the relocation and construction of a below-grade Eversource electrical substation that will serve the Cambridge community and improve the resilience of the area electrical grid for decades to come. The demolition of the Blue Garage will also enable the opportunity to construct the approximately 56,000 square foot Center Plaza at the heart of the North Parcel, resulting in an increase of more than 30,000 square feet of open space compared to the Concept Plan Amendment #1.

As a Transit Oriented Development (TOD), the Project will integrate into the existing public transportation and mode share infrastructure to further reduce traffic and indirect air emissions, including mobile source GHG emissions. TOD is environmentally, economically, and socially sustainable; it promotes greater accessibility, walking and biking, healthy lifestyles; and increased value for property owners, businesses, local governments, transit authorities and residents.

The Project will promote the design and construction of high-performance, green buildings through an integrated design approach where all project disciplines are engaged early and throughout the design process to meet sustainability goals. The Project's design will prioritize sustainability as a core strategic imperative and will implement state-of-the-art high performance green building technologies, construction, and operating procedures. Sustainability planning with an integrated design team during conceptual design will establish a pathway to Gold-level certification under the LEED v4 rating system. The project design teams will use iterative energy modeling and life cycle analysis to consider the long-term value of sustainable property investment decisions.

The integrated design approach will address best practices in energy and emissions, water management, reduced urban heat island effect (cool roofs), energy use monitoring and rooftop mechanical equipment noise mitigation, as set forth in Article 14.74. The Applicant is looking beyond these zoning requirements by addressing climate change preparedness, implementing sustainable tenant guidelines, and considering the health and wellness of its future occupants and users through the potential use of the WELL Building Standard® (WELL) design and operation principles.

Furthermore, the Applicant will work with its design teams to evaluate and incorporate, where feasible and reasonable, strategies that support the Cambridge Net Zero Action Plan. Refer to Appendix B for Net Zero Narratives for Residential Building South at 135 Broadway, Commercial Building C at 290 Binney Street, and Commercial Building D at 250 Binney Street.

8.2 ENERGY CONSERVATION APPROACH

Buildings are significant consumers of energy and building mechanical and electrical systems are the chief consumers within any building. The Project Components will be designed to be energy-efficient, green buildings, and renewable energy strategies will continue to be evaluated as the design evolves and will be included in each Project Component's design review submission. The Applicant proposes that for each square foot of solar-ready rooftop provided, a square foot of occupiable green roof be permitted as exempt GFA (a 1:1 ratio). Renewable energy credits can also be purchased on a building-by-building basis to support off-site renewable energy production and offset non-renewable electricity use on site.

8.2.1 REGULATORY CONTEXT

Commercial Building A and Commercial Building B were permitted under and exceeded the previous Massachusetts Stretch Energy Code requirement to show at least 10 percent overall reduction in energy used as compared to the ASHRAE 90.1-2013 Appendix G code compliant baseline model with the inclusion of two additional efficiency measures per IECC 2015 section C406.1. Commercial Building C, Commercial Building D, and Residential (South) will be permitted under the new Massachusetts Stretch Energy Code requirement to show at least a 10% EUI reduction, either in site or source energy, compared to the baseline building as per ASHRAE 90.1-2013 Appendix G with the inclusion of at least three additional efficiency measures per IECC 2018 section C406.1 in both the baseline and proposed cases.

In accordance with Article 22.20, all new project buildings will also meet the LEEDv4 minimum building performance requirement of a two percent improvement in energy cost for core and shell projects and a five percent improvement in energy cost for residential new construction projects when compared to a baseline building performance as calculated using the rating method in Appendix G of ANSI/ASHREA/IESNA Standard 90.1-2010 improvement in energy cost for core and shell projects and a five percent improvement in energy cost for residential new construction projects when compared to a baseline building performance as calculated using the rating method in Appendix G of ANSI/ASHREA/IESNA Standard 90.1-2010

8.2.2 DESIGN STAGE - REDUCE ENERGY DEMAND

Success in reducing energy demand from these systems follows a four-step approach. This basic approach will be followed for each Project Component.

- Step 1 - Reduce Demand: Challenge assumptions to right size equipment, reduce plug and lighting loads, and improve the building shell.
- Step 2 - Harvest Site Energy: Orient the building to maximize passive solar and daylighting opportunities. Harvest waste energy on site through heat recovery and other means.
- Step 3 - Maximize Efficiency: Beyond simply reducing loads, use efficient equipment to maximize benefit.

- Step 4 - Efficient Operations and Maintenance: Building commissioning, training of staff, and ongoing preventative maintenance, combined with monitoring of on-going performance will be implemented to ensure energy efficiency gains are realized.

8.2.3 DESIGN STAGE – SET ENERGY TARGETS AND MODEL

These energy conservation targets are met by the selection of efficient building systems, equipment, and a lighting power density that is below code. Additionally, an improved building envelope design is required. The design teams will develop whole building energy models to demonstrate the expected energy performance of each designed building.

A variety of Energy Conservation Measures (ECM) will continue to be evaluated as design progresses. ECM's to be considered include, but are not limited to, the following:

- High-performance mechanical systems, including chilled beams in office and laboratory spaces.
- High-performance building envelope
- Reduced window-to-wall ratio
- Reduced lighting power density
- Building orientation and window locations shall be suited for improved energy efficiency
- Cogeneration
- Rooftop Solar PV
- Energy Star appliances and equipment
- Occupancy and daylight sensors and controls
- Demand Response / Peak Load Reduction / Smart Grid Compatibility

A preliminary energy analysis and GHG study was completed for each Project Component. The summary of findings is represented in the Preliminary Energy Analysis and Greenhouse Gas Study shown on the opposite page.

COMMERCIAL BUILDING A - 145 BROADWAY

Based on as-built design strategies, the estimated energy use reduction for the commercial building is approximately 12.1 percent, which equates to a 11.6 percent reduction (177 metric tons per year) in stationary source CO₂ emissions when compared to the Base Case. Key energy savings features include improved glazing properties, improved roof and wall insulation, improved lighting power densities, variable volume condensing water pump, a high efficiency domestic water heater, and a high efficiency gas boiler, chiller beam system. Commercial Building A was New England's first LEED V4 Platinum Certified building.

COMMERCIAL BUILDING B - 325 MAIN STREET

Based on building currently under construction, the estimated energy use reduction for the new commercial building is approximately 15.40 percent, which equates to a 13.1 percent (245 metric tons per year) reduction in stationary source CO₂ emissions when compared to the Base Case. Key energy savings features include improved glazing properties, interior lighting power density reduction, high-efficiency active chilled beam system, high-efficiency gas-fired condensing boilers, variable volume hot water and chilled water pumping systems, and high-efficiency centrifugal chillers.

RESIDENTIAL BUILDINGS SOUTH – 135 BROADWAY

Based on preliminary design strategies being considered, the estimated energy use reduction for residential building is 21.4 percent, which equates to a 17.2 percent reduction (193 metric tons per year) in stationary source CO₂ emissions when compared to the Base Case. Key energy savings features include improved glazing properties, improved roof and wall insulation, improved lighting power densities, high efficiency heat pumps, high efficiency ventilation systems, and a high efficiency gas boiler.

COMMERCIAL BUILDING C (290 BINNEY)

Based on preliminary design strategies being considered, the estimated energy use reduction for the new commercial building is 43.2 percent, which equates to a 35.8 percent reduction (3,499 metric tons per year) in stationary source CO₂ emissions when compared to the Base Case. Key energy savings features include improved glazing properties, improved roof and wall insulation, improved lighting power densities, variable speed hot water and chilled water pumping systems, high-efficiency centrifugal chillers, energy recovery for ventilation systems, and high-efficiency gas-fired condensing boilers.

COMMERCIAL BUILDING C (290 BINNEY)

Based on preliminary design strategies being considered, the estimated energy use reduction for the new commercial building is 43.2 percent, which equates to a 35.8 percent reduction (3,499 metric tons per year) in stationary source CO₂ emissions when compared to the Base Case. Key energy savings features include improved glazing properties, improved roof and wall insulation, improved lighting power densities, variable speed hot water and chilled water pumping systems, high-efficiency centrifugal chillers, energy recovery for ventilation systems, and high-efficiency gas-fired condensing boilers.

8.2.4 OPERATIONS STAGE BUILDING COMMISSIONING

In addition, building commissioning will be conducted prior to and during occupancy to ensure the building systems are operating efficiently and as designed. Tenant green building guidelines will engage and educate building users and influence occupant behavior toward more energy (water and material) efficient practices.

8.2.5 OPERATIONS STAGE ENERGY TRACKING AND MONITORING

The Applicant has a robust internal program for tracking building energy use over time, using Energy Star Portfolio Manager and other tools. In addition, the Applicant has committed to reducing average building EUI by 15 percent, and is currently a strong supporter of the City's Building Energy Use Disclosure Ordinance.

The Applicant will implement a Measurement and Verification (M&V) plan that will utilize the base building energy management system to monitor operation of equipment or systems that are not already directly metered for electric or gas use. Core and shell projects will include a centrally monitored electronic metering network in the base building design that is capable of being expanded to accommodate and document the future tenant sub-metering.

In compliance with the Cambridge Building Energy Use Disclosure Ordinance, Chapter 8.67 of the Municipal Code, the Applicant will report energy use.

8.2.6 ON-SITE CLEAN/RENEWABLE ENERGY GENERATION

Commercial Building A includes a roof-mounted solar array that is anticipated to be capable of producing enough energy to equal at least one percent of the building's annual energy consumption. Commercial Building B is currently planning to install a roof-mounted solar array.

The remaining Project Components will be constructed to be solar-ready, including designing the roof structure to support the weight and wind loads associated with solar energy collectors as well as providing space to accommodate associated infrastructure, including conduit to the roof and space in the electrical room for an inverter. Each building will be individually analyzed for solar opportunities as the design develops. In addition, innovative strategies such as solar roadways will be considered. A solar-ready roof assessment has been provided as part of the Net Zero Narratives in Appendix B for Residential Building South at 135 Broadway, Commercial Building C at 290 Binney Street, and Commercial Building D at 250 Binney Street.

TABLE 8-1 PRELIMINARY ENERGY ANALYSIS AND GREENHOUSE GAS STUDY

PROJECT COMPONENT	ENERGY CONSUMPTION (MMBTU/YR)			CO ₂ EMISSIONS (TONS/YR)		
	BASE CASE	DESIGN CASE	PERCENT SAVINGS	BASE CASE	DESIGN CASE	PERCENT REDUC-TION
Commercial Building A – 145 Broadway	23,067 ¹	20,281	12.1%	1,533	1,356	11.6%
Commercial Building B – 325 Main Street	21,501 ¹	18,196	15.4%	1,864	1,619	13.1%
Residential Building (South) – 135 Broadway	18,444 ²	14,506	21.4%	1,122	929	17.2%
Commercial Building C – 290 Binney Street	134,660 ²	76,504	43.2%	9,762	6,263	35.8%
Commercial Building D – 250 Binney Street	176,671 ²	104,930	40.6%	12,869	8,641	32.9%

Tons/yr = tons per year

1. Commercial Building A and Commercial Building B reflect the final energy code energy model results that were approved during the building permit application for each building. Both Commercial Building A and Commercial Building B were permitted under the previous iteration of the Massachusetts energy code.
2. The base case has also been updated to reflect the most recent building code to ASHRAE 90.1 2013 with Massachusetts amendments.

8.3 WATER CONSERVATION

The Project will reduce overall potable water use and reduce wastewater generation compared to a conventional development through installation of low-flow plumbing fixtures and high-efficiency irrigation systems. All Project Components are currently targeting a minimum 30% water use reduction compared to conventional plumbing fixtures (per Energy Policy Act of 1992 fixture performance requirements).

The landscape design will incorporate native and adaptive vegetation and the design of the irrigation system will target, at minimum, a 50% reduction in potable water use when compared to a mid-summer baseline through the use of high-efficiency irrigation systems with controllers and moisture sensors. Non-potable water use strategies, such as rainwater reuse will be considered for irrigation. In addition, the landscape design will consist mostly of local, drought resistant species to minimize or eliminate the need for irrigation over the lifetime of the Project. Landscape areas will be designed to hold as much rainwater as practicable. The Applicant is also considering the use of rainwater capture for irrigation and the incorporation of green roofs and rainwater harvesting tanks for each individual building design.

Each Project Component will largely maintain the existing site drainage, replacing existing impervious rooftop and hardscape in kind on-site. The Project will be required to mitigate stormwater runoff to comply with City and MassDEP standards. Stormwater infrastructure will be designed and installed for each Project Component to reduce the runoff discharge rate and improve the quality of the runoff to the City's stormwater system and the Charles River basin.

8.4 RECYCLING AND SOLID WASTE MANAGEMENT

Recycling and reuse programs will be developed and implemented by all construction contractors to reduce the amount of waste that is sent to landfill throughout construction. Prior to the start of construction, the construction management team will prepare and submit a Construction Waste Management plan which will be implemented on site. A minimum of 75% of C&D waste will be diverted, as required by Massachusetts' law.

Storage of collected recyclables will be accommodated on the ground floor of the new buildings in a designated recycling area. A contracted waste management company will collect the recyclables on a regular basis. It is anticipated that approximately 100% of paper, corrugated cardboard, glass, plastic and metal would be recycled during operations. The Tenant Design and Construction Guidelines (discussed further below in Section 8.8) will include strategies to reduce waste through recycling and reuse programs.

In partnership with our vendors and tenants, BXP has implemented best practices for waste management, including single-stream recycling, composting, and e-waste programs for tenant solid waste in all of our regions. As a result, 54.9% of office waste by weight is recycled or composted across our portfolio, which is a 53% increase since 2008.

The Applicant will work closely with future tenants to promote responsible waste management practices, including haul trip optimization and composting at cafés and restaurants. Additionally, the Applicant will work with future tenants to ensure that they have signage and receptacles, and the building has designated central compost bins with frequently scheduled pickup.

8.5 REDUCE HEAT ISLAND EFFECT

Over the design life of the Project, climate change is expected to significantly increase the duration and frequency of heat waves. The anticipated change in average temperatures is exacerbated by the development density of Cambridge, which results in urban heat island effect. In an effort to mitigate urban heat island effect, the Applicant is considering a number of site and building design strategies, including light colored roof materials, light colored hardscape materials, landscaped areas, and green roofs.

8.5.1 SITE DESIGN

Site landscaping will be designed with tree canopy cover, low-level plantings, discontinuous impervious covers, reflective materials and permeable pavements in an effort to reduce the capture of energy from sunlight while promoting evaporation and plant transpiration. The construction of the new Central Plaza will also result in an increase in vegetated area that will not only reduce the increased heat associated with heat island effect, but will provide for a more comfortable pedestrian environment.

8.5.2 BUILDING DESIGN

To further reduce the heat island effect and mitigate storm water runoff, the Applicant is exploring the use of green roof cover, where feasible. Vegetation and shading structures will also be employed to shade buildings and outdoor spaces, where possible. The roof membrane on all Project Components will be a high albedo roof product, excluding any green roof areas. All vehicle parking supporting the Project will be below-grade, greatly reducing the uncovered and impervious surface area needed for the Project's required parking.

The Applicant understands the City Council approved a zoning petition on May 3, 2021 that would require installation of green roofs, or BioSolar roofs on future construction and significant rehab of buildings that are 20,000 square feet and larger. The Proponent will take this requirement into account as the design advances for the remaining phases of the Project.

8.6 RESILIENCY IN BUILDING DESIGN

The Applicant has studied the vulnerability of the infill development sites for the potential of precipitation-based inland flooding events. Potential building design resiliency measures being considered include limiting basement areas, and other improvements that may mitigate potential flooding. Additionally, ground floor finish elevations for all Project Components will be raised to the greatest extent possible to reduce the risk of internal flooding. Flood-resilient materials will be specified for first floor uses, where practicable.

Flood prevention techniques could include: sealed wall penetrations for cable and electrical lines; watertight door barriers; septic line backflow prevention valves, sump pumps, and discharge pumps—all of which could be connected to auxiliary external generator connections or resilient backup power. In addition, the Project is anticipated to include green roofs/roof gardens and roofing membranes with high SRI to reduce the volume of storm water runoff and reduce solar heat gain/minimize air conditioning loads, respectively. Additionally, high-performance curtain wall is being considered to maximize views and daylighting of interior spaces, thus reducing overall lighting loads and associated internal heat gains, which has a direct impact on the space cooling load. As the climate change analysis shows, the rising temperature increases the space cooling demand in the Cambridge climate; therefore, any strategy that can reduce the space cooling demand is considered an adaptive strategy for climate change.

The Project's climate change mitigation includes the incorporation of several ECMs to reduce GHG emissions associated with energy use beyond what is required by Code. (Refer to Appendix B for further details on such measures.) Some of these measures can also be considered adaptive design approaches to mitigate the potential impacts of climate change on the Project. These GHG emissions mitigation and climate change adaptation measures are considered mutually re-enforcing and, therefore, cannot be considered in isolation. As an example, the window area in the Residential Building South will be designed at an appropriate ratio to reduce energy use while still providing enough daylight and opening area for natural ventilation. This is an adaptive strategy in response to potential future increases in mean temperature. Other climate change adaptive strategies considered will include improved envelope insulation and high-performance glazing in response to increasing temperatures. The design team will continue to investigate the feasibility of renewable energy sources and highly energy-efficient technologies, such as solar PV, air-source heat pumps and water-source heat pumps. As climate change is not limited only to temperature increase, but may also include flooding, intensified downpours, and/or hail events, the design team will continue to consider ways in which the architectural elements selected for the Project can reduce the vulnerability to these extreme events.

While the Applicant is not responsible for the execution of the electrical substation, resiliency to future climate change will be an important focus of the design and the review and approval by the Massachusetts Energy Facilities Siting Board.

OTHER POTENTIAL RESILIENCY MEASURES

On-site renewable energy, and a district energy network also provide opportunities for added resiliency during periods of power loss during storms. While the KSURP area is served by underground utility power lines and gas mains, and as such, is not normally effected by storms that disrupt power or gas transmissions, according to Massachusetts Department of Energy Resources (DOER), the Kendall Square Cogeneration Station (the “Cogeneration Station”) has been registered by the ISO-NE as a black start generation asset that can operate in island mode to provide both electricity to the Cambridge grid and thermal energy to the KSURP area in the event of a grid outage.

On-site combined heat and power (CHP), or solar PV, generally will operate in phase with the incoming utility power, and needs incoming power to synchronize phase delivery. In “island mode”, generators and CHP systems can be made to operate independently of the grid and self-synchronize power phasing with on-site solar. However, this approach is normally used in large-scale shelter locations only, when long-term operation may be needed to protect a group of people.

In most cases, the proposed commercial buildings will shut down and send occupants home in storm-related power failure scenarios. Any generators provided will most likely be optional standby generators that are sized to maintain server room or process operations only. In the case of the residential components, the generators provided will be for life-safety uses only (stairway pressurization, egress elevators, fire pump, etc.) and cannot by Code be used for ordinary ongoing operations in a building. The capacity provided by solar PV, even if the available space is maximized, will not be more than 10 percent of the power needed by the building, and cannot provide all power needed for normal operations. A CHP system could be used to provide limited ongoing operation, but the economics of such a system when compared to the likelihood of repeated power outages in the Kendall Square area would not be favorable. Storm response actions and resiliency measures will be incorporated into leasing agreements or tenant guidelines, including guidance related to tenant fit-out of commercial space, particularly those located on the lower floors.

8.7 HEALTH AND WELLNESS

Human health and wellness are addressed in the Project through design, operations, and occupant behavior. Within each Project Component, special attention will be given to address human health and comfort during construction and once the building is occupied. This will be accomplished by implementing pollutant reduction strategies, using non-toxic materials, providing fresh air to occupants, installing individual lighting and heating controls, and by providing natural daylight and views to outdoor green spaces. Tenant Design and Construction Guidelines will include comfort related requirements such as installing CO2 sensors in all regularly occupied spaces.

The Applicant is also exploring the use of principles of the WELL Building Standard, which place human health and wellness at the center of design and can encourage and educate future tenants on healthy living practices. Active design principles, encouraging physical and social activity, will be employed where possible. The Project Site will include vibrant spaces where people can safely walk, bike, use transit, and access open spaces. Individual buildings will be designed wherever possible to include visible, attractive and well-lit stairs, communal services such as break areas and copy services, and a variety of public gathering spaces and individual relaxation spaces. Ground level outdoor spaces will be easily accessible to both building occupants and visitors alike.

8.8 SUSTAINABLE TENANT GUIDELINES

Tenant Design and Construction Guidelines will be provided to office and retail tenants as a guide to use when fitting out their spaces. The intent of these guidelines is to educate tenants about implementing sustainable design and construction features in their tenant improvement build-out as well as adopting green building practices that support the overall sustainability goals of the Project. The guidelines will also communicate the sustainable and resource-efficient features incorporated into the base building(s) and provide specific suggested sustainable strategies enabling tenants to coordinate their leased space design and construction with the rest of the building systems.

In summary, the guidelines may include the following information:

- Descriptions of sustainable design, construction and operations features of the proposed building(s), including resource conservation goals and features for tenant fit-out spaces (e.g., low-flow plumbing fixtures, sub-metered systems, lighting controls) as well as building certifications (i.e., LEED certification).
- Encourage tenant commitments for meeting various energy and water conservation goals.
- Descriptions of current regulatory requirements that pertain to leasable spaces.
- Strategies for energy efficiency, such as those for HVAC equipment recommendations, lighting and lighting controls, and low-flow, high-efficiency plumbing fixture recommendations.
- Information on the various high-performance building rating systems, such as EPA's ENERGY STAR and LEED for Commercial Interiors (CI) as well as information on how the design of the base building(s) can contribute towards these certifications.
- Waste reduction goals and recycling facilities/programs.
- Information on green cleaning guidelines and policies.
- Information regarding project-wide features that aim to encourage alternative transportation and TDM measures.
- Information on how to train and inform maintenance staff and employees on operations related to sustainable design features and systems.

8.9 LEED CREDIT NARRATIVE

Refer to the Sustainability Supporting Documentation in Appendix B for individual Project component reports.

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The background image shows a construction site with several workers in hard hats and safety gear. They are gathered around a large set of blueprints or plans that are laid out on the ground. A ladder is visible in the background. The entire image is covered with a semi-transparent yellow filter.

9. PHASING PLAN

9.0 INTRODUCTION

CHAPTER UPDATES

The following section summarizes minor refinements to this Chapter since the Concept Plan Amendment #1.

- **Phase 1:** Since the Concept Plan Amendment #1 was approved in 2019, the Applicant has completed construction of the commercial space and ground floor retail associated with the Commercial Building A (Phase 1) located at 145 Broadway.
- **Phase 2:** Commercial Building B (Phase 2), also known as 325 Main Street, is currently under construction and anticipated to be completed in Q2 of 2022.
- **Phase 3:** This chapter has been updated to reflect the construction of the consolidated Residential Building South at 135 Broadway, an electrical substation vault, and the new Commercial Building C at 290 Binney Street.
- **Phase 4:** This chapter has been updated to reflect the proposed construction of the new Commercial Building D at 250 Binney Street, build-out of the electrical substation, completion of the Center Plaza open space and conversion of the existing service drives to east and west “Plaza Drives”.

9.1 PHASING PLAN

The evolution of the Project is expected to occur over four major phases consisting of the following generally described components:

- **Phase 1 (Commercial Building A)** The commercial space and associated ground floor retail or active use at 145 Broadway;
- **Phase 2 (Commercial Building B)** The commercial space and associated ground floor retail or active use at 325 Main Street;
- **Phase 3 (Residential Building South)** The residential space on the south side of the existing Blue Garage consisting of rental apartments;
- **Phase 3 (Commercial Building C)** The commercial space and associated ground floor retail or active use at 290 Binney Street;
- **Phase 3 (Substation Vault)** The construction of an electrical substation vault under what will become the Center Plaza;
- **Phase 4 (Commercial Building D)** The commercial space and associated ground floor retail or active use at 250 Binney Street;
- **Phase 4 (Electrical Substation)** Build-out of the electrical substation; and
- **Phase 4 (Center Plaza)** Completion of the Center Plaza open space after completion of the electrical substation and opening to public use.

The specific timing of each of the phases depends upon the duration required for permitting, the leasing conditions within the Cambridge sub-market and the construction logistics associated with staging and the demolition of portions of the Blue Garage.

Since the Concept Plan Amendment #1 was approved in 2019, the Applicant has completed construction of the commercial space and ground floor retail associated with the Commercial Building A (Phase 1) located at 145 Broadway. Commercial Building B (Phase II), also known as 325 Main Street, is currently under construction and anticipated to be completed in Q2 of 2022. As part of delivery of the Phase 2 building—which will serve as Google's local headquarters—the Applicant is constructing approximately 40,000 square feet of retail uses, enhancing the Kendall Roof Garden, creating a new public lobby in the ground floor of 325 Main Street, and working closely with MBTA to renovate the existing Kendall Northbound Headhouse. Delivery of the MBTA Kendall Northbound Headhouse is subject to third party approvals of schedule and construction timeline.

The Applicant remains committed to complying with the requirements of the MXD Zoning and KSURP Amendment 11 that requires the commencement of construction of at least 400,000 square feet of residential GFA to precede or be constructed concurrent with the construction of either Commercial Building C or Commercial Building D, whichever starts first.

Table 9-1 summarizes the approximate GFA and program by phase along with the public benefits associated with each phase of development.

The combination of new active ground floor uses, the redesign of key existing public spaces along with adjustments and refinements to other parts of the public realm will significantly improve the connectivity, as well as the experience of the public realm between Broadway and Binney Street and along Main Street in proximity to Kendall Plaza in the MXD.

TABLE 9-1 GROSS FLOOR AREA

ANTICIPATED PHASING PLAN WITH PUBLIC BENEFIT ³					
	PHASE 1	PHASE 2	PHASE 3		PHASE 4
	COMMERCIAL BLDG. A (145 BROADWAY)	COMMERCIAL BLDG. B (325 MAIN STREET)	RESIDENTIAL SOUTH BLDG. (135 BROADWAY)	COMMERCIAL BLDG. C (290 BINNEY STREET)	COMMERCIAL BLDG. D (250 BINNEY STREET)
COMMERCIAL GFA	441,614	385,423	0	409,500	444,776
RESIDENTIAL GFA	0	0	420,000	0	0
ACTIVE USE/RETAIL GFA	8,700	0	700	2,500	5,800
EXISTING GFA	(78,636)	(117,201)	0	0	(62,576)
NET NEW GFA	362,978	268,222	420,700	412,000	450,576
(OS) OPEN SPACE IMPROVEMENTS	6 TH STREET CONNECTOR E/W CONNECTOR (W)	KENDALL PLAZA / KENDALL ROOF GARDEN AND PUBLIC TERRACE CONNECTOR	EVERSOURCE VAULT BUILD OUT	CENTER PLAZA & SOUTHERN E/W CONNECTOR	CENTER PLAZA / NORTH-ERN AND SOUTHERN E/W CONNECTORS / PLAZA DRIVES / VAULT EQUIP-MENT BUILD-OUT
INNOVATION SPACE AT 255 MAIN	60,496	44,704	0	0	0
VEHICLE PARKING	457	0	0 ¹		1,584 ¹
LONG-TERM BIKE PARKING	134 ²	108 ²	20 ³		400-610 ²
SHORT-TERM BIKE PARKING	34 ²	47 ²	12 ³	12 ³	12 ³
MARKET RATE HOUSING	0	0	316,000 GFA	0	0
AFFORDABLE HOUSING	0	0	84,000 GFA	0	0
MIDDLE INCOME HOUSING	0	0	21,000 GFA	0	0
STATUS	COMPLETED	UNDER CONST.	PLANNED	PLANNED	PLANNED

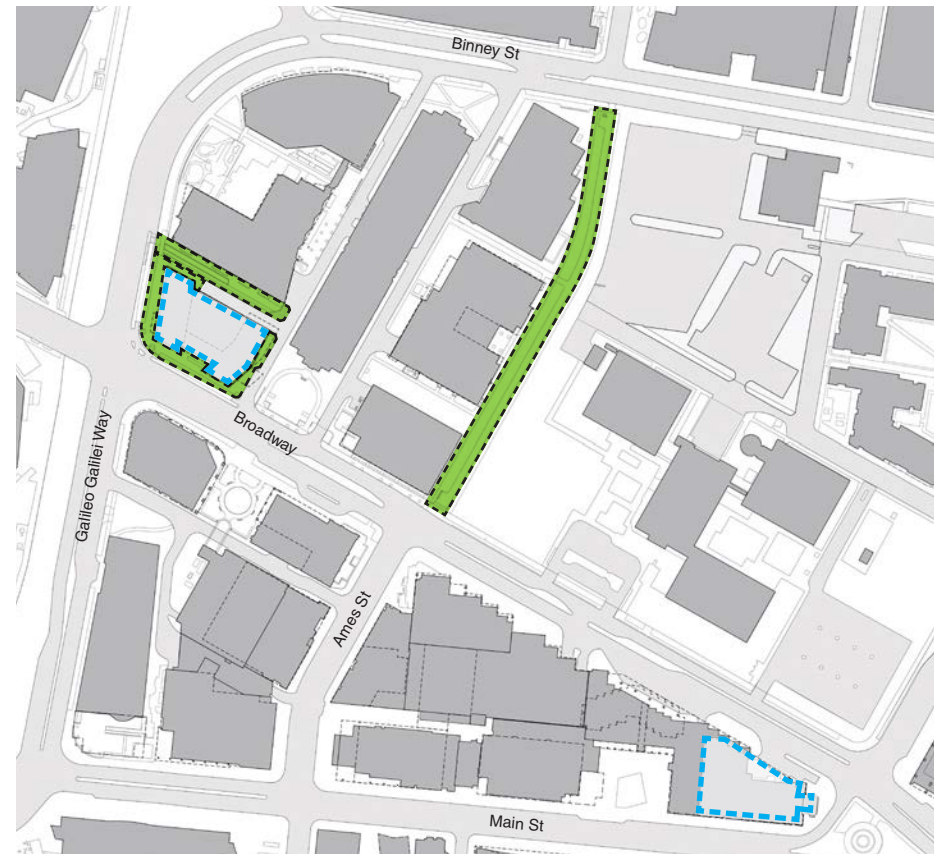
1. The Project Change proposes to relocate the approximately 1,170 existing above-grade parking spaces associated with the Blue Garage below-grade into in two, connected parking garages situated beneath Commercial Building C and Commercial Building D. The Project Change also proposes an additional 413 net new vehicle parking spaces to be accommodated within the new below-grade garage for a total of 1,558 vehicle spaces that will service Commercial Buildings C and D, and Residential Building South. Two existing above-grade parking garages shall be retained, with modifications as to provide more efficient self-parking striping and the provision of managed/valet spaces as approved by Concept Plan Amendment #1.
2. Reflects as-built bicycle parking for Commercial Building A, and approved bicycle parking for Commercial Building B, which is currently under construction.
3. The Applicant intends to satisfy bicycle parking demand from the Residential Building South, Commercial Building C and Commercial Building D via a commercial bicycle valet. In accordance with Article 6.108.1 the Applicant therefore intends to seek a modification of bicycle parking requirements via special permit. To complement the services of the envisioned bicycle valet, the Applicant also seeks to deliver approximately 20 traditional long-term bicycle parking spaces within the Residential Building South and 12 short-term bicycle parking spaces for Residential Building South, Commercial Building C, and Commercial Building D. The range of valet spaces illustrated (400-600) conveys the changing maximum capacities of the valet from its temporary premises within Commercial Building C to its permanent location within Commercial Building D. The Applicant also anticipates that the proposed bicycle valet will be able to offer short-term bicycle parking, subject to capacity utilization trends. The implications of applying the minimum bicycle parking requirements established by the City of Cambridge Bicycle Parking Guide to the Project are shown in Table 10 of the TIS Update Memo #2, Appendix B."

PHASE 1

FIGURE 9.2

PROJECT PHASING FORECAST																
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
PHASE 1	Commercial Building A															
PHASE 2																
PHASE 3									Residential Building South							
									Commercial Building C							
PHASE 4															P2 Open Space	

Since the Concept Plan Amendment #1 was approved in 2018, the Applicant has completed construction of the commercial space and ground floor retail associated with the Commercial Building A (Phase I) at 145 Broadway. Commercial Building has become Akamai's new global headquarters, and provides 8,700 GFA of ground floor retail space. In conjunction with Commercial Building A, the Applicant delivered enhancements to the 6th Street Connector, enhancements to the East/ West connector connecting Galileo Galilei Way to the West Service Drive, and the creation of 60,496 GFA of Innovation Space located at 255 Main Street.



1. Timelines are estimates and subject to change in duration due to complex nature of multiple overlapping projects

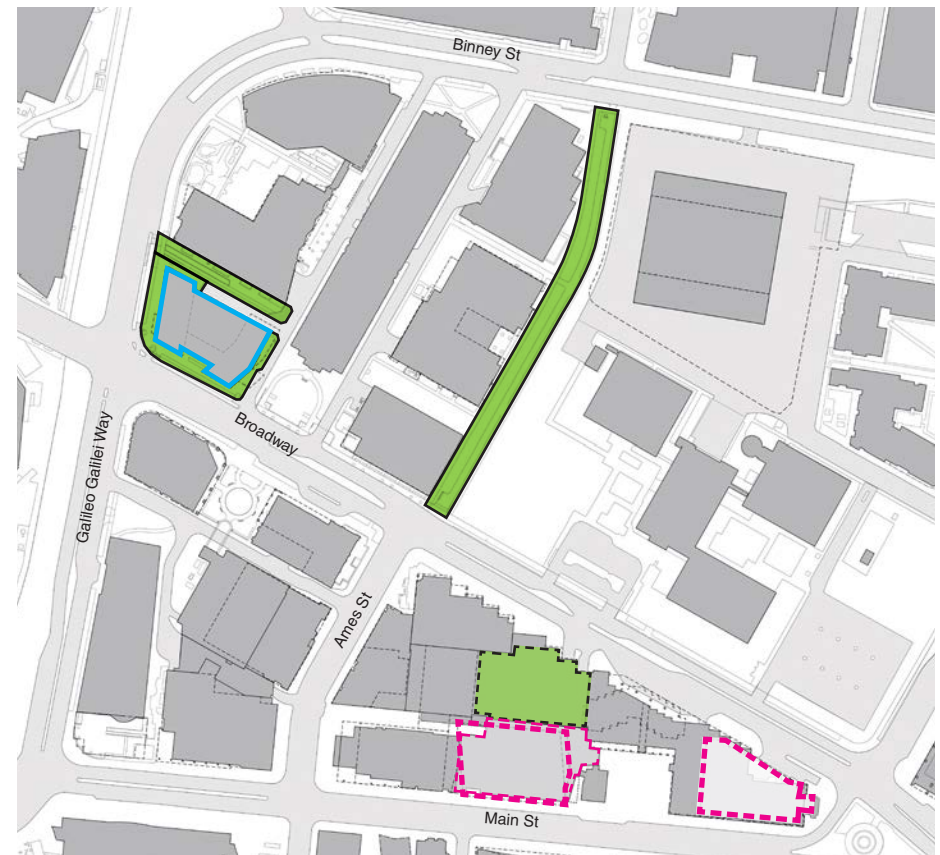
PHASE 2

FIGURE 9.3

PROJECT PHASING FORECAST																
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
PHASE 1	Commercial Building A															
PHASE 2				Commercial Building B												
PHASE 3									Residential Building South							
									Commercial Building C							
PHASE 4															P2 Open Space	
													Sub Station Fit Out			

Since the Concept Plan Amendment #1 was approved in 2018, the Applicant has commenced construction of the commercial space and ground floor retail associated with Commercial Building B, with an estimated completion and Certificate of Occupancy in Q2 2022. The office space will operate as Google's local headquarters on completion, and will be accompanied by approximately 40,000 GFA of reconstructed retail delivered in the basement, ground floor, and second floor. The 325 Main Street site is bordered by Main Street to the south, 355 Main Street to the west, the Green Garage to the north, and the Kendall Plaza to the east. As part of delivery of the Phase 2 building—the Applicant is enhancing the Kendall Roof Garden and working closely with the Massachusetts Bay Transportation Authority (MBTA) to renovate the existing Kendall Northbound Headhouse. The remaining 44,704 GFA of Innovation Space will be provided in conjunction with the completion of Commercial Building B.

1. Timelines are estimates and subject to change in duration due to complex nature of multiple overlapping projects



PHASE 3

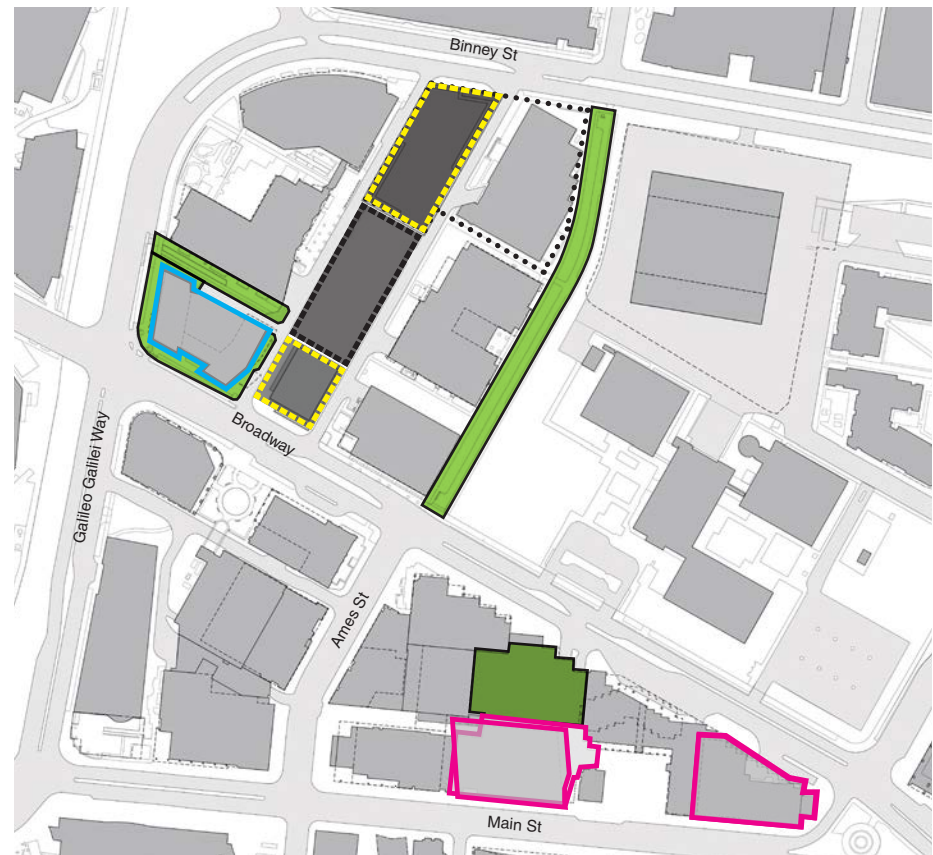
FIGURE 9.4

PROJECT PHASING FORECAST																
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
PHASE 1	Commercial Building A															
PHASE 2				Commercial Building B												
PHASE 3									Residential Building South							
									Commercial Building C							
PHASE 4															P2 Open Space	

Will consist of both Commercial Building C and Residential Building South. The construction of these two components will require demolition of the existing above-grade Blue Garage to accommodate the relocation of the Eversource electrical substation. It is anticipated that construction of these two project components will start at different times due to on site logistics, relative complexity of each building, and market conditions, however the construction of the Residential South Building will precede or be concurrent with the construction of Commercial Building C.

Phase 3 will also include the construction of a vault beneath the Center Plaza that will be used to house the electrical substation that will be completed as part of the subsequent Phase 4. While proposed project scheduling and sequencing is complex and remains subject to change, it is estimated that this phase carries an approximate duration of 4.5 years.

1. Timelines are estimates and subject to change in duration due to complex nature of multiple overlapping projects



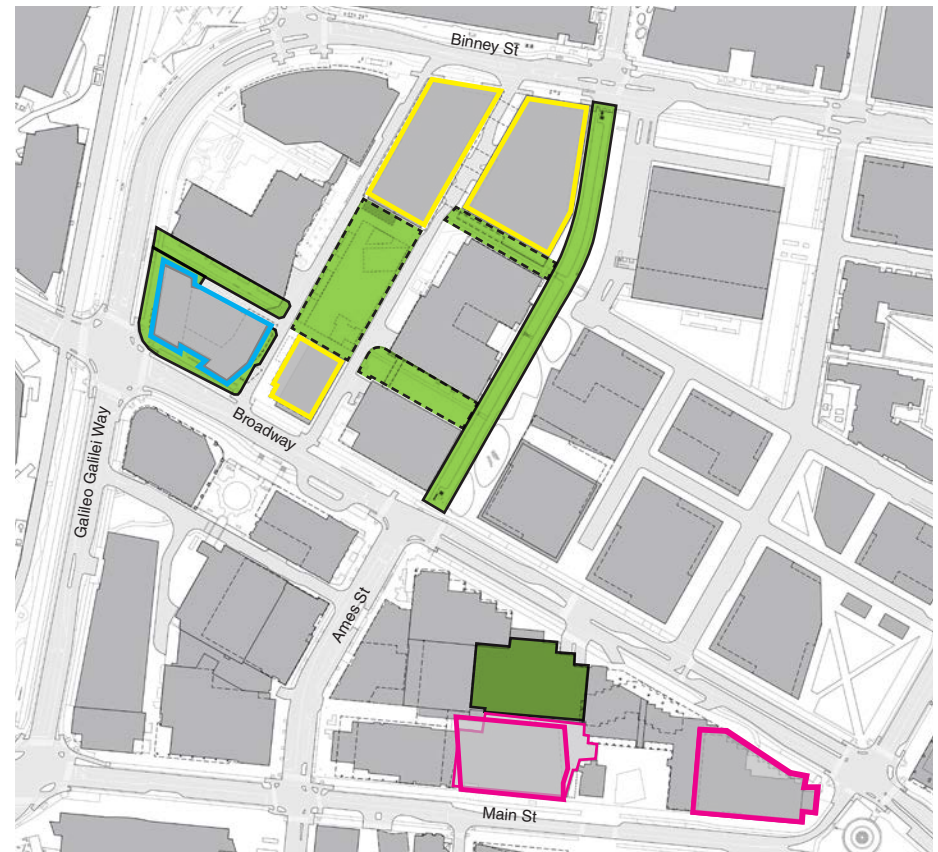
PHASE 4

FIGURE 9.5

PROJECT PHASING FORECAST																
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
PHASE 1	Commercial Building A															
PHASE 2				Commercial Building B												
PHASE 3									Residential Building South							
									Commercial Building C							
PHASE 4									Commercial Building D						P2 Open Space	
												Sub Station Fit Out				

Will consist of the demolition of the existing building at 250 Binney Street and the construction of Commercial Building D. Phase 4 will also include the build-out of the electrical substation, completion of the Center Plaza, and the planned enhancement of the northern and southern East/West Pedestrian Connectors connecting the East Service Drive to the 6th Street Connector. Lastly, Phase 4 will include the conversion of the existing service drives to east and west “plaza drives”. While proposed project scheduling and sequencing is complex and remains subject to change, it is estimated that this phase carries an approximate duration of 6 years from completion of Phase 3.

1. Timelines are estimates and subject to change in duration due to complex nature of multiple overlapping projects

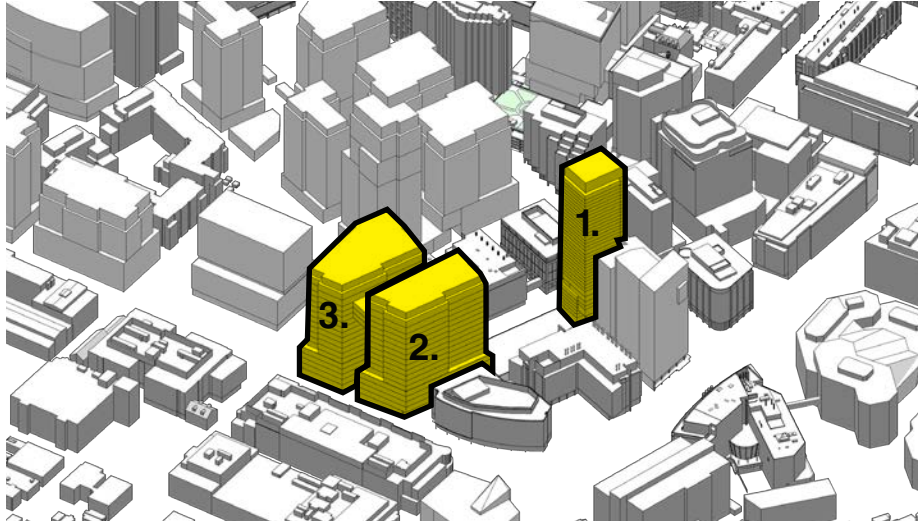


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The background of the slide is a dense, isometric illustration of a city skyline. It features numerous buildings of varying heights and shapes, rendered in a light yellow color with black outlines. The perspective is from an elevated angle, looking down at the city blocks. The buildings are packed closely together, creating a sense of a bustling urban environment. The overall tone is clean and modern.

10. DESIGN GUIDELINES

10.0 INTRODUCTION



1. Residential Building South (135 Broadway)
2. Commercial Building C (290 Binney)
3. Commercial Building D (250 Binney)

The following design guidelines are presented in a “ground up manner” that first considers the broader goals of the overall Project and then articulates specific guidelines for streets and public pathways, landscape materials, building form and massing, building materials and guidelines for each of the proposed commercial and residential projects. The Guidelines are divided into the following sections:

- I. Key Goals and Objectives**
- II. Character of Streets and Pathways**
- III. Landscape Material**
- IV. Built Form and Massing**
- V. Building Material and Facade Guidelines**

A variety of design guidelines and priorities have come to act on the Infill Development Concept Plan over its history, including the original KSURP Design Guidelines, K2/C2, and others as incorporated into Amendment #1 of the Infill Development Concept Plan. These guidelines have collectively shaped previous iterations of the Concept Plan by establishing high-level goals for proposed development and then mediating execution of key facets of design in turn. These include the nature of streets and pedestrian pathways, materials to be utilized in landscaping, the character of building form and massing schemes, as well as orienting selection of building materials and façade design direction. Rather than minutely prescribing development, these guidelines have generally been intended to consistently inform project design so as to promote a more cohesive and thoughtful whole.

Consistent with representations made during the re-zoning petition that is enabling this proposed Concept Plan Amendment #2, the Applicant in this instance intends to adopt the design guidelines applied to the adjacent Volpe development project while respecting the aspirations and objectives of the guidelines that acted on Amendment #1 to the Infill Development Concept Plan. This evolution in design direction will ensure that the proposed amendment is responsive to the interrelationship between the Applicant's proposed Concept Plan Amendment #2 and the adjacent Volpe development being elaborated by MIT. As such, the design guidelines for this proposed amendment shall serve the purpose intended in prior iterations of the Infill Development Concept Plan—to promote cohesive design via harmonization of goals, objectives and guidelines within the MXD.

I. KEY DESIGN GOALS AND OBJECTIVES

The following goals and objectives are intended to guide and support the successful execution of the MXD Infill Development Concept Plan as a whole. Overall, the Original Concept Plan is an infill development proposal that is bounded by the realities of existing development and infrastructure while seeking to contribute to the evolution of Kendall Square as a neighborhood with varied and complimentary uses. A set of design objectives are primarily provided for the MXD District in sections 501 and 702 of the KSURP. However, with the approval of the IDCP, the following goals shall also apply broadly to the district as a whole:

1. Create a complementary mix of uses that contribute to Kendall Square's evolution as a 24/7 Live Work and Play neighborhood.
2. Create permeability with pedestrian and bicycle connections through the site blocks within the district especially those routes that strengthen ground floor active use and retail.
3. Provide access to outdoor and indoor public spaces that allow people to enjoy them throughout day and evening.
4. Enhance connections between existing open spaces and public and private pedestrian and bicycle infrastructure.
5. Make housing available across multiple income spectrums as further defined in the Zoning Ordinance.
6. Design and build in a sustainable and resilient fashion.
7. Create buildings of appropriate scale, mass, height, form and texture for their site context on its parcel, the block, and in relation to the width of the street or adjacent open space, with the goal of optimizing light, air and views for all both inside and outside the buildings.
8. Building and open space design enhances and embraces that life in a dense urban setting happens vertically by including public and private open spaces such as balconies, terraces and rooftop decks.

II. CHARACTER OF STREETScape AND PATHWAYS

The following section describes the guidelines for the streetscape and publicly available pathways. This section presents general guidelines that apply to Broadway, Galileo Galilei, Binney Street, Main Street the 6th Street connector and Pioneer Way. In addition to these general guidelines, City Street standards shall apply as well as the joint CRA's May 2017 City ALTA cycle track design that will impact portions of Broadway, Galileo Galilei Way, Binney Street and Main Street. At the time of this submission the ALTA CRA's May 2017 cycle track has been advanced to a Schematic Design level of detail.

For specific information on the vision for associated open spaces and parks in the Concept Plan Amendment, please refer to Chapter 3, Open Space. Note that all public space proposals will evolve with the design of each applicable building or project as more thoroughly described in Chapter 9, Phasing, and will be submitted concurrently with design review for each building. The following guidelines shall apply to all streetscapes and pathways subject to modification in the design review process:

1. Streets shall be designed to improve pedestrian and bicycle access, circulation, and safety.
2. Streets shall be designed to allow for separated circulation paths for pedestrian bicycles and automobiles to minimize conflict and ensure safety.
3. Intersections between private access roads and streets shall be carefully designed to compromise between the variable needs of pedestrians, bicycles, automobile traffic, bus traffic, delivery trucks and emergency service vehicles.
4. Where possible, lay by areas shall be planned to allow for safe access to ride sharing vehicles.
5. Bike racks shall be included in a manner consistent with zoning for short or long term bike uses, and dedicated space provided for municipal bike share systems as required by PTDM or Zoning.
6. Lighting shall be provided consistent with city standards that balances concerns between light pollution, safety, and the creation of a compelling evening streetscape, outdoor patio, retail, and open space environment.
7. Where possible, planted areas and permeable hardscape shall be included to allow for water infiltration.
8. Street furnishing shall be included consistent with City Standards to allow for points of gathering, rest, and for public transit uses.

III. LANDSCAPE MATERIALS DESIGN GUIDELINES

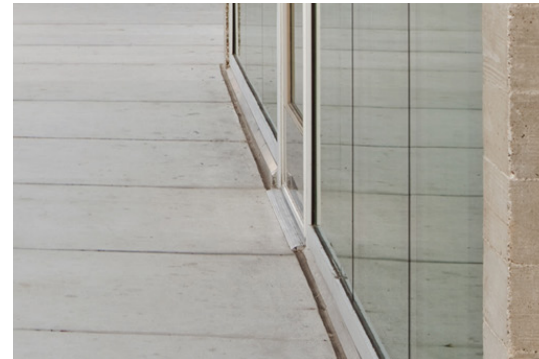
The following section sets forth the design goals and objectives for the landscape materials that will be used throughout the broader MXD Infill Development Concept Plan, and within the individual building sites. Specific manufacturer reference should be considered solely as precedent examples to help illustrate a guideline. The following material guidelines apply to open spaces and parks that are part of the MXD Infill Development Concept Plan, and are included as part of Chapter 3 of this submission. The following guidelines shall apply to all landscaping materials subject to modification in the design review process:

PAVING

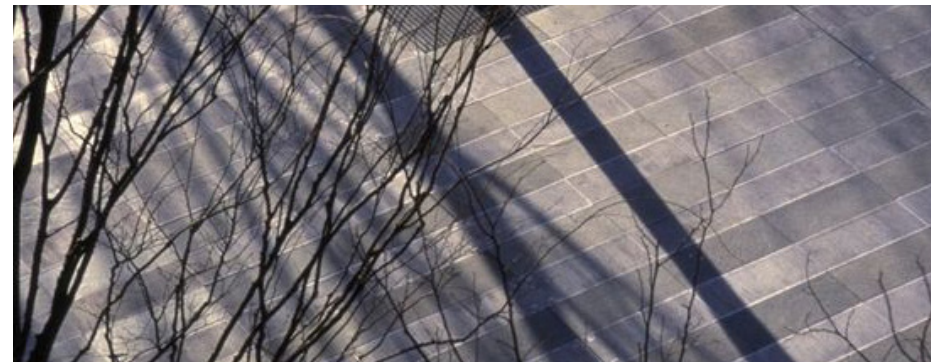
1. All paving materials should be able to withstand high volumes of pedestrian movement and harsh weather conditions. Paving should be able to accommodate garage entrances, retail loading areas, vehicular crossings, and de-icing treatments.
2. In the event of damage, repair or utility work, hardscapes should be easily repairable with matching materials. Pavements must be slip resistant and safe for pedestrian traffic. Paving that utilizes lighter coloring can help reduce heat island effect and can count towards LEED credits. The following are pavement recommendations:
3. Paving should be predominantly used to minimize tripping hazards along the pedestrian clearway zone.
4. Specialty paving should be used to highlight entries to buildings or parks, mid-block crossings or public art. Paving over tree spaces should be porous, either by utilizing porous pavers, setting unit pavers on a pervious setting bed or using tree grates.
5. Within the district, concrete pavers may be used to signify primary building entries and stairs, Plaza Drives and within the Center Plaza. Sidewalks along Broadway, and Galileo Galilei Way will typically be cast in place concrete with saw cut joints, scoring patterns, and/or texture. Compacted almost-flush decomposed granite and or a Flexi-pave surface material could be considered an option for surfacing when permeability is necessary.



CONCRETE UNIT PAVER



CAST-IN-PLACE CONCRETE



III. LANDSCAPE MATERIALS DESIGN GUIDELINES

FURNISHINGS

1. Benches, tables and other types of seating should be located in a variety of settings to allow a choice of scenery and social settings. Within the district, a mix of fixed and movable chairs, as well as tables will be provided to allow for informal gatherings, outdoor eating, studying and socializing.
2. If located in sunny areas, umbrellas or shading devices will be considered.
3. Playful, relaxed types and shapes of furniture should be considered, including Adirondack Chairs, lounges, swings and similar.
4. In addition to movable tables and chairs, fixed benches may be used along the East West Connector, or potentially near building entrances, including vestibules, and other covered spaces.
5. Within the district core, seat walls or colored concrete benches (preferably with wooden seats) will be used to provide seating in or around the edges of these spaces. Walls shall be concrete with optional metal and wood components and be compatible in material, pattern and color with immediately adjacent buildings. Capstones will be granite or precast concrete. Seat walls should be set level.
6. The litter receptacle that should be used throughout the district is the 'collect' as supplied by "landscapeforms," or "Big Belly," with top or side opening, or similar. Finish shall be polyester powder coat in color 'silver,' 'titanium,' or 'black,' matching the color chosen for the benches.

BIKE RACKS

1. In all district areas, the 'Bola Rack', or similar, shall be used. Racks should be anchored to a concrete base, and shall preferably be stainless steel, receive a hot dipped galvanized finish, or a powder coat finish in black. Spacing of the racks shall conform to Bicycle Rack Cambridge Standards.

LITTER RECEPTACLES



BigBelly Smart Waste Management System



Apex - Forms and Surfaces



Radium - Mmcite

BENCHES AND CHAIRS



Parc Center Chair - Landscapeforms



Custom Bench

BIKE RACKS



Bola - Landscapeforms



Bikepark - Mmcite

LIGHTING

The primary function of exterior lighting is the safety of drivers, cyclists and pedestrians at night, but it plays an equally important role in complementing architecture and urban form to provide a sense of place before and after sunset. Exterior lighting sources shall be light emitting diode (LED), unless approved by city staff.

Developments in the MXD District shall observe the following guidelines with respect to exterior lighting:

1. The primary function of exterior lighting is the safety of drivers, cyclists and pedestrians at night, but it plays an equally important role in complementing architecture and urban form to provide a sense of place before and after sunset. Exterior lighting sources shall be light emitting diode (LED), unless approved by city staff. Developments in the district shall observe the following guidelines with respect to exterior lighting:
2. Exterior walls of buildings may be illuminated at a regular intervals by wall-bracketed or accent up/down lighting, and such lighting should enhance the building's architectural expression. Where a feature such as a soffit or arcade is employed in the architectural design of a building, lighting should be recessed into that feature.
3. Pedestrian light fixtures should be no more than 14 feet (14') tall, and be anchored by a pedestal base that is of proportion to the height and circumference of the pole of a complementary material.
4. Lighting maybe incorporated within the paving design of the center plaza to celebrate the idea of the plaza's direct correlation with the substation.

GOOD NEIGHBOR LIGHTING

These types of fixture designs DO NOT comply in all locations.

Unacceptable / Discouraged
Fixtures that produce glare and light trespass

These types of fixture designs DO comply in all locations.

Acceptable
Fixtures that shield the light source to minimize glare and light trespass and to facilitate better vision at night

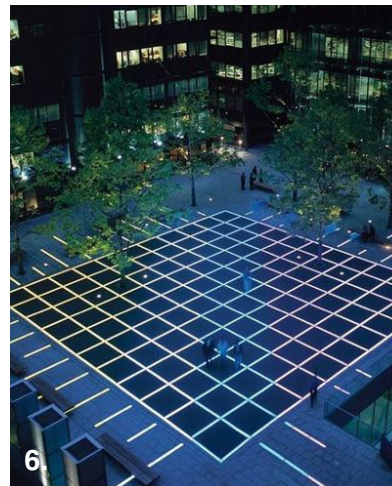
Good Neighbor Lighting

Lighting Requirements and Practices in Cambridge

City of Cambridge
DRAFT: 4/1/2016

This illustration courtesy of Bob Crelin / NELPAG Photo by Jeffrey Berg

LIGHTING



6 Amenity lighting (led)



7 Cree - Edge Series

1. See "Good Neighbor Lighting" PDF https://www.cambridgema.gov/-/media/Files/CDD/EconDev/lightingtaskforce/2016/goodneighborbrochure_180117.pdf
2. The full Outdoor Lighting Ordinance is located Chapter 15.22 Outdoor Lighting Section 15.22.050 1. Prescriptive Standard

III. LANDSCAPE MATERIALS DESIGN GUIDELINES

WATER FEATURES

Water features of the proposed public realm can play a vital role in providing places to create visual interest and serve as a landmarks or focal points. The design will integrate water features in the urban landscape as stormwater collection, storage and or circulation. Water features can be designed to incorporate children's play. Guiding principles for introducing water features into the pedestrian realm are as follows:

1. Use of high-quality stone products and applications that complement adjacent architecture.
2. Locate water features with the landscape zone, building zone, or open space locations. Water features should be kept out of the sidewalk zone of the streetscape, in order not to impede pedestrian movement.
3. Design considerations should take into account the appearance during winter months or other periods when the water feature is turned off.



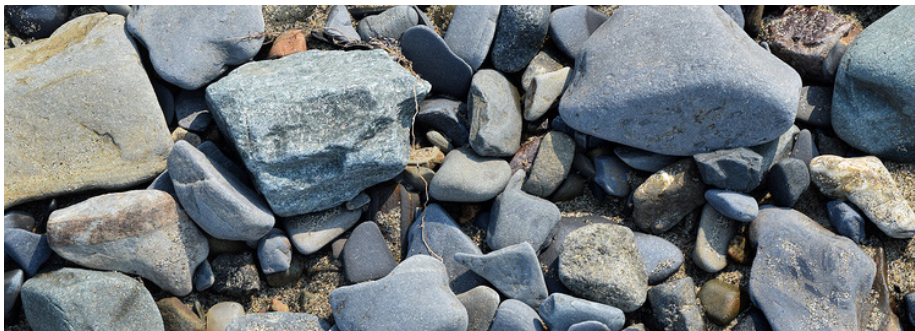
CHILDREN'S PLAY WATERFEATURE



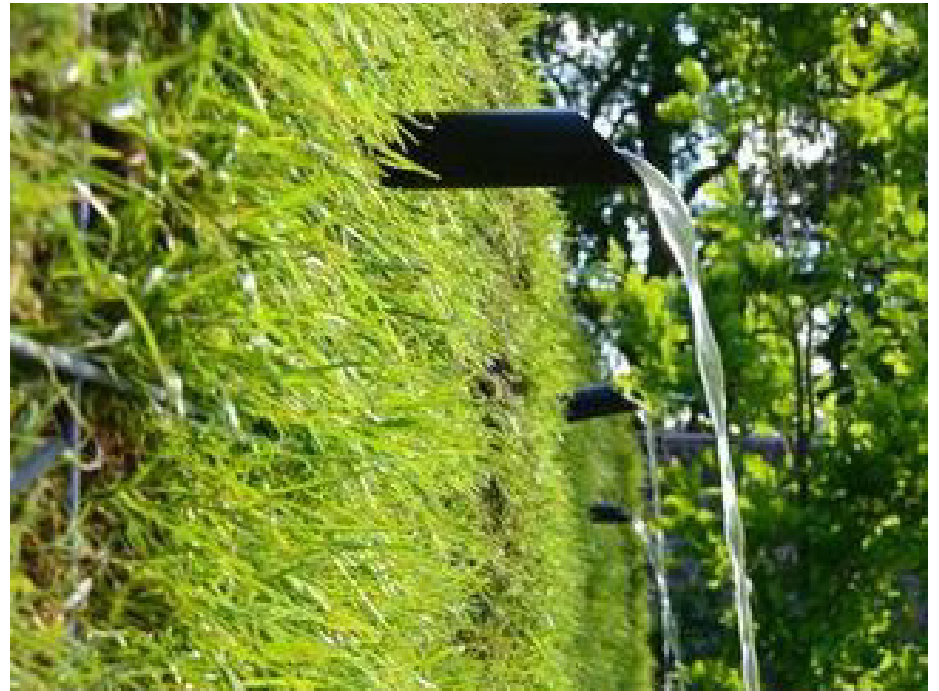
WATER FEATURE / RUNNEL



RUNNEL SIGNAGE



DECOMPOSED GRANITE



WATER SPOUTS

EXISTING / ADAPTED GARAGE STRUCTURES

Within the MXD district, recent developments have proposed to mask existing garage structures with new building proposals. For exposed parking garage surfaces, murals and screening devices or the continuation of building facade fenestration can be introduced when appropriate to mask or enliven these existing structures without impacting necessary open area for ventilation of the garage functions.

Within existing parking structures opportunities for enhanced wayfinding graphics can be applied to surfaces for greater pedestrian safety and information



PAINTED MURALS



GREEN WALLS



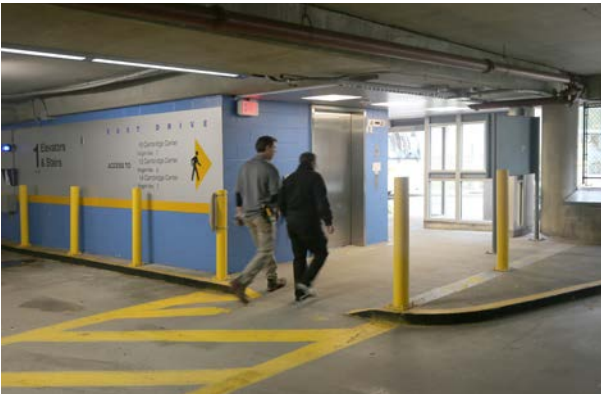
COLORFUL WAYFINDING AND GRAPHICS



SCREENING MATERIALS BREAK DOWN SCALE



FACADE PANEL GRAPHICS



IV. BUILT FORM AND MASSING

The following section sets forth the design goals and objectives for massing and built form of the proposed commercial and residential buildings that form the MXD Concept plan. In addition, a building specific component is included in these guidelines to help address guidelines in a site specific context including relationships to public spaces and streetscapes. The built form and massing guidelines attempt to strike balance between multiple important considerations including visual interest, interior functionality, market demand, environmental impacts, sustainability and programmatic flexibility among others. Note that all proposed massings in the MXD Concept plan will evolve with the design of each applicable building or project and through the design review process for each building. The following guidelines shall apply broadly to all proposed massings and built forms and specifically to each building and subject to modification in the design review process:

1. Create dynamic varied street walls to help frame sidewalks, plazas, and other public spaces while allowing for breaks in street wall to define entries to buildings. Varying materials and massing forms may be employed to prevent monolithic or flat street wall.
2. Use building mass to establish street corners, urban thresholds or create landmarks.
3. Create a variety of forms and rhythm, appropriate to urban context and street width.
4. Introduce vertical breaks in facades where appropriate to define entries or other programmatic changes.
5. Create interesting and varied rooflines identifiable from the ground and at a distance.
6. Create or support appropriate contextual datum lines to limit sense of height at street level.
7. Provide transition to adjacent context (parks, buildings).
8. Visually connect outdoor public realm with indoor public spaces.
9. Use recessed or projected entryways, canopies, awnings, etc., to enhance pedestrian experience, and provide weather protection to the sidewalk.
10. Architectural contrast is encouraged, while being deferential to the existing signature architectural elements of any existing buildings and/or blocks.
11. Use massing to mitigate potential wind impacts as described in wind studies provided as part of each building's Design Review submission.

BUILDING FORM

A primary planning goal of the Project is to create new human-scaled streets and open spaces and a district where the built form contributes to an overall sense of place by employing simple, shared urban design principles. The massing envelopes of each of the eight high-rise buildings proposed are conceived with four horizontal zones: pedestrian frontage, streetwall, tower, and building top.¹

Pedestrian frontage: This street level zone will maximize transparency, revealing lobby, retail, dining and recreation uses and fostering a sense of security along the streetscape.

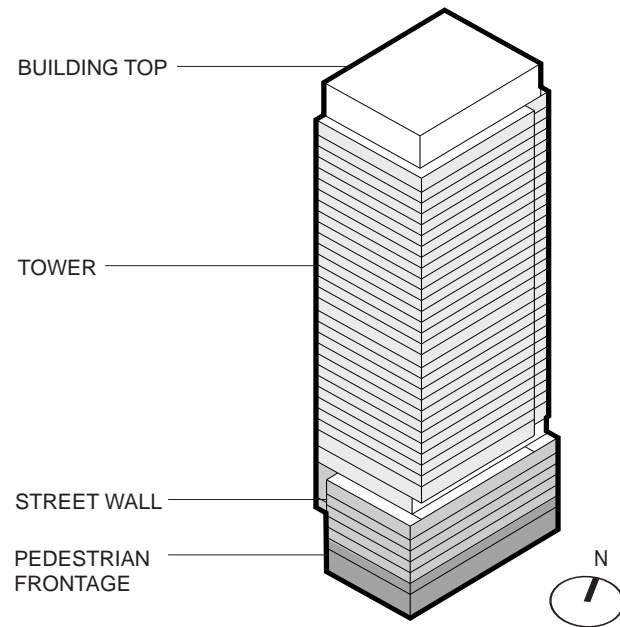
Streetwall: Floors within this zone may utilize less overall transparency than the pedestrian frontage zone, as they reflect the specific functional use of the overall building and define the urban scale of streets and open spaces.

Tower: Defining the majority of the building's presence above the streetwall zone, the building tower participates at the scale of the district. Fenestration patterns in this zone will relate to the primary function of the building, and it is in the tower massing where the most opportunity exists to manipulate bulk and proportion.

Building top: The building top operates on the scale of the city and lends identity to the building and compositional character to the profile of the city skyline.

1. Criteria Adopted from the Volpe Development Project Design Guidelines

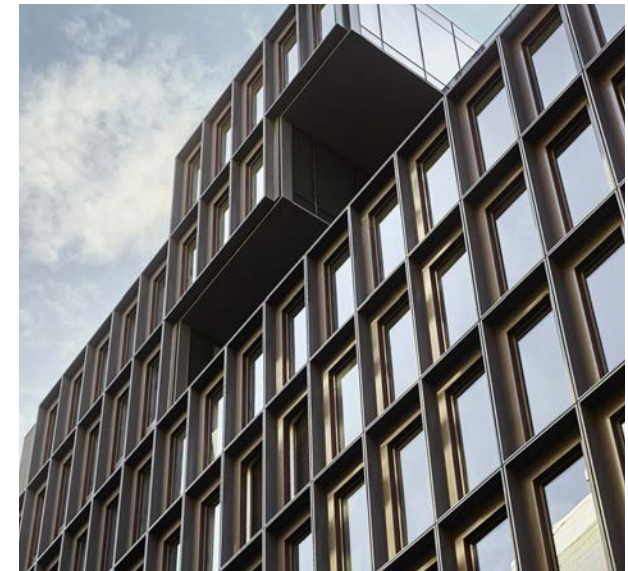
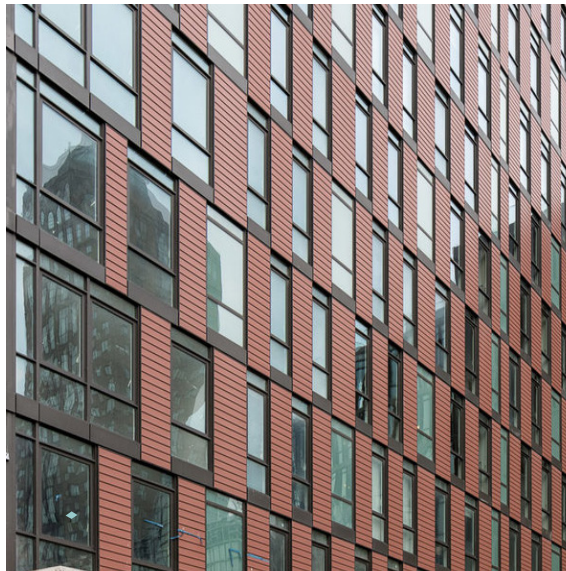
RESIDENTIAL BUILDING



MASSING SOUTH EAST AXON

Common Features:

- Simple definition of pedestrian frontage, tower and top
- Strong expression of frame and legibility of scale
- Architectural language of residential



IV. BUILT FORM AND MASSING

BUILDING USE TYPOLOGIES

All buildings will have active, highly transparent street levels, with particular emphasis on frontages that face major streets and open spaces. The individual building architecture will reflect specific uses in building metrics like floor-to-floor height, structural bay spacing, and in fenestration patterns and material selection.¹

Residential Buildings: Residential building architecture will reflect the private nature of individual homes and residential spaces, emphasizing a lower window-to-wall ratio and a diversity of fenestration patterns, responding to unit organization and solar orientation. Residential floor plates are inherently thinner than commercial floor plates, and accentuating the slender proportions of the residential plates is encouraged. Balconies, whether projecting from the typical plane of the exterior facade or recessed into it, will be utilized to lend scale and variety to the massing and contribute to the language of residential typology.

Commercial Buildings: The proposed commercial buildings will differ from residential buildings by virtue of their larger floor plates, greater floor-to-floor heights, rigorous structural bay spacing, and more uniform pattern of fenestration. Building massing and envelope details will respond to distinctions between primary front facades and secondary facades and to differences in solar orientation. Careful articulation of large commercial buildings is critical to enable the buildings to relate to the scales of the city, the neighborhood, and the pedestrian.

CONTEXT

Building design will consider the existing architecture of Kendall Square and East Cambridge as presenting a vocabulary of contextual precedent which is background for the integration of the Project's new buildings into the existing city fabric. That fabric is by no means uniform – multiple materials, colors, and proportions of massing elements and fenestration exist nearby and may be precedent in developing compositional strategies for new buildings. While imitation is highly discouraged, a strategy of reference and interpretation is encouraged, with individual design teams encouraged to study elements of the Cambridge vocabulary for inspiration. A city consists of both background buildings and foreground buildings. As an ensemble, the Project build-out will be comprised of foreground buildings set in the context of important background buildings.¹

CHARACTER AND COMPOSITION

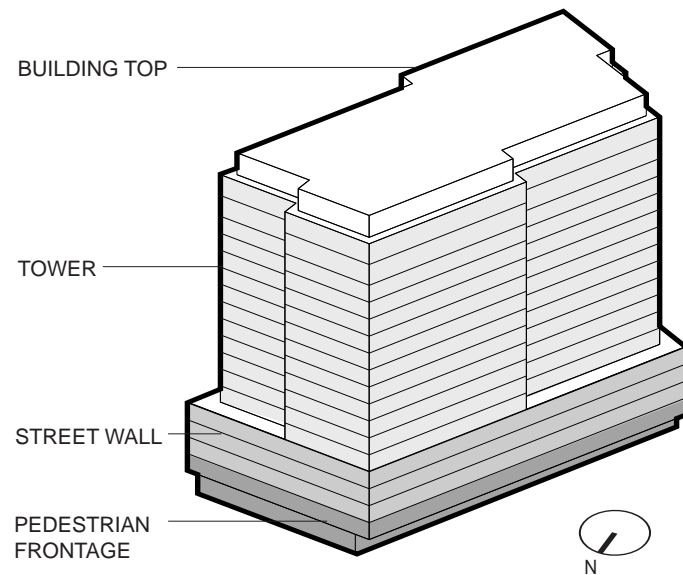
Architectural character and composition will emphasize a distinct identity for each building while also expressing a consistent level of quality, proportional elegance and detail throughout the Project. These buildings will relate to human scale by means of material selection, transparency and public accessibility at lower levels, fenestration patterns, and exterior details and articulation. They will be specific to context, climate, and to the urban and solar orientations of their specific sites. Architectural character will weave into the history and tradition, material and color palette, and compositional organization evident in Kendall Square and East Cambridge. Attributes that will create distinct architectural composition include the proportions of major massing elements, cohesive or contrasting use of materials and color. Individual building identity and character will be legible from adjacent streets and critical view corridors, while the collective Project's skyline will be recognizable when seen from a distance.¹

The architectural character will support these objectives by:

- Providing diversity and variety within a community of buildings.
- Contributing to the definition and beauty of the public realm.
- Relating to human scale and address urban scale at the pedestrian, building, and district levels.
- Responding to the surrounding context of Kendall Square and East Cambridge.

1. Criteria Adopted from the Volpe Development Project Design Guidelines

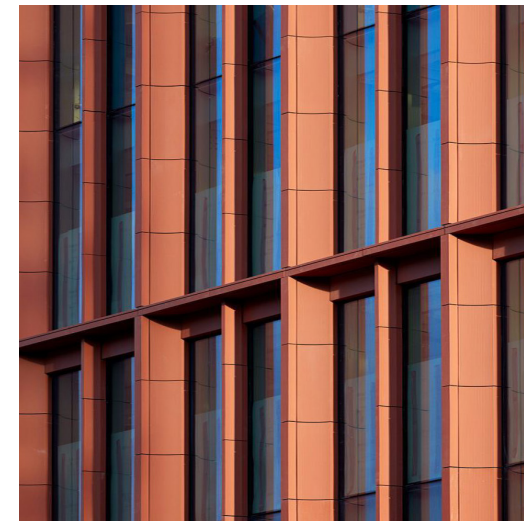
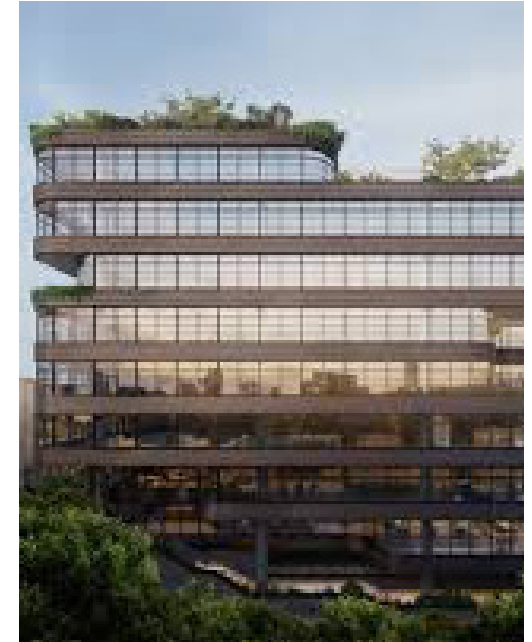
COMMERCIAL BUILDING



MASSING NORTH WEST AXON

Common Features:

- Simple definition of pedestrian frontage, tower and top
- Strong expression of frame and legibility of scale
- Confident use of color
- Legibility of Commercial use, universal and flexible space



IV. BUILT FORM AND MASSING

RESIDENTIAL BUILDING SOUTH

Residential Tower

Approximate GFA: 420,000 SF

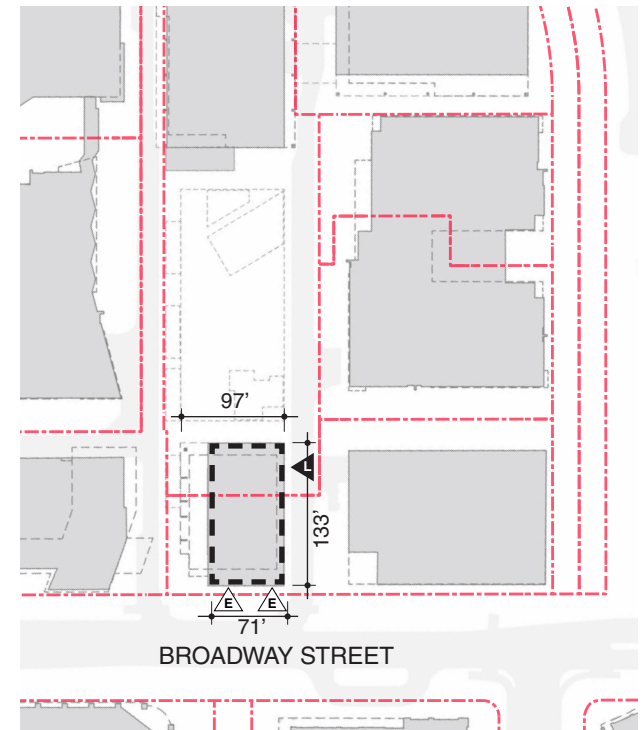
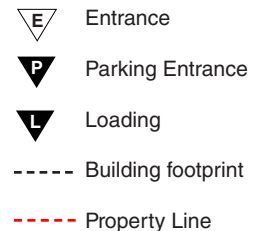
Maximum Height: 400 FT

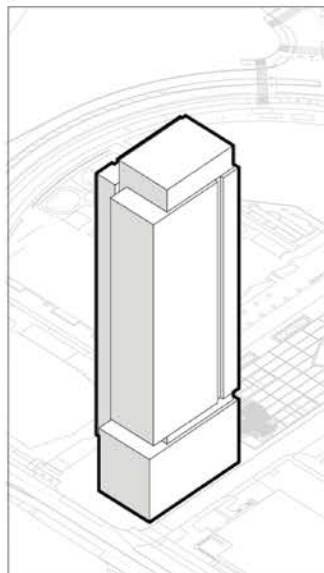
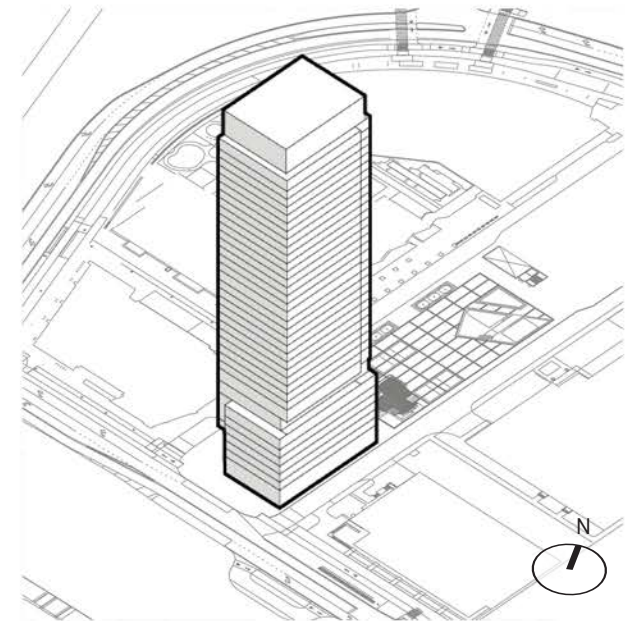
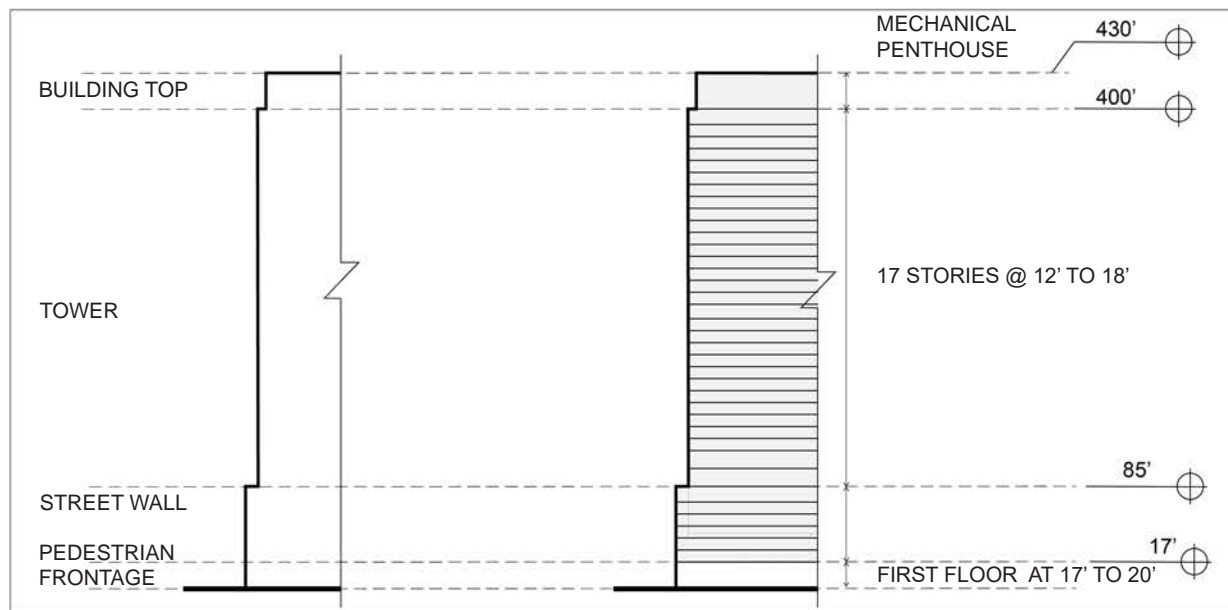
Use: Residential and Retail

Located in the center of Parcel 2, the residential building is bounded by Broadway to the south, East Service Drive to the East, West Service drive to the West, and the Center Plaza to the North. The proposed Residential Building South contributes to the housing needs of the City of Cambridge including affordable, middle income, and market rate rental housing units. The new construction will function as a gateway to the redeveloped Blue Garage parcel, as well as activation catalyst of the Broadway street and the proposed "Center Plaza" public open space. The following are the design guidelines for Residential Building South:

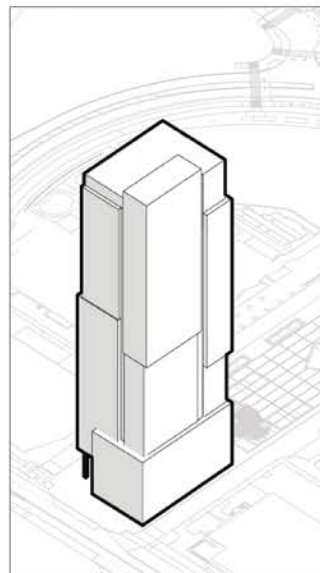
- The massing is broken into 3 primary components beginning with a podium fronting Broadway and creating continuity along the street edge. The plane of the tower is set back from the podium creating an opportunity for outdoor amenity space at the roof overlooking Broadway. The tower continues up to its allowable height where it then culminates with the expression of the mechanical penthouse. Standing at 400 feet, the tower provides an opportunity for a landmark building and can be seen from afar. Massing of the building emphasizes slender, vertically-oriented proportion and vertical breaks as necessary to minimize monolithic form. Balconies humanize the building adding horizontal, and provide outdoor space - social space and roof deck.
- The relationship between the residential parcel and adjacent 145 Broadway (Akamai) will be carefully studied to accommodate sufficient light and views given the current projecting bays that overhang West Service Drive. The baseline massing podium is pulled back from 145, creating a colonnade space that will allow for a stronger pedestrian connection from Center Plaza to Broadway and ultimately to Daniel Lewin Park. There will be a dedicated loading off East Service Road, so as to further pedestrian focus for the West Service Road.

- The ground floor along Broadway will be lined with residential entry, amenities, and retail to activate the frontage. The active use spaces will return back into the colonnade passage to activate the space between the residential parcel and 145 Broadway retail that is located on West Service Drive.
- The Northern edge of the podium is pulled back along Center Plaza to create a clear connection along the East-West Connector. The current pedestrian walkway between 10 CC and Biogen Building 6 can continue uninterrupted between the 135 Broadway podium and Center Plaza. The outdoor amenity space will overlook the open space.

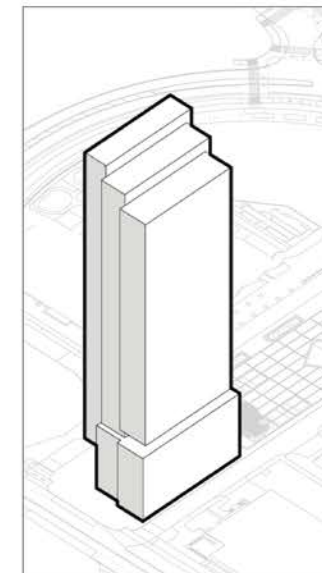




Variation 1



Variation 2

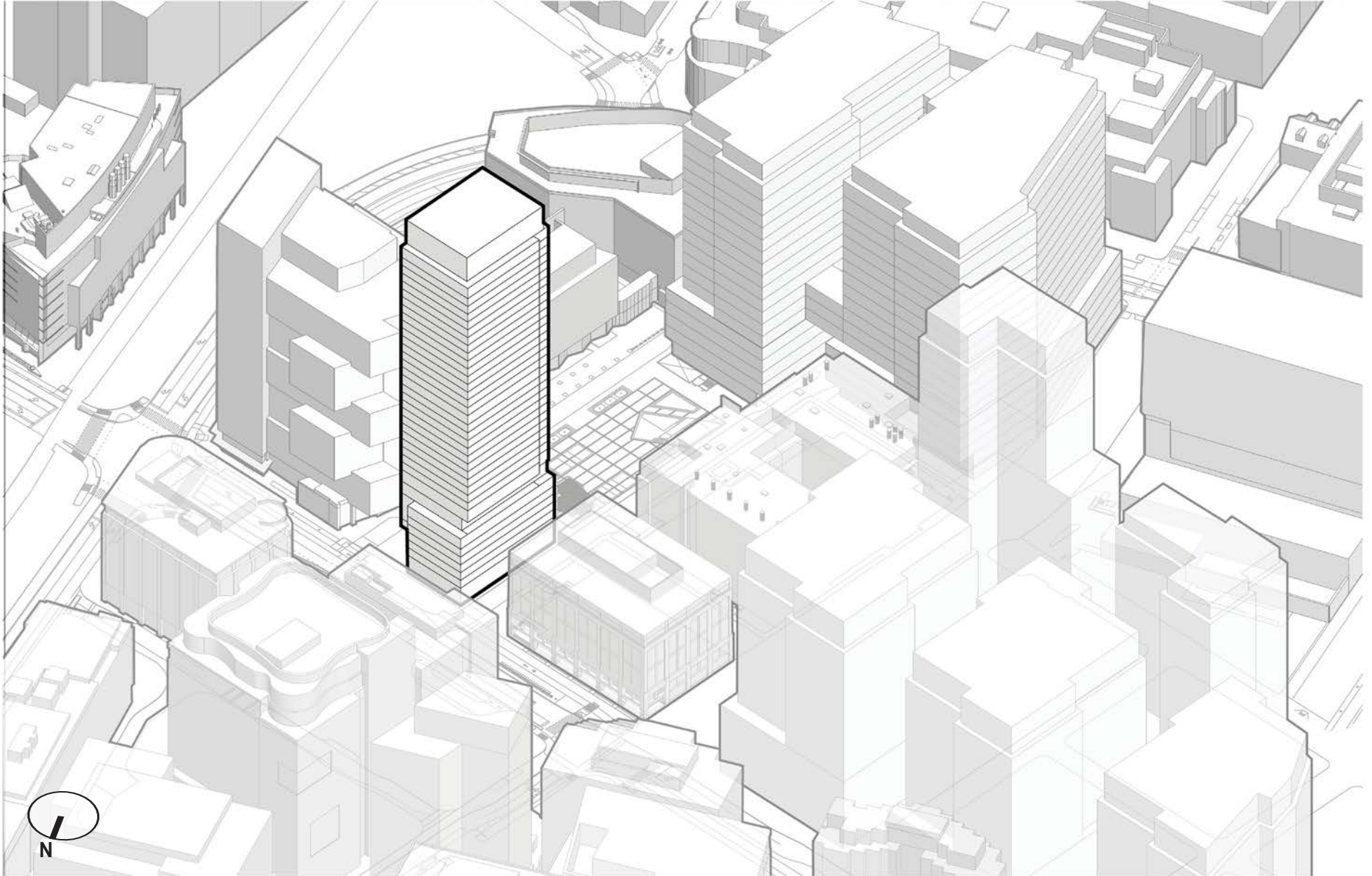


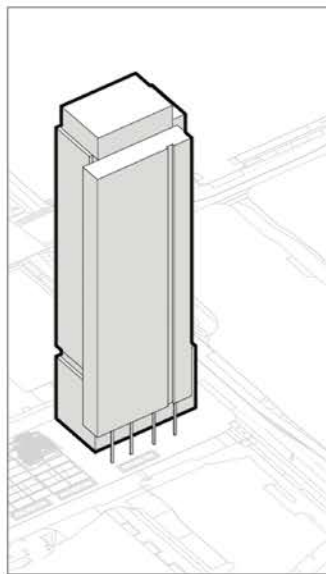
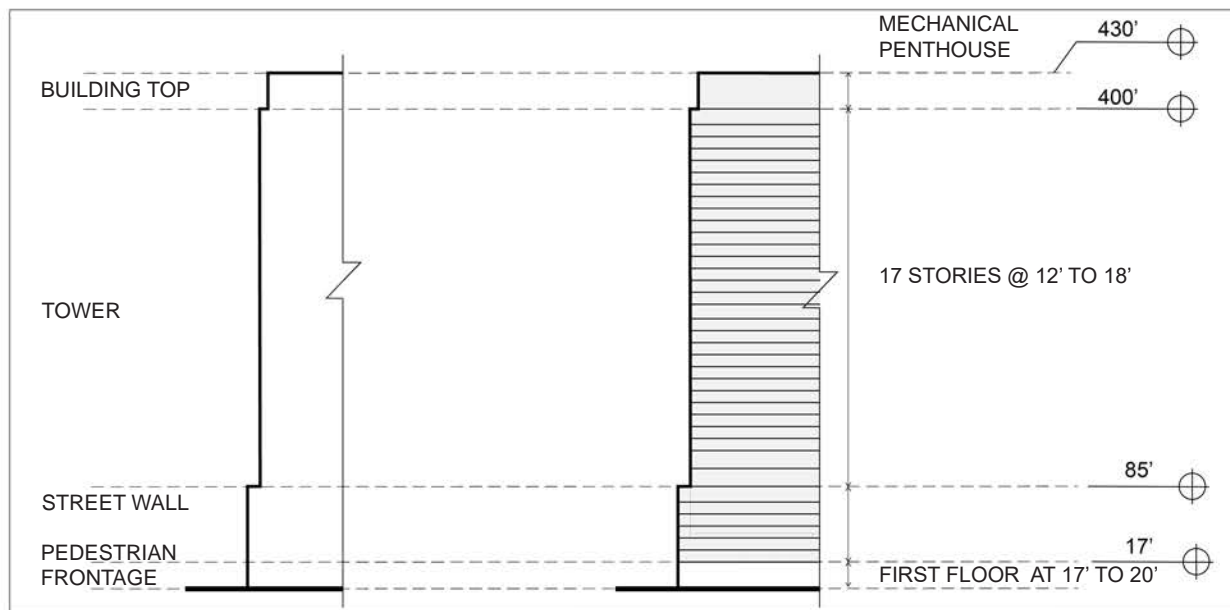
Variation 3

SOUTH EAST AXON

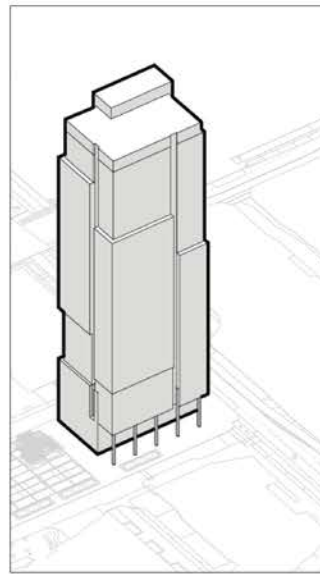
IV. BUILT FORM AND MASSING

RESIDENTIAL BUILDING SOUTH

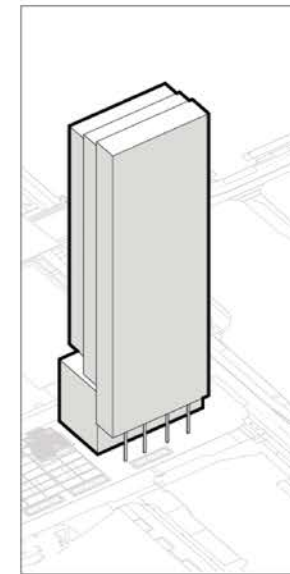




Variation 1



Variation 2



Variation 3

NORTH WEST AXON

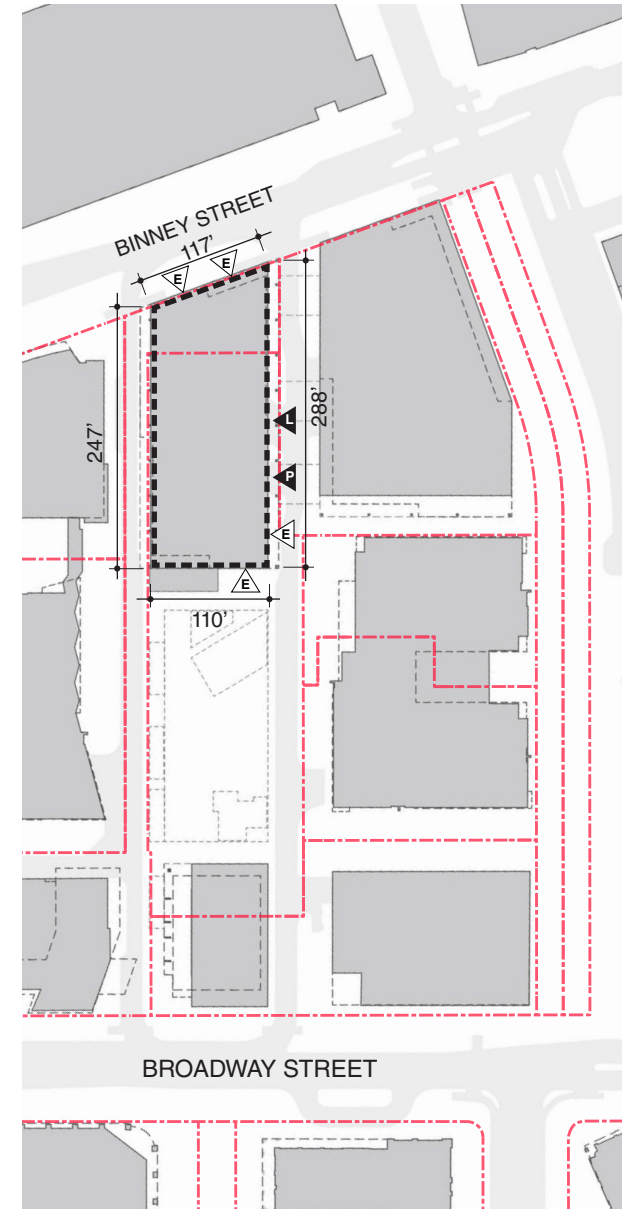
IV. BUILT FORM AND MASSING

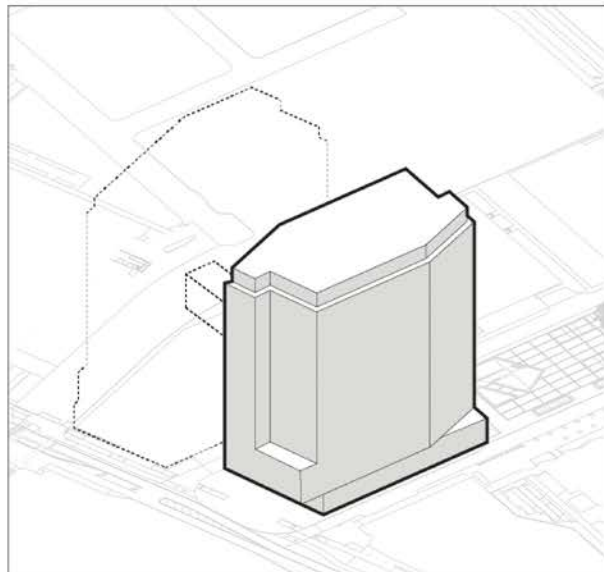
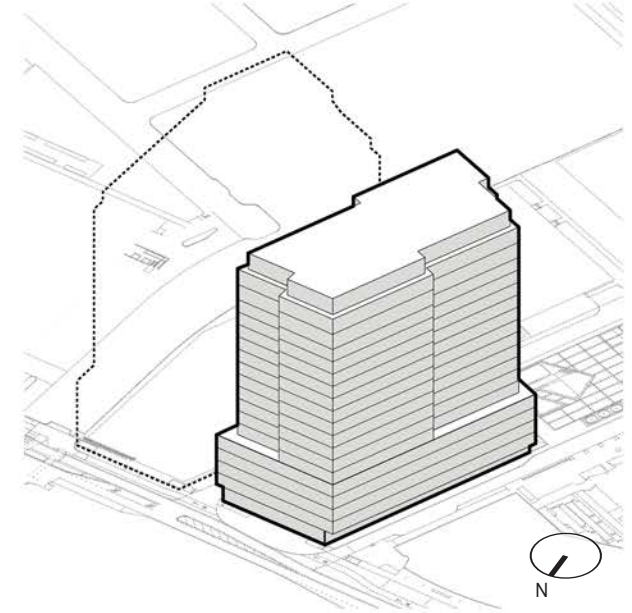
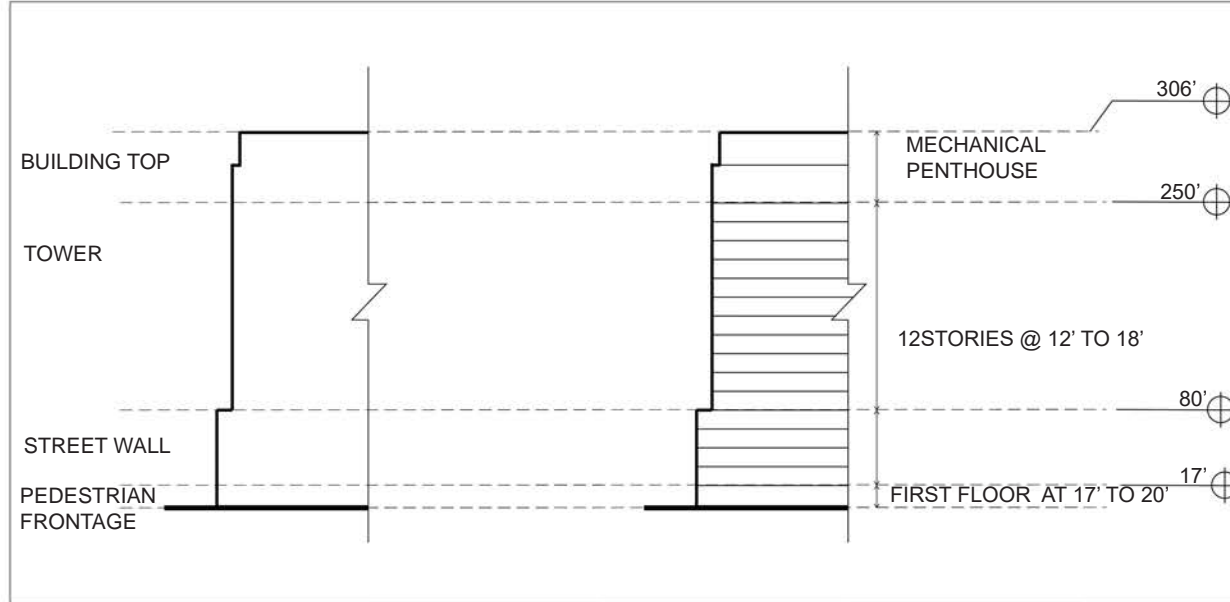
COMMERCIAL BUILDING C

Commercial Building C
Approximate GFA: 412,000 SF
Maximum Height: 250 FT
Use: Commercial Lab/Office

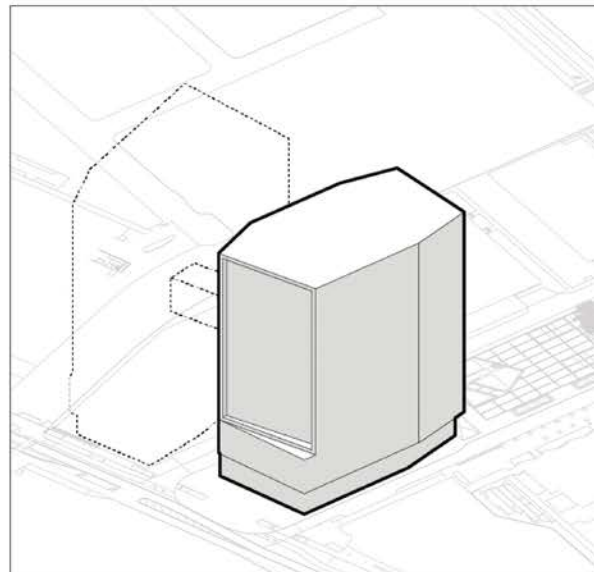
Commercial Building C is situated at the north end of the Blue Garage Parcel, located between the East and West Service Drives, Binney Street, and the new Center Plaza public open space.

- The Commercial Building C has developed a shared service zone with Commercial Building D in the East Service Drive. The collection of these services along the same portion of the site is meant to open opportunities for other site connectivity and reduce non-active zones on the facades of both buildings along public corridors.
- The West Service Drive will serve as the primary public connection from the Central Plaza open space to Binney Street. The massing has been undercut at the podium along the service drive to increase pedestrian connectivity through the site.
- The building entrance and landscape design along Binney Street will be important elements that activate the ground plane to create a sense of place. These elements will contribute to the character of the street and along with Commercial Building D, will redefine the pedestrian experience of Binney Street.
- The ground floor program along the Central Plaza open space will contribute to the new pedestrian experience and anchor the north end of the open space.
- The massing and articulation of the north and south facades have the important role of defining the character of Binney Street and the Central Plaza open space.

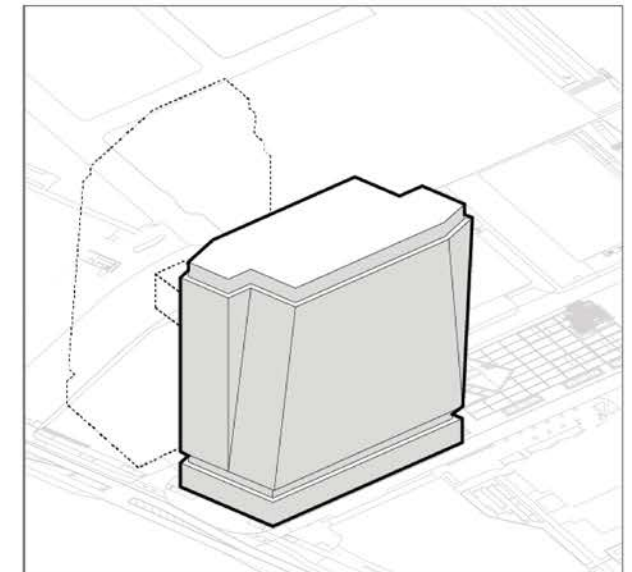




Variation 1



Variation 2

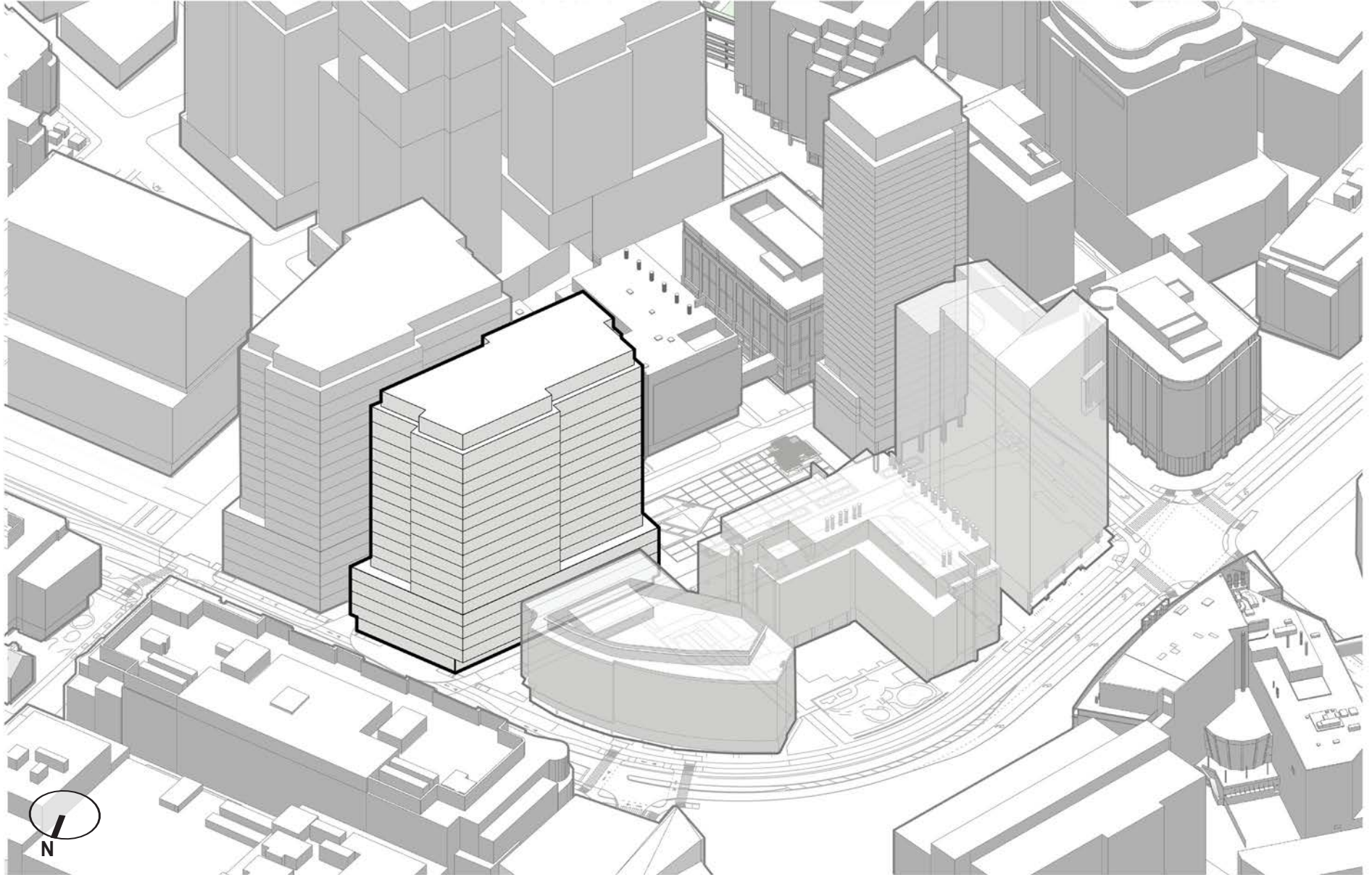


Variation 3

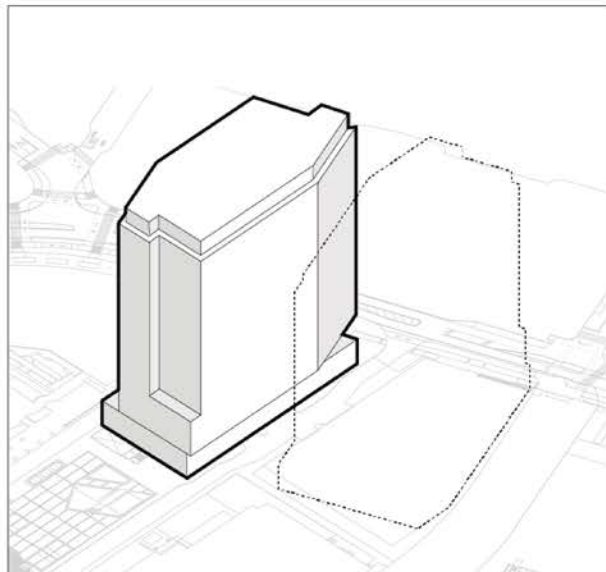
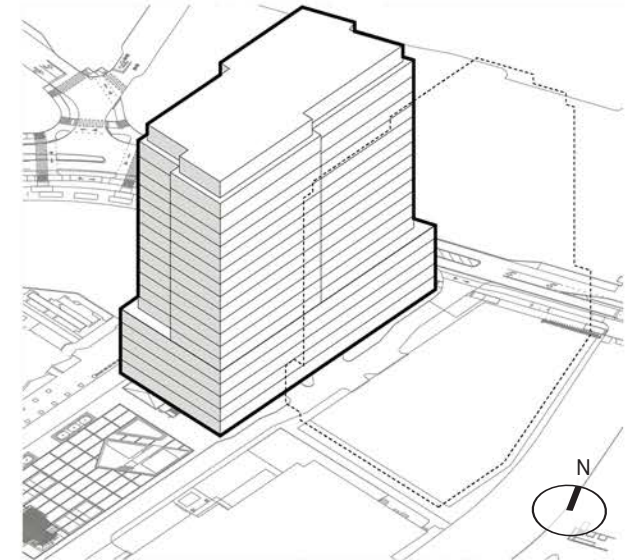
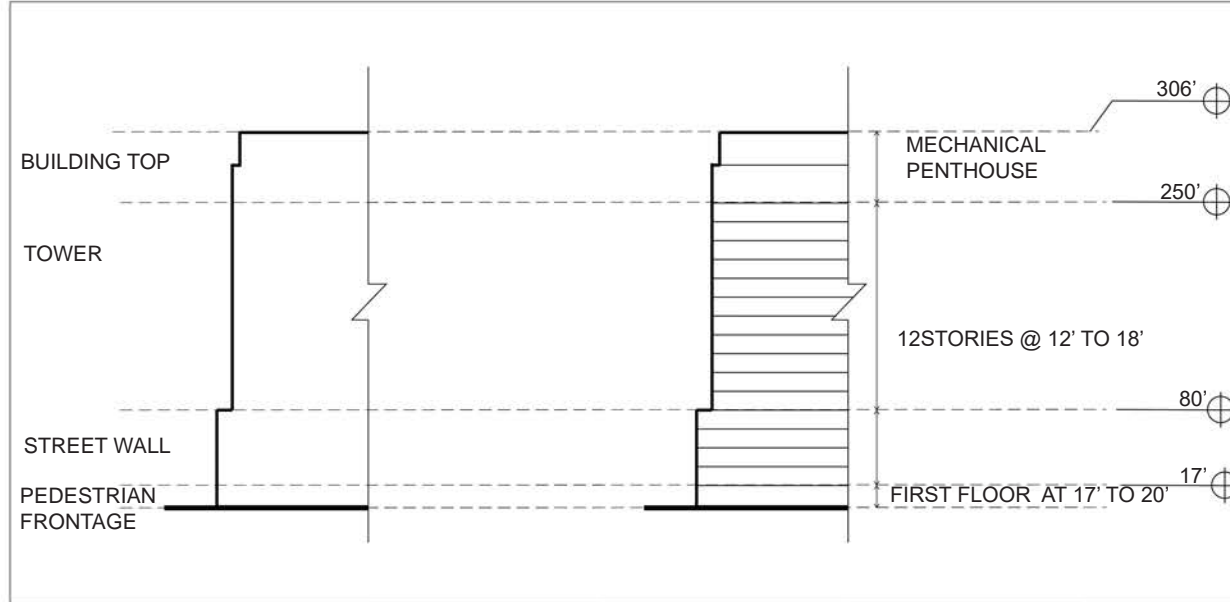
NORTH WEST AXON

IV. BUILT FORM AND MASSING

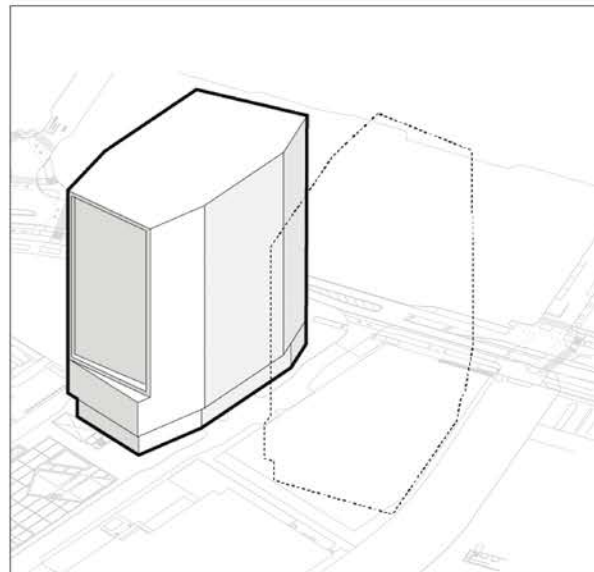
COMMERCIAL BUILDING C



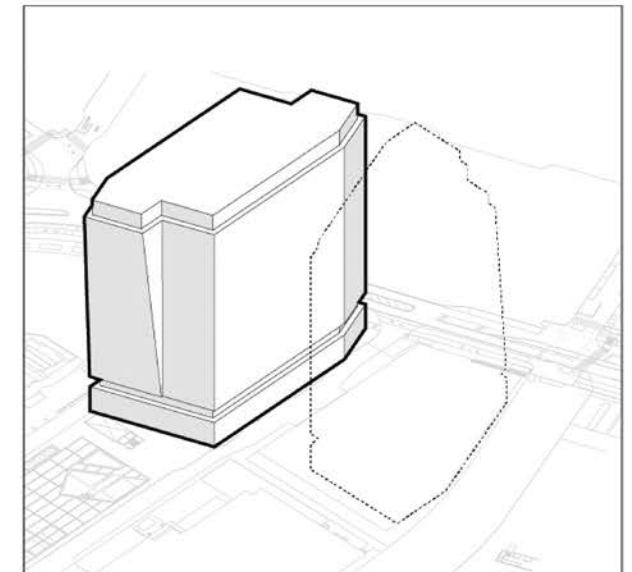
NORTH WEST AXON



Variation 1



Variation 2



Variation 3

SOUTH EAST AXON

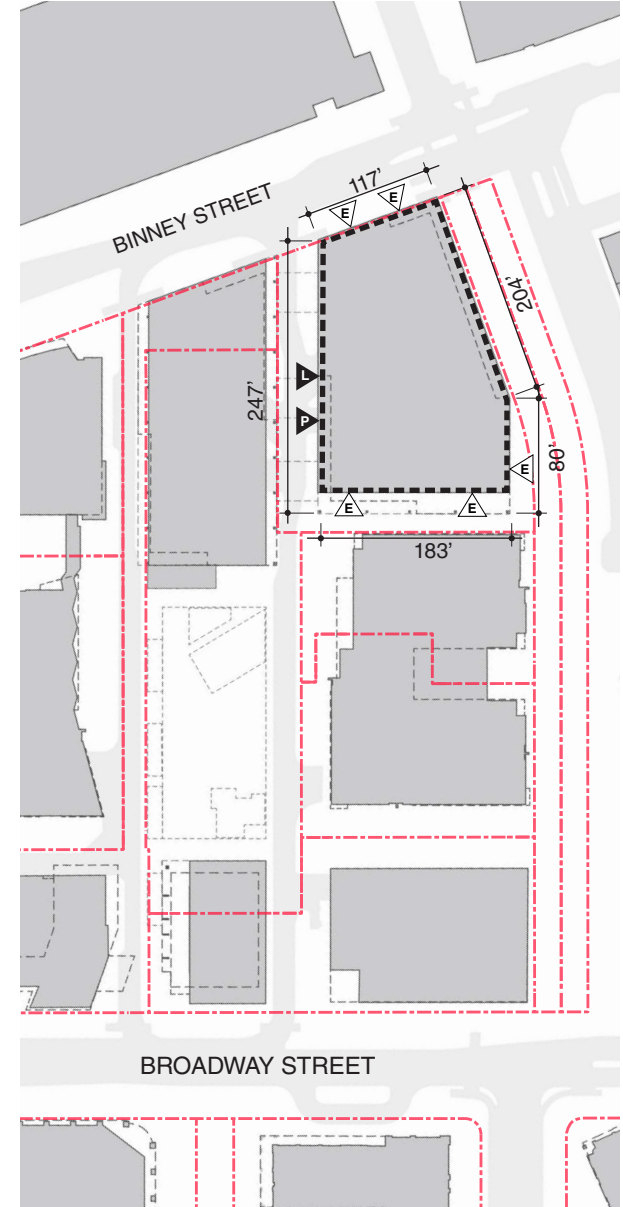
IV. BUILT FORM AND MASSING

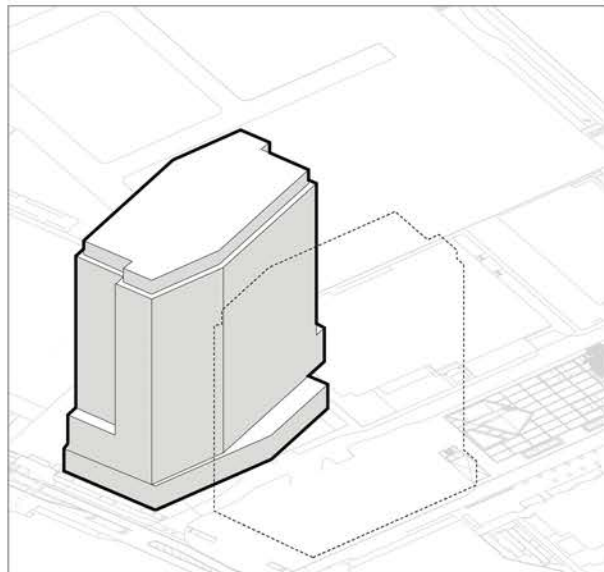
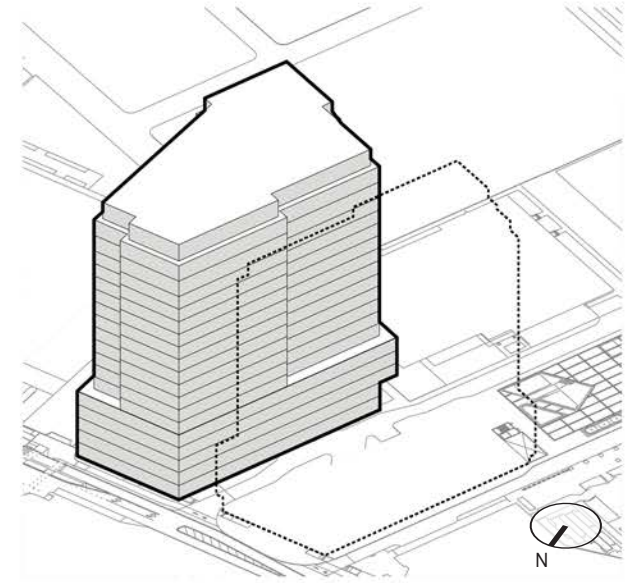
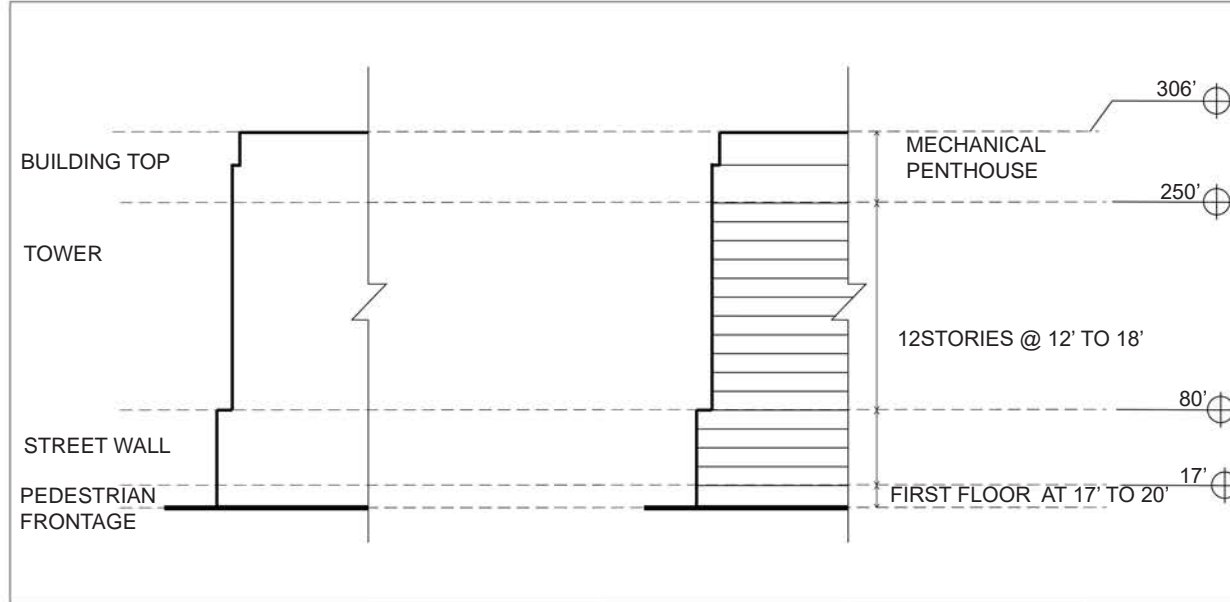
COMMERCIAL BUILDING D

Commercial Building D
Approximate GFA: 450,000 SF
Maximum Height: 250 FT
Use: Commercial Lab/Office

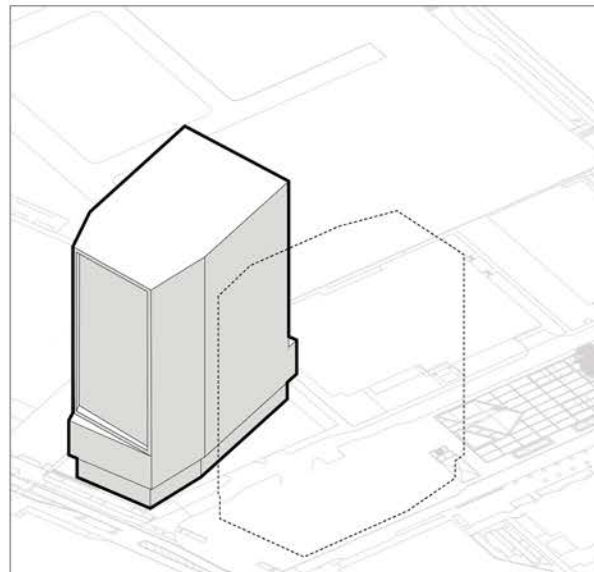
Commercial Building D is situated at the north end of the Blue Garage Parcel, located between the East service Drive, the 6th Street Connector (Loughrey Way), 12 Cambridge Center, and Binney Street.

- The Commercial Building D has developed a shared service zone with Commercial Building C in the East Service Drive. The collection of these services along the same portion of the site is meant to open opportunities for other site connectivity and reduce non-active zones on the facades of both buildings along public corridors.
- The building will have an important relationship with the 6th Street Connector and should contribute to the rejuvenated life of the connector.
- The southern portion of the massing has been undercut at the podium to increase the site connectivity between the new Central Plaza open space, the 6th Street Connector, and Volpe beyond. The ground floor program along this connection will aid in the activation of the space.
- The building entrance and landscape design along Binney Street will be important elements that activate the ground plane to create a sense of place. These elements will contribute to the character of the street and along with Commercial Building C, will redefine the pedestrian experience of Binney Street.
- The massing and articulation of the north and south facades have the important role of defining the character of Binney Street and the access route between the 6th street connector and Central Plaza public open space.

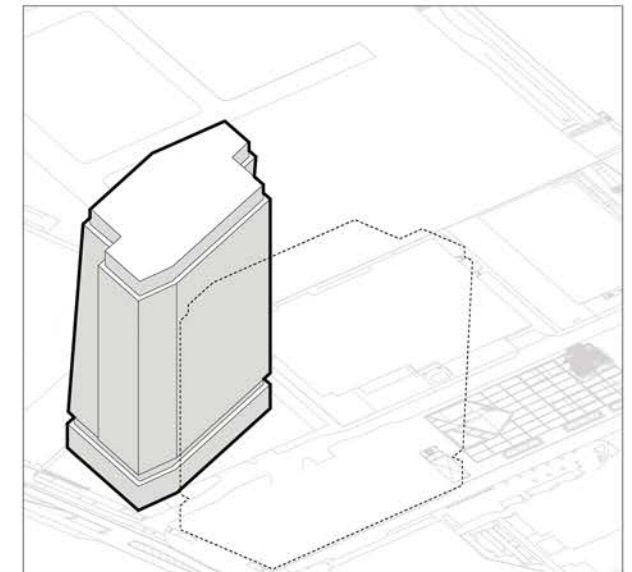




Variation 1



Variation 2



Variation 3

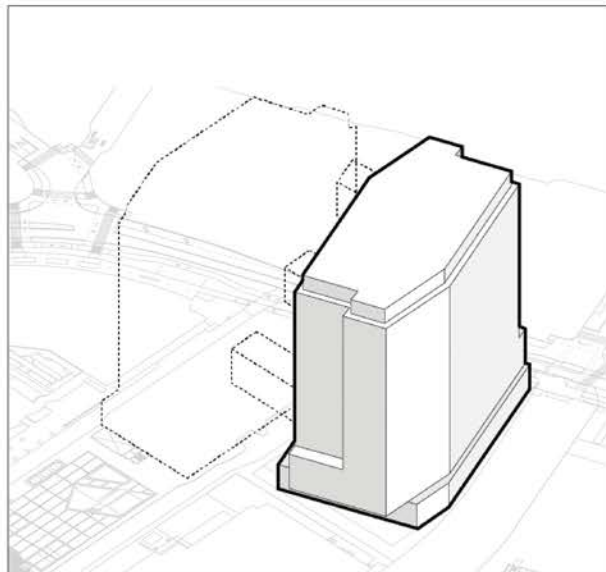
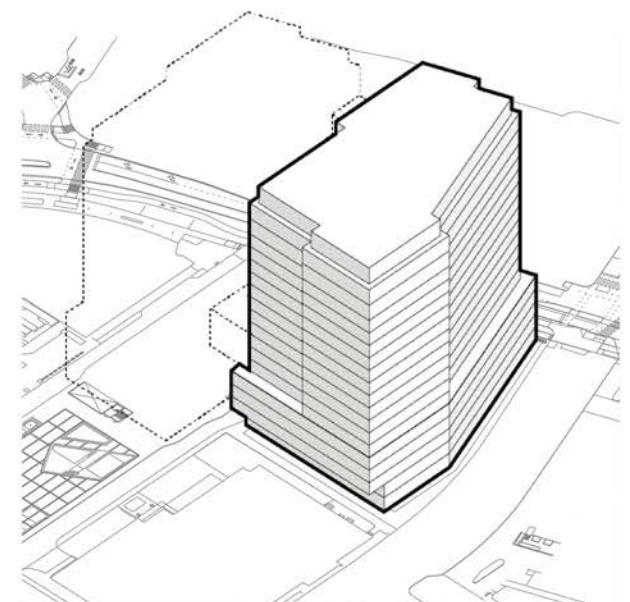
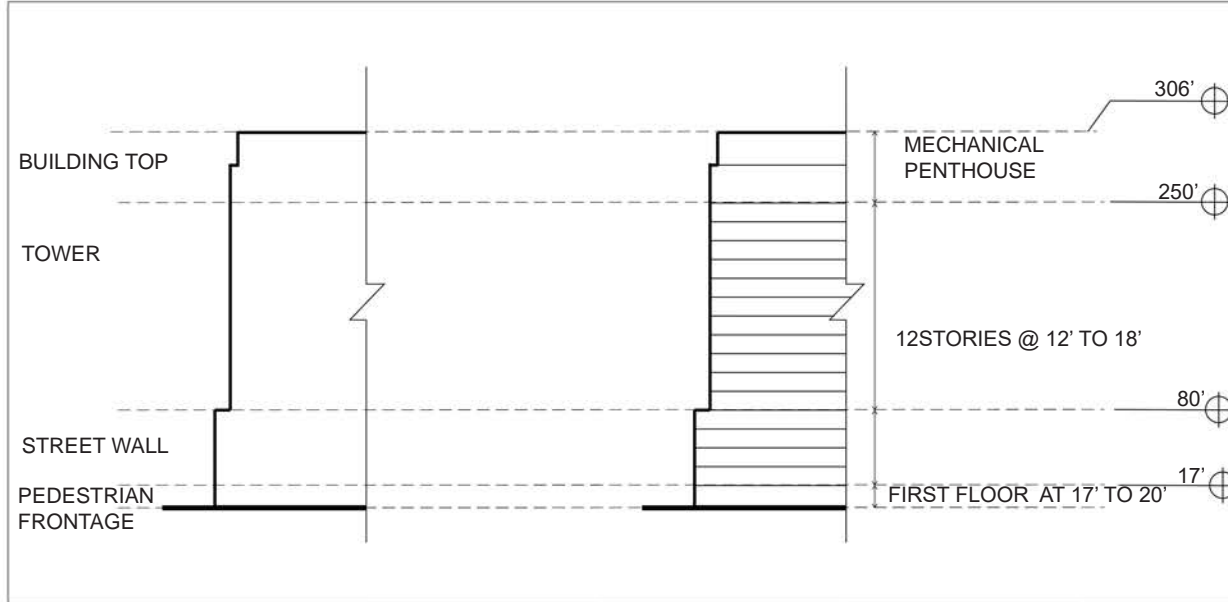
NORTH WEST AXON

IV. BUILT FORM AND MASSING

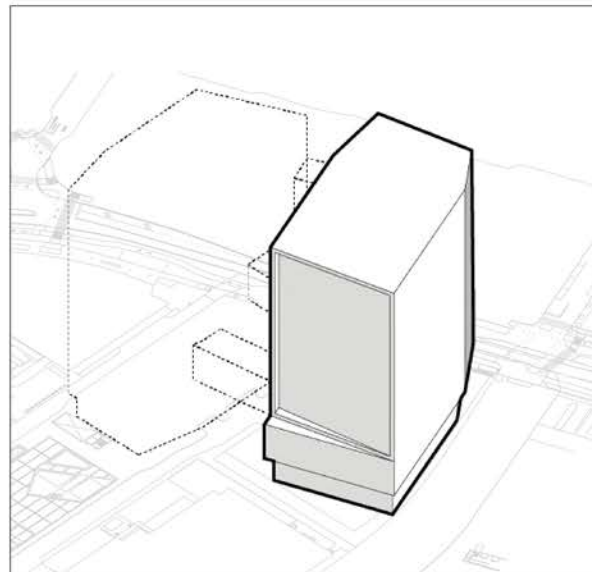
COMMERCIAL BUILDING D



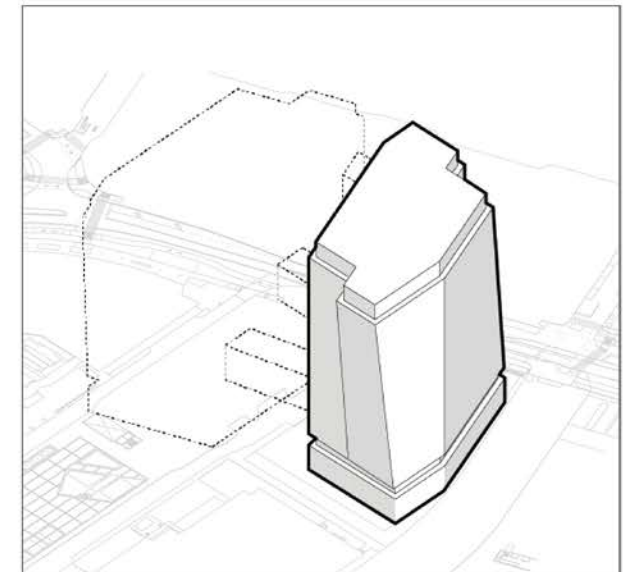
NORTH WEST AXON



Variation 1



Variation 2



Variation 3

SOUTH EAST AXON

V. BUILDING MATERIAL AND FACADE GUIDELINES

The following section sets forth the design goals and objectives for the building and facade materials that will be used throughout the broader MXD and within the individual building sites. Specific manufacturer reference should be considered solely as precedent examples to help illustrate a guideline. The following material guidelines apply open spaces and parks that are part of the MXD concept plan is included as part of Chapter 3 of this submission. The following guidelines shall apply broadly to all commercial and residential facades as specified and subject to modification in the design review process:

COMMERCIAL BUILDING MATERIALS AND FACADE

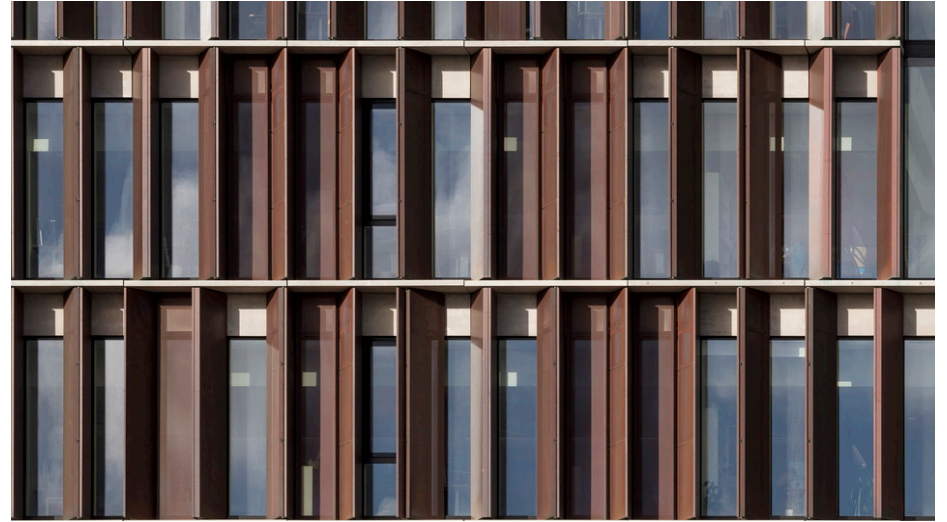
1. Provide high transparency at the ground floor level to emphasize the activity within the building, extending the public realm and enlivening the streetscape.
2. Provide openness and permeability at the ground level and other retail/active use levels (if applicable) by providing sliding walls and raising doors at all possible locations.
3. Maximize transparency of glass at upper levels while considering solar heat gain, energy performance, and interior daylighting.
4. Use variation in glazing types, frame depths and scale of horizontal and vertical expressions to heighten visual interest.
5. Consider using reveals, recesses, and cantilevers to break down the proportions of large facades.
6. Introduce solid wall cladding, where appropriate, to embed the scale of occupants and interior spaces on the elevations in addition to allowing for complementary materials to the urban context.
7. Solid wall cladding should incorporate a mix of color and texture, depth, create shadows and incorporate middle scaling elements.



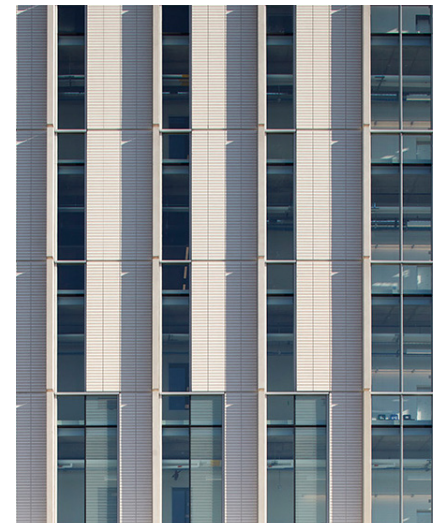
STREET LEVEL CONDITIONS



Curtain Wall Panels - Variation in glazing types, frame depths and scales of horizontal and vertical expressions heightens visual interest.



Glazed Volumes - Reveals and recesses in the facade breakdown the proportions of large facades. Plane changes on the facade allow opportunities for exterior spaces and introduce a smaller scale of inhabitation on the facade



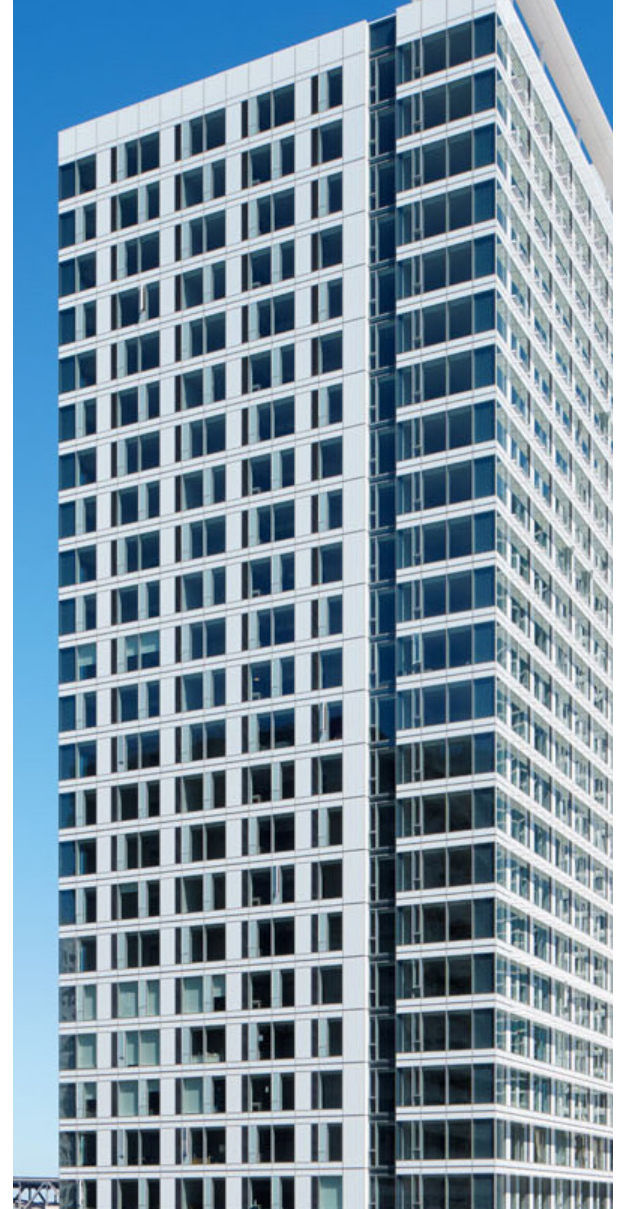
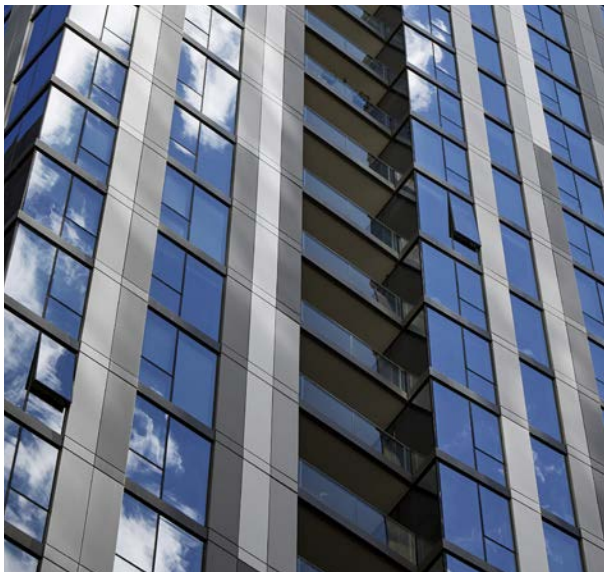
Opaque Wall Areas

V. BUILDING MATERIAL AND FACADE GUIDELINES

RESIDENTIAL BUILDING MATERIALS AND FACADE

1. Provide highly transparency glass at the ground floor to highlight the residential lobby and animate the streetscape.
2. Design well-lit and welcoming lobbies at the ground floor designed to be the entrance to someone's new home but also enliven the streetscape.
3. Employ material changes and various breaks in the building to reduce the scale of the building form the street.
4. Employ balconies to create outdoor space for urban living, to humanize the building architecturally, and to add visual interest and relief in large facades.
5. Employ punched window openings in the facade as a sustainable design approach that seeks to increase energy efficiency to meet the energy code and LEED requirements while using a combination of window glass and opaque materials to create interesting visual patterns.
6. Horizontal spandrels and other pattern facades can be used to accentuate thinner proportions within the building. These strategies work in combination to break down the scale of the mass.





(Intentionally Blank)

