



JANUARY 2022

CambridgeSide 2.0 150 Cambridge Place Design Review Submittal

Submitted to:
City of Cambridge

Submitted by:
**NEW ENGLAND
DEVELOPMENT** | New England Development
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Prepared by:





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150 Cambridgeside Place Design Review Narrative

The following narrative and attached graphic materials and reports are provided in accordance with Condition 4 of the Special Permit Decision for PB #364 (CambridgeSide 2.0) dated February 17, 2021 (the “Decision”), which addresses the design review requirements for buildings developed pursuant to the Decision. Simultaneous with this filing, and consistent with Conditions 2.c.ii and 15 of the Decision, the Applicant submitted a minor amendment to the Decision (the “Minor Amendment”) to allow for a reconfiguration of the Subsequent Phase building sites (and the uses and GFA proposed at same), largely in order to move the residential use to the corner of First Street and Cambridgeside Place in response to feedback from City staff, the Planning Board and the public.

As detailed throughout this narrative, the proposed 150 Cambridgeside Place (formerly known as Best Buy, and initially identified as 110 First Street, including in the previously submitted Article 22 Green Building Report) building has been designed to be consistent with the Decision, as amended, which incorporates the approved Final Development Plan for the CambridgeSide 2.0 Project (as the same has been modified by the Design Review Certificates for 20 Cambridgeside and 60 First Street, as well as the Minor Amendment).

Over the last three years of the rezoning and special permit process, the development team has met various times with City departments, including Community Development Department (CDD); Traffic, Parking and Transportation (TP&T); Housing Division (Housing); Department of Public Works (DPW) and the Water Department. These meetings have also included informal meetings most recently with CDD design staff to review detailed aspects of the 150 Cambridgeside Place building design, particularly the general massing and proposed façade articulation strategies. Materials presented herein reflect CDD design staff input.

Project Summary

As indicated in the design review graphic materials herein, the 150 CambridgeSide Place building will be located at the corner of First Street and CambridgeSide Place and will include the demolition of the existing three-story building, originally designed for a single tenant retail use (Lechmere) but currently occupied by Best Buy and TJ Maxx.

The proposed construction will result in a 14-story residential building, with retail and Active Uses on the ground level. In addition, open space along First Street, between the 150 CambridgeSide and 80 First Street buildings, will include a mix of passive and active outdoor spaces and landscape elements. Together with the active building uses, the open spaces will help to foster a welcoming pedestrian environment along the building's perimeter on First Street and CambridgeSide Place. Additional details regarding uses proposed at the building are provided on the Dimensional Form on page 3. In conformance with the Decision, the 150 CambridgeSide Place building will have a height of approximately 155 feet and will incorporate appropriate setbacks to complement the scale of surrounding buildings.

The ground floor will include retail and lobby uses that will provide a welcoming and active pedestrian environment along the street frontage and into the proposed South Courtyard open space.

Design Intent Overview

The proposed design is consistent with the goals and design standards set forth in the approved Final Development Plan and the Decision, which incorporate policy objectives identified in the earlier Eastern Cambridge design documents set forth in Section 13.107.5 of the Cambridge Zoning Ordinance (the "CZO"). The primary urban design goals include: a contextual massing approach that addresses multiple proximate neighborhood scales while reducing the perceived height of the building and mechanical penthouse; material expression rooted in the site's architectural heritage and which simultaneously embraces contemporary conditions and uses; architectural celebration of the corner of CambridgeSide Place and First Street; and ground-floor Active Uses that maximize visual transparency to support the creation of an active, engaging streetscape.

Building Massing

The building massing, as indicated on Exhibits 18,19,27 and 38-39, incorporates a series of setbacks on First Street that help reduce the building's perceived mass while visually relating the building to the scale and height of buildings in the neighborhood. Consistent with the approved Final Development Plan, the building's base massing as shown on Exhibits 18-19 includes the first 5 stories up to a first setback

condition at a height of approximately 65', acknowledging the existing horizontal datum of the immediate context, including the adjacent 100 CambridgeSide building. This approximately 10' setback also reinforces the short, podium element of the building, which establishes a relationship to the pedestrian scale. The building's middle massing element as shown on Exhibits 18-19 extends 7 floors (levels 6-12) to a height of approximately 135', in conformance with the approved Final Development Plan up to a second setback condition of approximately 10 feet. The building's top extends 2 stories (levels 13 and 14) up to the maximum height of 155 feet, which is consistent with the approved Final Development Plan. Finally, the mechanical penthouse screen steps back from the building façade (as shown on Exhibit 17) along First Street and CambridgeSide Place, aiding in reducing its visibility from street level.

Building Character and Materiality

The material expression of the building is rooted in the load bearing, brick masonry heritage of East Cambridge. As shown on Exhibits 20-25, the brick masonry detailing includes accent brick coursing, including horizontal soldier course bands and vertical stacks to provide texture, relief and architectural scale. Punched windows will provide a residential scale and a rhythm to the façade. Windows are primarily joined vertically in pairs, to accentuate the verticality of the building. The glazed openings are expressed with projected metal frames, introducing a modern materiality and crisp detailing. On the south elevation, window overhangs will provide shading and glare control for energy performance and occupant comfort. In combination with the brick, the metal frames provide contrast and depth as shown on Exhibits 24 and 25. The penthouse and mechanical screen at the top of the building are clad in standing seam metal panel, to provide relief and contrast from the brick.

In order to increase energy performance, the building's envelope will include an R-20 continuous insulation for an overall R-value of R-25 or greater. The window quantity will be optimized for energy conservation and the glazing will include double low-e coatings.

A physical model of the proposed building, in its context, is available. The project team will make the model available for virtual viewing consistent with staff and Planning Board needs. Similarly, photographs of proposed building materials are incorporated within Exhibits 24 and 25.

Rooftop Penthouse

The building's mechanical penthouse has been designed in consideration of the building massing as well as the materiality of surrounding buildings, to contribute to a varied skyline. The configuration includes enclosed and screened portions with a continuous setback as shown on Exhibit 17,

which generally conforms to the approved Final Development Plan. The penthouse is clad with architectural formed metal with variegated vertical jointing to provide scale, shadow lines and texture, as indicated on Exhibits 20-23. The metal color will provide contrast and relief to the brick material, while reinforcing the metal trim color of the window frames and cornices. Additionally, the metal cladding extends vertically along the north portion of the tower at the core location. This expression will serve to add texture and character to a section of the north façade where window openings are infeasible due to structural requirements. Mechanical penthouse louvers, where required, will be located to the interior, north side of the site, and will be designed to integrate with the panel jointing to ensure a unified aesthetic. The setbacks from the building below will be optimized with the equipment requirements to minimize pedestrian sightlines of the penthouse.

Ground Floor Uses and Activation

As shown on Exhibits 29 and 30, the ground floor of the 150 CambridgeSide Place building will incorporate new Active Uses and an engaging streetscape on all three edges: along CambridgeSide Place, First Street, and on the north side of the building in the South Courtyard, a new, publicly accessible open space. Special consideration is given to maximizing transparency and locating Active Uses along the perimeter of the ground floor. To the extent feasible, utility spaces – including the electrical room and transformer vault – have been elevated to the second floor to increase the size of potential retail, restaurants and cafes and other Active Uses.

The primary building entry is located on CambridgeSide Place and is marked by a large architectural canopy, accented by an architecturally detailed metal surround. CambridgeSide Place also includes approximately 150 linear feet of Active Uses and transparent storefront frontage. The storefront glazing turns the corner north onto First Street, with frontage entirely devoted to active use and clad in storefront glazing along its entire length which is shown on Exhibit 27.

The storefront at the ground floor will be glazed in high performance, low iron, ultra clear glazing, and the height will be maximized to the extent feasible with the floor heights of the building. It is anticipated that a continuous signage band will be provided above the potential retail zones along CambridgeSide Place, First Street and the north side of the building of the South Courtyard. This band will provide flexibility for future retail signage which will provide additional identity, variety and a sense of place.

As shown on Exhibits 30, 31, 45 and 46, construction of 150 CambridgeSide Place will also include improvements to the existing streetscape along CambridgeSide Place and First Street. Additional sidewalk width will allow for the opportunity to provide a café seating zone to further activate

the public realm. A curbside furnishings zone will include the street signage, infrastructure, lighting and 9 new street trees, which will benefit from enhanced and expanded soil conditions and drainage to allow them to grow and thrive. This area will be coordinated with the City's ongoing First Street Study to benefit the City by introducing a lively, safe and engaging multi-modal environment.

To the north, the new South Courtyard is shared by the proposed 80 First Street and 150 CambridgeSide Place buildings. It is a generously proportioned space to allow for many types of programming. As shown in Exhibit 27, guests, tenants and residents may use the Lower Garage elevators just off the South Courtyard to park their bikes in the bike parking area in 80 First, or may arrive into the 80 First lobby or South Courtyard having parked their car and taken the elevators to the ground floor. Refer to Exhibits 51 and 52. Like the North Pocket Park, the South Courtyard is surrounded by retail and Active Uses which may spill out into the courtyard. The generous landscape and ample seating proposed for the space will invite guests to linger, while additional activities to encourage play, dining and visiting may be introduced based on the needs and interests of the community. Similar to the Initial Phase Canal Park open space improvements, while the Applicant is seeking approval of the location, general dimensions and overall design intent of each of the North Pocket Park and the South Courtyard as part of these design review applications, the final programming (e.g., furnishings and fixtures) of such open spaces will be determined in coordination with the Open Space and Retail Advisory Committee to ensure that the design is responsive to community needs.

Lighting

The façade lighting strategy of 150 CambridgeSide Place will adopt a sensitive lighting approach similar to the neighboring developments 20 CambridgeSide and 80 First Street. The exterior façade lighting will primarily be limited to building entries and the ground floor retail signage. All fixtures will be concealed or aimed and shielded appropriately to minimize any visible source aperture brightness.

Street level lighting will focus on the legibility of the main building entry for enhanced wayfinding. The main building entry may have soft facade lighting to create a visual identity for the building at the streetscape level and to enhance wayfinding. Further, it is anticipated that the ground floor retail signage band will be illuminated from concealed fixtures at that location. The South Courtyard between 80 First Street and 150 CambridgeSide Place will create a warm and inviting evening atmosphere through subtle landscape lighting, appropriate pedestrian scale lighting and other hardware appropriate for small urban plazas.

The upper stories of the building will not receive any façade lighting, allowing the upper building massing to visually fade away at night, effectively reducing the building's perceived scale at night and maintaining a visually quiet appearance, in order to be sensitive to adjacent neighborhoods. Additionally, the exterior building entry lighting and streetscape lighting will be dimmable to allow further flexibility with respect to neighborhood light level programming throughout the night. The proposed exterior lighting concepts are shown on Exhibit 34.

Technical Standard and Public Improvement Requirements

Over the last three years, the development team has met numerous times with various City departments regarding the more technical standards (such as transportation and Green Building requirements) and proposed public infrastructure improvements (e.g., stormwater improvements) associated with the CambridgeSide 2.0 Project.

The development team met, and had ongoing correspondence with TP&T over the course of the last two years to review and determine appropriate transportation measures, as summarized in the certified TIS for the CambridgeSide 2.0 Project and the transportation mitigation measures incorporated into the Decision. The approved Final Development Plan and Decision establish the mutually agreed upon approach to vehicular and bicycle parking across the PB-364 Development Parcel, as well as transportation mitigation measures that were reviewed at a conceptual stage. The development team is committed to continuing to coordinate with TP&T to finalize the specific design and implementation of the proposed transportation measures over the course of the project. Final design of the improvements within the First Street right of way, which abut the on-site North Pocket Park and South Courtyard and the Subsequent Phase buildings, will be coordinated with City pending outcome of the First Street Study.

Since February 2020, the development team has coordinated with CDD staff to incorporate Article 22 Green Building requirements into the overall CambridgeSide 2.0 Project, as well as into the Initial Phase buildings. The overall CambridgeSide 2.0 Green Building Report was certified by CDD on August 12, 2020, and building specific Green Building Reports for 20 CambridgeSide and 60 First Street were certified by CDD on November 6, 2020. Further, the development team submitted the required Green Building Report materials for the 150 CambridgeSide Place building on October 20, 2021, and was certified by CDD on December 29, 2021. A summary of the key components of the 150 CambridgeSide Place Green Building Report materials is included on Exhibit 60, and the full set of materials is on file with CDD. With respect to the 150 CambridgeSide Place building, the development team will comply with the City's

ongoing requirements for Green Building compliance as the building progresses to the building permit and certificate of occupancy stages of development.

Infrastructure

The development team has also worked with the Department of Public Works DPW and the Cambridge Water Department (CWD) to identify appropriate infrastructure upgrades to be implemented by the Applicant in order to meet the CambridgeSide 2.0 Project's I/I requirement. In May of 2019, the Applicant proposed an interceptor drain concept that will intercept the existing City drains in a new infiltration collection treatment and redirect their flows from the MWRA Marginal Conduit (a combined sewer) to the existing CAM 017 outfall on the downstream side of the Binney Street regulator (the "Land Boulevard I/I Project").

The relocation of the residential uses from the 80 First Street building to the 150 CambridgeSide Place building site will have a nominal increase in wastewater flow. However, the nominal increase will not affect the overall design of the proposed Land Boulevard I/I Project, which is estimated to remove approximately 380,000 gallons of stormwater from the MWRA Marginal Conduit. The proposed Land Boulevard I/I Project, currently in design, will provide sufficient 4:1, I/I mitigation for the wastewater flows from all the four (4) new buildings included as part of the CambridgeSide 2.0 Project.

The Land Boulevard I/I Project is intended to be completed in the Fall of 2022, prior to the construction of 150 CambridgeSide Place. In accordance with the DPW standards incorporated into the Decision and further described below, the development team will continue to follow other DPW and CWD requirements for utility and site improvements as construction of the project, including the 150 CambridgeSide Place building, commences.

Wastewater Infrastructure

Existing wastewater flows from CambridgeSide discharge to the City's separated sewers in the abutting streets. Per initial communication with the DPW the existing sewer infrastructure in the adjacent streets have adequate capacity to handle the CambridgeSide 2.0 Project's wastewater flows.

The proposed wastewater flow for the 150 CambridgeSide Place building is approximately 29,625 gallons per day (gpd), based on 310 CMR 15.203 Title 5 System Sewage Flow Design and is subject to change based on final tenants and seating capacities. The Applicant will continue to work with the DPW to coordinate new sewer service connections to the existing sewer mains as construction of the project, including the 150 CambridgeSide Place building, commences.

Water Infrastructure

There are several existing water mains adjacent to CambridgeSide that are interconnected and provide a loop completely around CambridgeSide. Per initial communication with the CWD, there are no known low-pressure concerns within the CambridgeSide 2.0 Project vicinity and the existing water mains currently serving the CambridgeSide have adequate capacity to handle the CambridgeSide 2.0 Project's demand. The domestic water demand for the 150 CambridgeSide Place building is approximately 32,600 gpd, based on the Title 5 calculations with an additional 10% consumption factor. The Applicant will continue to work with the CWD to coordinate new domestic and fire protection service connections to the existing water mains as construction of the project, including the 150 CambridgeSide Place building, commences.

Stormwater Infrastructure

Under the existing conditions, CambridgeSide is almost entirely impervious covered by buildings.

Stormwater runoff from the First Street buildings is collected through roof leaders that discharge to the City's drain in First Street which discharges to a large culvert in Thorndike Way that empties into to the Lechmere Canal. The remainder of CambridgeSide discharges stormwater runoff to the Land Boulevard City drains. The CambridgeSide 2.0 Project will have a slight reduction in stormwater runoff and volume since there will be a reduction in impervious area with the proposed southern courtyard on First Street. The Applicant will continue to work with the DPW to coordinate stormwater improvements and Best Management Practices (BMPs) as construction of the project, including the 150 CambridgeSide Place building, commences.

Private Utilities

The CambridgeSide 2.0 Project is surrounded by a dense network of private utilities located in the abutting streets. These utilities have served the existing facility for the past 30 years and with the Project's proposed energy conservation measures will have adequate capacity to serve the CambridgeSide 2.0 Project. The Applicant will continue to work with the private utility companies to coordinate utility and site improvements as construction of the project, including the 150 CambridgeSide Place building, commences.

Dimensional Form

Please see following Table 1: Dimensional Form.

Conclusion

As detailed throughout this application and demonstrated by the graphics included within the same, the 150 CambridgeSide Place building has been designed to conform to the applicable design review standards set forth in Condition 4 of the Decision, including with respect to the following criteria:

- The architectural design of building facades, with special attention to the ground level.
- The placement of rooftop mechanical equipment, along with the design of penthouses and other features meant to screen such equipment, and any other exteriorures within or surrounding the building site.
- The configuration and design of pedestrian, bicycle and vehicular modes of access and egress.
- The design of landscape elements, and modifications to abutting street or sidewalk rights of way, with attention to pedestrian and bicycle circulation and comfort and management of potential conflicts between pedestrian and bicycle paths of travel.
- Any potential impacts of the proposed design on the public realm or on properties outside of the PUD, including but not limited to visual impacts, noise impacts, wind impacts, and effects on the safety and comfort of pedestrians, bicyclists and motorists in the area, and measures that are being taken to mitigate such impacts.
- The measures being implemented to promote highly sustainable design and development reflecting the goals and objectives established by the City.

Accordingly, we respectfully request that the Planning Board find that the 150 CambridgeSide Place building design as described and shown in this application maintains an architectural character consistent with the planning and design goals set forth in the PUD-8 Design Guidelines and Principles and approve the proposed design of the 150 CambridgeSide Place building as described throughout this application, and grant in its approval any waivers required for the building as reflected in the design shown on the plans approved by the Board or as the Board otherwise deems appropriate.

Dimensional Form

Table 1: Dimensional Form

CambridgeSide Development Program Update							
Building	GROSS FLOOR AREA					Net New GFA ¹	
	Retail	Office	Lab	Residential	Total	Existing	Net New
20 CambridgeSide Place	15,200	125,112	187,669	0	327,981	125,000	202,981
150 CambridgeSide Place **	10,000	0	0	175,000	185,000	113,000	72,000
80 First	10,000	149,888	295,112	0	455,000	273,000	182,000
60 First	25,000	0	171,365	0	196,365	124,000	72,365
Totals	60,200	275,000	654,146	175,000	1,164,346	635,000	529,346
Core Mall	315,000	140,000	0	0	455,000		
Grand Total	375,200	415,000	654,146	175,000	1,619,346		

PUD-8 Final Development Plan Shared Program ²			
	Final Development Plan	Existing	Upon Completion of the 150 CambridgeSide Building ²
Open Space (sq ft)	244,600 ³	234,820	245,820 ⁵
Off-Street Parking Spaces	1,695	2,490	1,695 ⁴
Long-Term Bicycle Parking Spaces	450	143	334
Short-Term Bicycle Parking Spaces	146	87	143
Loading Bays	12-20	15	13

150 CambridgeSide Place Building Height and Setbacks	Final Development Plan	Existing	Upon Completion of the 150 CambridgeSide Building
Building Height (ft)	155		See Exhibit 18
Front Yard Setback (ft)	0		See Exhibit 18
Side Yard Setback (ft)	0		See Exhibit 18
Rear Yard Setback (ft)	0		See Exhibit 18

** As the design of the 150 CambridgeSide building progresses to the construction drawing and building permit stages of development, the proposed Gross Floor Area (GFA) will be further refined to account for allowable exemptions from the calculation of GFA.

¹ The Net New GFA available for development or reallocation is 296,037 sf following the Initial Phase buildings and does not account for the 182,000 sf of Net New GFA allocated to 80 First Street, for which a Design Review application is being simultaneously submitted. A total of 45,654 sf of Net New GFA will be available for development or reallocation following completion of both Subsequent Phase buildings.

² Consistent with PB #364 and the Final Development Plan, requirements for Open Space, parking, bicycle parking and loading may be met across the PUD-8 Development Parcel, intended to serve the interconnected mixes proposed as part of the CambridgeSide 2.0 project, at full buildout. The numbers identified here do not account for any improvements to be constructed as part of the 80 First Street building (i.e., 116 long-term bicycle parking spaces and 4 short-term bicycle parking spaces). Following completion of both Subsequent Phase buildings, and in full satisfaction of the requirements of the PB #364 Decision, there will be a total of 245,820 sf of Open Space, approximately 1,695 off-street parking spaces (subject to footnote 4 below), 450 long-term bicycle parking spaces, 147 short-term bicycle parking spaces and 13 loading bays to serve the uses on the PUD-8 Development Parcel.

³ Per Section 13.105 of the CZO applicable to the PUD-8 District, Open Space includes (i) the off-site Public Open Space at Charles Park and Canal Park and (ii) the on-site Publicly Beneficial Open Space, to be comprised of the publicly accessible mall atrium space, the public easement for CambridgeSide Place and the new Mall connector in the 60 First Street building, new setbacks and new North Pocket Park and South Courtyard on First Street.

⁴ Consistent with PB #364 and the Final Development Plan, the total number of parking spaces on the PUD-8 Development Parcel will be reduced from 2,490 to approximately 1,695 at the time of demolishing the existing above-grade structured parking garage. All parking is subject to maximum ratios by use set forth in Section 13.106.4 of the CZO. Consistent with the PB #364 Decision, the Applicant will continue to work with TP&T on the coordination of parking to incorporate a flexible parking solution, if needed, that ensures adequate supply exists over the life of the Project.

⁵ The total Open Space accounts for the addition of the North Pocket Park and the South Courtyard, the location and general dimensions of which have been established but the programming (e.g., fixtures and furnishings) for which will be coordinated with the Open Space and Retail Advisory Committee and subject to a subsequent design review filing.

150 CambridgeSide



Building Design Review

150 CambridgeSide

DEVELOPMENT PLAN

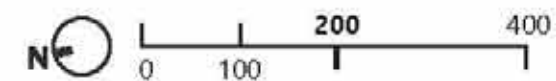
EXHIBIT 1

Legend

 PUD-8 DEVELOPMENT PARCEL

SUBSEQUENT PHASE DEVELOPMENT

 150 CAMBRIDGESIDE



NEW ENGLAND
DEVELOPMENT

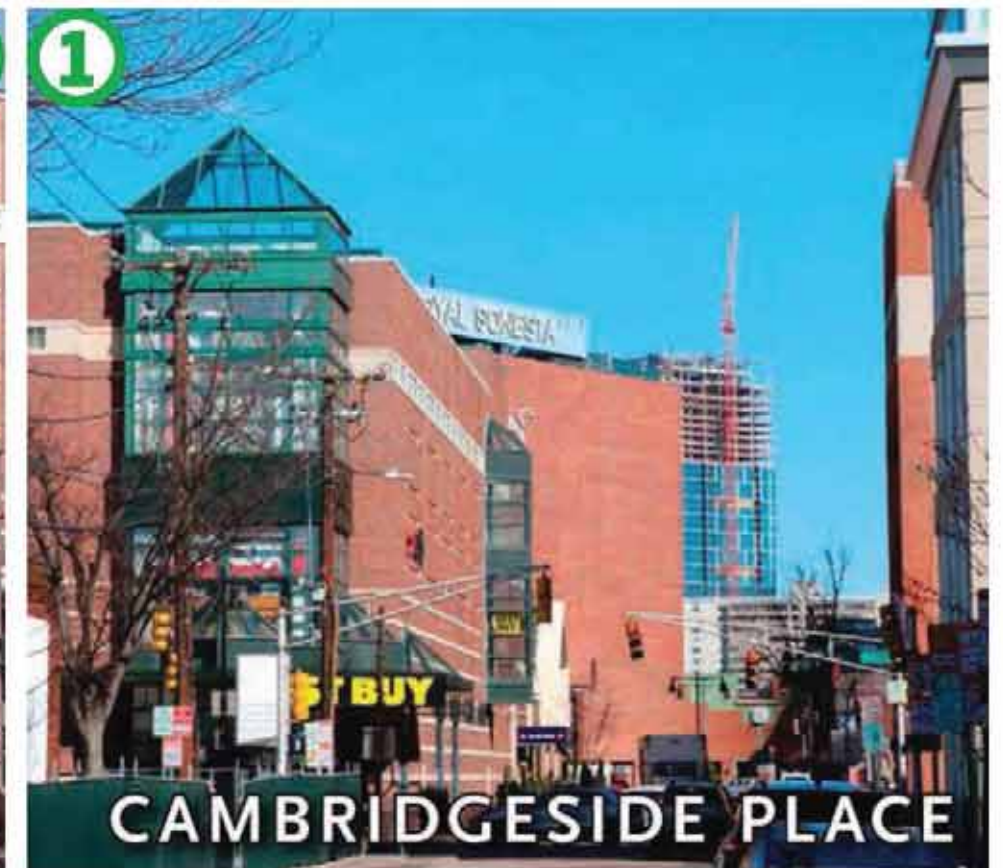
ELKUS | MANFREDI
ARCHITECTS





Building Design Review
150 CambridgeSide
 EXISTING CONDITIONS PHOTOS

EXHIBIT 2



Building Design Review

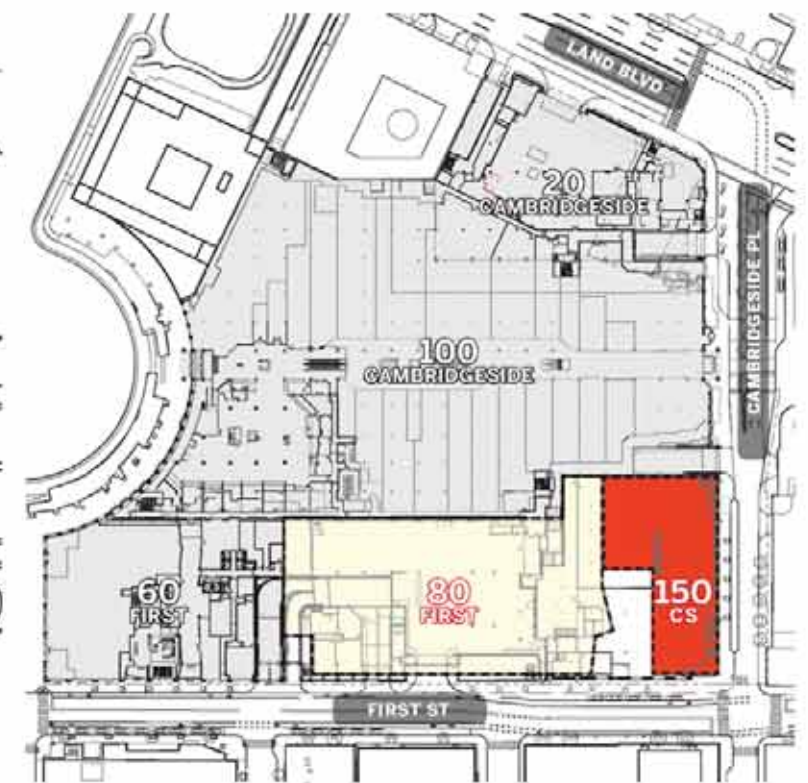
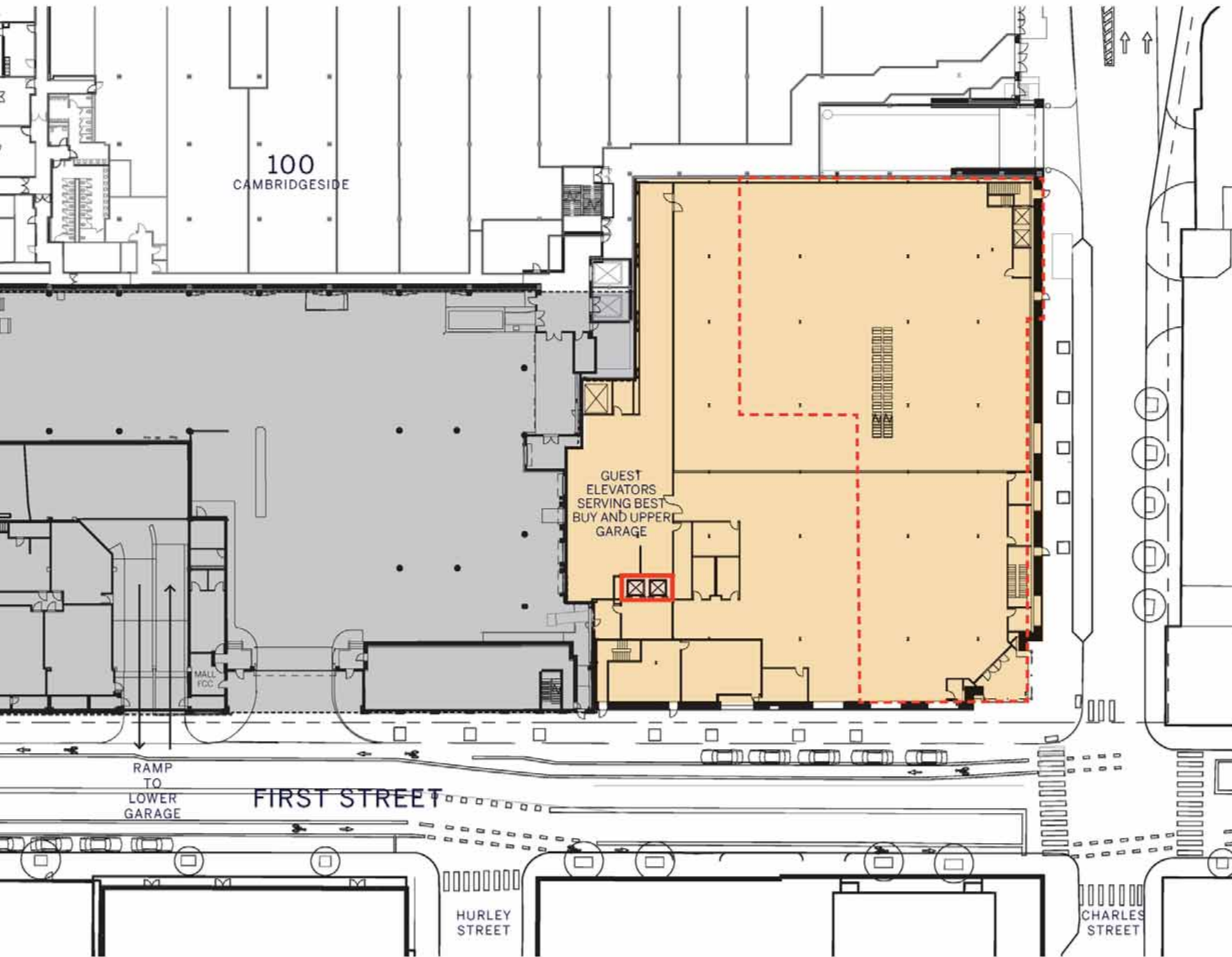
150 CambridgeSide

EXISTING CONDITIONS SITE PLAN

EXHIBIT 3

Legend

-  BUILDING SITE
-  DEMOLISHED STRUCTURE
-  INFRASTRUCTURE TO REMAIN



Building Design Review 150 CambridgeSide PROPOSED SITE PLAN

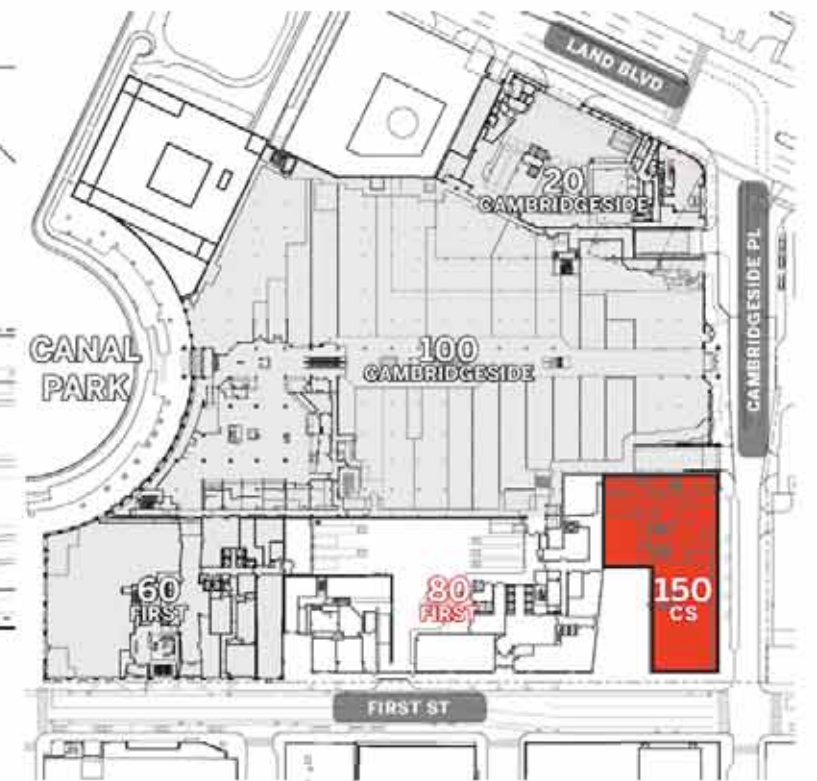
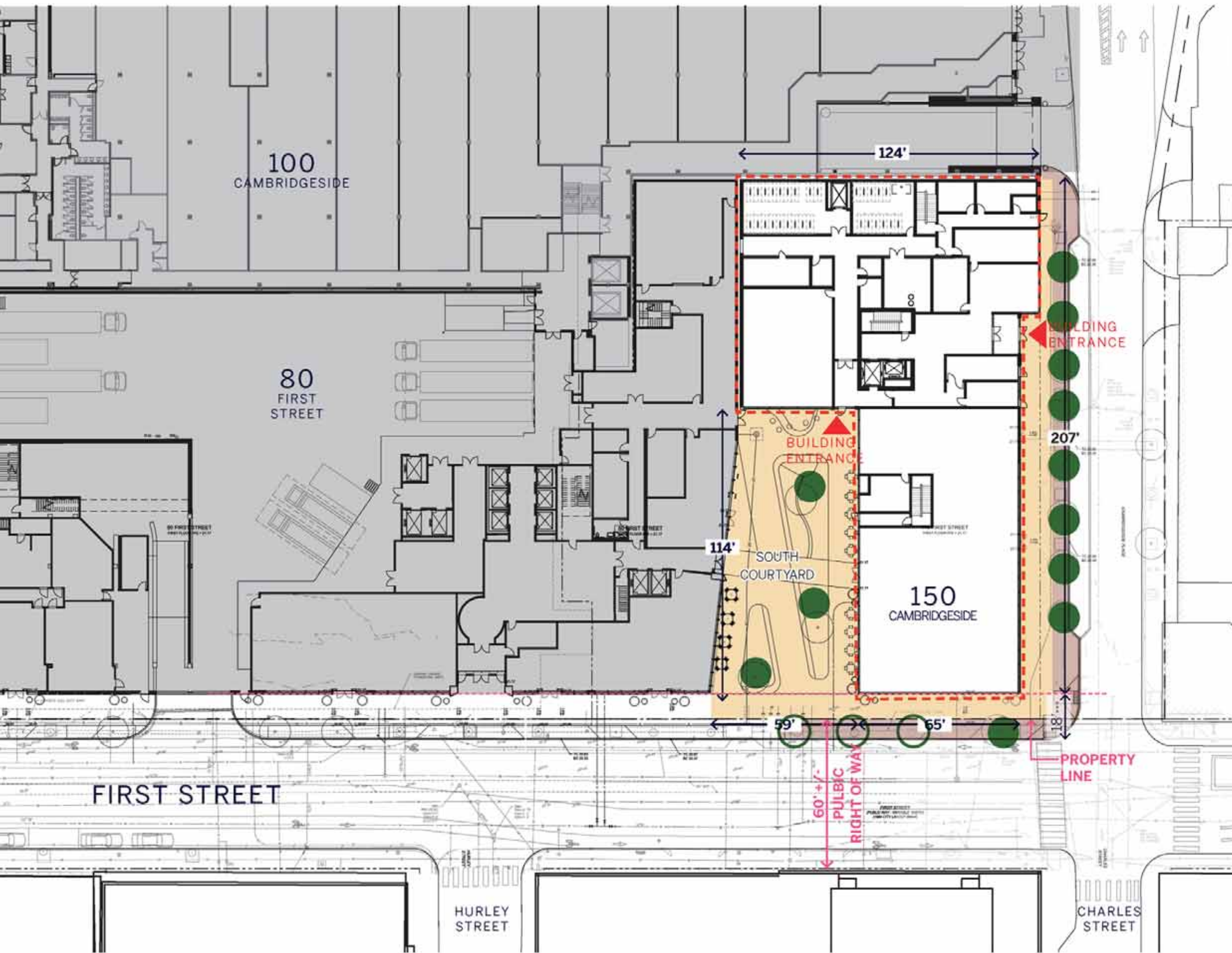
EXHIBIT 4

Legend

- BUILDING SITE
- NEW SIDEWALK AND PAVING
- EXISTING AND REFURBISHED ZONE
- EXISTING TREE
- NEW TREE

SEE GROUND FLOOR ENTRY, LANDSCAPE MATERIALS AND PLANTING PLANS FOR ADDITIONAL DETAIL

***SIDEWALK DIMENSION FROM FACE OF BUILDING TO FACE OF CURB IS MEASURED USING THE EXISTING FIRST STREET LAYOUT AND IS APPROXIMATE AS THE CURB LINE MAY VARY. CURB LOCATION IS SUBJECT TO FINAL DESIGN OF THE FIRST STREET/SECOND STREET STUDY.



* FINAL PROGRAMMING OF THE NORTH POCKET PARK AND SOUTH COURTYARD WILL BE DETERMINED IN COORDINATION WITH THE OPEN SPACE AND RETAIL ADVISORY COMMITTEE AND IS NOT THE SUBJECT OF THIS DESIGN REVIEW APPLICATION

** FINAL DESIGN OF THE IMPROVEMENTS WITHIN THE FIRST STREET RIGHT OF WAY WILL BE COORDINATED WITH CITY PENDING OUTCOME OF THE FIRST STREET STUDY



Building Design Review

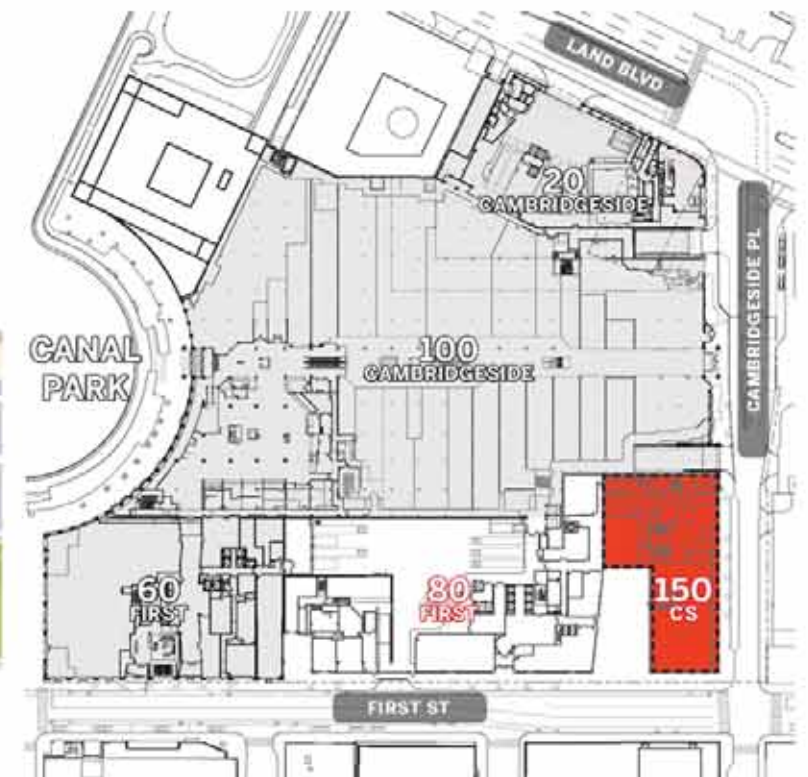
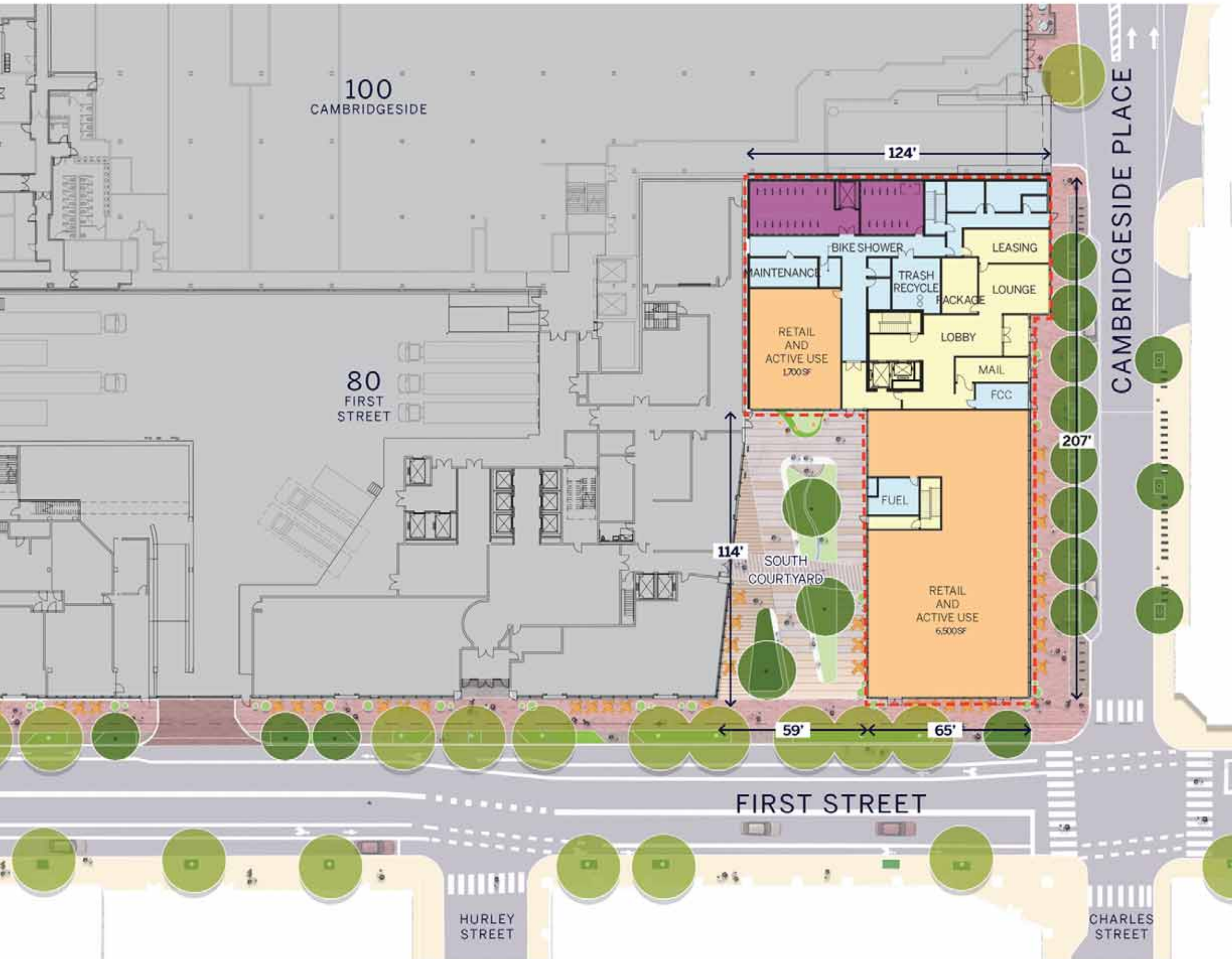
150 CambridgeSide

GROUND FLOOR PLAN

EXHIBIT 5

Legend

- BUILDING SITE
 - RETAIL AND ACTIVE STOREFRONT
 - RESIDENTIAL
 - AMENITY
 - BACK OF HOUSE AND SERVICE
 - OTHER DEVELOPMENT
- DESIGN AND DEMISING OF THE RETAIL AND ACTIVE USE AREAS IS SUBJECT TO FINAL DESIGN AND LEASING AGREEMENTS.



* FINAL PROGRAMMING OF THE NORTH POCKET PARK AND SOUTH COURTYARD WILL BE DETERMINED IN COORDINATION WITH THE OPEN SPACE AND RETAIL ADVISORY COMMITTEE AND IS NOT THE SUBJECT OF THIS DESIGN REVIEW APPLICATION

** FINAL DESIGN OF THE IMPROVEMENTS WITHIN THE FIRST STREET RIGHT OF WAY WILL BE COORDINATED WITH CITY PENDING OUTCOME OF THE FIRST STREET STUDY



Building Design Review

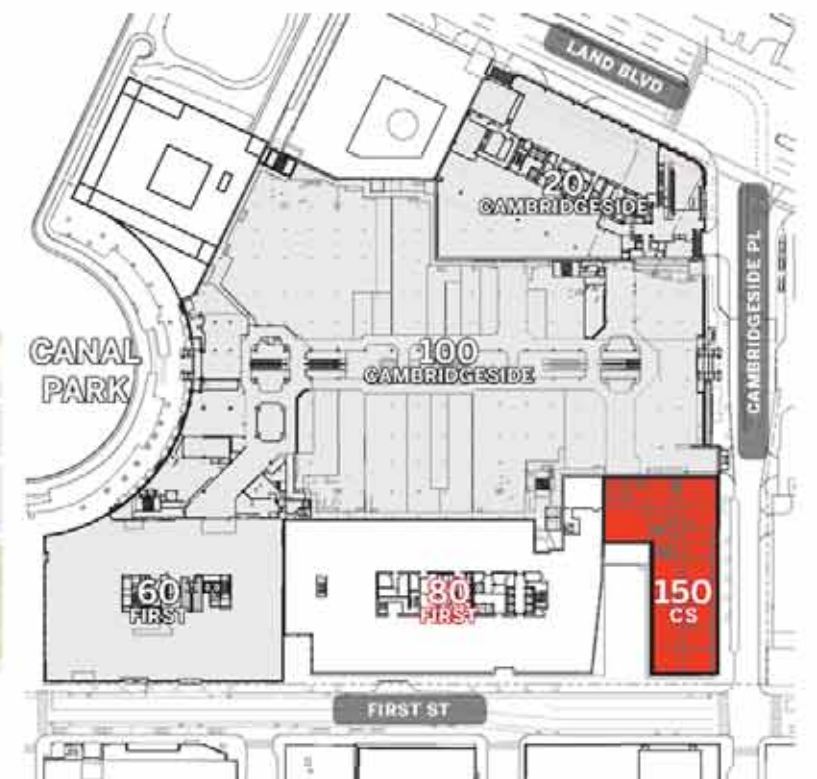
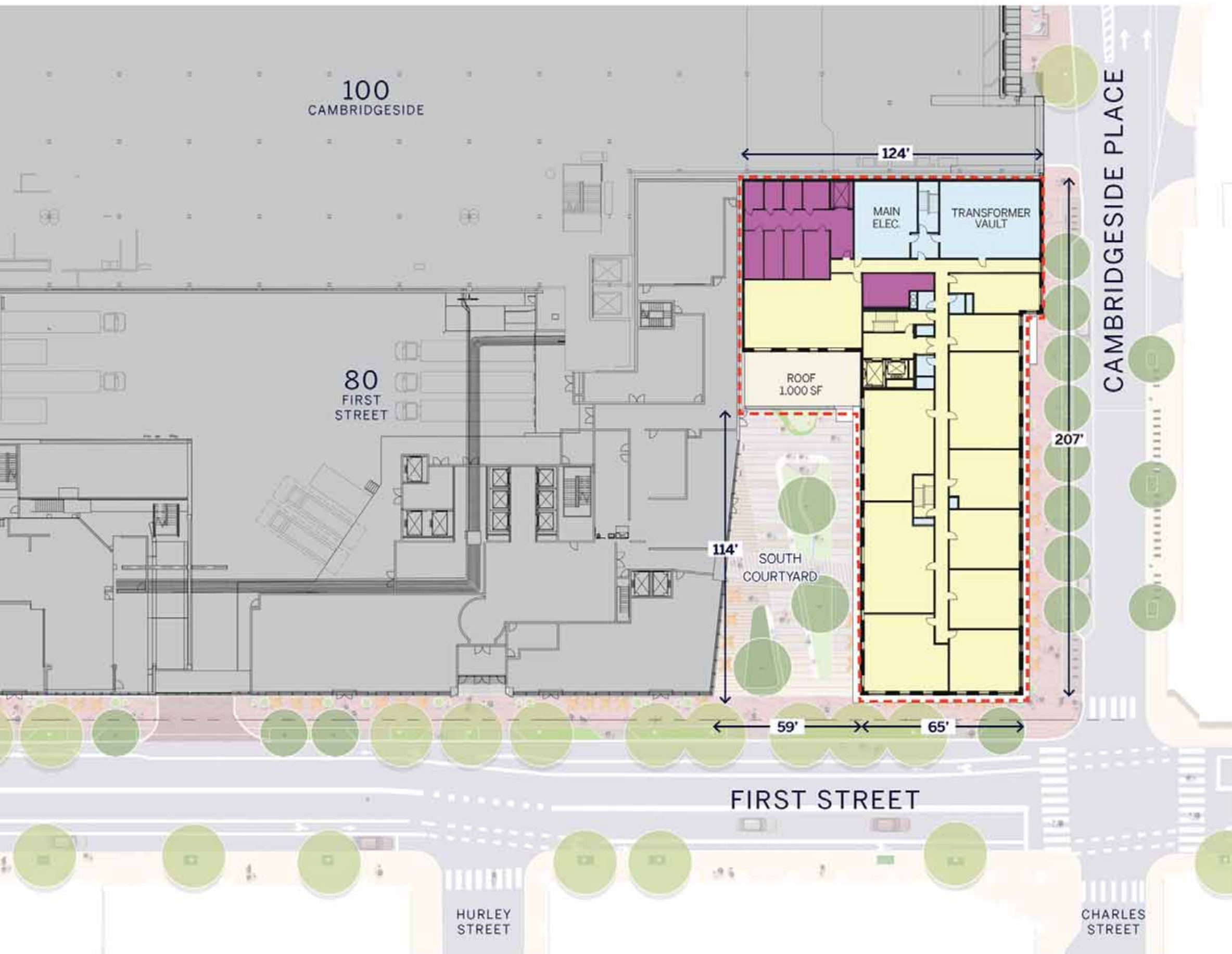
150 CambridgeSide

2ND FLOOR PLAN

EXHIBIT 6

Legend

- BUILDING SITE
- RESIDENTIAL
- AMENITY
- BACK OF HOUSE AND SERVICE
- OTHER DEVELOPMENT
- ROOF



Building Design Review

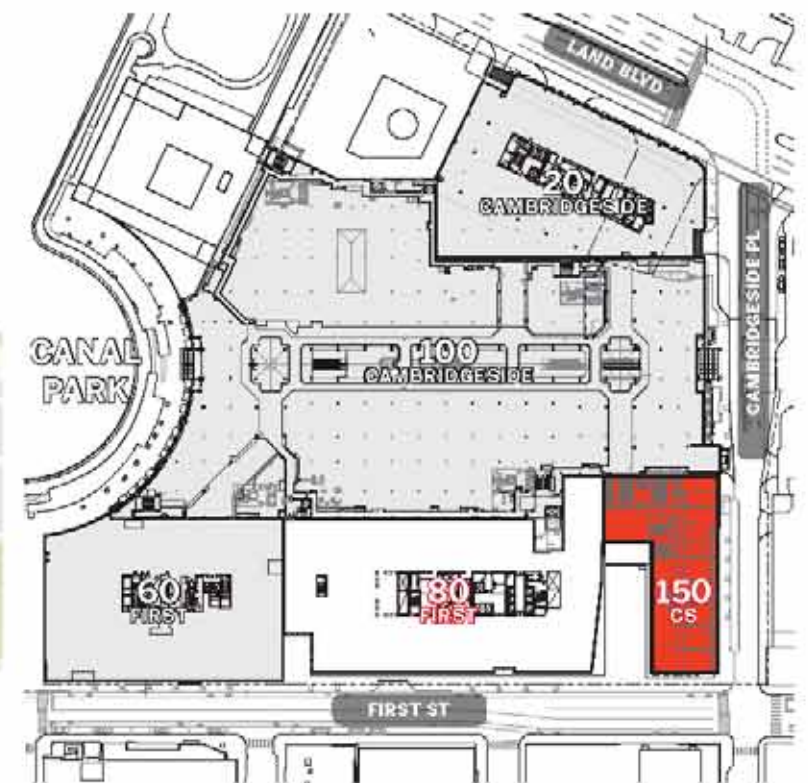
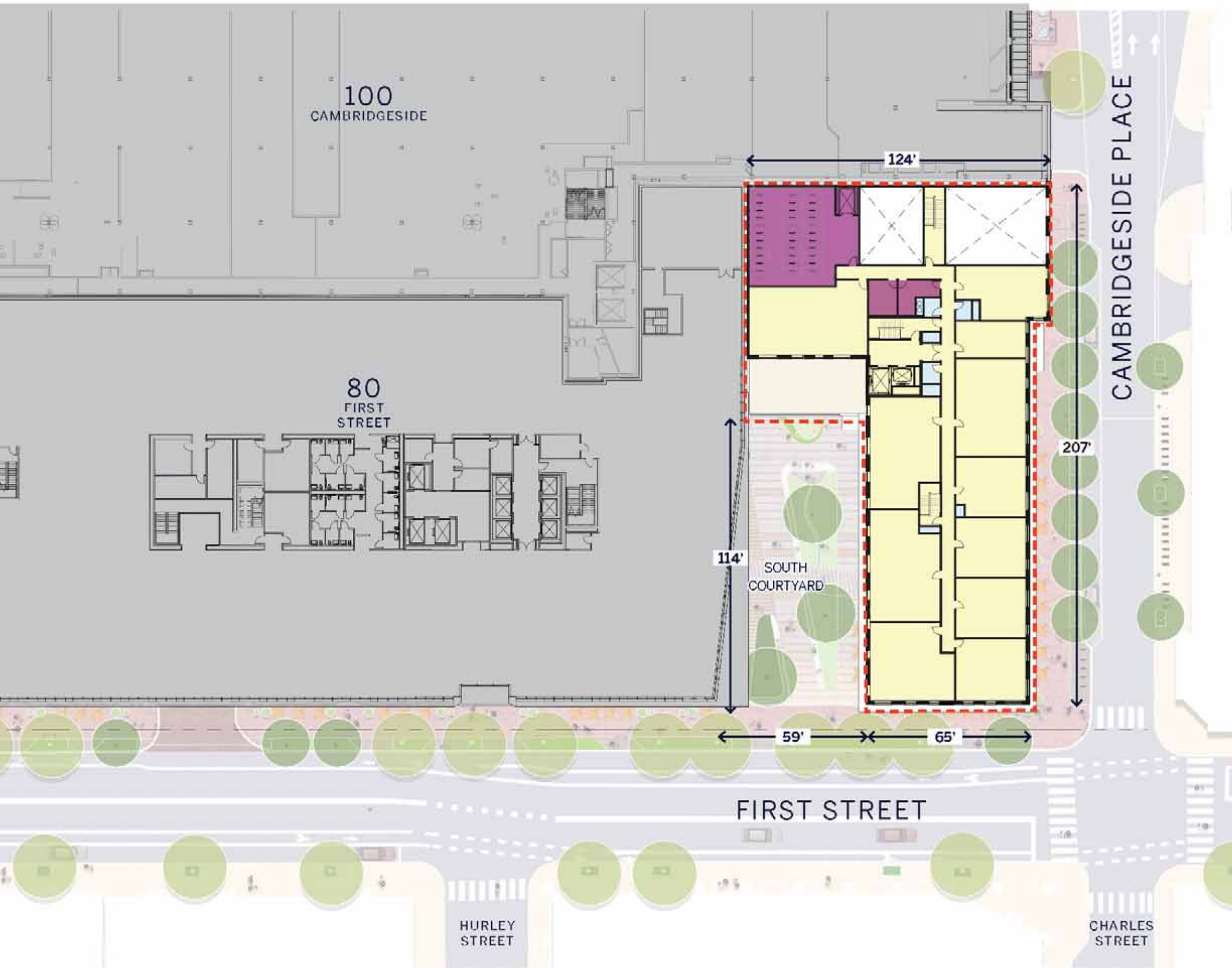
150 CambridgeSide

3RD FLOOR PLAN

EXHIBIT 7

Legend

- BUILDING SITE
- RESIDENTIAL
- AMENITY
- BACK OF HOUSE AND SERVICE
- OTHER DEVELOPMENT



Building Design Review

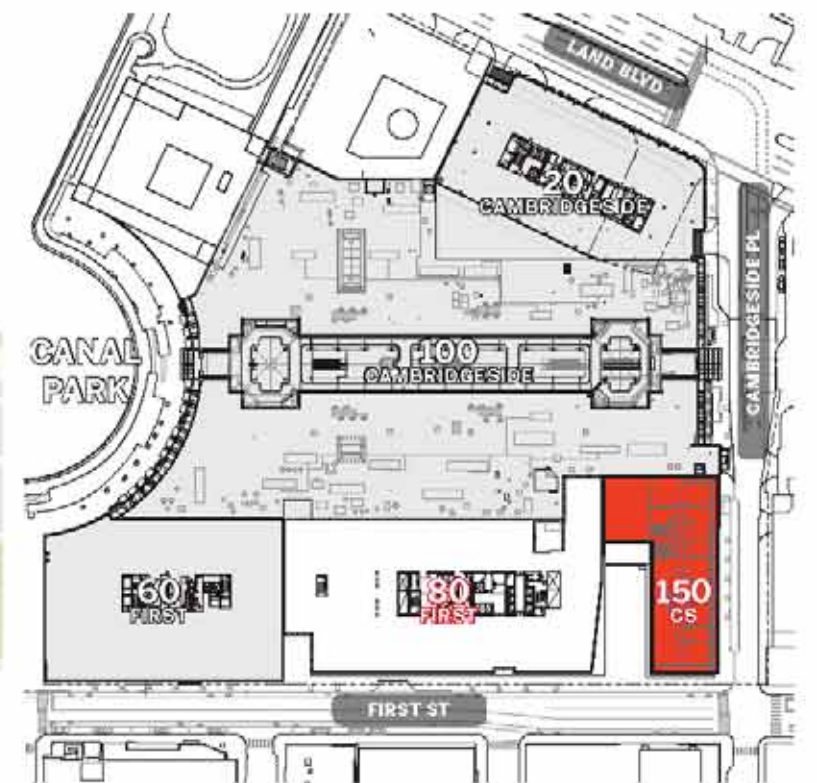
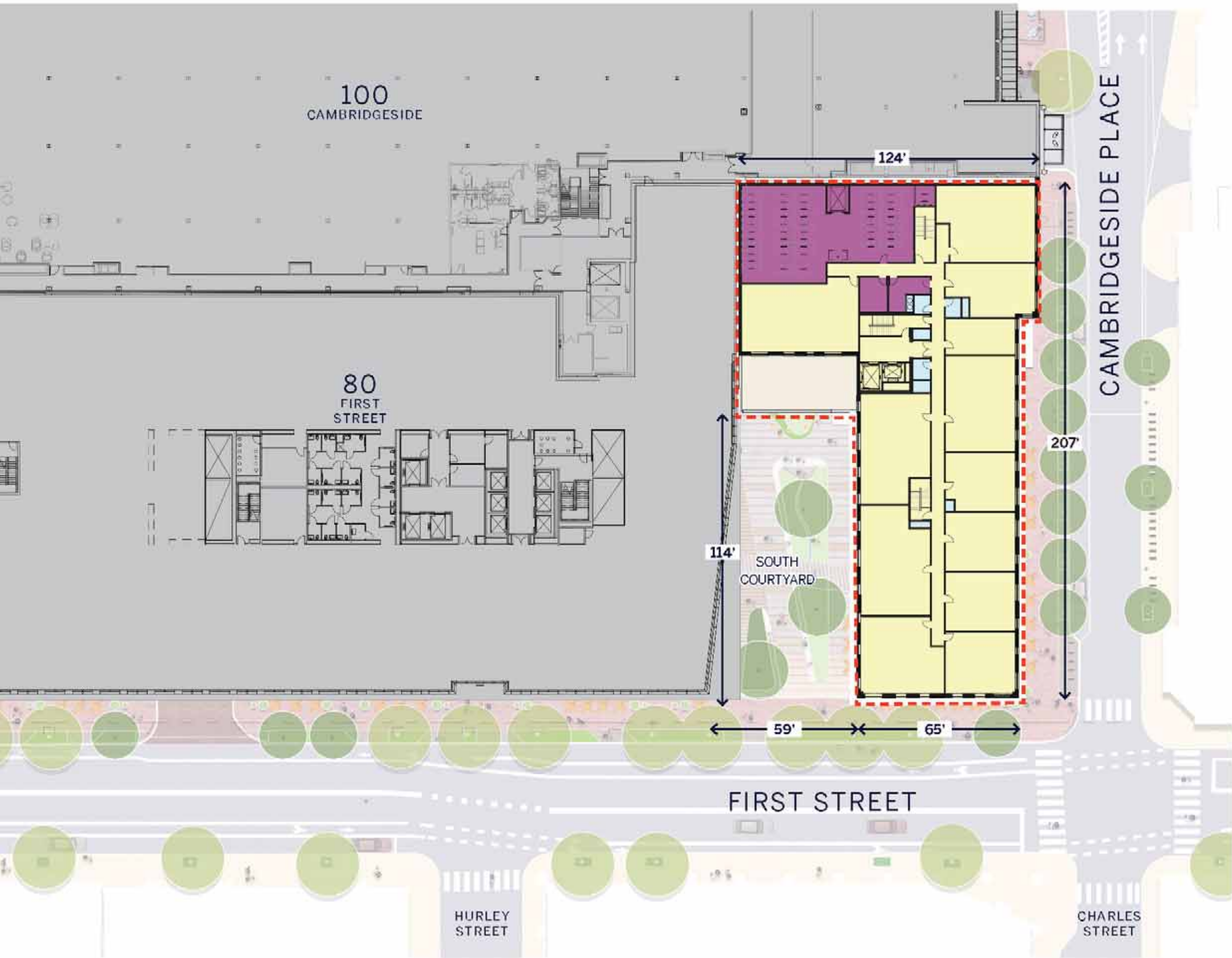
150 CambridgeSide

4TH FLOOR PLAN

EXHIBIT 8

Legend

- BUILDING SITE
- RESIDENTIAL
- AMENITY
- BACK OF HOUSE AND SERVICE
- OTHER DEVELOPMENT
- ROOF



Building Design Review

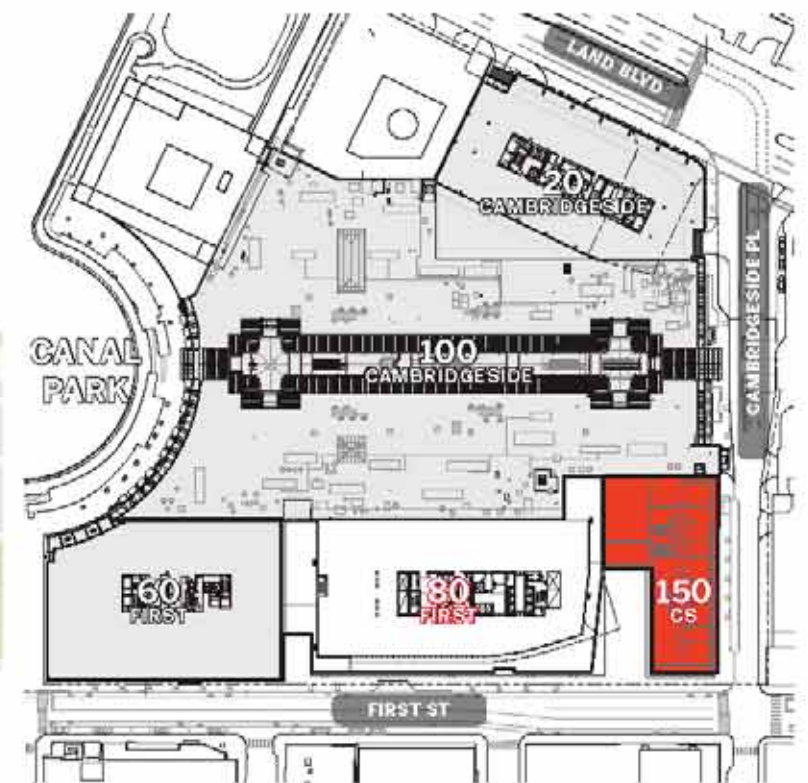
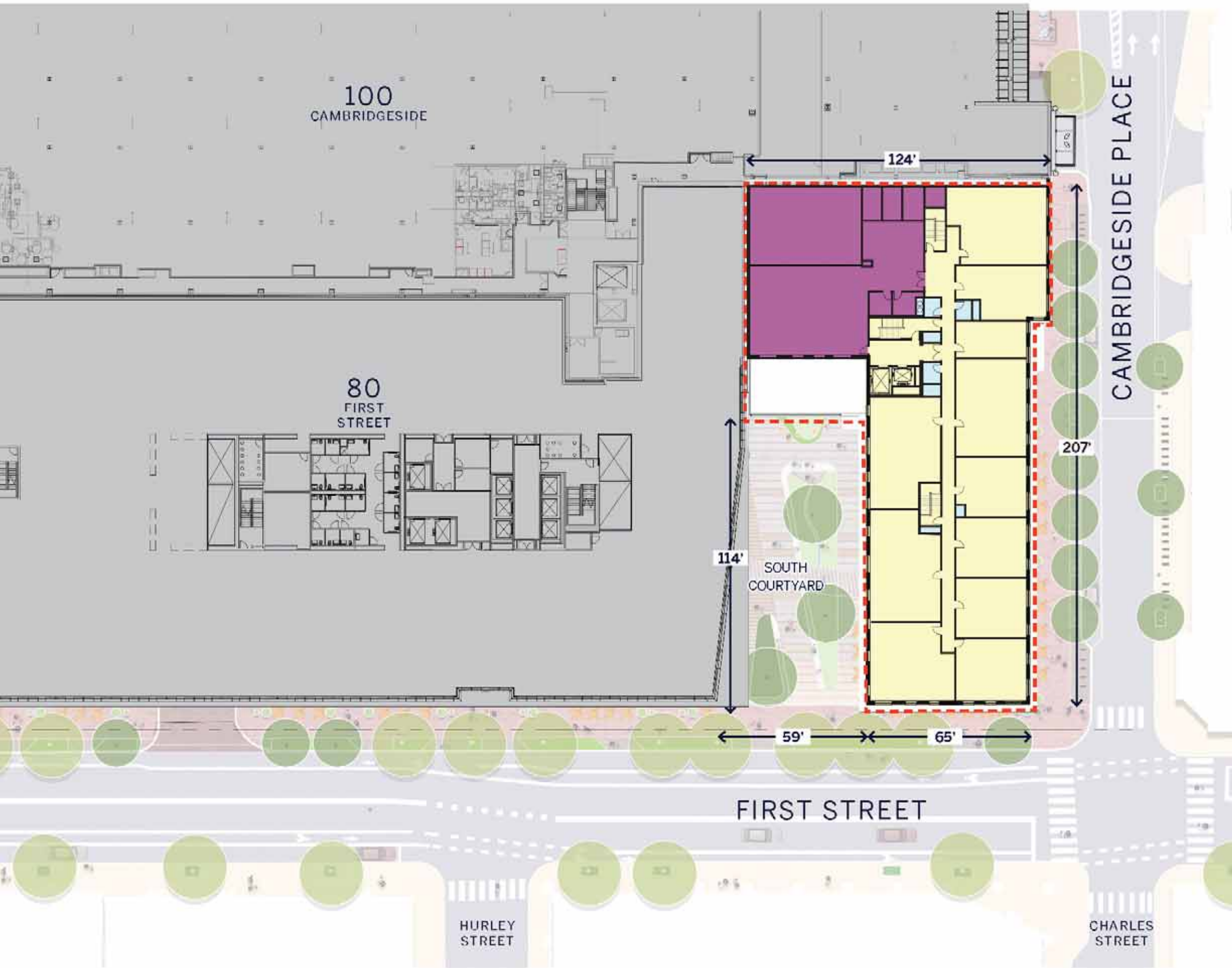
150 CambridgeSide

5TH FLOOR PLAN

EXHIBIT 9

Legend

- BUILDING SITE
- RESIDENTIAL
- AMENITY
- BACK OF HOUSE AND SERVICE
- OTHER DEVELOPMENT



Building Design Review

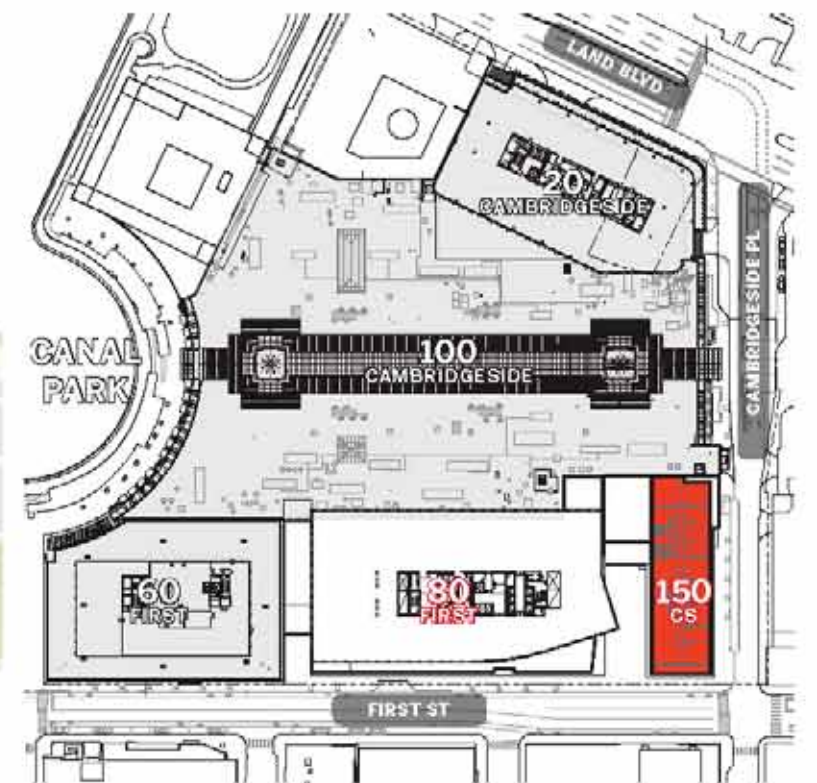
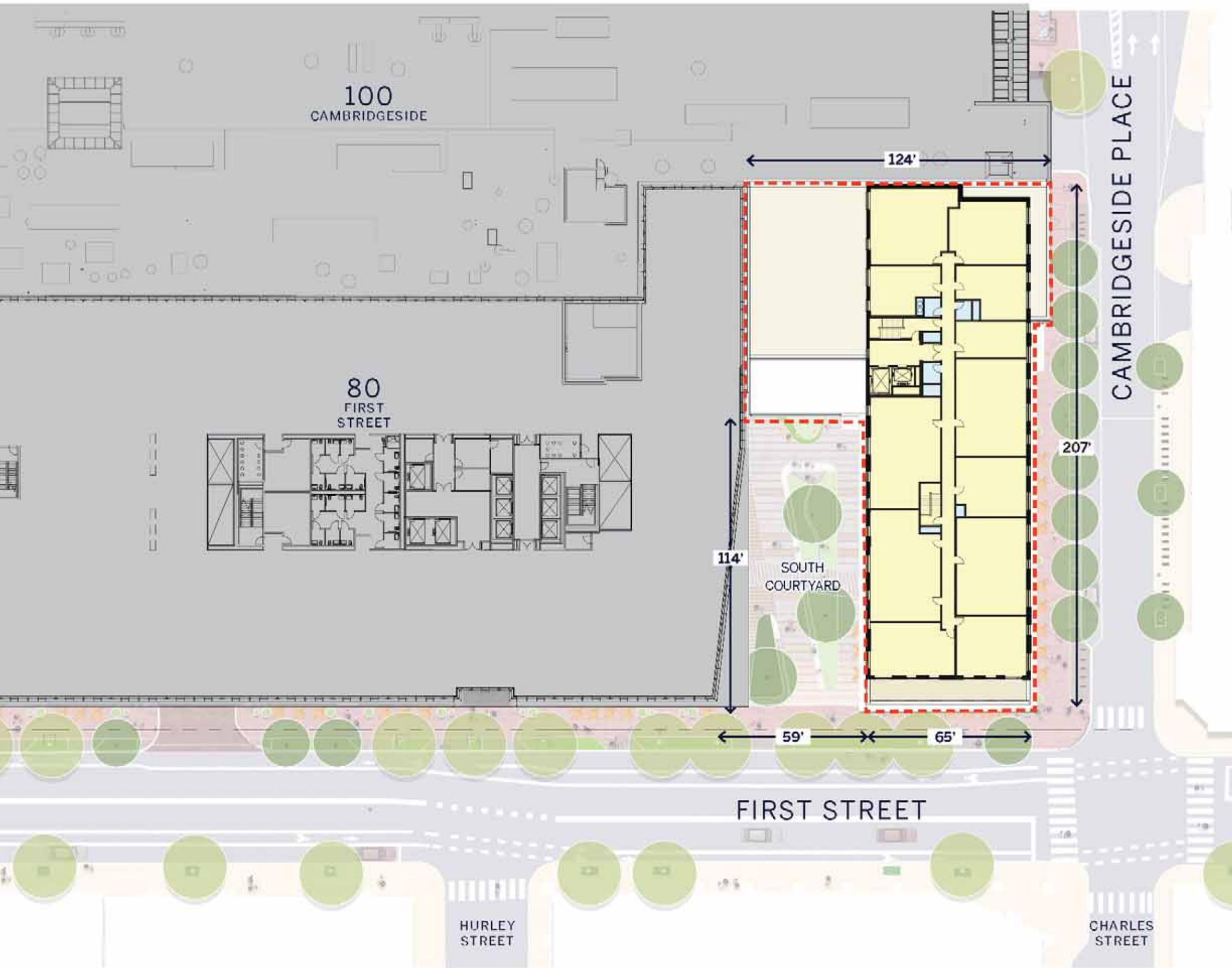
150 CambridgeSide

6TH FLOOR PLAN

EXHIBIT 10

Legend

- BUILDING SITE
- RESIDENTIAL
- BACK OF HOUSE AND SERVICE
- OTHER DEVELOPMENT
- ROOF



Building Design Review

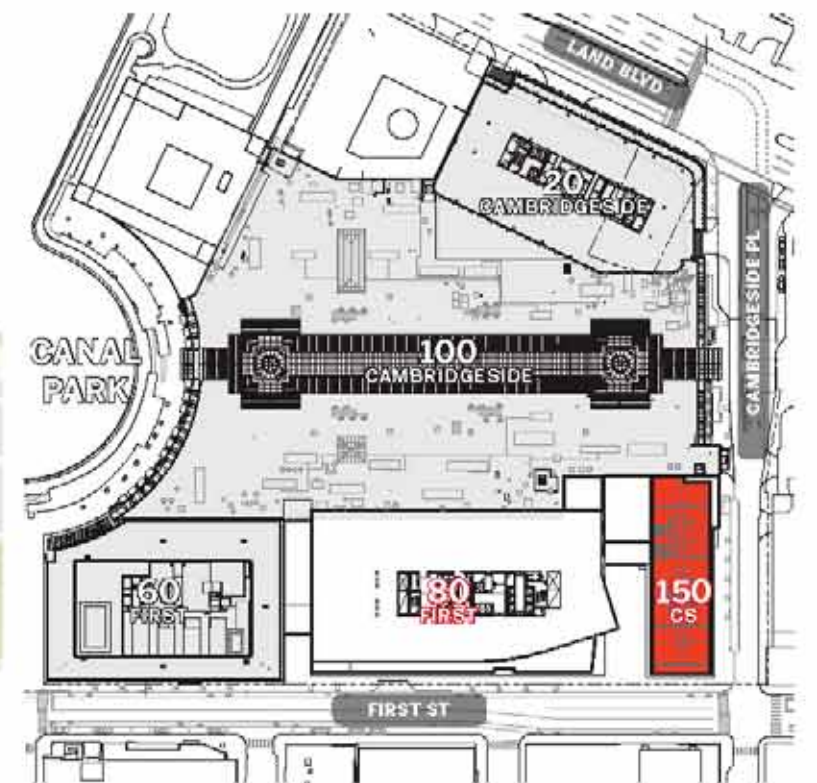
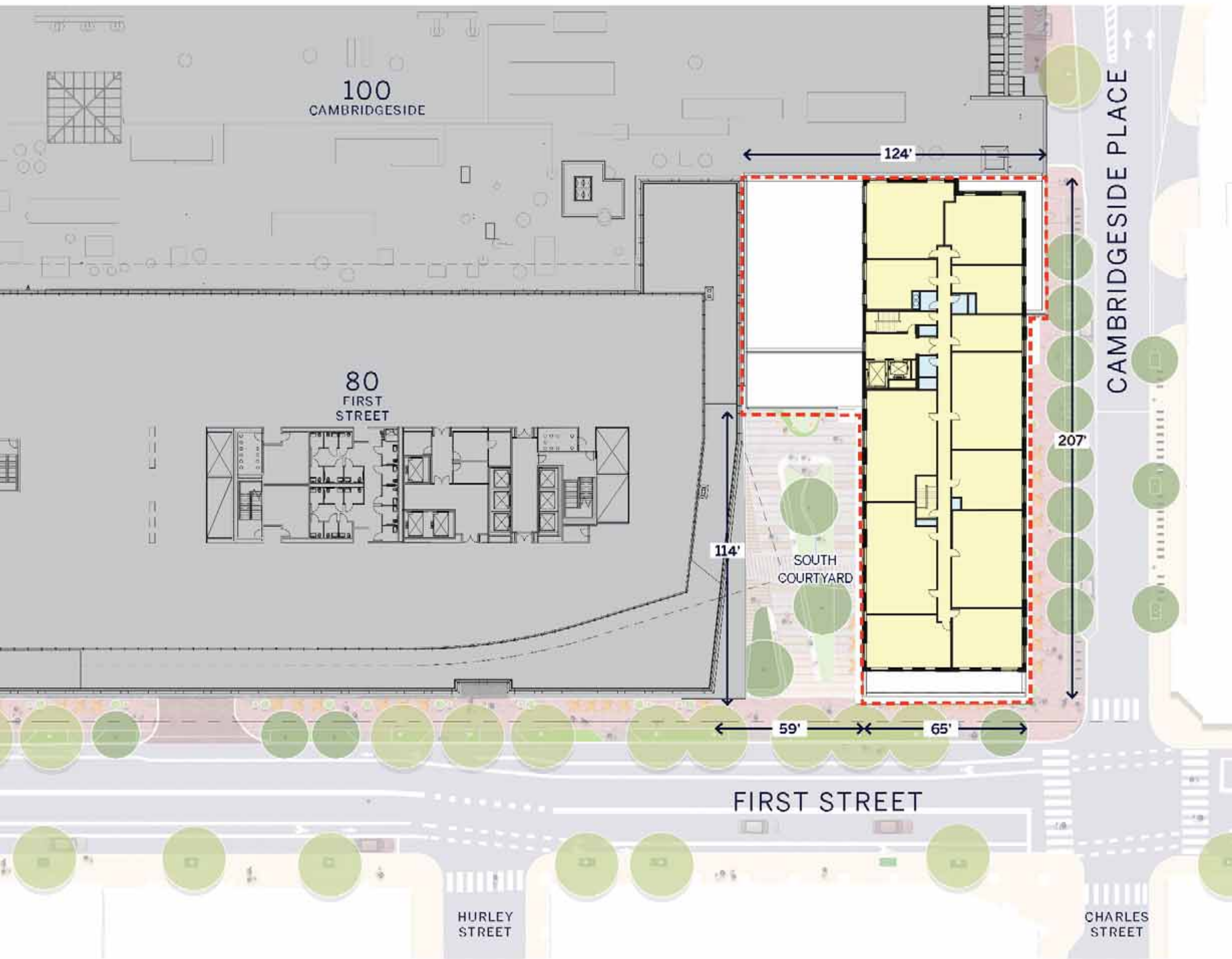
150 CambridgeSide

7TH TO 9TH FLOOR PLAN

EXHIBIT 11

Legend

- BUILDING SITE
- RESIDENTIAL
- BACK OF HOUSE AND SERVICE
- OTHER DEVELOPMENT



Building Design Review

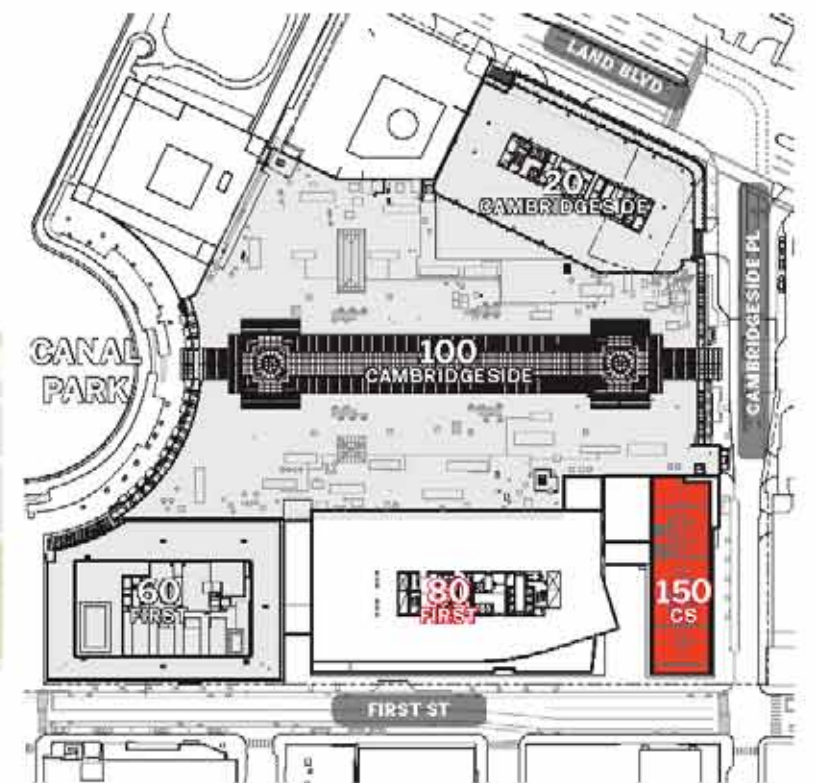
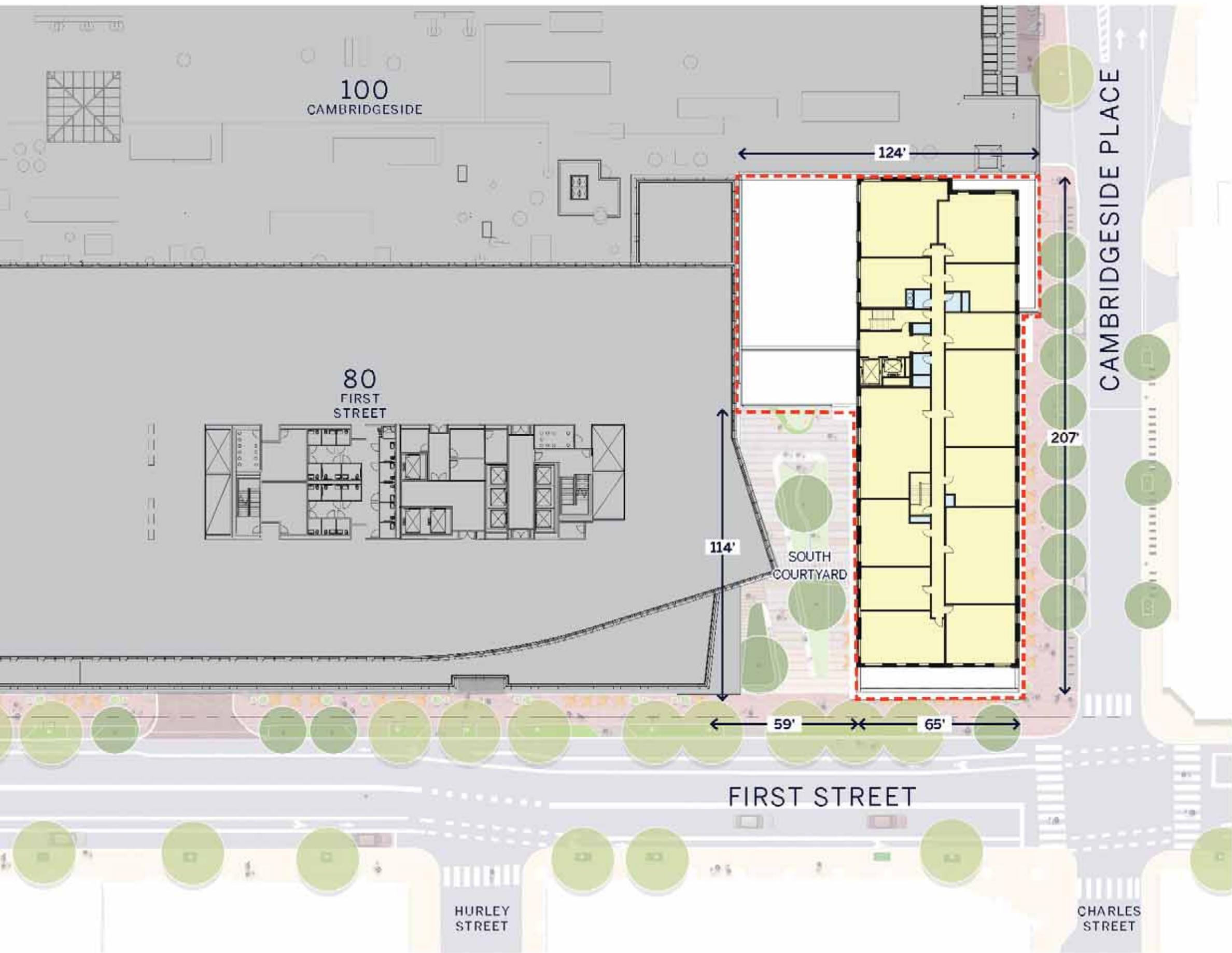
150 CambridgeSide

10TH FLOOR PLAN

EXHIBIT 12

Legend

- BUILDING SITE
- RESIDENTIAL
- BACK OF HOUSE AND SERVICE
- OTHER DEVELOPMENT



Building Design Review

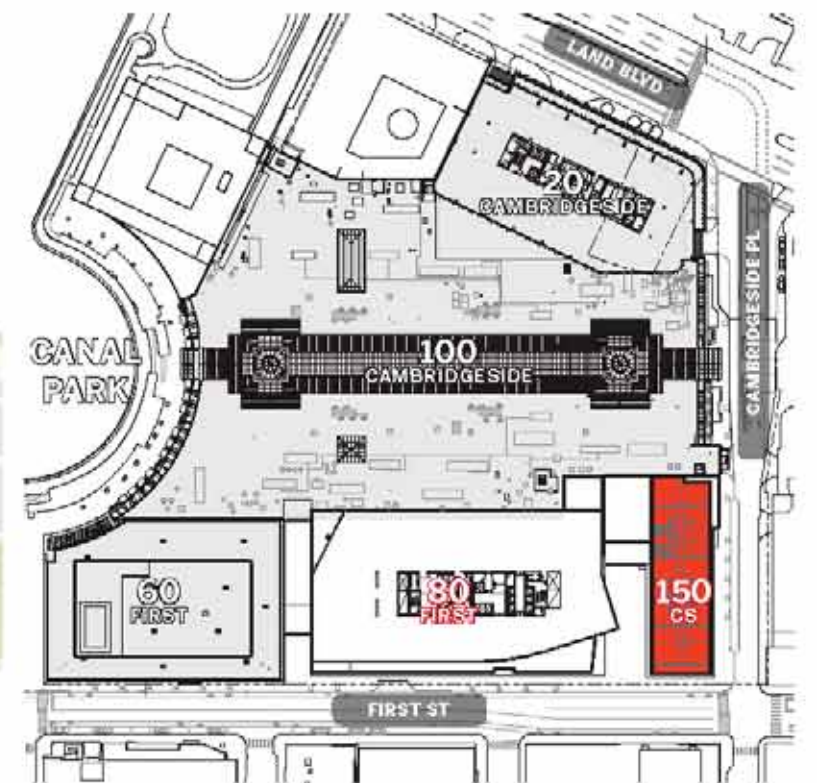
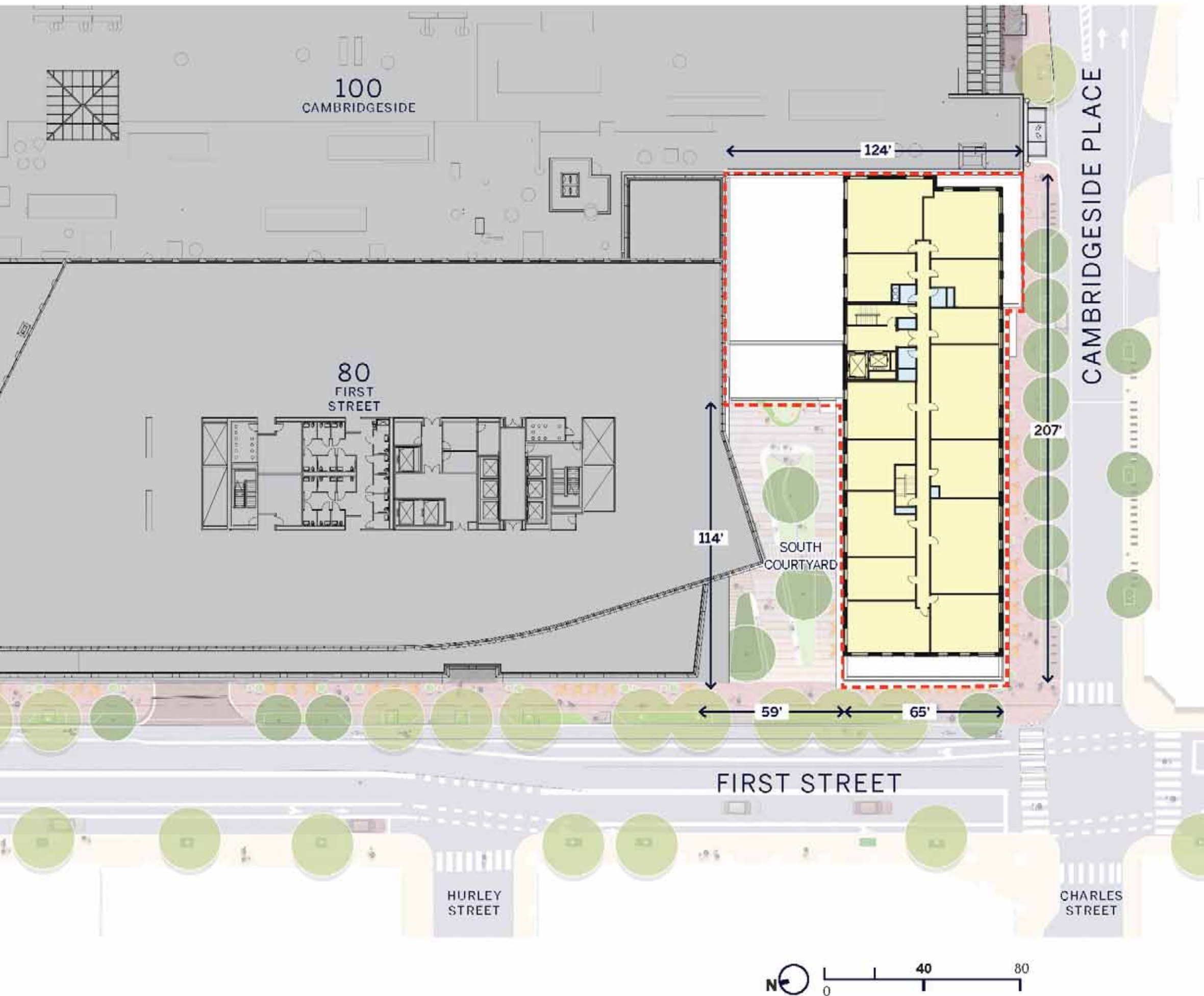
150 CambridgeSide

11TH & 12TH FLOOR PLAN

EXHIBIT 13

Legend

- BUILDING SITE
- RESIDENTIAL
- BACK OF HOUSE AND SERVICE
- OTHER DEVELOPMENT



Building Design Review

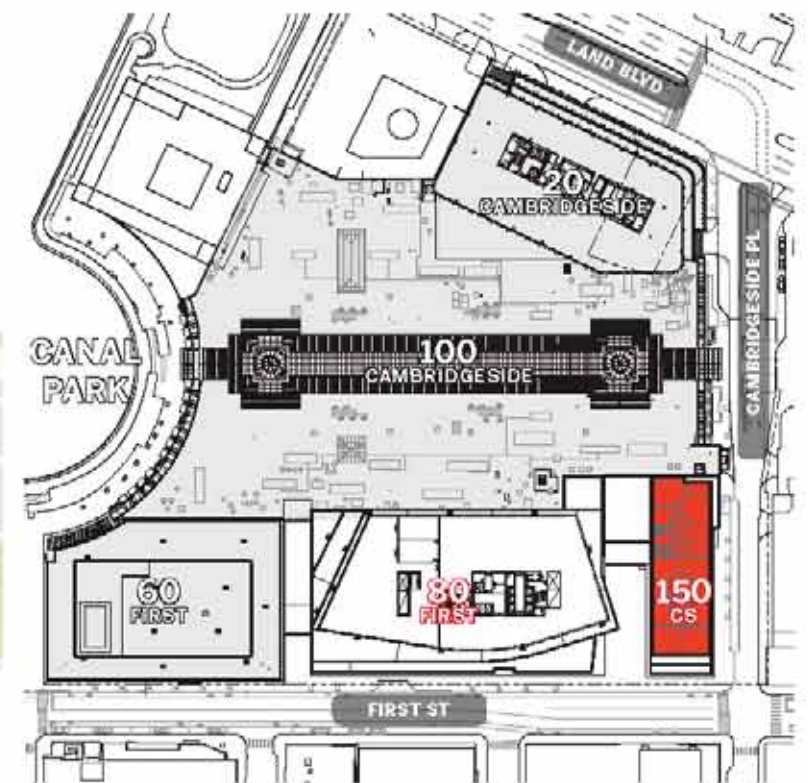
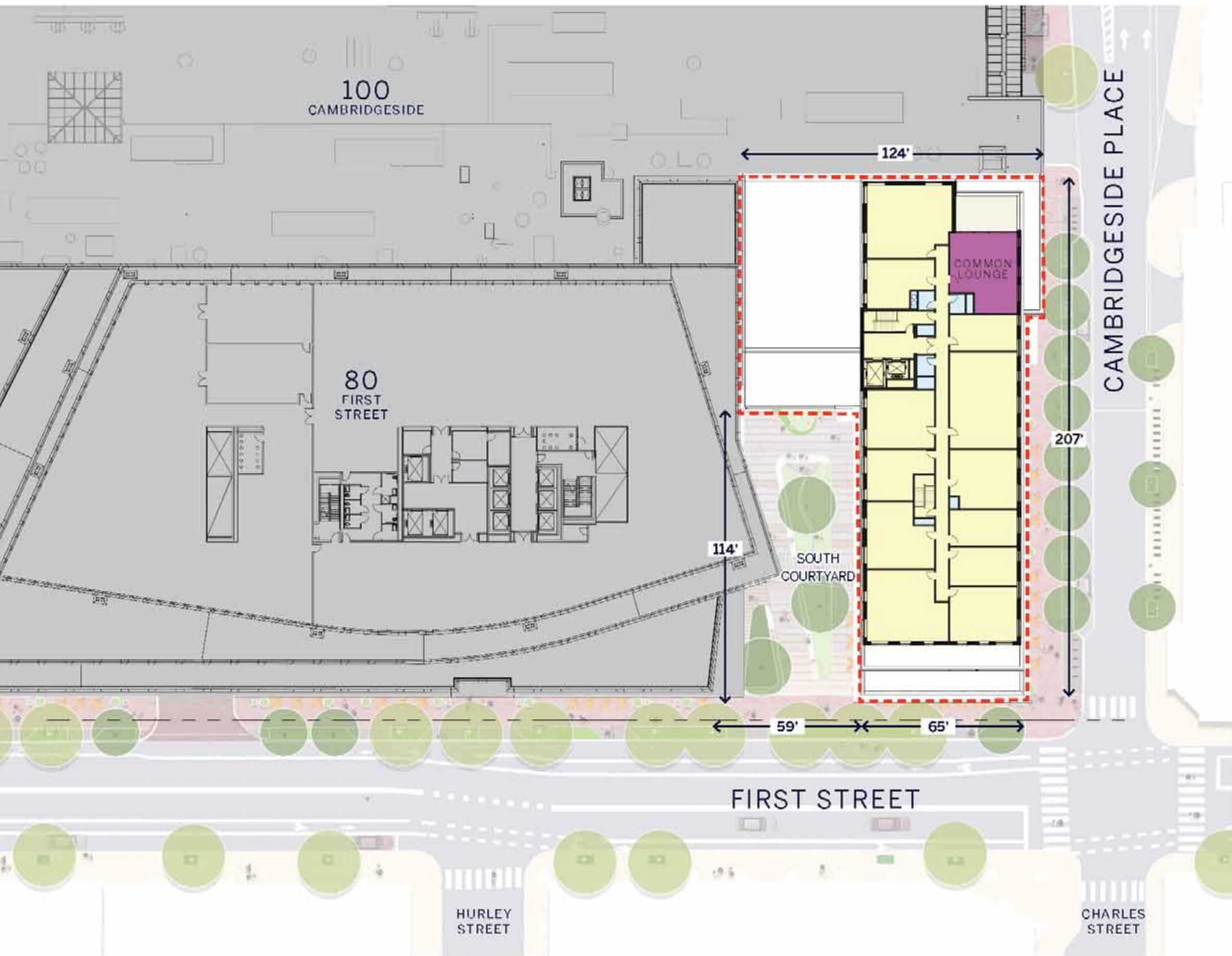
150 CambridgeSide

13TH FLOOR PLAN

EXHIBIT 14

Legend

- BUILDING SITE
- RESIDENTIAL
- AMENITY
- BACK OF HOUSE AND SERVICE
- OTHER DEVELOPMENT
- ROOF



Building Design Review

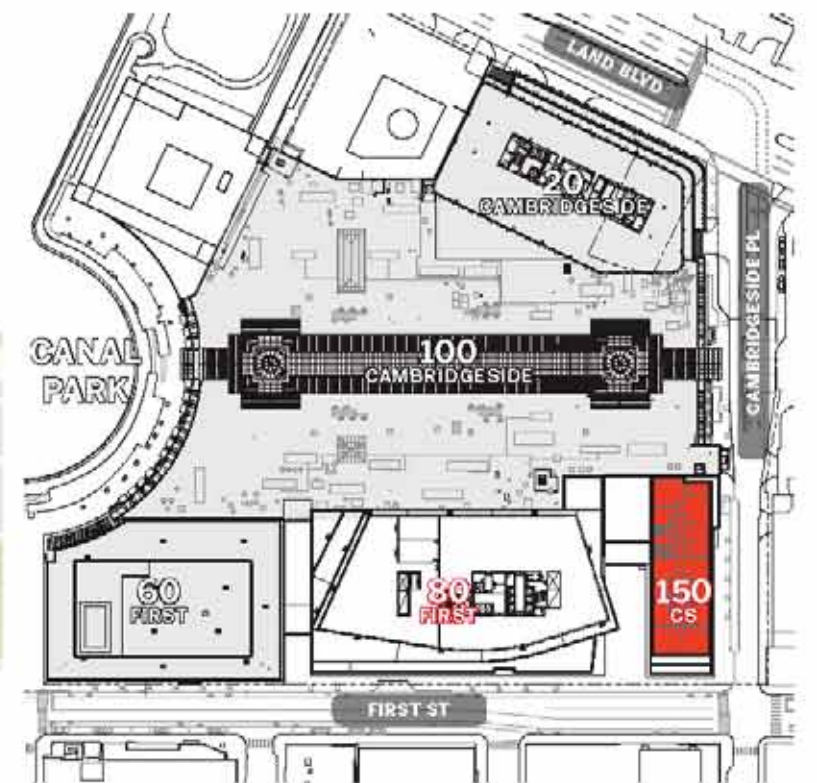
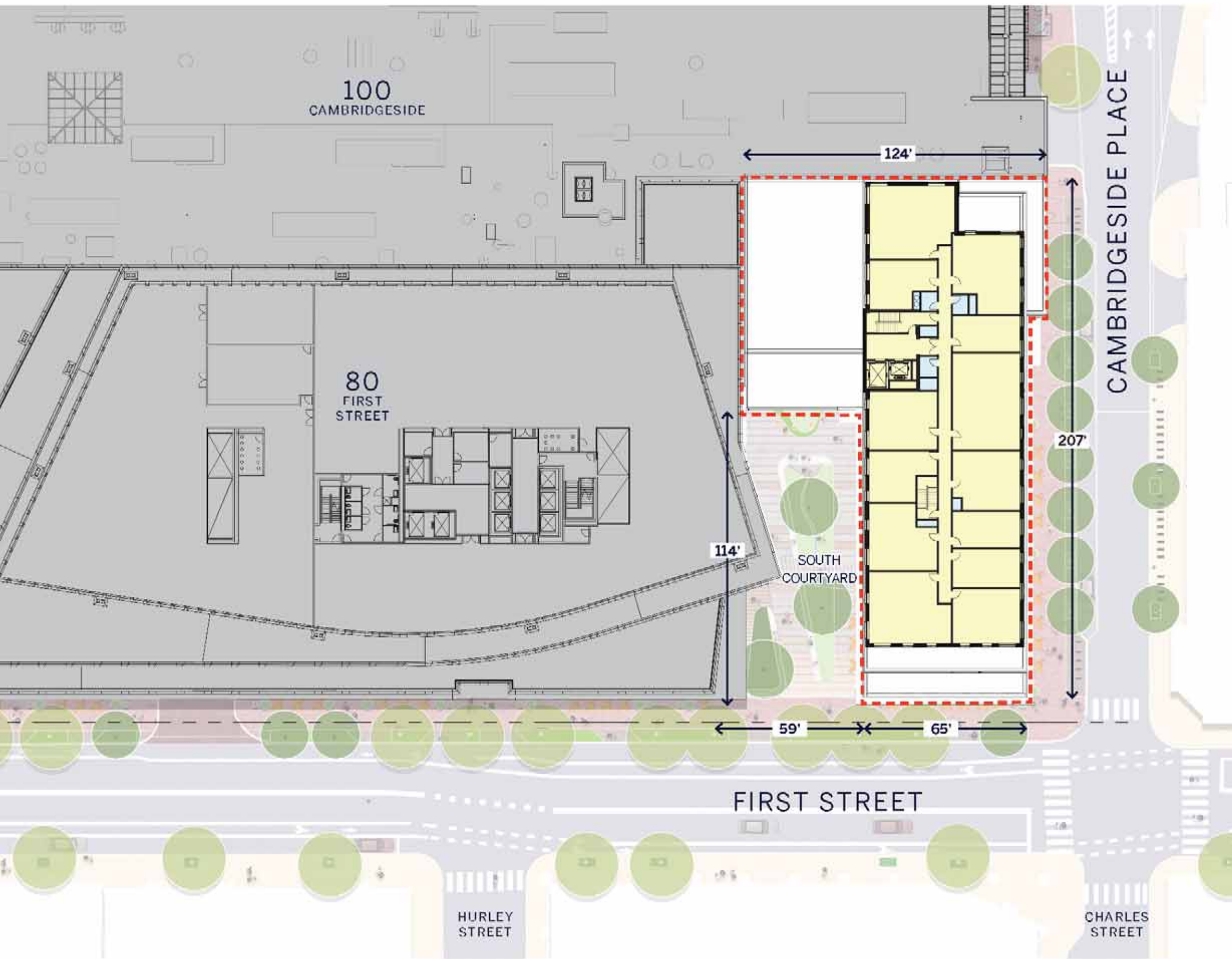
150 CambridgeSide

14TH FLOOR PLAN

EXHIBIT 15

Legend

- BUILDING SITE
- RESIDENTIAL
- BACK OF HOUSE AND SERVICE
- OTHER DEVELOPMENT



Building Design Review

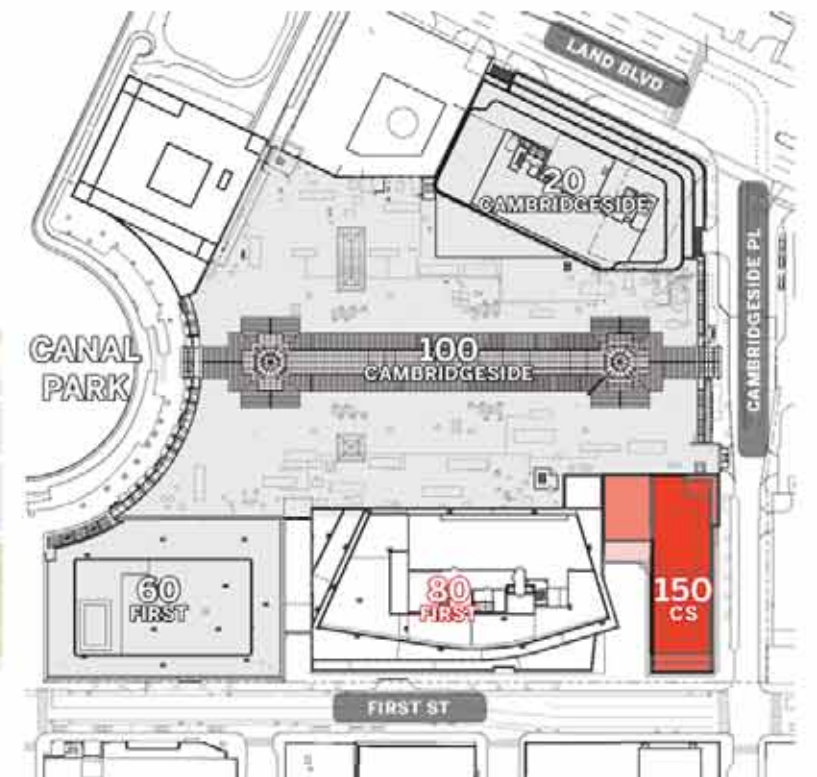
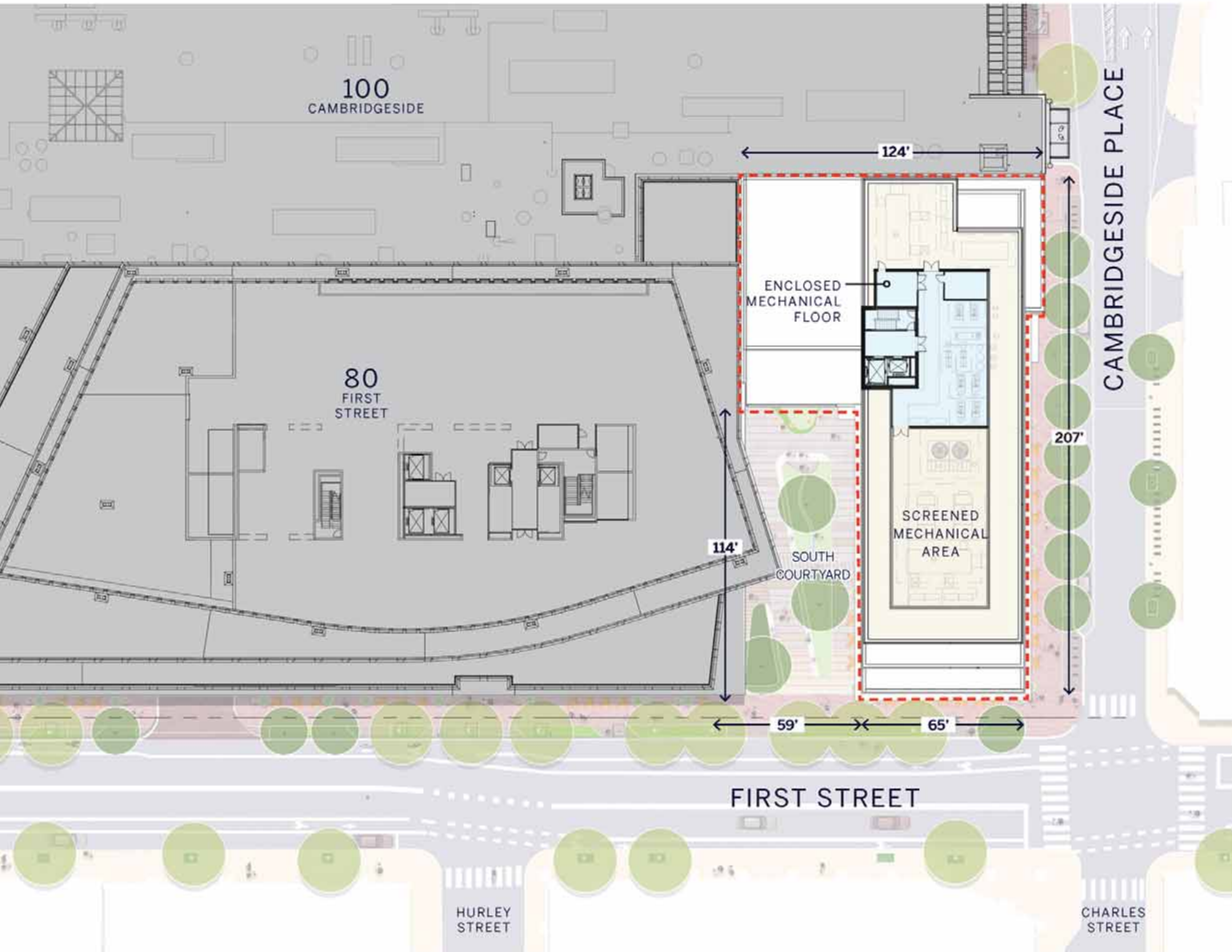
150 CambridgeSide

MECHANICAL LEVEL PLAN

EXHIBIT 16

Legend

- BUILDING SITE
- BACK OF HOUSE AND SERVICE
- OTHER DEVELOPMENT
- ROOF



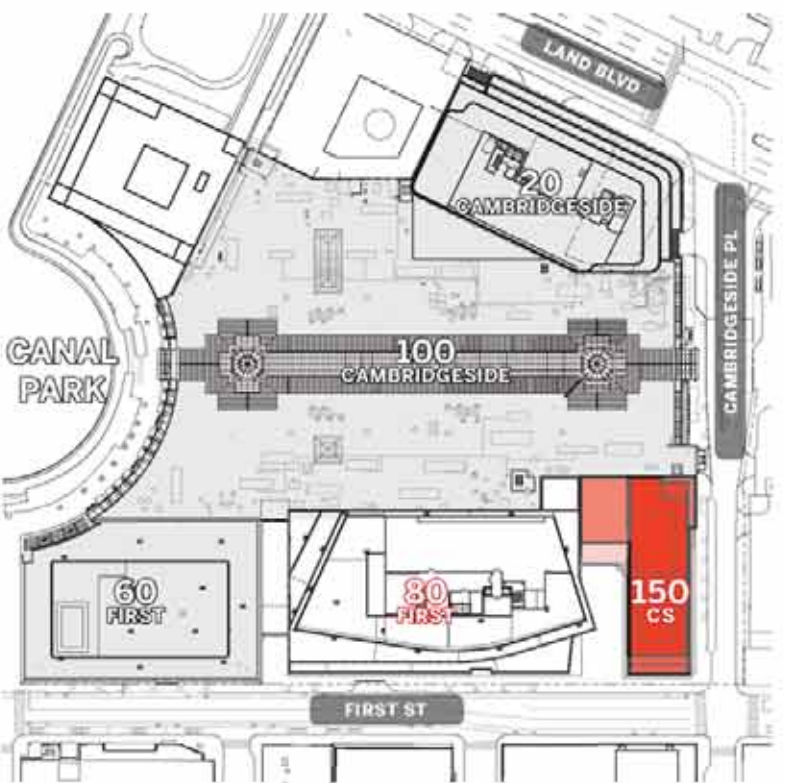
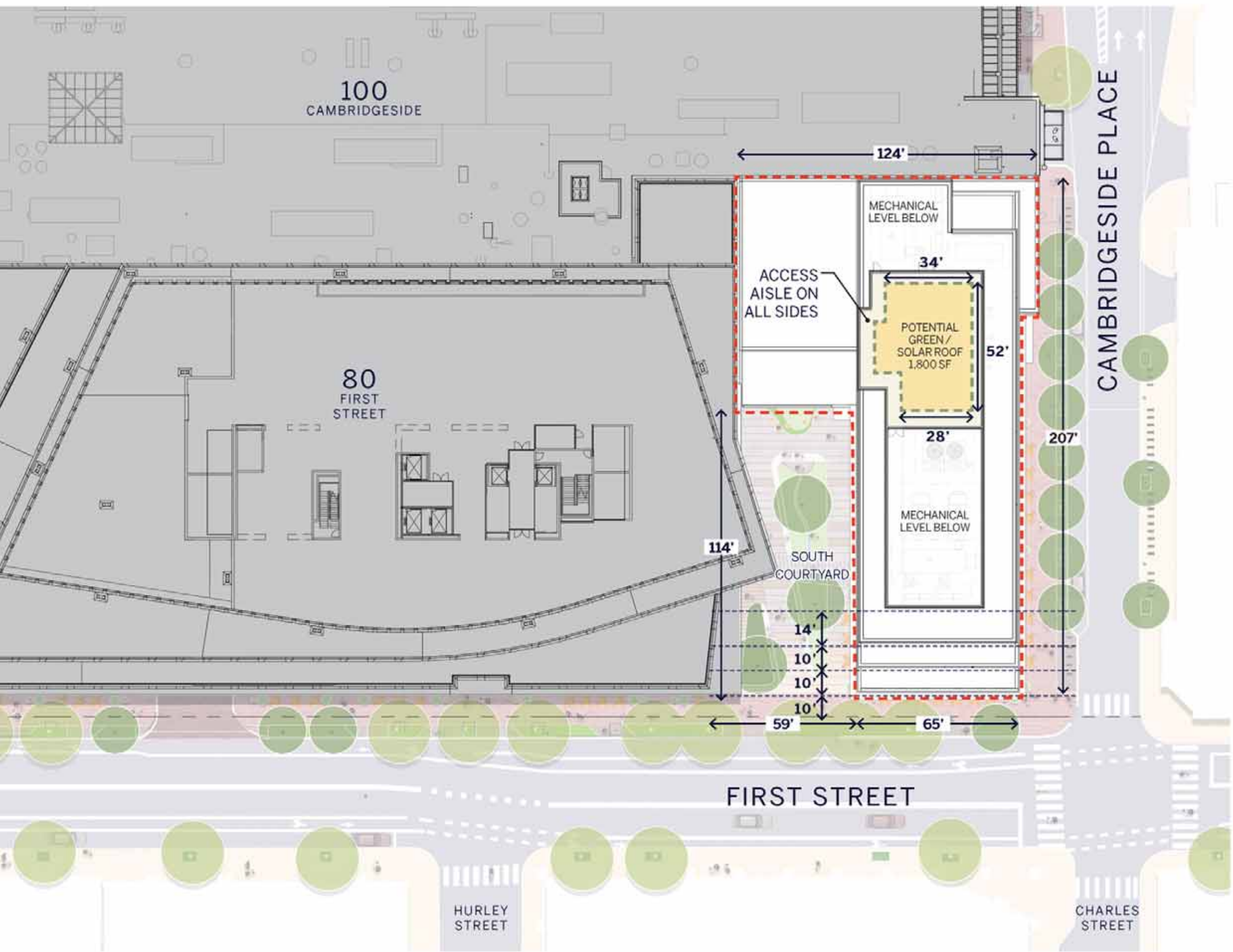
Building Design Review

150 CambridgeSide

ROOF PLAN

EXHIBIT 17

- Legend**
- BUILDING SITE
 - OTHER DEVELOPMENT
 - HIGH ROOF (2,755 SF)
 - GREEN/SOLAR ROOF POTENTIAL (1,800 SF)



Building Design Review

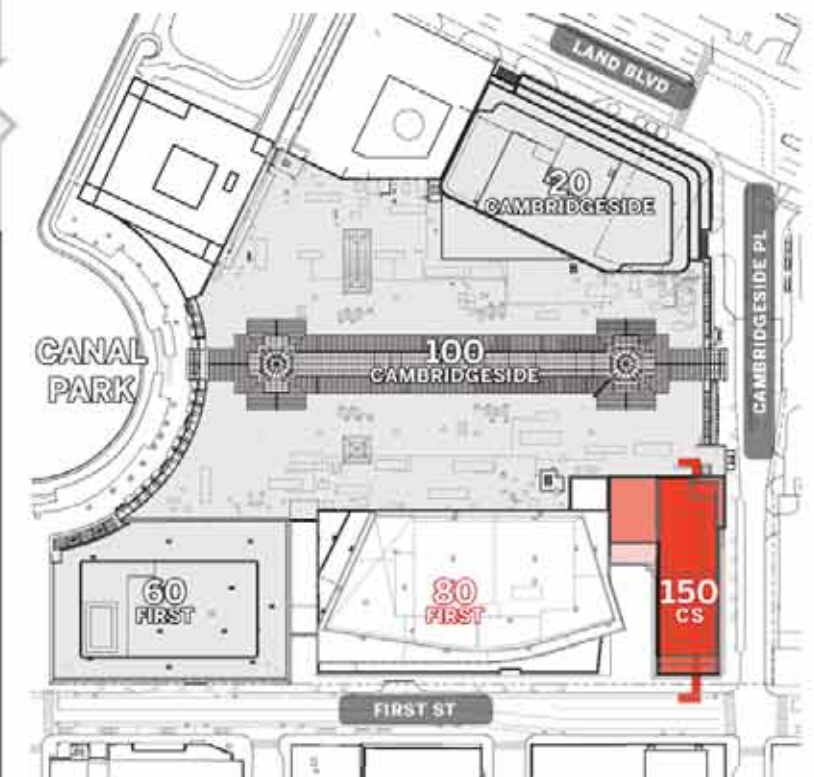
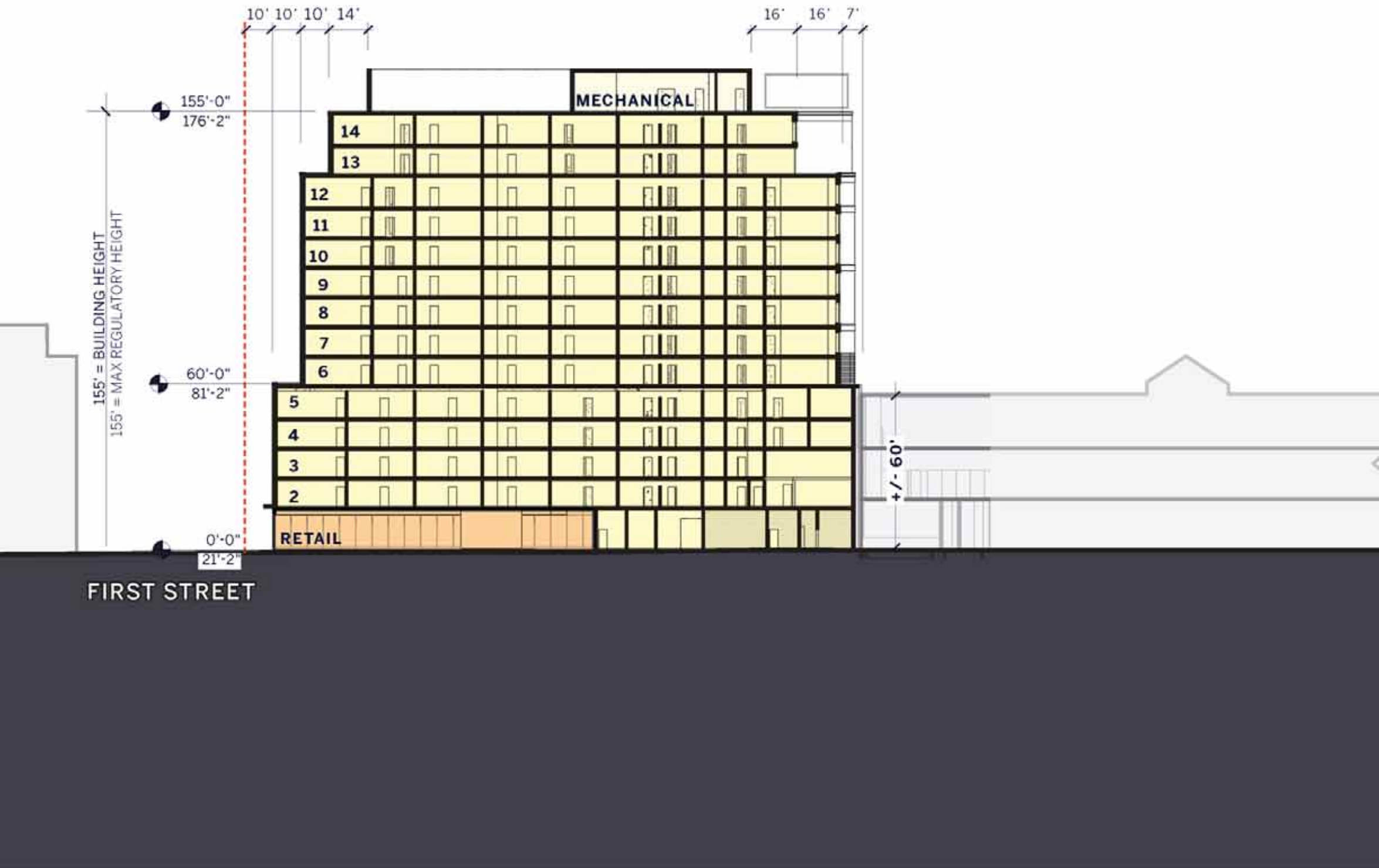
150 CambridgeSide

EAST / WEST SECTION

EXHIBIT 18

Legend

- BUILDING SITE
- RETAIL AND ACTIVE STOREFRONT
- RESIDENTIAL



Building Design Review

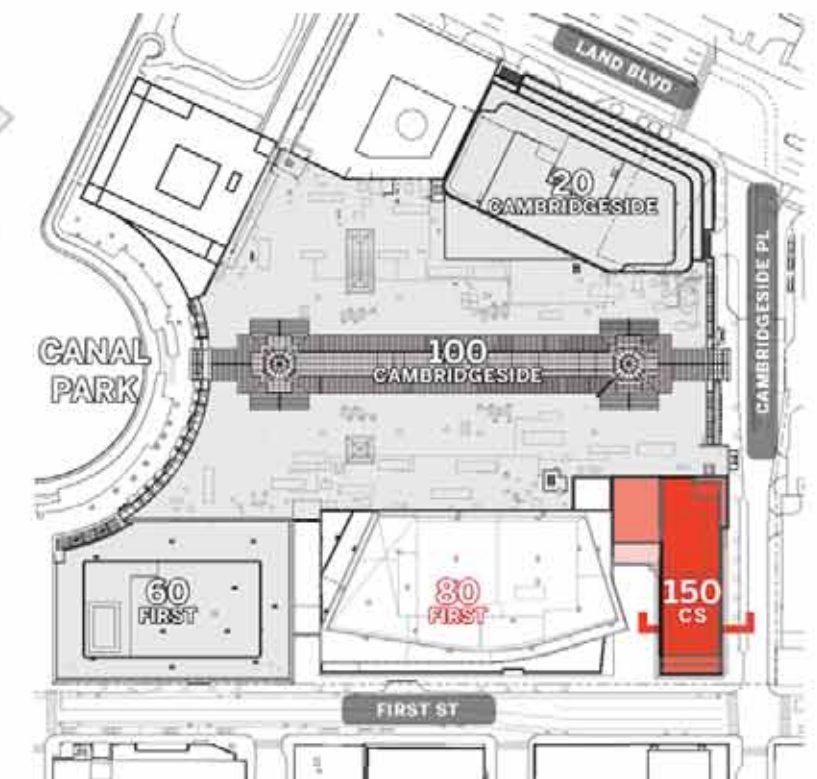
150 CambridgeSide

NORTH / SOUTH SECTION

EXHIBIT 19

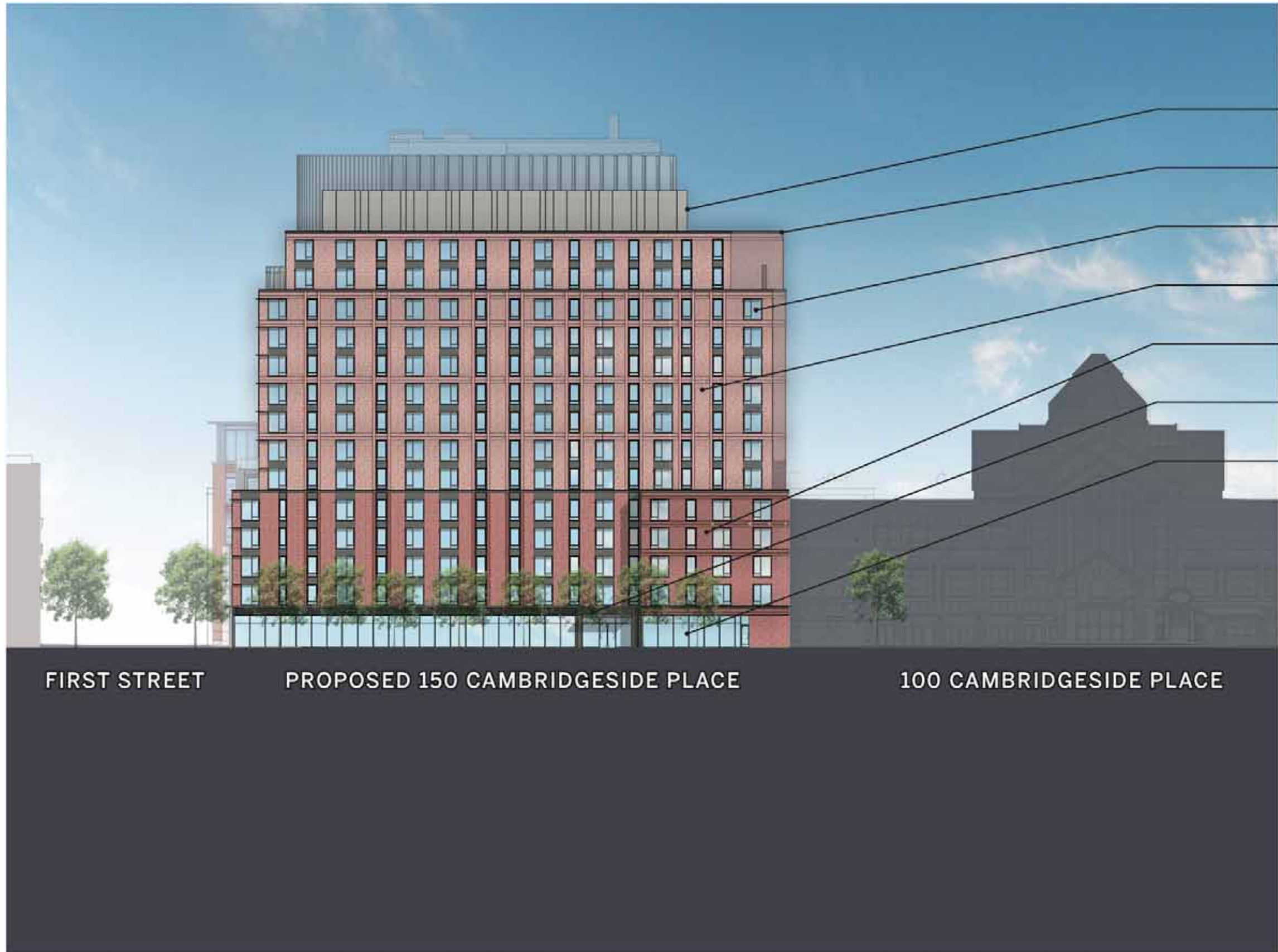
Legend

- BUILDING SITE
- RETAIL AND ACTIVE STOREFRONT
- RESIDENTIAL
- OTHER DEVELOPMENT



Building Design Review 150 CambridgeSide

SOUTH ELEVATION
EXHIBIT 20



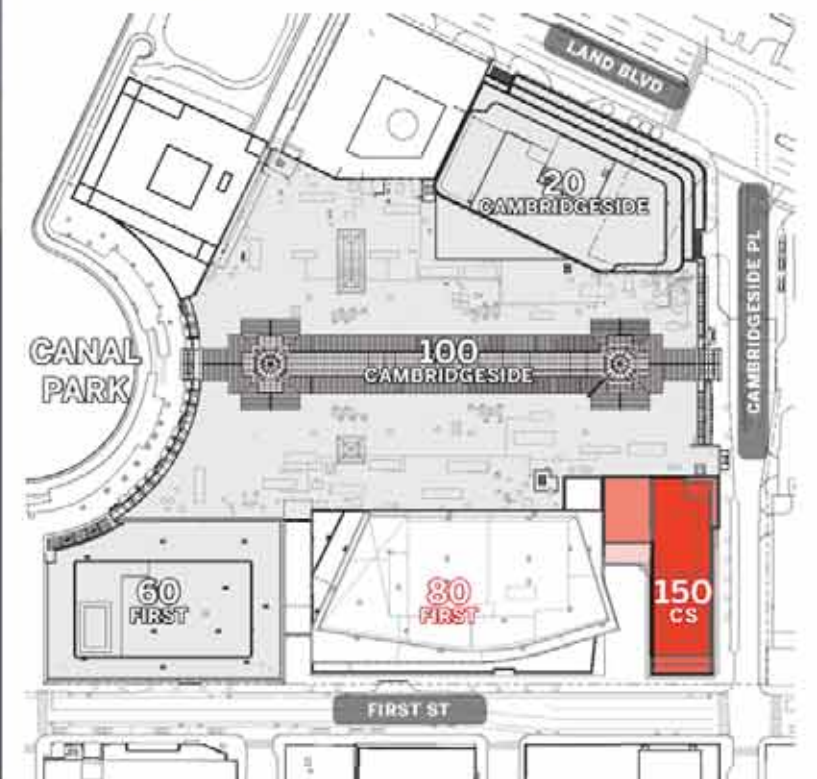
- FORMED METAL PANEL WALL
- ALUMINUM COPING
- ALUMINUM WINDOW WITH DOUBLE LOW-E GLAZING
- BRICK VENEER (TOWER COLOR)
- BRICK VENEER (PODIUM COLOR)
- ALUMINUM LOUVER
- LOW IRON GLAZING

55'-7"
76'-0"

FIRST STREET

PROPOSED 150 CAMBRIDGESIDE PLACE

100 CAMBRIDGESIDE PLACE



NEW ENGLAND
DEVELOPMENT

ELKUS | MANFREDI
ARCHITECTS



Building Design Review

150 CambridgeSide

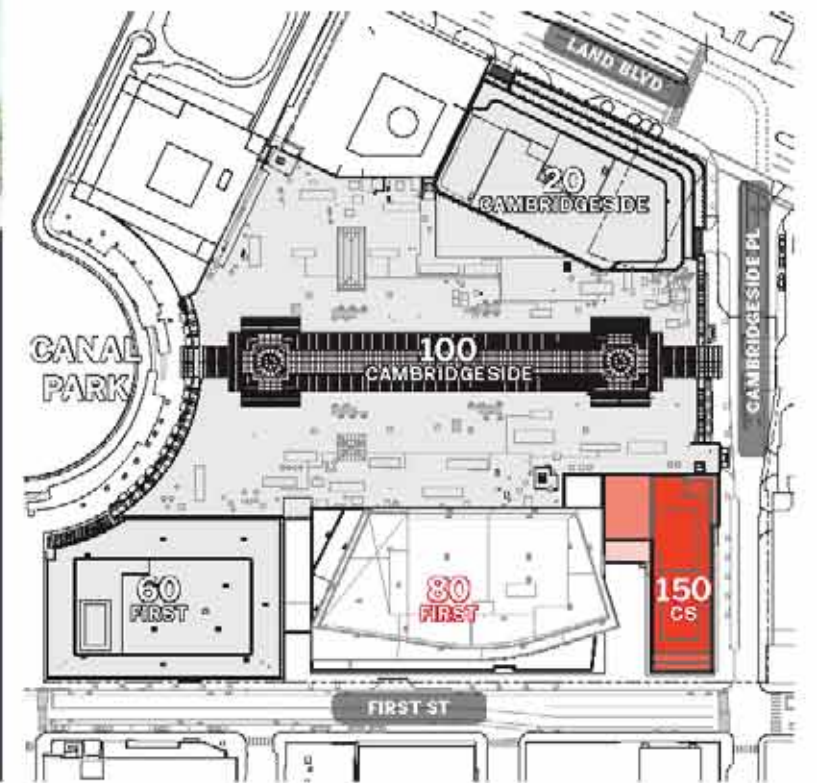
WEST ELEVATION
EXHIBIT 21



- FORMED METAL PANEL
- ALUMINUM COPING
- ALUMINUM WINDOW WITH DOUBLE LOW-E GLAZING
- BRICK VENEER (TOWER COLOR)
- BRICK VENEER (PODIUM COLOR)
- ALUMINUM LOUVER
- LOW IRON GLAZING

80 FIRST STREET

PROPOSED 150 CAMBRIDGESIDE PLACE



NEW ENGLAND
DEVELOPMENT

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ARCHITECTS



Building Design Review 150 CambridgeSide

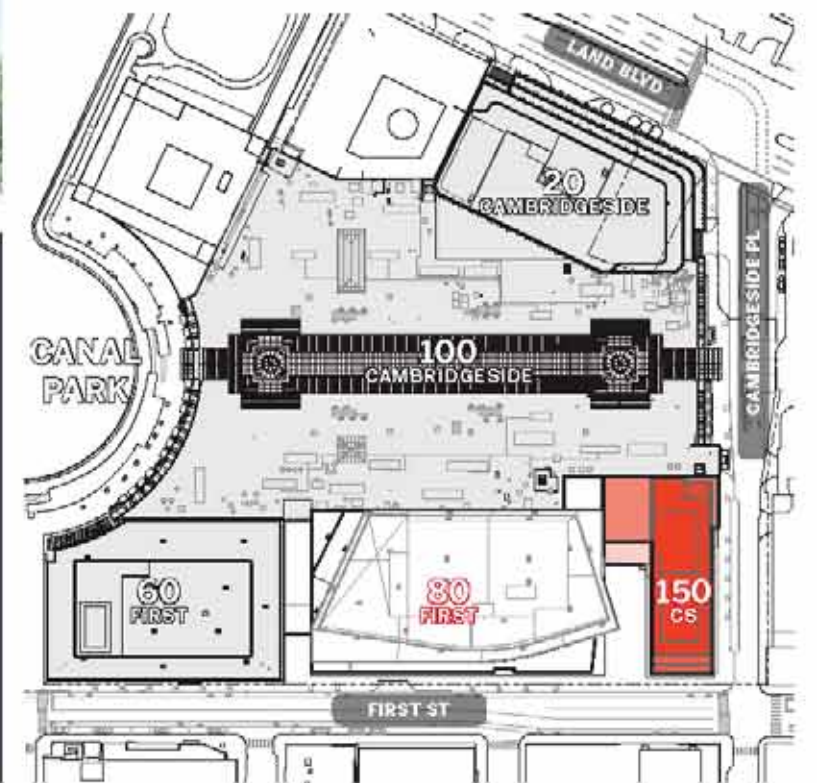
**NORTH ELEVATION
EXHIBIT 22**



- FORMED METAL PANEL
- ALUMINUM COPING
- ALUMINUM WINDOW WITH DOUBLE LOW-E GLAZING
- BRICK VENEER (TOWER COLOR)
- BRICK VENEER WALL (PODIUM COLOR)
- ALUMINUM LOUVER
- LOW IRON GLAZING

100 CAMBRIDGESIDE PLACE

PROPOSED 150 CAMBRIDGESIDE PLACE



**NEW ENGLAND
DEVELOPMENT**

**ELKUS | MANFREDI
ARCHITECTS**

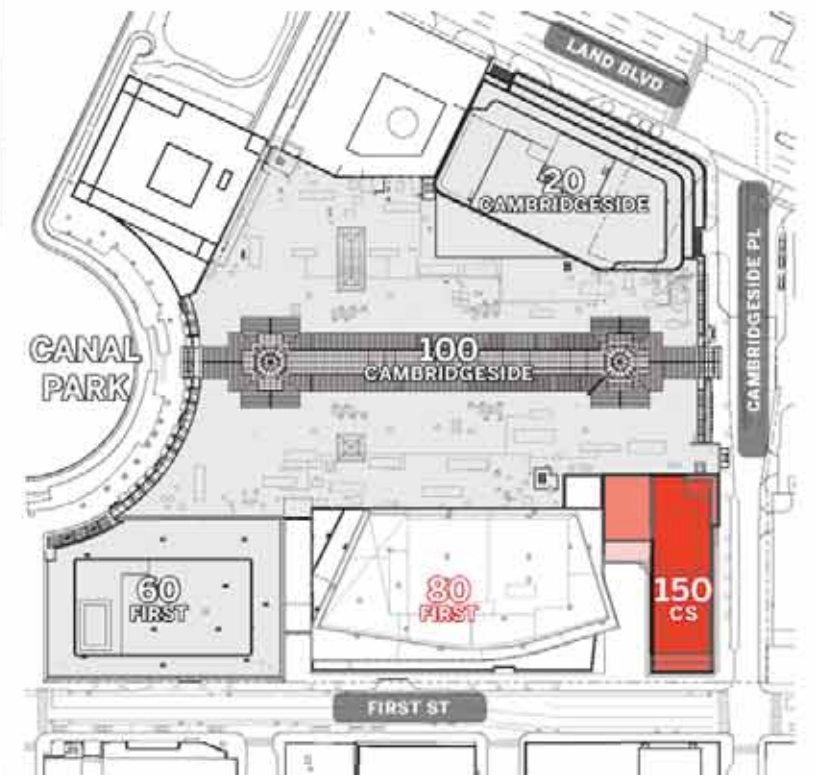


Building Design Review 150 CambridgeSide

EAST ELEVATION
EXHIBIT 23



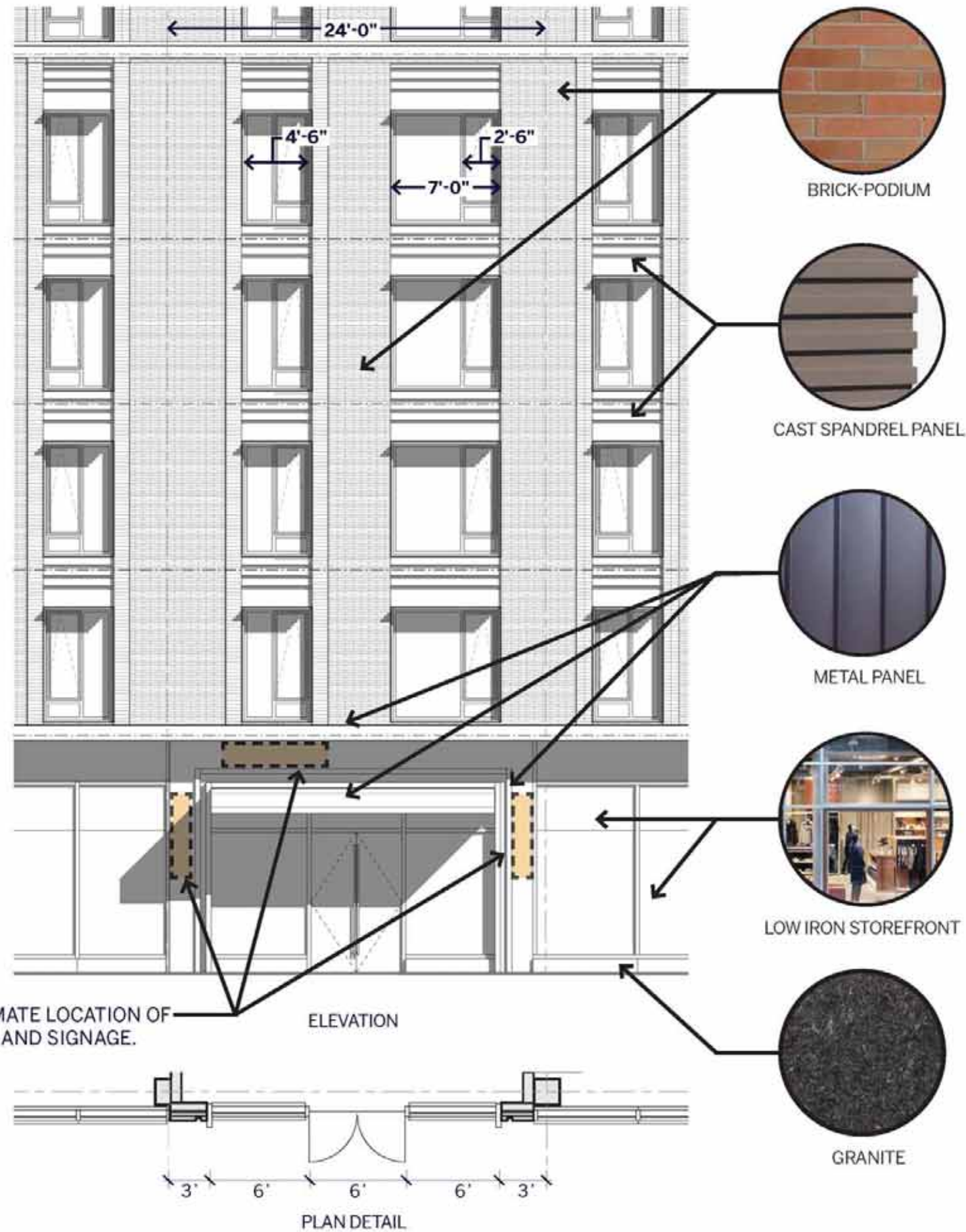
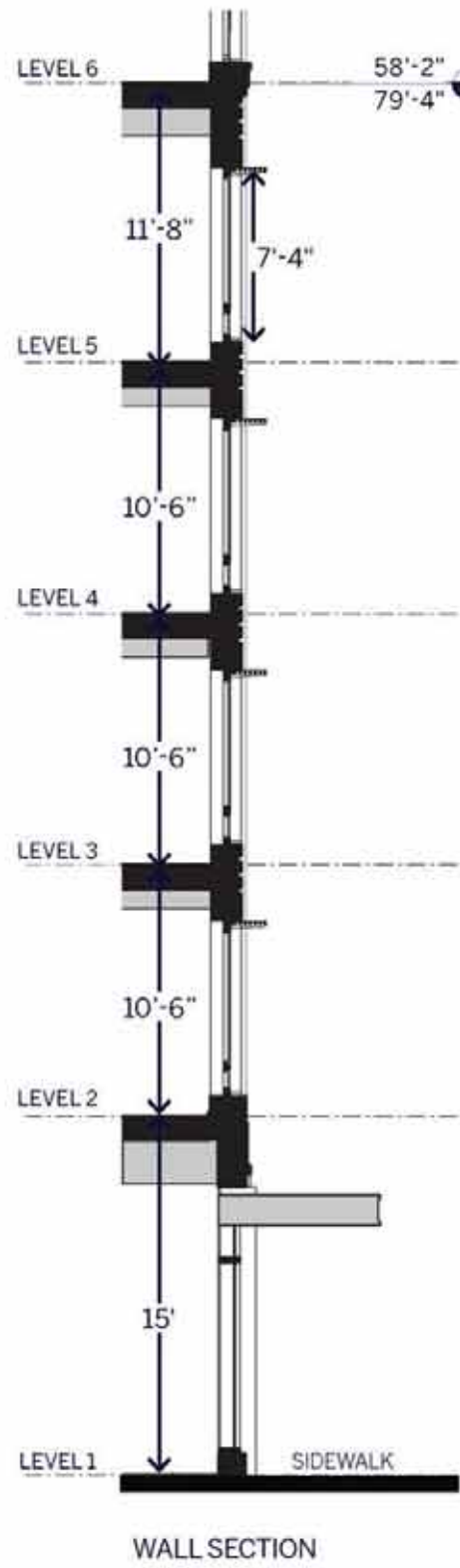
- FORMED METAL
- ALUMINUM COPING
- ALUMINUM WINDOW WITH DOUBLE LOW-E GLAZING
- BRICK VENEER (TOWER COLOR)



NEW ENGLAND
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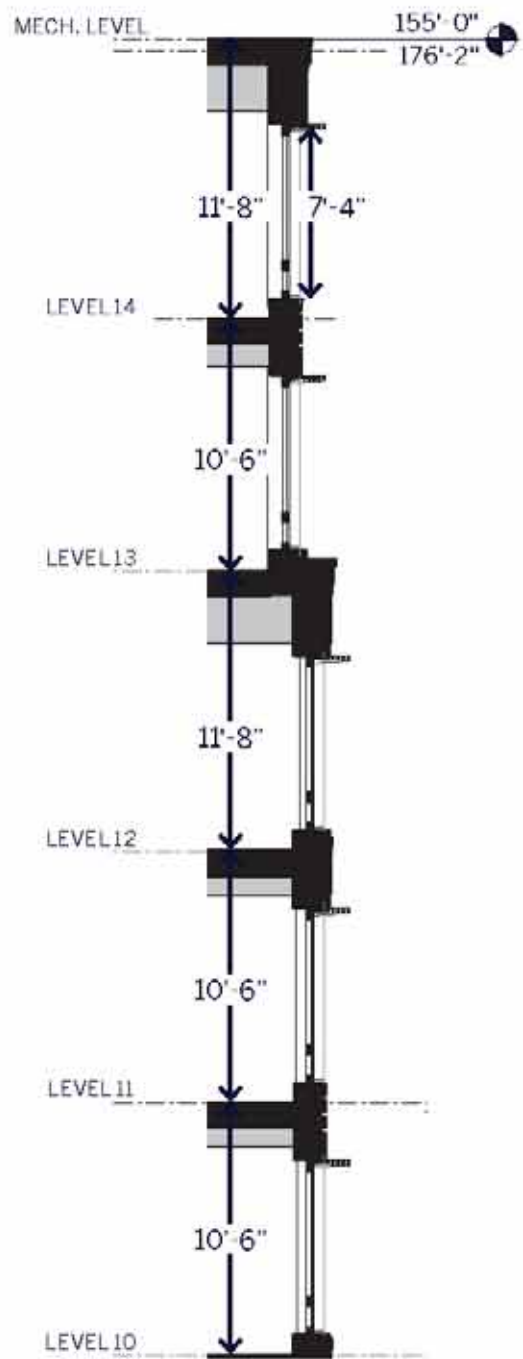
Building Design Review

150 CambridgeSide

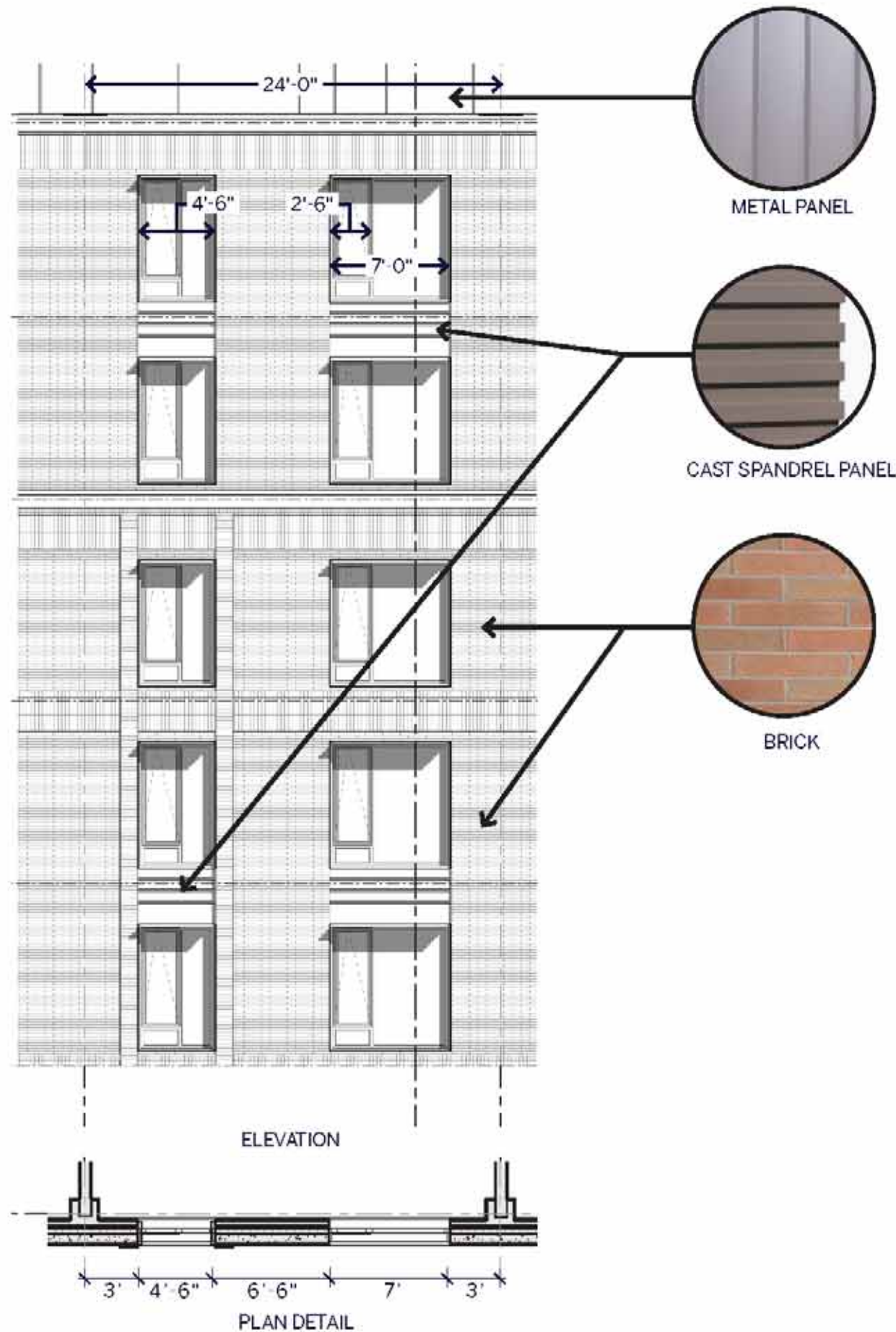
PODIUM FACADE DETAIL

EXHIBIT 24





WALL SECTION



ELEVATION

PLAN DETAIL



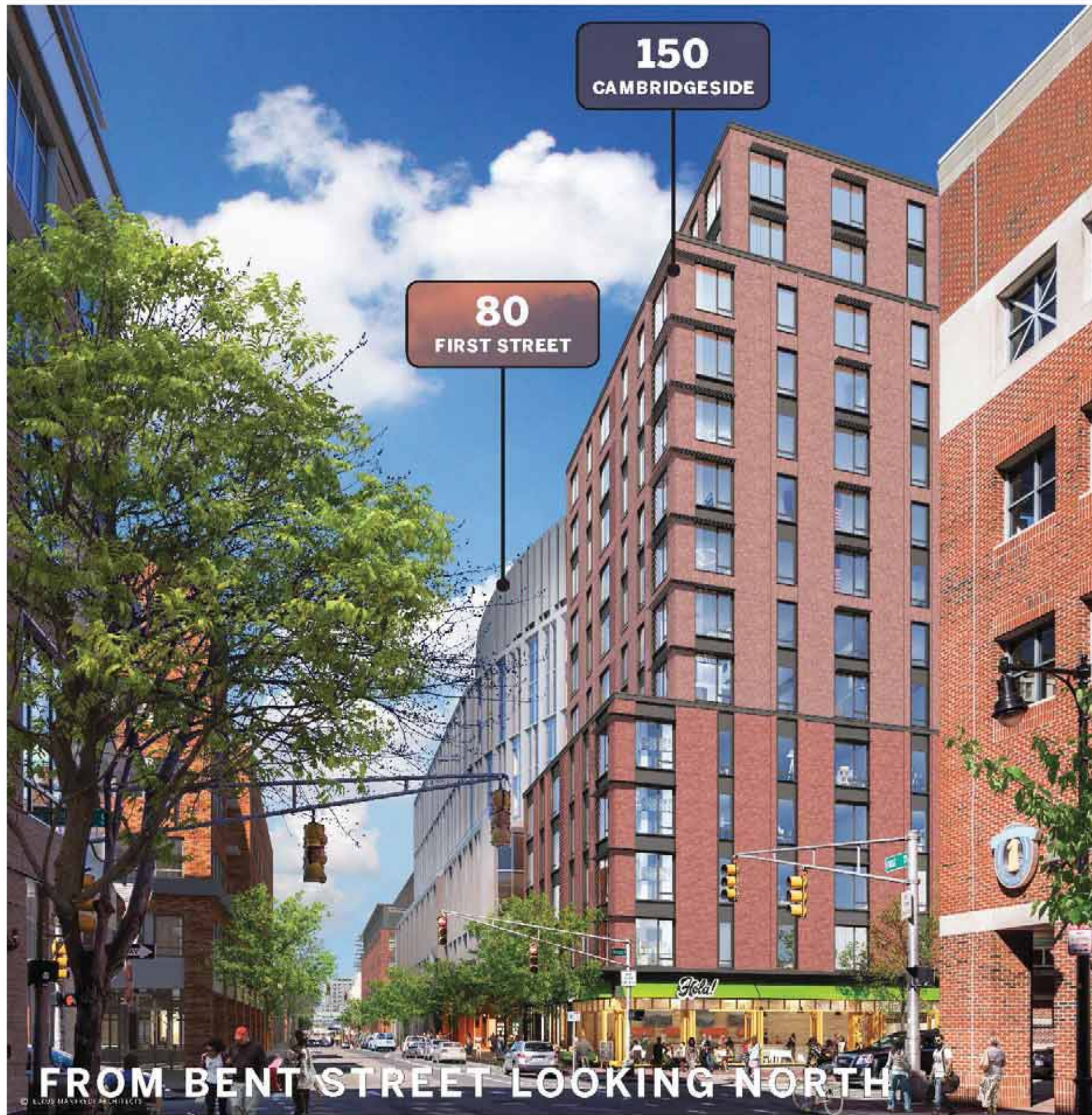
Building Design Review

150 CambridgeSide

UPPER FACADE DETAIL

EXHIBIT 25





150
CAMBRIDGESIDE

80
FIRST STREET

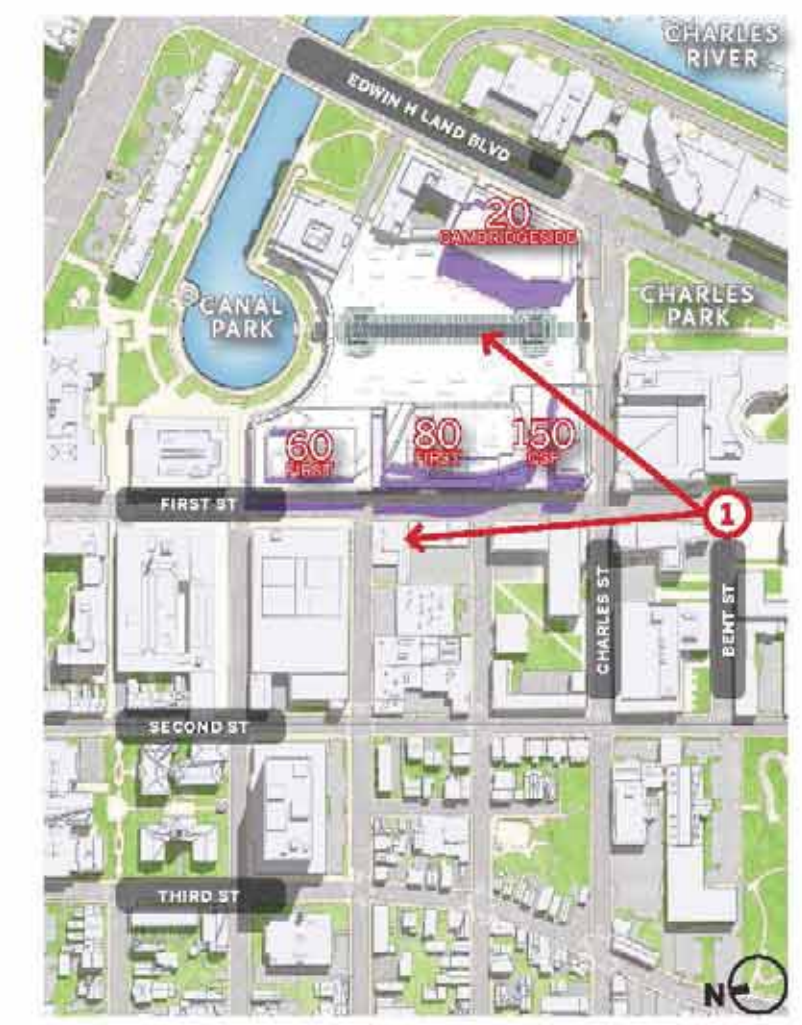
Hotel

FROM BENT STREET LOOKING NORTH

Building Design Review 150 CambridgeSide

PEDESTRIAN VIEW

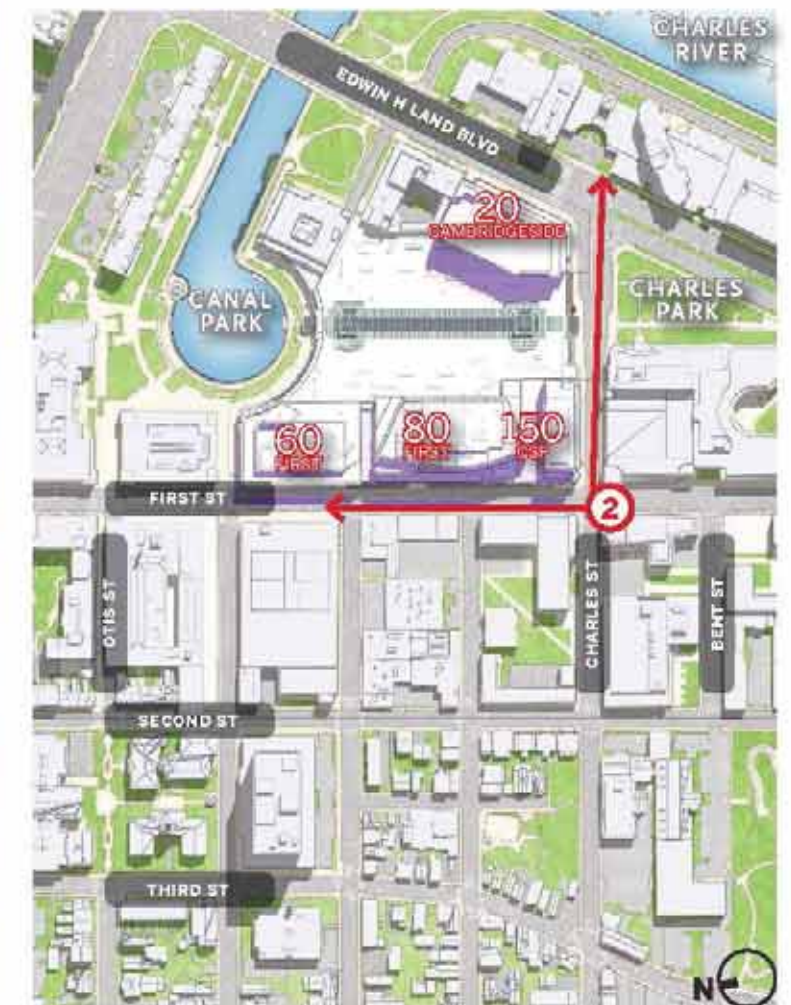
EXHIBIT 26



Building Design Review 150 CambridgeSide

PEDESTRIAN VIEW

EXHIBIT 27



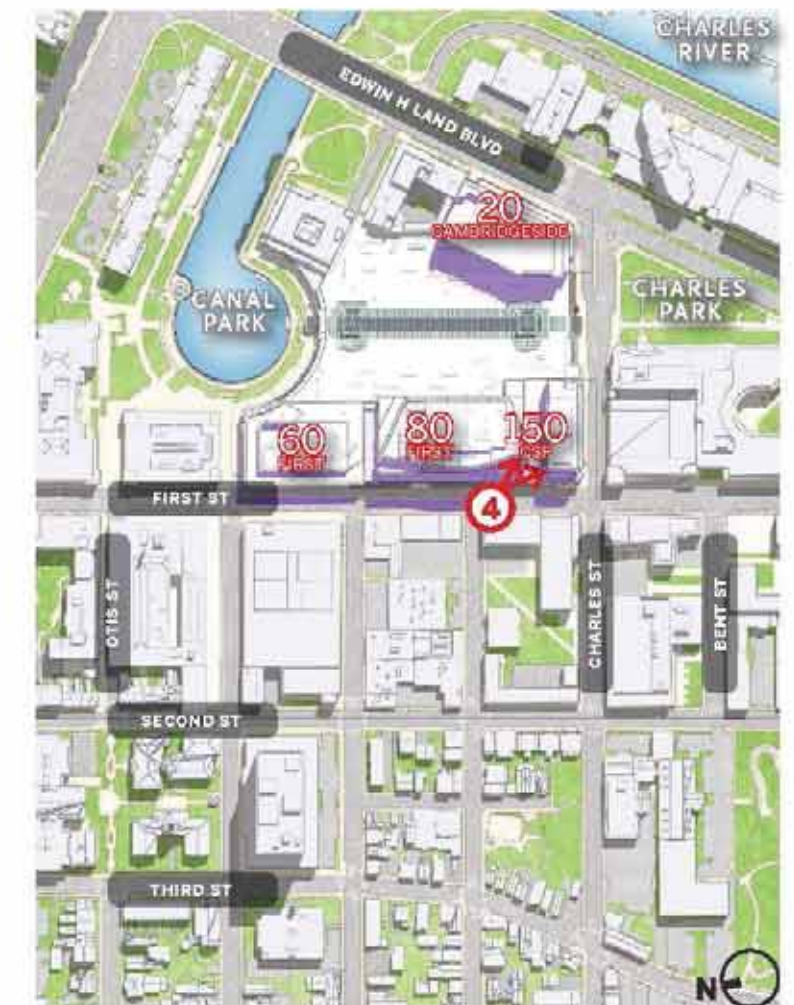
Building Design Review 150 CambridgeSide

PEDESTRIAN VIEW

EXHIBIT 28



FROM SOUTH COURTYARD LOOKING TOWARDS BUILDING



* FINAL PROGRAMMING OF THE NORTH POCKET PARK AND SOUTH COURTYARD WILL BE DETERMINED IN COORDINATION WITH THE OPEN SPACE AND RETAIL ADVISORY COMMITTEE AND IS NOT THE SUBJECT OF THIS DESIGN REVIEW APPLICATION

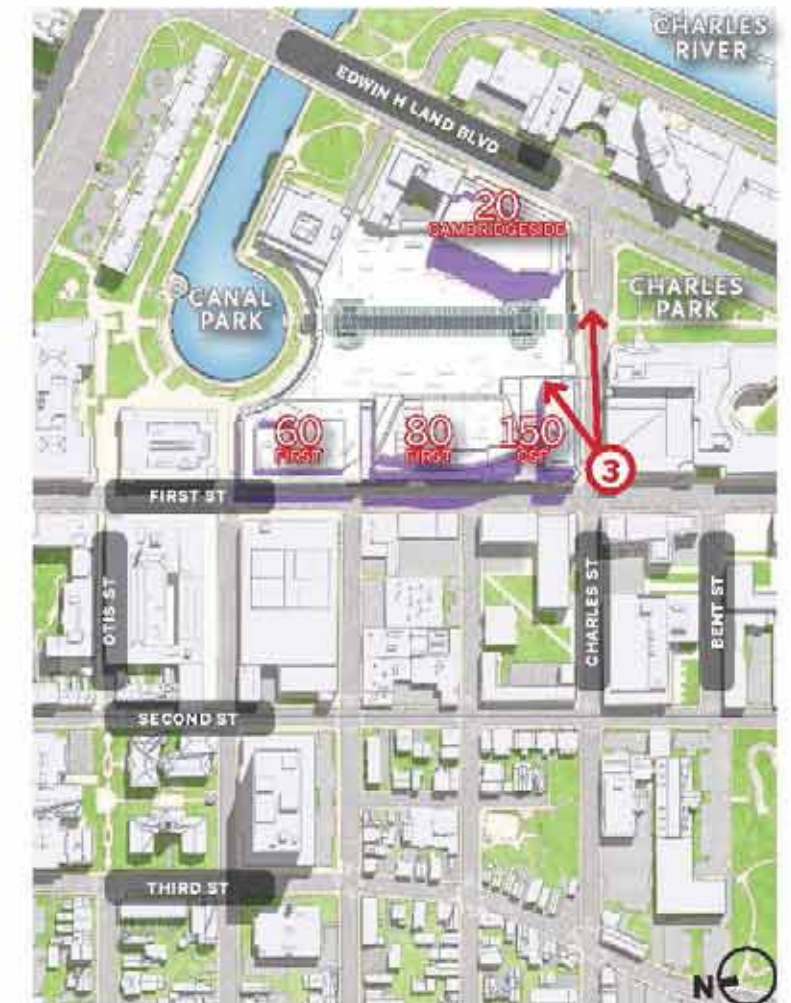
** FINAL DESIGN OF THE IMPROVEMENTS WITHIN THE FIRST STREET RIGHT OF WAY WILL BE COORDINATED WITH CITY PENDING OUTCOME OF THE FIRST STREET STUDY



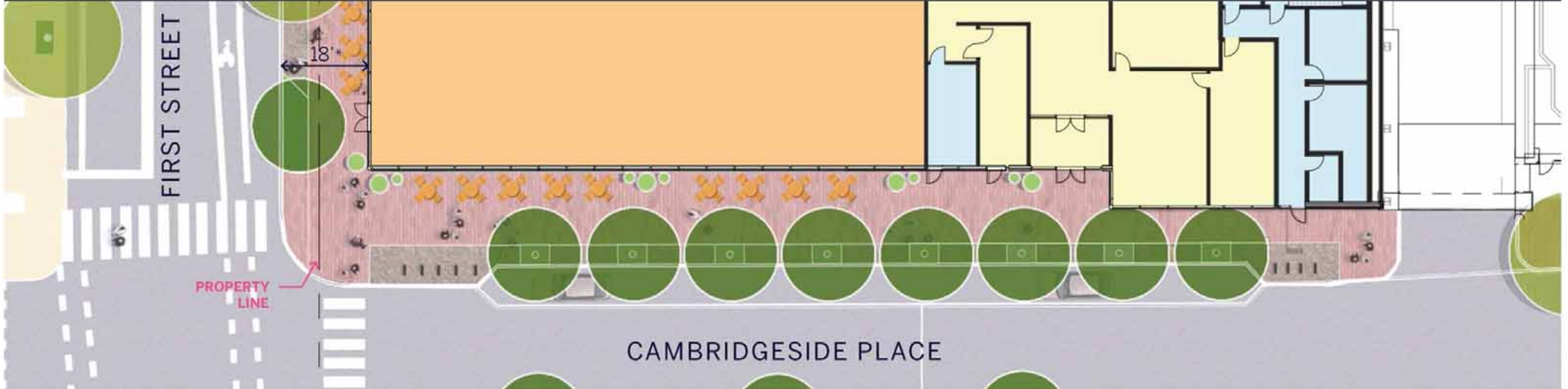
FROM CAMBRIDGESIDE PLACE LOOKING EAST

Building Design Review
150 CambridgeSide
 PEDESTRIAN VIEW: BUILDING ENTRY

EXHIBIT 29



Building Design Review
150 CambridgeSide
 PEDESTRIAN ZONE SOUTH FACADE
 EXHIBIT 30



SEE GROUND FLOOR ENTRY, LANDSCAPE MATERIALS AND PLANTING PLANS FOR ADDITIONAL DETAIL

* SIDEWALK DIMENSION FROM FACE OF BUILDING TO FACE OF CURB IS MEASURED USING THE EXISTING FIRST STREET LAYOUT AND IS APPROXIMATE AS THE CURB LINE MAY VARY. CURB LOCATION IS SUBJECT TO FINAL DESIGN OF THE FIRST STREET/SECOND STREET STUDY.

** FINAL DESIGN OF THE IMPROVEMENTS WITHIN THE FIRST STREET RIGHT OF WAY WILL BE COORDINATED WITH CITY PENDING OUTCOME OF THE FIRST STREET STUDY



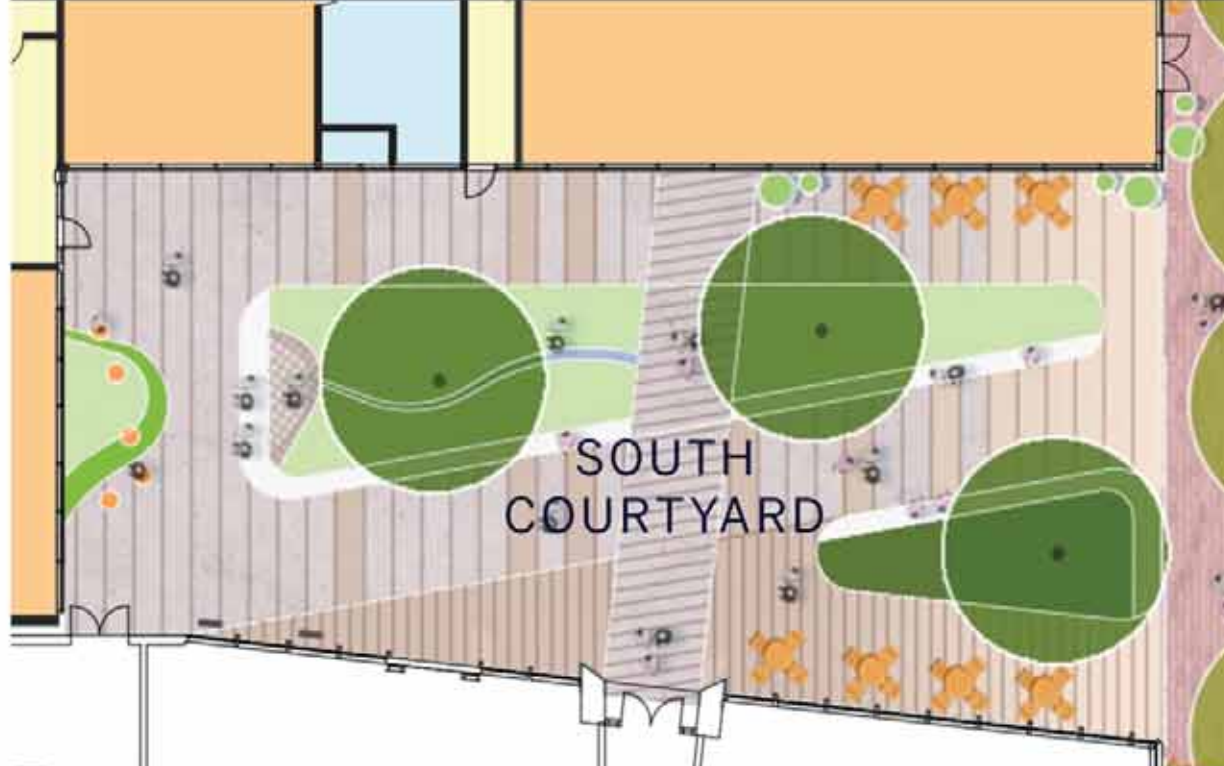
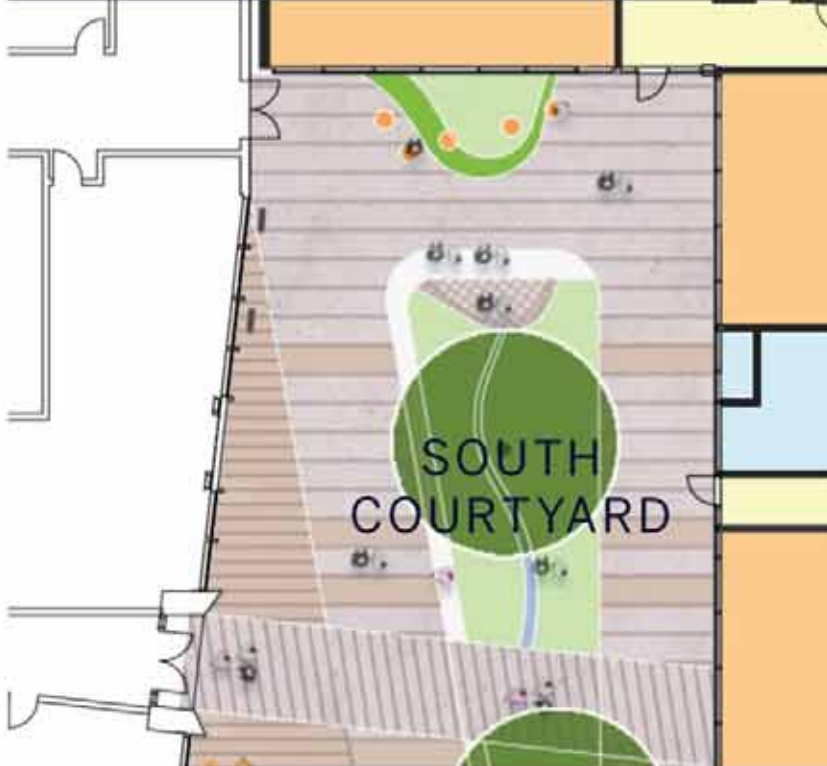
NEW ENGLAND
 DEVELOPMENT

ELKUS | MANFREDI
 ARCHITECTS



Building Design Review 150 CambridgeSide

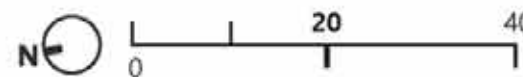
PEDESTRIAN ZONE WEST & NORTH FACADE
EXHIBIT 31



SEE GROUND FLOOR ENTRY, LANDSCAPE MATERIALS AND PLANTING PLANS FOR ADDITIONAL DETAIL

* SIDEWALK DIMENSION FROM FACE OF BUILDING TO FACE OF CURB IS MEASURED USING THE EXISTING FIRST STREET LAYOUT AND IS APPROXIMATE AS THE CURB LINE MAY VARY. CURB LOCATION IS SUBJECT TO FINAL DESIGN OF THE FIRST STREET/SECOND STREET STUDY.

** FINAL DESIGN OF THE IMPROVEMENTS WITHIN THE FIRST STREET RIGHT OF WAY WILL BE COORDINATED WITH CITY PENDING OUTCOME OF THE FIRST STREET STUDY




NEW ENGLAND
DEVELOPMENT

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Legend

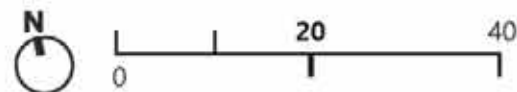
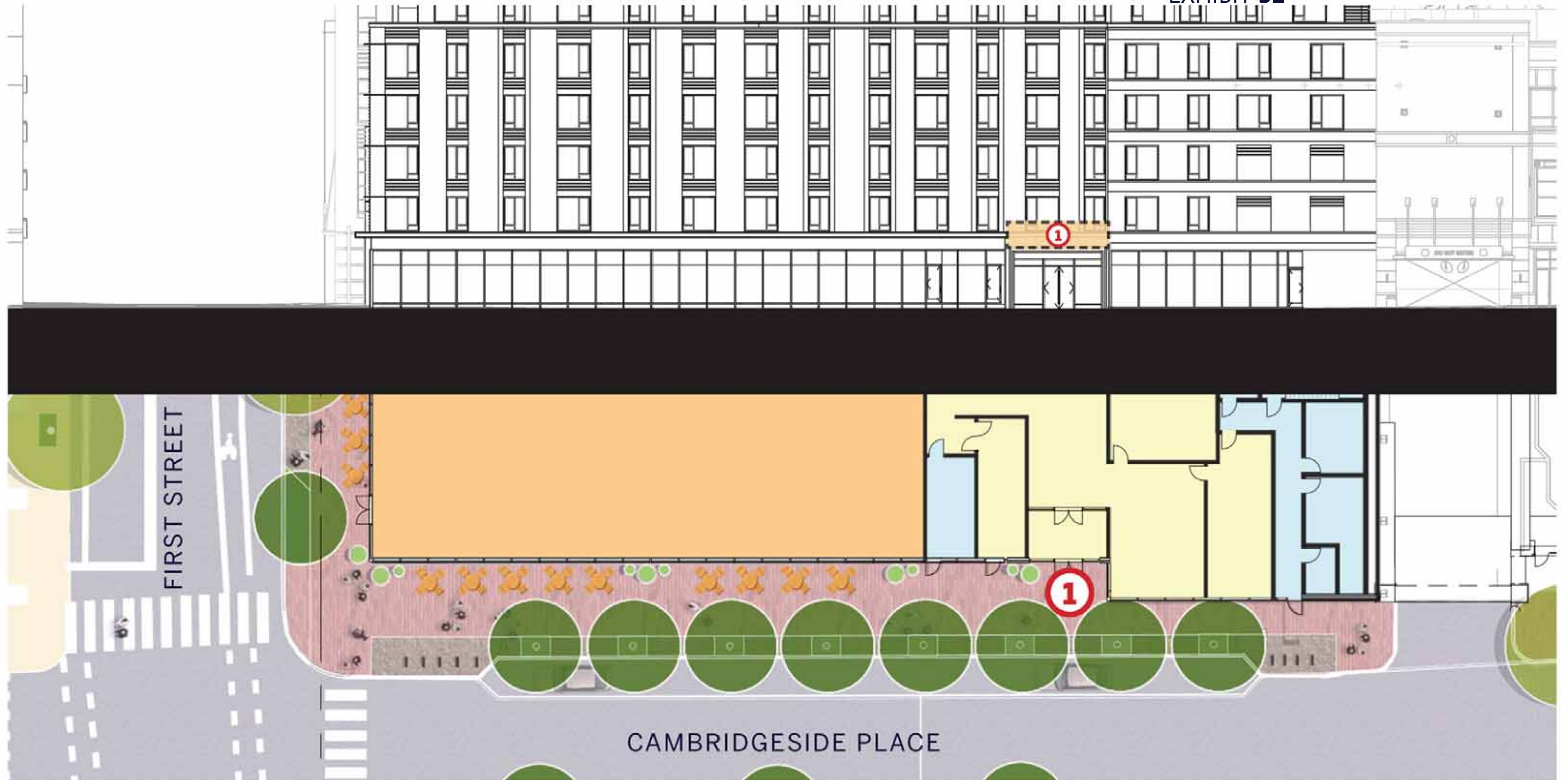
-  SIGNAGE ZONE
-  BUILDING ADDRESS

Building Design Review



150 CambridgeSide

BUILDING ADDRESS AND WAYFINDING SIGNAGE

EXHIBIT 32

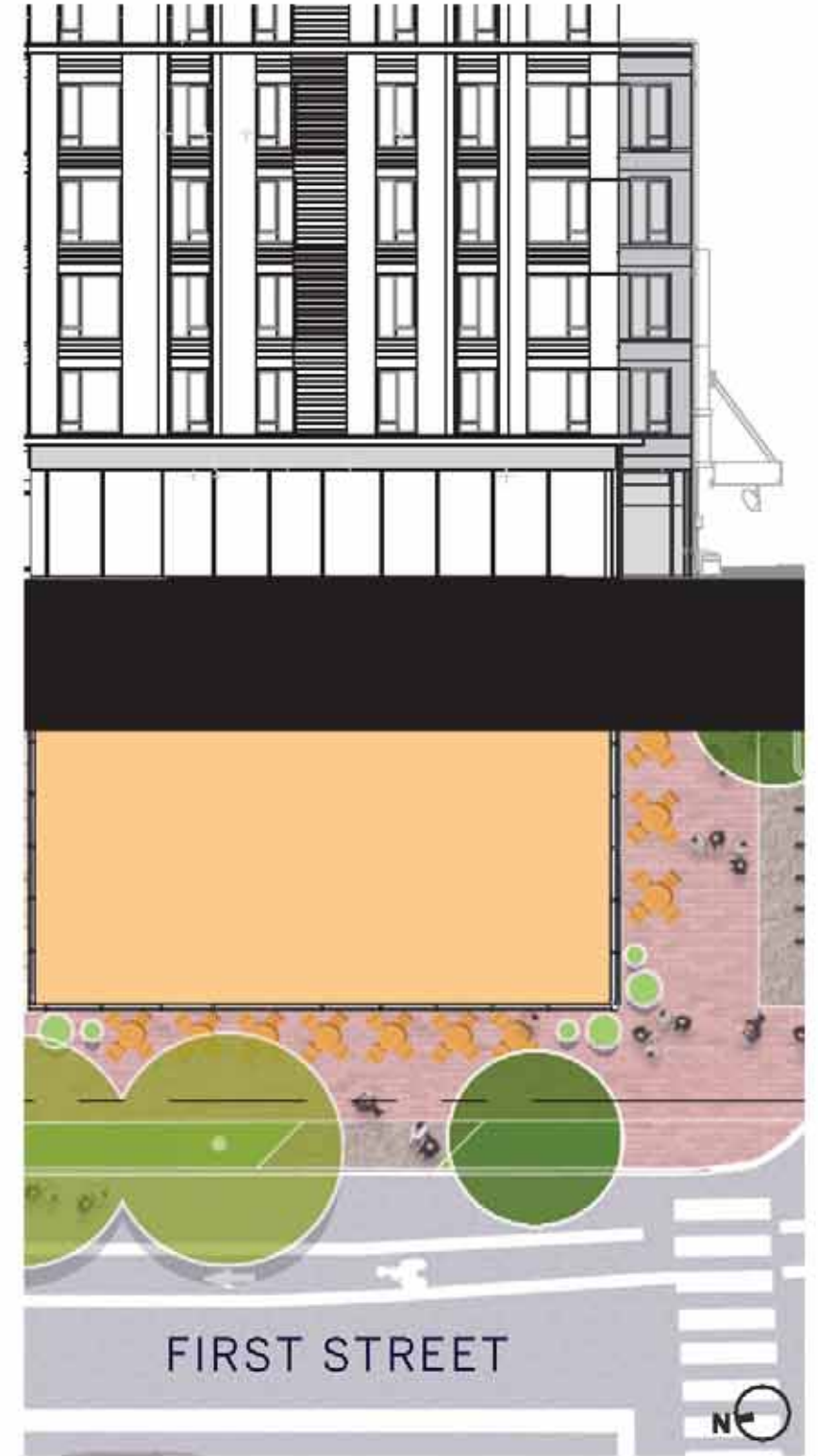
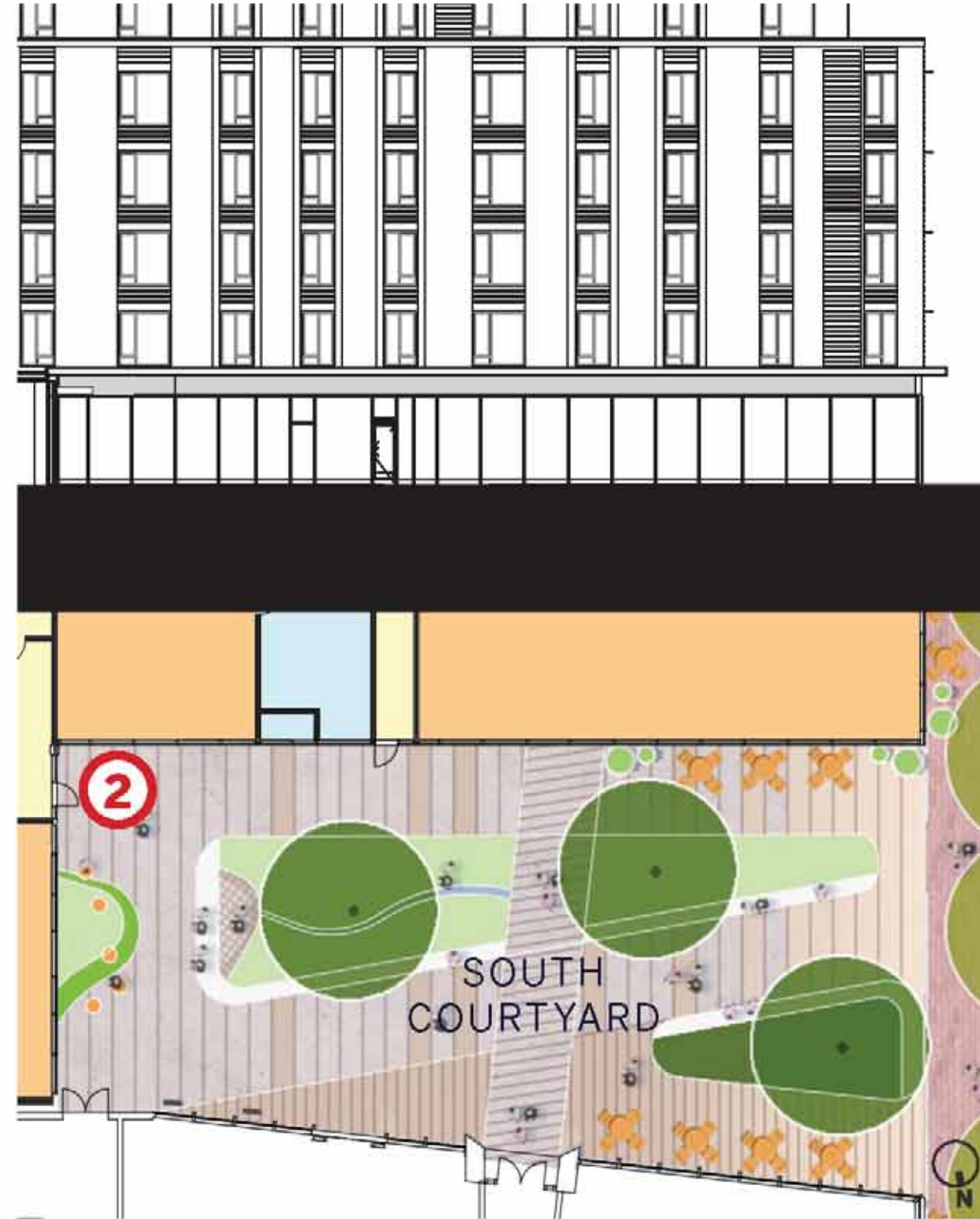


Legend

-  SIGNAGE ZONE
-  BUILDING ADDRESS

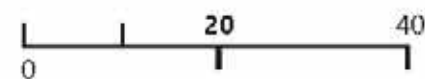
Building Design Review 150 CambridgeSide BUILDING ADDRESS AND WAYFINDING SIGNAGE

EXHIBIT 33



* FINAL PROGRAMMING OF THE NORTH POCKET PARK AND SOUTH COURTYARD WILL BE DETERMINED IN COORDINATION WITH THE OPEN SPACE AND RETAIL ADVISORY COMMITTEE AND IS NOT THE SUBJECT OF THIS DESIGN REVIEW APPLICATION

** FINAL DESIGN OF THE IMPROVEMENTS WITHIN THE FIRST STREET RIGHT OF WAY WILL BE COORDINATED WITH CITY PENDING OUTCOME OF THE FIRST STREET STUDY



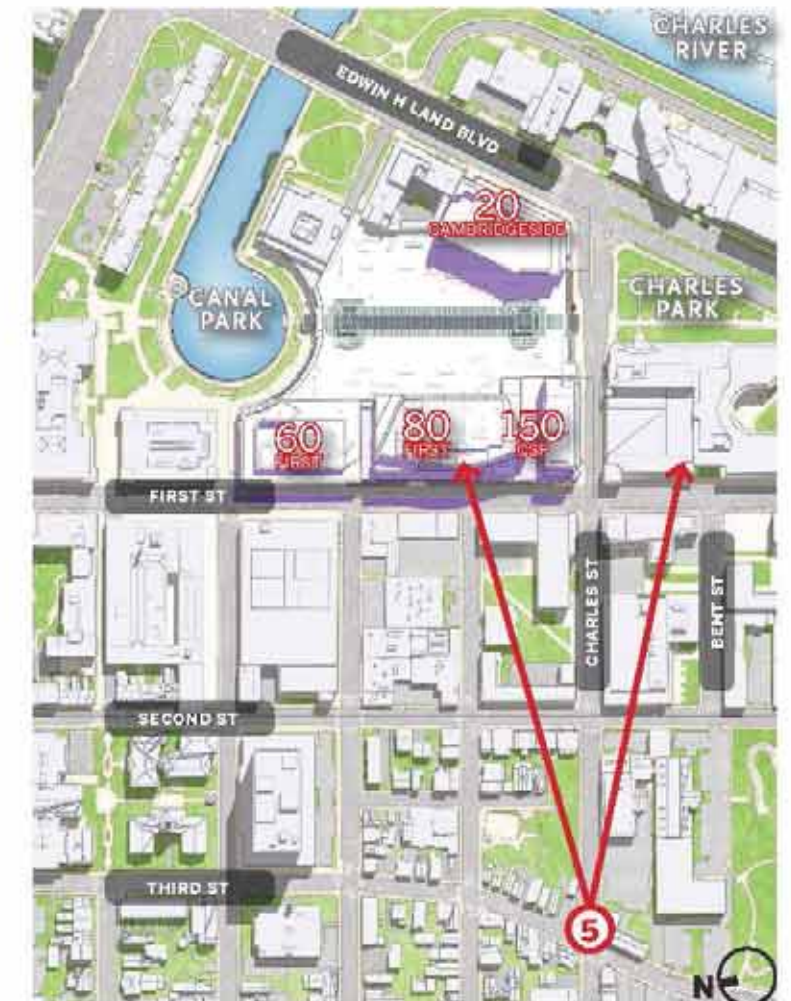
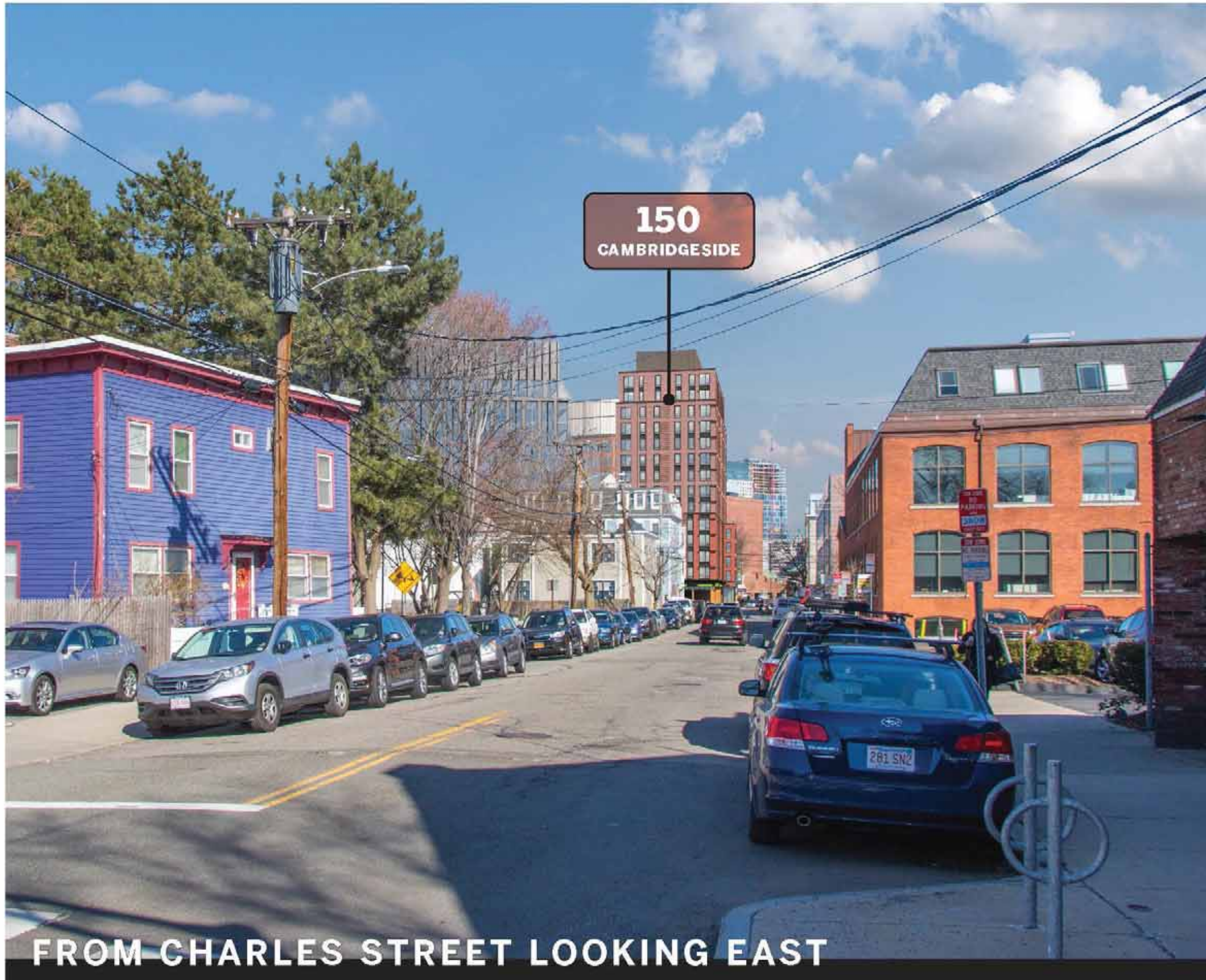


Building Design Review
150 CambridgeSide
EXTERIOR LIGHTING

EXHIBIT 34

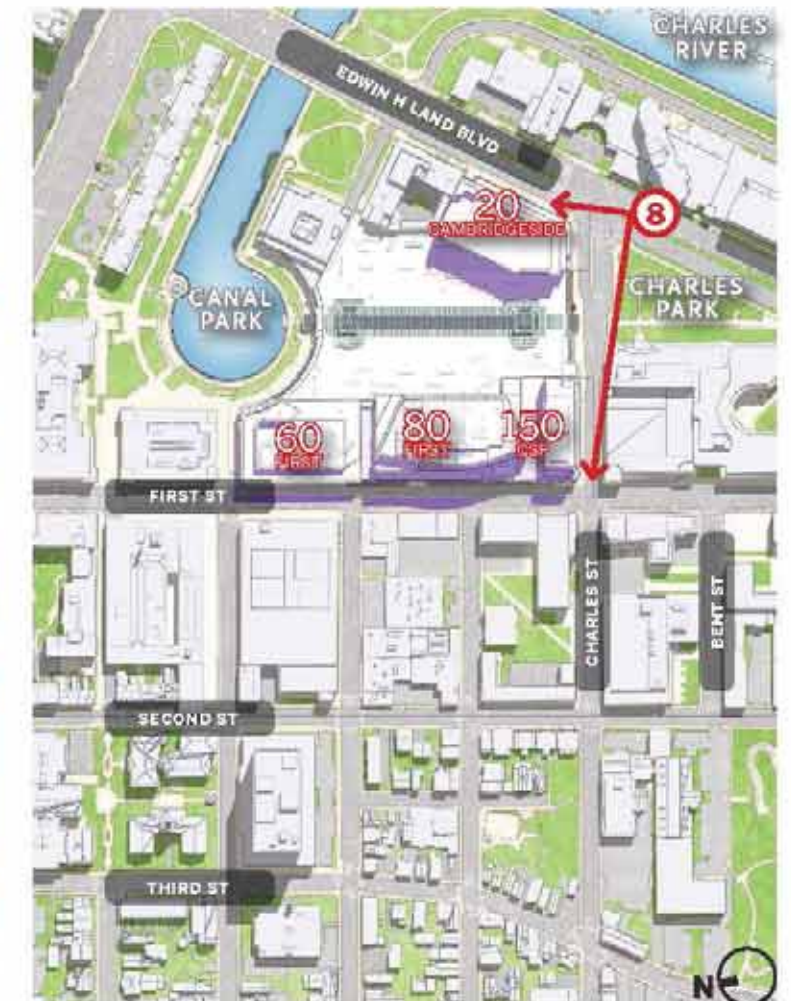
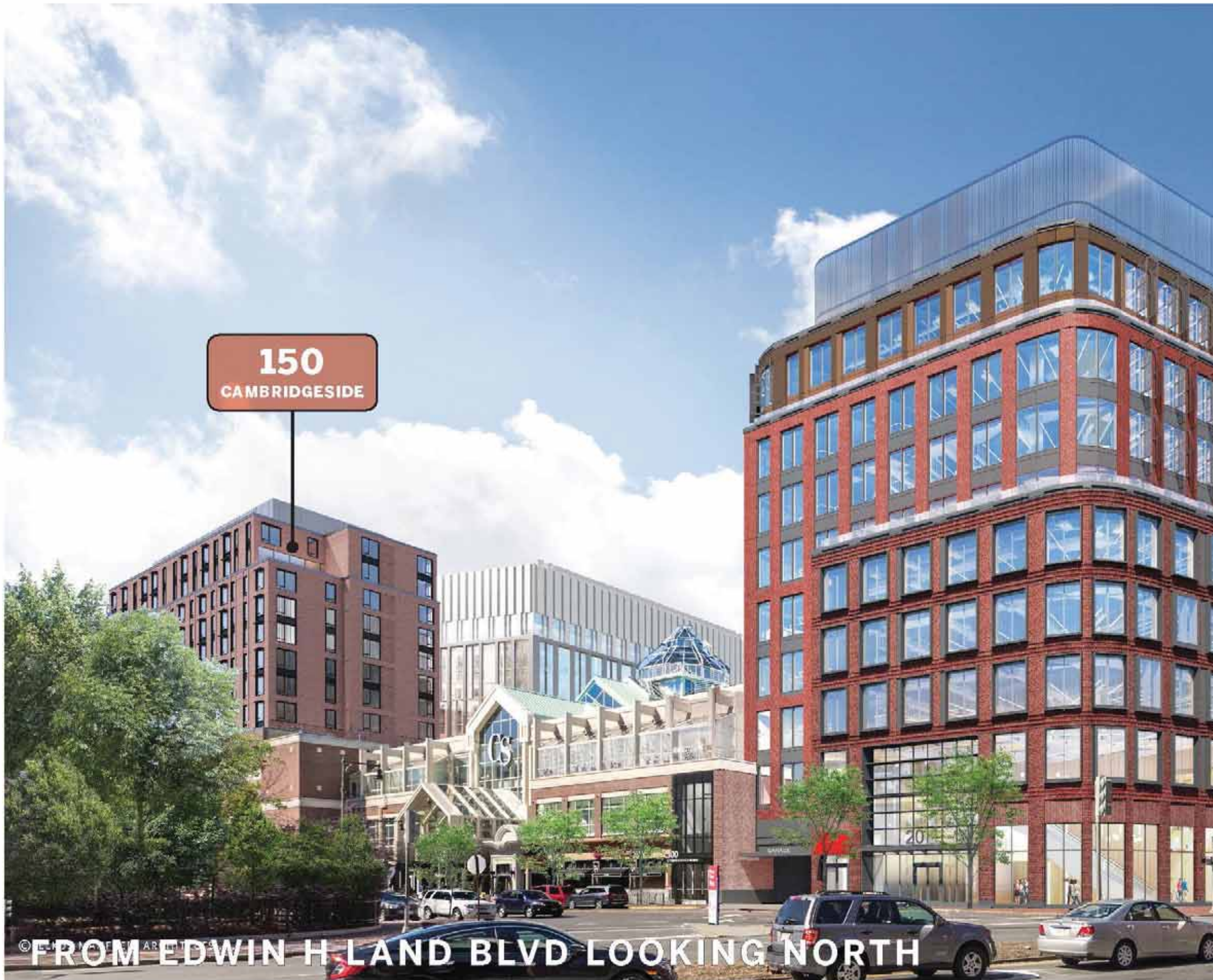
Building Design Review
150 CambridgeSide
PEDESTRIAN VIEW (DISTANT)

EXHIBIT 35



Building Design Review
150 CambridgeSide
PERSPECTIVE VIEW (DISTANT)

EXHIBIT 36



© L. D. ... ARCHITECTS
FROM EDWIN H LAND BLVD LOOKING NORTH

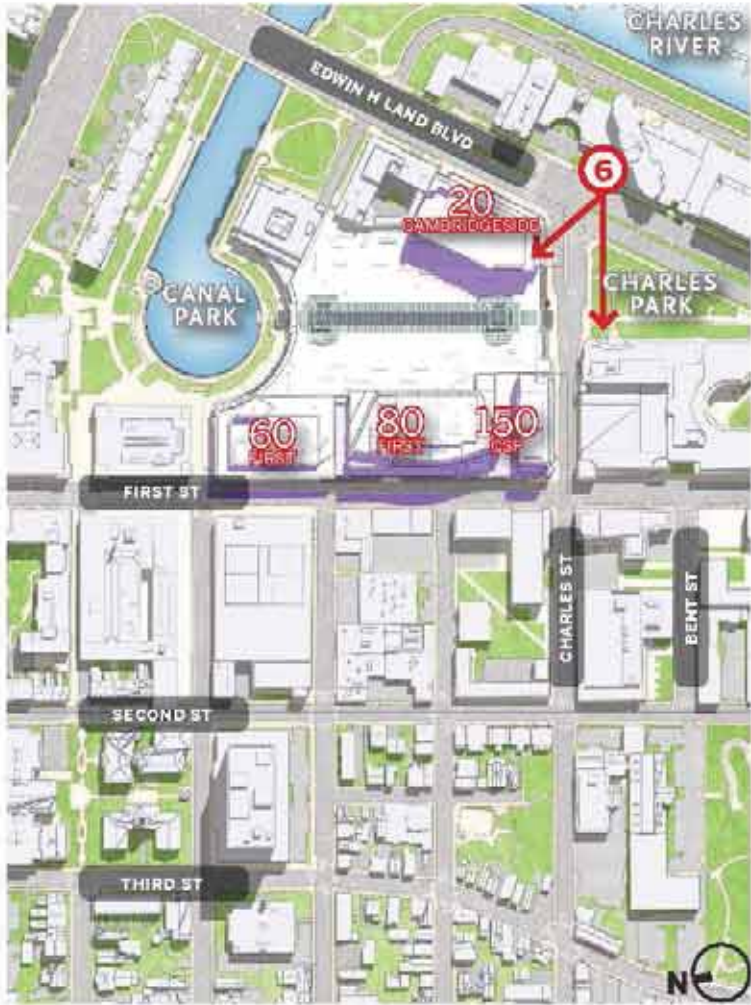


150
CAMBRIDGESIDE

FROM EDWIN H LAND BLVD LOOKING WEST

Building Design Review
150 CambridgeSide
PERSPECTIVE VIEW (DISTANT)

EXHIBIT 37

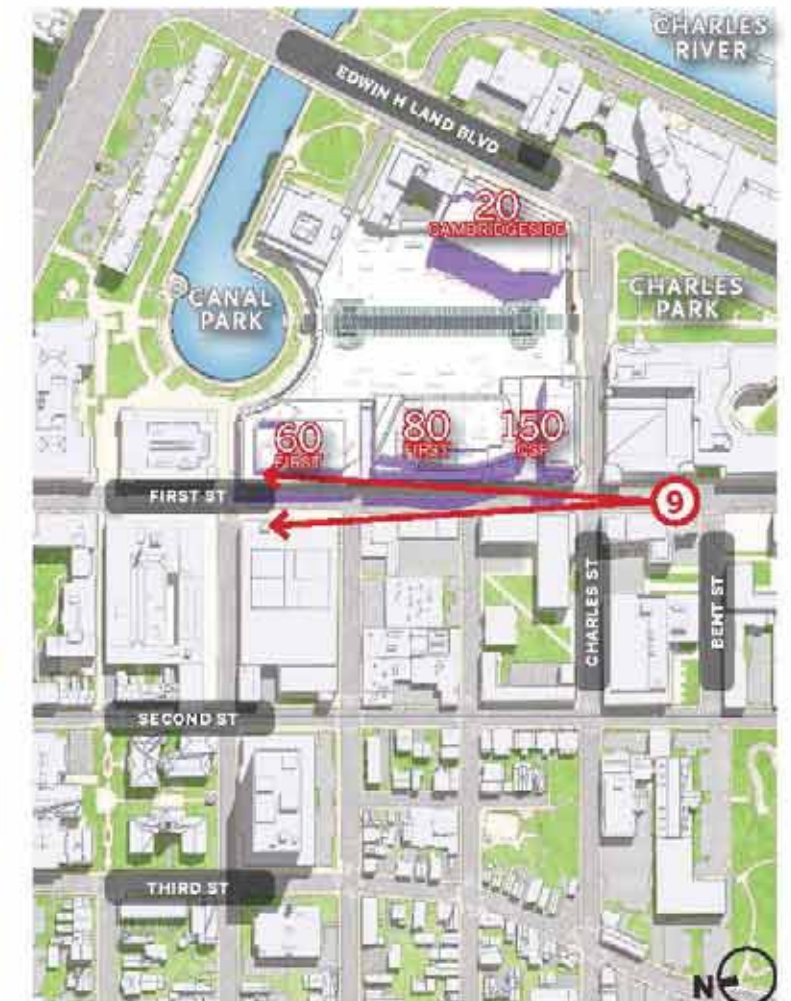




FROM FIRST STREET LOOKING NORTH

Building Design Review
150 CambridgeSide
 PEDESTRIAN VIEW

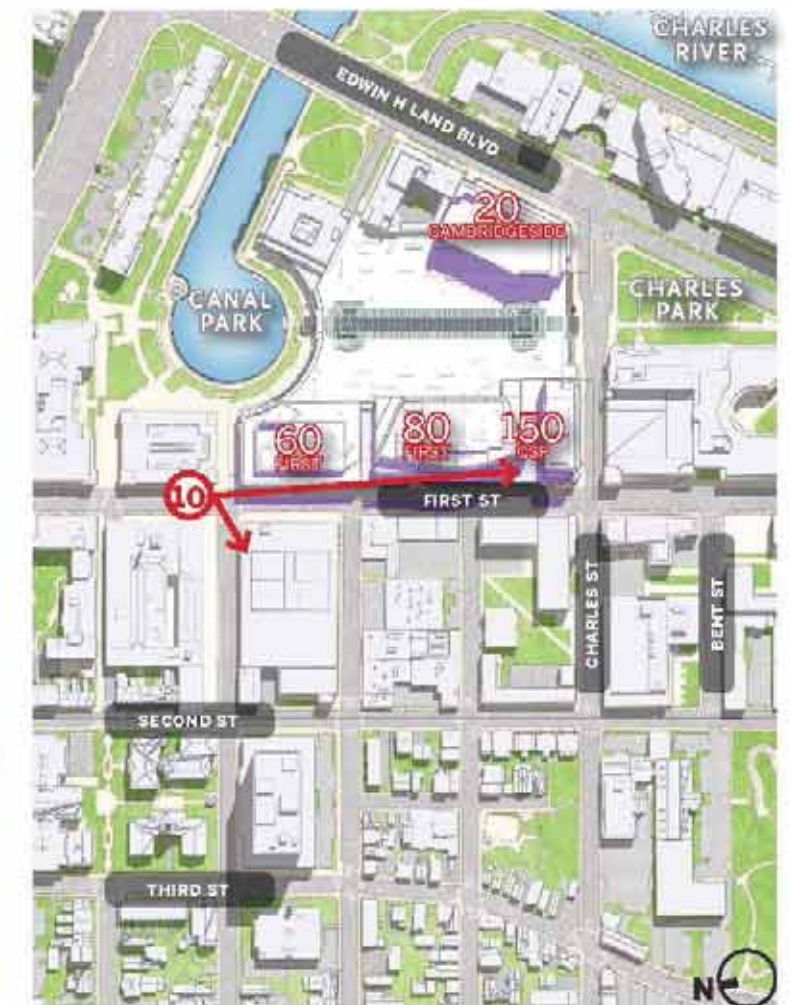
EXHIBIT 38





Building Design Review
150 CambridgeSide
 PERSPECTIVE VIEW (DISTANT)

EXHIBIT 39





Housing Plan

Housing Plan

The Project is anticipated to provide approximately 160-170 dwelling units and 175,000 square feet of Residential GFA in the new 150 Cambridgeside Place mixed-use building, which is currently anticipated to result in a total Dwelling Unit Net Floor Area of approximately 122,000 square feet.

The Applicant intentionally located the residential component near the East Cambridge neighborhood on the newly revitalized First Street, which will allow residents to benefit from convenient access to transit, jobs, shopping and outdoor amenities; and will promote connection with the East Cambridge neighborhood. New outdoor amenities includes a new Pocket Park and South Courtyard, and a widened sidewalk along First Street and Cambridgeside Place, which are associated with development of the new First Street buildings.

In response to the City’s need for affordable housing options, the Applicant committed to devoting the majority of the Dwelling Unit Net Floor Area – 65% - to affordable housing. 30% will be devoted to Affordable Dwelling Units created through Inclusionary Housing (as defined in Section 11.200 of the City of Cambridge Zoning Ordinance) and an additional 35% will be devoted to Middle Income Units (as defined in Section 13.104.1(d)(3) of the Ordinance). All 20 Family-Sized Dwelling Units at the Project will be subject to affordability restrictions in compliance with Section 13.104.1(d)(4) of the Ordinance.

After initial discussion with the City’s Housing Department, the Applicant reallocated the mix of units to provide a greater number of two-bedroom units than were initially anticipated. The addition of larger units results in an overall decrease in the total number of units, and is reflected in the currently anticipated total unit count (160 – 170 units). While the Applicant will generally aim to provide a similar mix of affordable and market rate units in compliance with Article 11.200, the Applicant will continue to consult with the City’s Housing Department as the project is developed, to identify the appropriate allocation of units in response to the City’s needs. For example, the provision of a disproportionate number of larger Inclusionary and Middle Income Units may be pursued.

The unit types will range from studio units to three-bedroom Family-Sized Dwelling Units. Of the estimated 160-170 units, it is currently anticipated that the mix of units will be as follows: 35-40 studio units ranging in size from 400-450 square feet; 70-75 one-bedroom units ranging in size from 500-650 square feet; 35-45 two-bedroom units ranging in size from 830-1,050 square feet; and 20 three-bedroom Family-Sized Dwelling Units ranging in size from 1,100-1,200 square feet. The Project includes approximately 9,000 square feet of lobby, bike storage and tenant storage space and approximately 5,500 square feet of amenity space including common lounges, study/work space and fitness/wellness space.

Unit Summary							
FLOOR	Studio	1 BR			2 BR	3 BR	Total
		Junior	Standard	1+Den	Standard		
1	0	0	0	0	0	0	0
2	1	0	4	0	2	3	10
3	1	3	4	0	2	3	13
4	1	3	4	0	2	3	13
5	1	3	4	0	2	2	12
6	3	1	3	2	3	1	13
7	3	1	3	1	4	1	13
8	3	1	3	1	4	1	13
9	3	1	3	1	4	1	13
10	3	1	3	1	4	1	13
11	3	1	3	1	4	1	13
12	3	1	3	1	4	1	13
13	1	1	3	1	3	1	10
14	1	1	3	2	3	1	11
SUBTOTAL	27	18	43	11	41	20	160
	Studio	1BR			2BR	3BR	
TOTAL	27	72			41	20	160
UNIT MIX	17%	45%			26%	13%	

The unit mix is subject to modification as the design progresses. The total unit count is estimated to be between 160 – 170.

Building Design Review
150 CambridgeSide
 UNIT PLANS

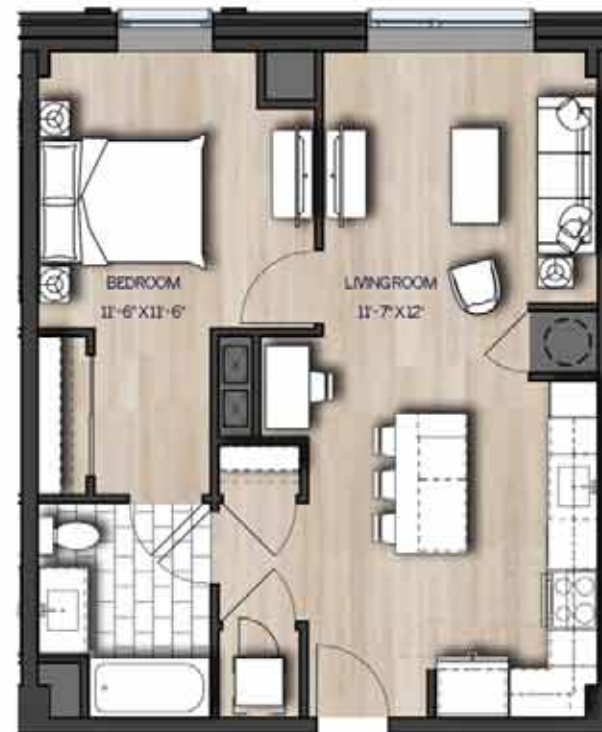
EXHIBIT 40



TYPICAL STUDIO

400 SF

DWELLING UNIT NET FLOOR AREA



TYPICAL 1 BEDROOM

630 SF

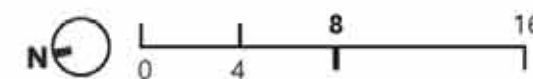
DWELLING UNIT NET FLOOR AREA



TYPICAL 2 BEDROOM

950 SF

DWELLING UNIT NET FLOOR AREA



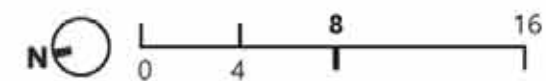
Building Design Review
150 CambridgeSide
UNIT PLANS

EXHIBIT 41



TYPICAL 3 BEDROOM

1100 SF
DWELLING UNIT NET FLOOR AREA



Building Design Review
150 CambridgeSide
VIEW FROM RESIDENTIAL UNIT

EXHIBIT 42



FROM 12TH FLOOR UNIT LOOKING SOUTHEAST



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ELKUS | MANFREDI
ARCHITECTS

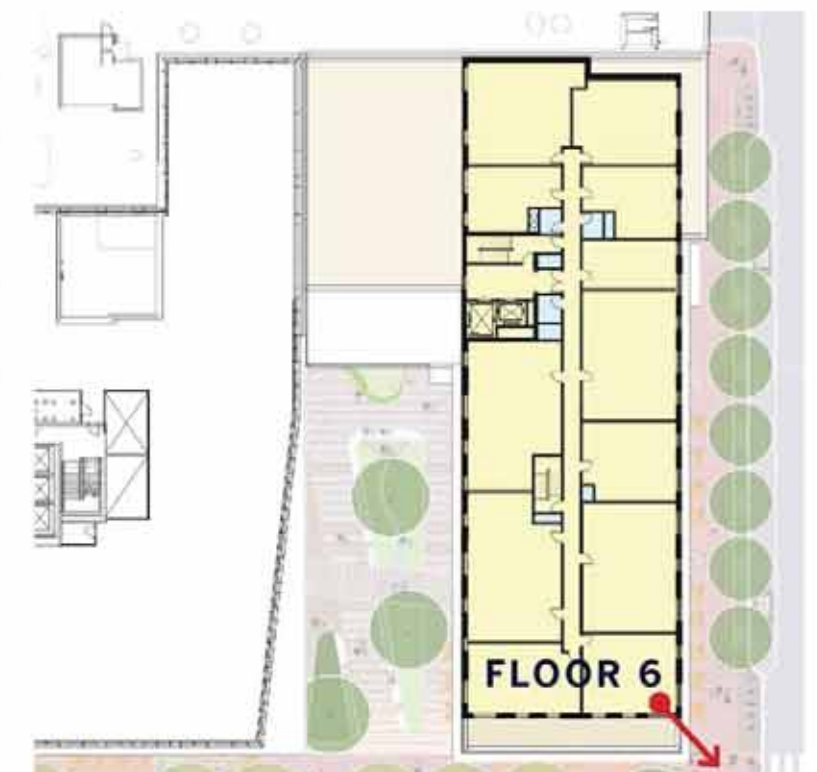


Building Design Review
150 CambridgeSide
VIEW FROM RESIDENTIAL UNIT

EXHIBIT 43



FROM 6TH FLOOR UNIT LOOKING SOUTHWEST



NEW ENGLAND
DEVELOPMENT

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Publicly Beneficial Open Space

Publicly Beneficial Open Space

As shown in the following Exhibits 44-46, the 80 First Street and 150 Cambridgeside Place developments continue the public realm improvements established by the 60 First Street development along First Street and provide enhanced open space for the public benefit in the form of a revitalized streetscape and pocket parks. Consistent with the Decision, the open space is shared across the entire PB-364 Development Parcel. The design also took cues from the Resilient Cambridge Handbook, including the following:

- Enhance pedestrian comfort.
- Reduce impervious surfaces.
- Employ green infrastructure.
- Expand open space.

The main pedestrian walkways along First Street will be constructed with the City's standard brick material. These walkways will be widened by setting back 80 First Street and 150 Cambridgeside Place 10 feet from the property line on First Street. The wider sidewalk will provide safe and comfortable movement along First Street while providing universal access to building entries and opportunities for retail and other Active Uses to spill out. 150 Cambridgeside Place will similarly setback 8 feet on Cambridgeside Place to lead pedestrians to the building entry and beyond to the mall retail, the entries to the 20 and 100 CambridgeSide buildings and out onto Land Boulevard.

As part of the streetscape, and as referenced in the Resilient Cambridge Handbook Section C, green infrastructure practices will be employed by using permeable pavers within the furnishing zones and open planters as stormwater infiltration. The planters will not only serve as green infrastructure but will reduce overall impervious surfaces along the streetscape.

Additionally, strategic placement of short-term bike parking is proposed as described herein, and will be coordinated with input from City staff, within the South Courtyard furnishing zone on First Street and on property within the PB-364 Development Parcel on Cambridgeside Place and along Land Boulevard. The short-term bike parking locations will be designed between the tree planters and will be mindful not to obstruct pedestrian movement from the street to the sidewalk.

The project will provide new Publicly Beneficial Open Space of approximately 11,000 sf. Along with the widened sidewalks provided by setting back 80 First Street and 150 Cambridgeside Place on both First Street and Cambridgeside Place, two new signature open spaces will be established to provide opportunities for guests, tenants, residents and the general public to engage with the new retail and Active Uses that will line First Street and Cambridgeside Place. These two signature spaces have been carved from the architectural

volumes to create 3 distinct buildings along First Street (60 and 80 First Street, and 150 Cambridgeside Place) replacing a single, 750 foot long uninterrupted wall to the neighborhood.

The two proposed open spaces will provide moments of discovery and extend the streetscape public realm. Lined with retail and Active Uses on all sides, the two new open spaces will invite pedestrians to pause, dwell, dine, and play throughout the day.

The North Pocket Park between 60 and 80 First Street replaces entry ramps which serve the existing Upper Garage. The North Pocket Park is currently envisioned to be a more relaxed, intimate space where the public is invited to grab a coffee, read a book or meet friends within an "outdoor living room" type of setting. Arrangements of planters, art, lighting, and furnishings provide a welcoming appearance.

Continuing along First Street toward 150 Cambridgeside Place, the South Courtyard is unveiled by a generous architectural expression, inviting pedestrians to explore deeper into the outdoor gathering space. Surrounded by retail and Active Uses, including entries to 80 First Street, the Lower Garage and 150 Cambridgeside Place, this courtyard offers ample opportunity for ground floor activation and engagement. Large trees planted in-ground with the possibility of overhead string lights provide comforting scale, shade, color and a sense of place. The Applicant currently anticipates that the courtyard will have a mixture of movable tables and chairs, fixed seating elements, and soft furnishings. Throughout the space, family-friendly activities are supported, culminating in a more whimsical environment near the 150 Cambridgeside Place secondary entry where it is anticipated that children's discovery and play will be programmed.

Similar to the Initial Phase Canal Park open space improvements, while the Applicant is seeking approval of the location, general dimensions and overall design intent of each of the North Pocket Park and the South Courtyard as part of these design review applications, the final programming (e.g., furnishings and fixtures) of such open spaces will be determined in coordination with the Open Space and Retail Advisory Committee to ensure that the design is responsive to community needs. Once the Applicant has received input from the Committee, it will return to the Planning Board for design review and approval of the final programming of the North Pocket Park and the South Courtyard. The Applicant will submit such design review materials to the Planning Board with adequate time to incorporate any comments from the Board into the final construction drawings. Once approved by the Planning Board, the North Pocket Park and the South Courtyard improvements will be constructed prior to the issuance of



a final certificate of occupancy for the third new building in the CambridgeSide 2.0 Project.

Final design of the improvements within the First Street right of way, which about the on-site North Pocket Park and South Courtyard and the Subsequent Phase buildings, will be coordinated with City pending outcome of the First Street Study.

In June 2021, the Applicant created the Retail and Open Space Advisory Committee, comprised of various representatives from the City of Cambridge and East Cambridge residents. The Committee met on July 26, August 16, September 13, and October 25, 2021 to discuss opportunities for the improvement of Canal Park. The Committee identified 6 areas for improvement, including a) mall edge, b) Thorndike Way, c) the Great Lawn, d) the Play Area, e) Thomas Graves Landing terrace, and f) under the bridge. IBI Placemaking and HLB, the Applicant's landscape architect and lighting consultant, participated in each meeting, receiving feedback from the Committee and preparing concept plans for the proposed improvements. The proposed improvements recommended by the

Committee include landscape and hardscape improvements, lighting upgrades, enhanced seating and other activation opportunities, an upgraded play structure in the play area, public art opportunities, and accessibility upgrades. The Applicant continues to work with IBI and HLB to advance the plans to comport with the Committee's vision and will present the final design to the Planning Board in the spring of 2022. Once approved by the Planning Board, the Canal Park improvements will be constructed prior to the issuance of a final certificate of occupancy for the new 20 CambridgeSide building.

Legend

- RETAIL AND ACTIVE USE
- PUBLICLY BENEFICIAL OPEN SPACE
- LOBBY/GATHERING
- RESIDENTIAL
- BACK OF HOUSE AND SERVICE

Canal Park

Building Design Review 150 CambridgeSide PUBLICLY BENEFICIAL OPEN SPACE PLAN

EXHIBIT 44 Core Retail

Food Court

Cambridgeside Place

150 CambridgeSide Place

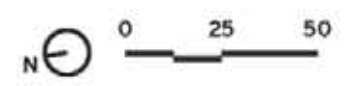
First Street

60 First Street

80 First Street

* FINAL PROGRAMMING OF THE NORTH POCKET PARK AND SOUTH COURTYARD WILL BE DETERMINED IN COORDINATION WITH THE OPEN SPACE AND RETAIL ADVISORY COMMITTEE AND IS NOT THE SUBJECT OF THIS DESIGN REVIEW APPLICATION

** FINAL DESIGN OF THE IMPROVEMENTS WITHIN THE FIRST STREET RIGHT OF WAY WILL BE COORDINATED WITH CITY PENDING OUTCOME OF THE FIRST STREET STUDY



Building Design Review 150 CambridgeSide LANDSCAPE MATERIALS PLAN*

EXHIBIT 45

Legend

 BUILDING SITE



CAMBRIDGE CITY
STANDARD BRICK PAVING



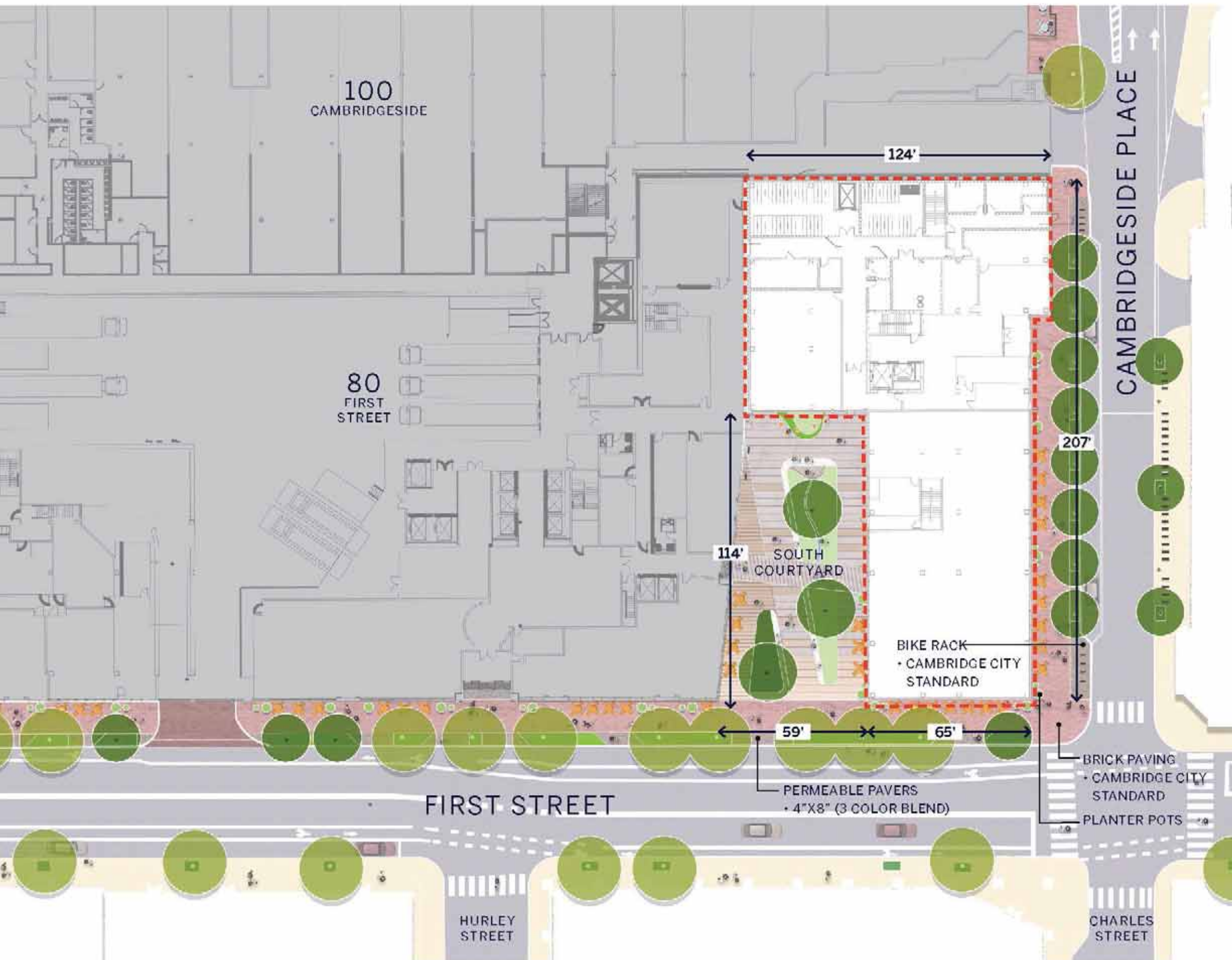
GRANITE ENTRANCE
PAVING



PLANTER POTS

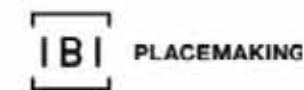


OUTDOOR SEATING



*FINAL DESIGN FROM EXISTING CURB TO PROPERTY LINE/R.O.W. TO BE COORDINATED WITH THE CITY PENDING OUTCOME OF THE FIRST STREET STUDY

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Building Design Review

150 CambridgeSide

LANDSCAPE PLANTING PLAN

EXHIBIT 46

Legend

 BUILDING SITE



RED MAPLE



FLOWERING DOGWOOD



ORNAMENTAL GRASS



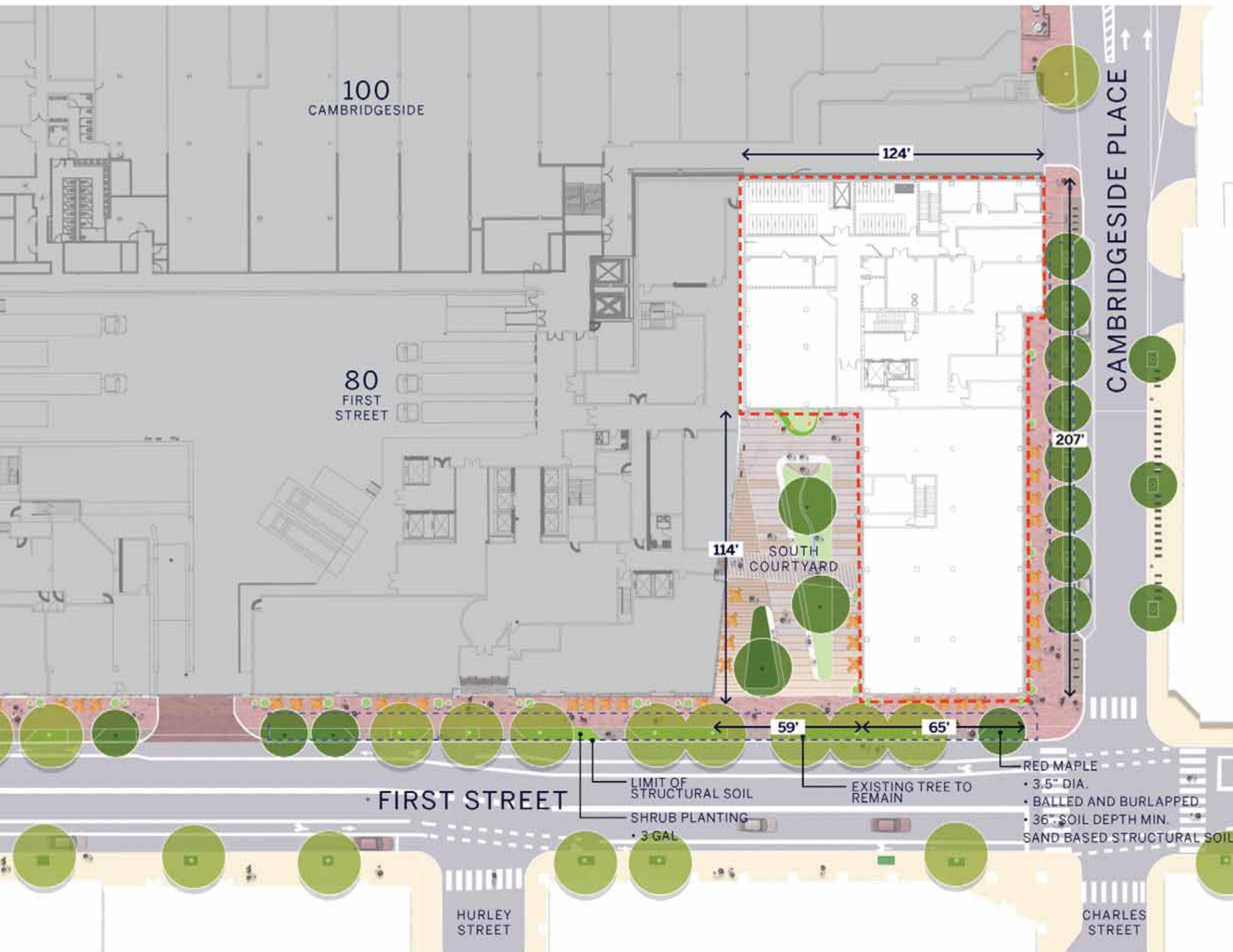
SHRUB PLANTING



SEASONAL FLOWERS



SEASONAL FLOWERS

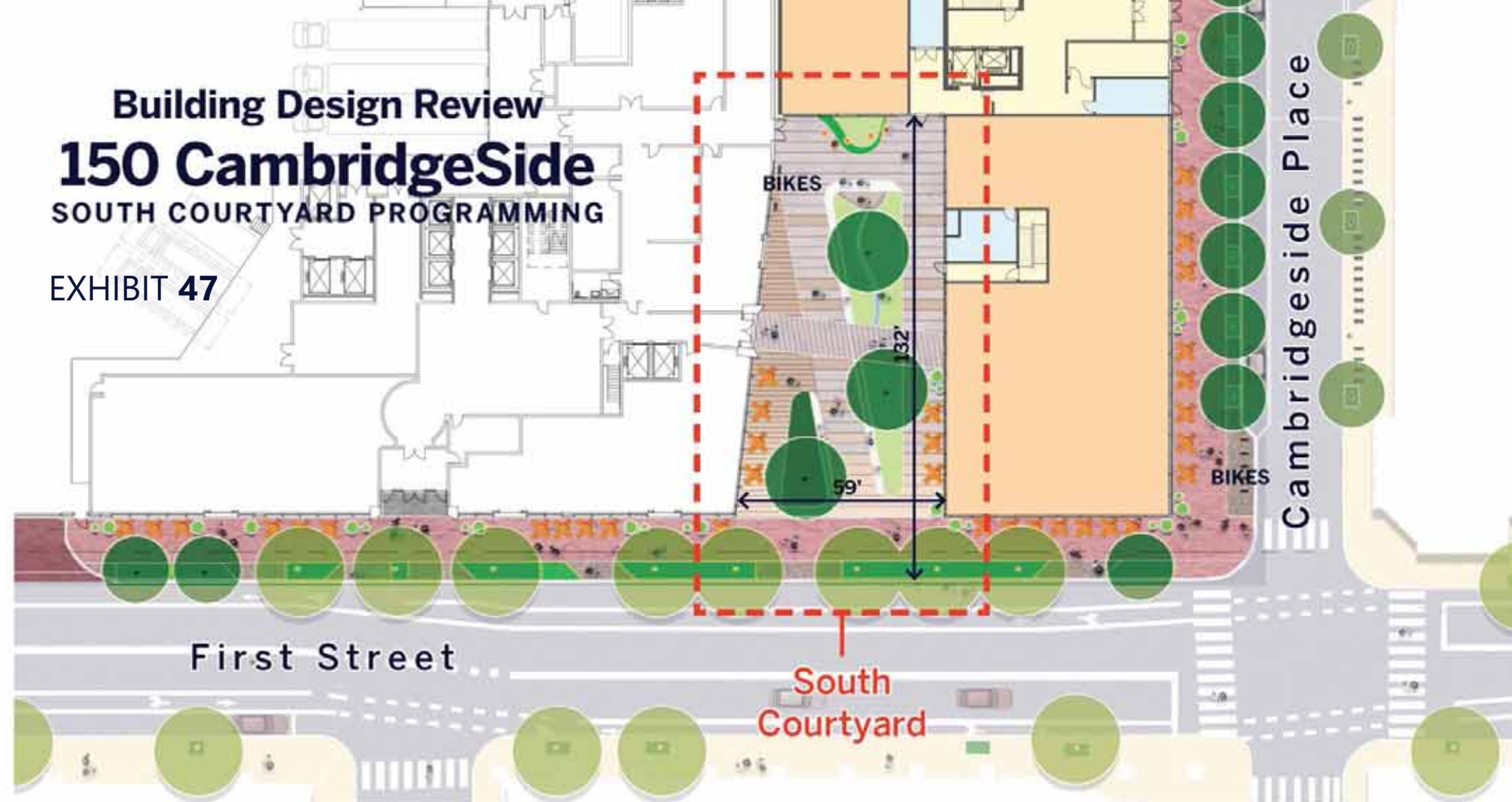


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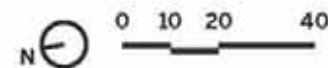
Building Design Review
150 CambridgeSide
 SOUTH COURTYARD PROGRAMMING

EXHIBIT 47



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Parking, Loading and Circulation

Parking

The Project will be served by shared below-grade parking spaces located in the adjacent 80 First Street building. As indicated on Exhibits 48-50, the adjacent 80 First Street project includes renovation of the portion of the existing Lower Garage located underneath the 80 First Street building site area. The proposed renovations include structural foundation reinforcing required for the proposed 10-story structure. The existing garage access driveway ramp on First Street will be retained and new public elevator access to street level is proposed within the 80 First Street building footprint area.

Consistent with the Decision, all approved uses on the PB- 364 Development Parcel (including those within the 150 Cambridgeside Place building) will be served by existing parking spaces on site, which will be reduced upon project completion from the existing 2,490 spaces to approximately 1,695 parking spaces.

Bicycle Parking

The Decision provides that the required number of bicycle parking spaces for the entire PB-364 Development Parcel at full buildout shall be 450 long-term spaces and 146 short-term spaces. Long-term bicycle parking spaces may be provided anywhere on the site and are permitted to serve all approved uses in the PUD. The 150 Cambridgeside Place Building will include approximately 191 long term indoor parking spaces. The bike spaces will be accessed by residents through the lobby and a dedicated bike room elevator.

Additionally, strategic placement of short-term bike parking is proposed as described herein, and will be coordinated with input from City staff, within the South Courtyard furnishing zone on First Street and on property within the PB-364 Development Parcel on Cambridgeside Place and along Land Boulevard. The short-term bike parking locations will be designed between the tree planters and will be mindful not to obstruct pedestrian movement from the street to the sidewalk. Following the completion of both 80 First Street and 150 Cambridgeside Place buildings, there will be a total of 450 long-term bicycle parking spaces and 147 short-term bicycle parking spaces on the PB-364 Development Parcel, in full satisfaction of the requirements of the Decision.

Loading/Service

Consistent with the Decision, loading facilities will be shared across the buildings and uses on the entire PB-364 Development Parcel in order to serve the interconnected mix of uses at the site. 150 Cambridgeside Place will share access to the loading facilities at 80 First Street, which is located directly adjacent to the north. Upon completion of the Subsequent Phase buildings, a total of 13 loading bays will exist across the PB-364 Development Parcel, which is

consistent with the approved range of loading bays for the site under the Decision (including the Phasing Timeline included on Appendix A of the Decision).

As part of the 80 First Street project, the existing Upper Garage loading dock accessed from First Street will be renovated. The renovated loading dock will maintain off-street loading for all loading dock users, including those serving the 150 Cambridgeside Place building. As indicated on Exhibits 58 and 59 truck maneuvering for entry and exit will continue to be accommodated within the enclosed loading dock area, including truck sizes up to a WB-50, with no on-street loading. The renovated loading dock arrangement within the loading dock will accommodate retail, residential and office and lab users. 7 truck loading bays are proposed. Additionally, 4 bays for garbage and recycling services are provided. A service corridor will connect the loading, trash and recycling facilities to the 150 Cambridgeside Place building on the ground floor (Exhibit 59). The loading dock will continue to be actively managed to allow for on-going coordination and oversight of loading dock activities and operations.

Consistent with Condition 2.b.viii of the Decision and the Final Development Plan, long-term bicycle parking for the CambridgeSide 2.0 Project may be provided across the PB #364 Development Parcel to serve all approved uses at the site. Following completion of both Subsequent Phase buildings, and in full satisfaction of the requirements of the Decision, there will be a total of 450 long-term bicycle parking spaces and 147 short-term bicycle parking spaces to serve the uses on the PUD-8 Development Parcel as outlined below.

Long-Term Bicycle Parking Spaces (Required)	450
Provided (Location)	
Core Retail / 100 Cambridgeside Place	46
20 Cambridgeside Place	61
60 First Street	36
80 First Street	116
150 Cambridgeside Place	191
TOTAL (Provided)	450

Short-Term Bicycle Parking Spaces (Required)	146
Provided (Location)	
Canal Park and Thorndike Way	57
First Street / South Courtyard	4
Cambridgeside Place	76
Land Boulevard	10
TOTAL (Provided)	147

Building Design Review

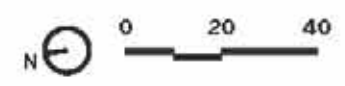
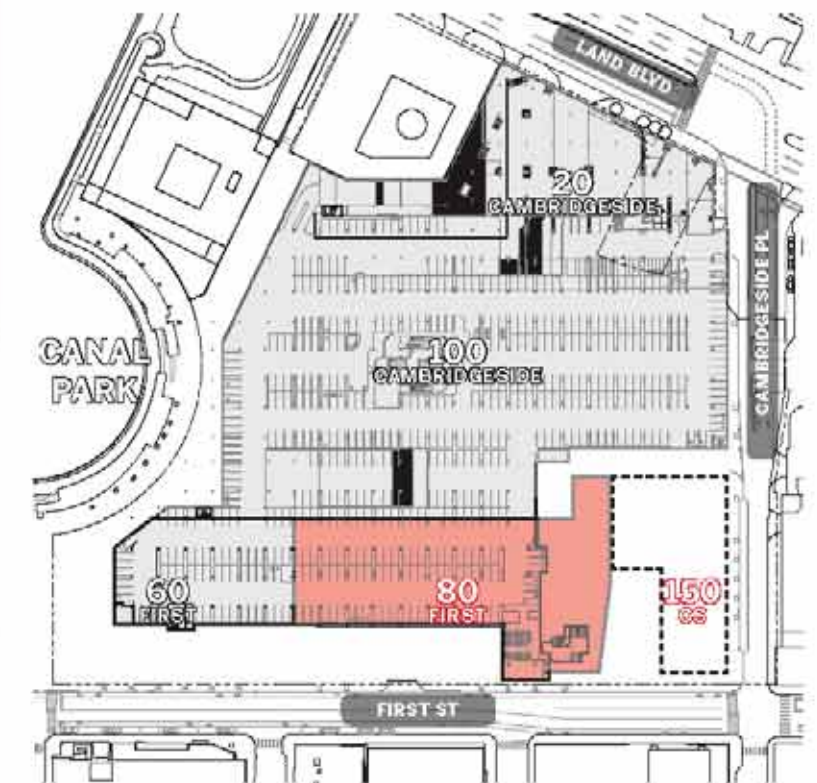
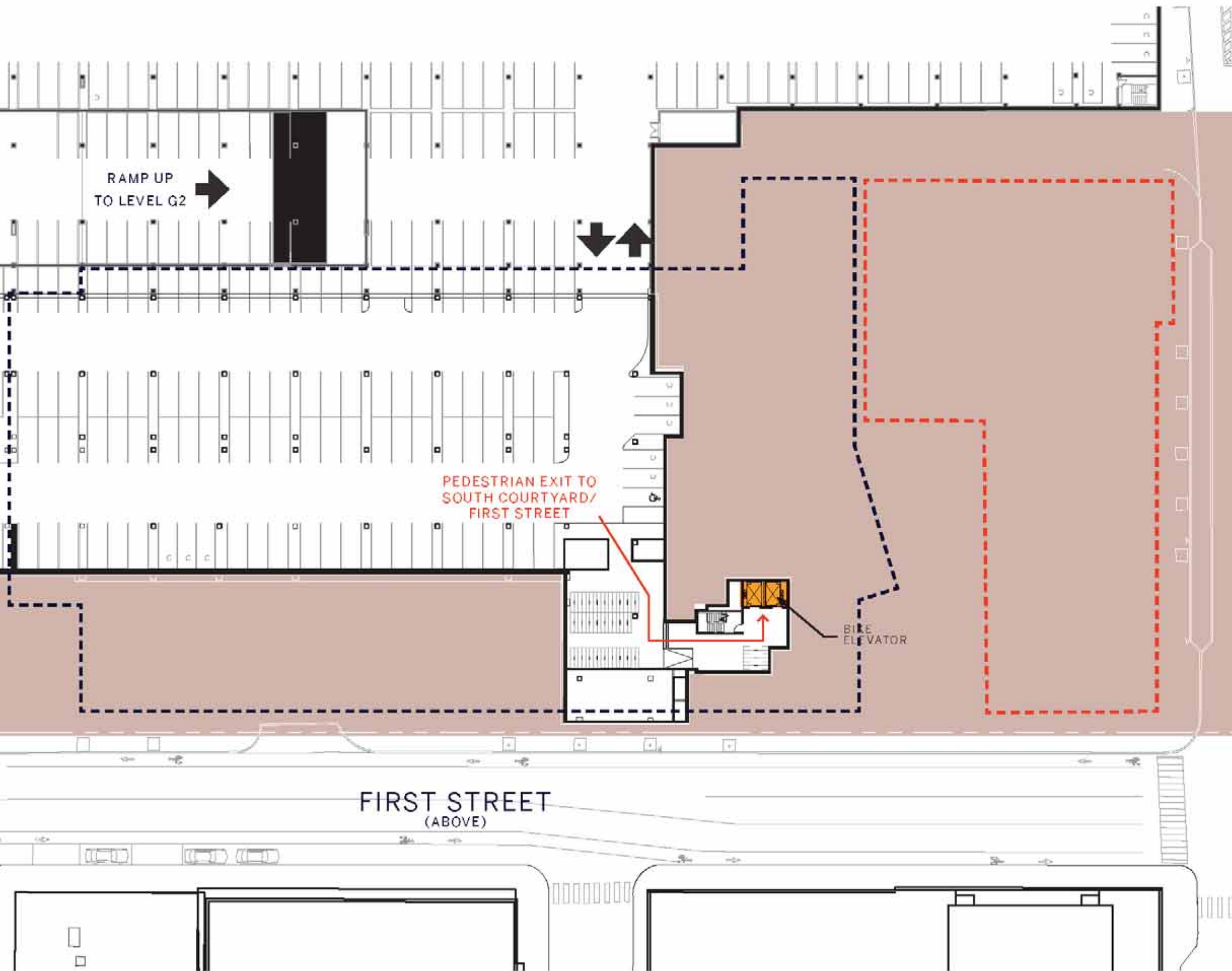
150 CambridgeSide

80 FIRST ST GARAGE LEVEL G3

EXHIBIT 48

Legend

- BUILDING SITE
- ADJACENT 80 FIRST STREET SITE
- UNEXCAVATED
- RESIDENT ACCESS TO PARKING



Building Design Review

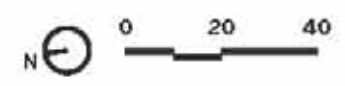
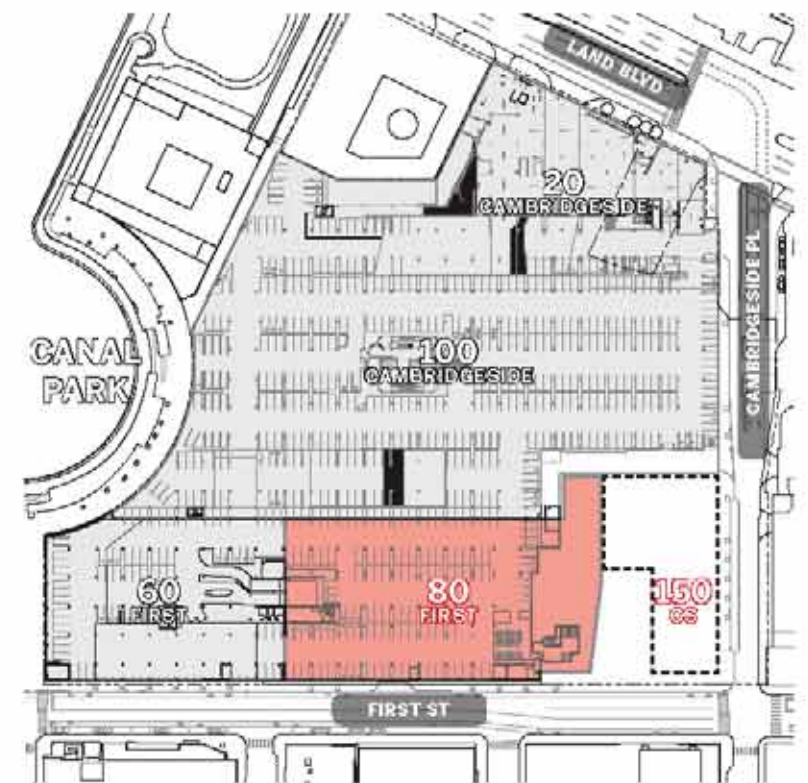
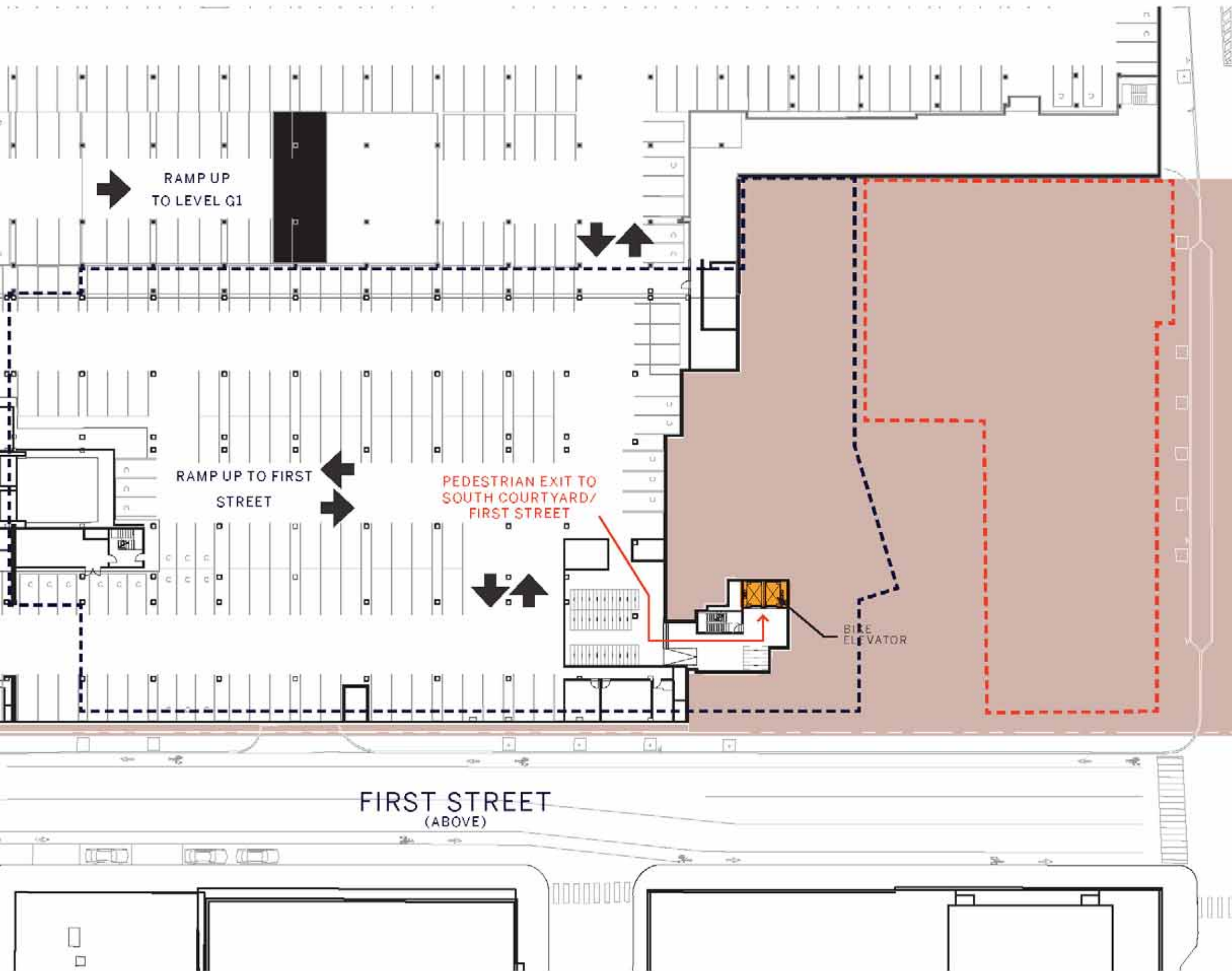
150 CambridgeSide

80 FIRST ST GARAGE LEVEL G2

EXHIBIT 49

Legend

- BUILDING SITE
- ADJACENT 80 FIRST STREET SITE
- UNEXCAVATED
- RESIDENT ACCESS TO PARKING



Building Design Review

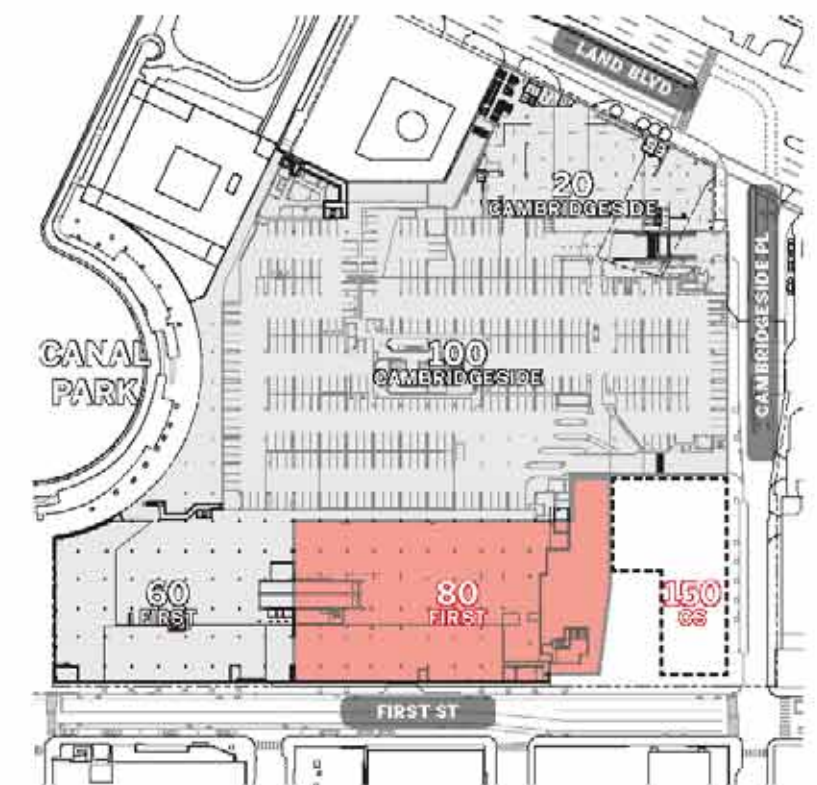
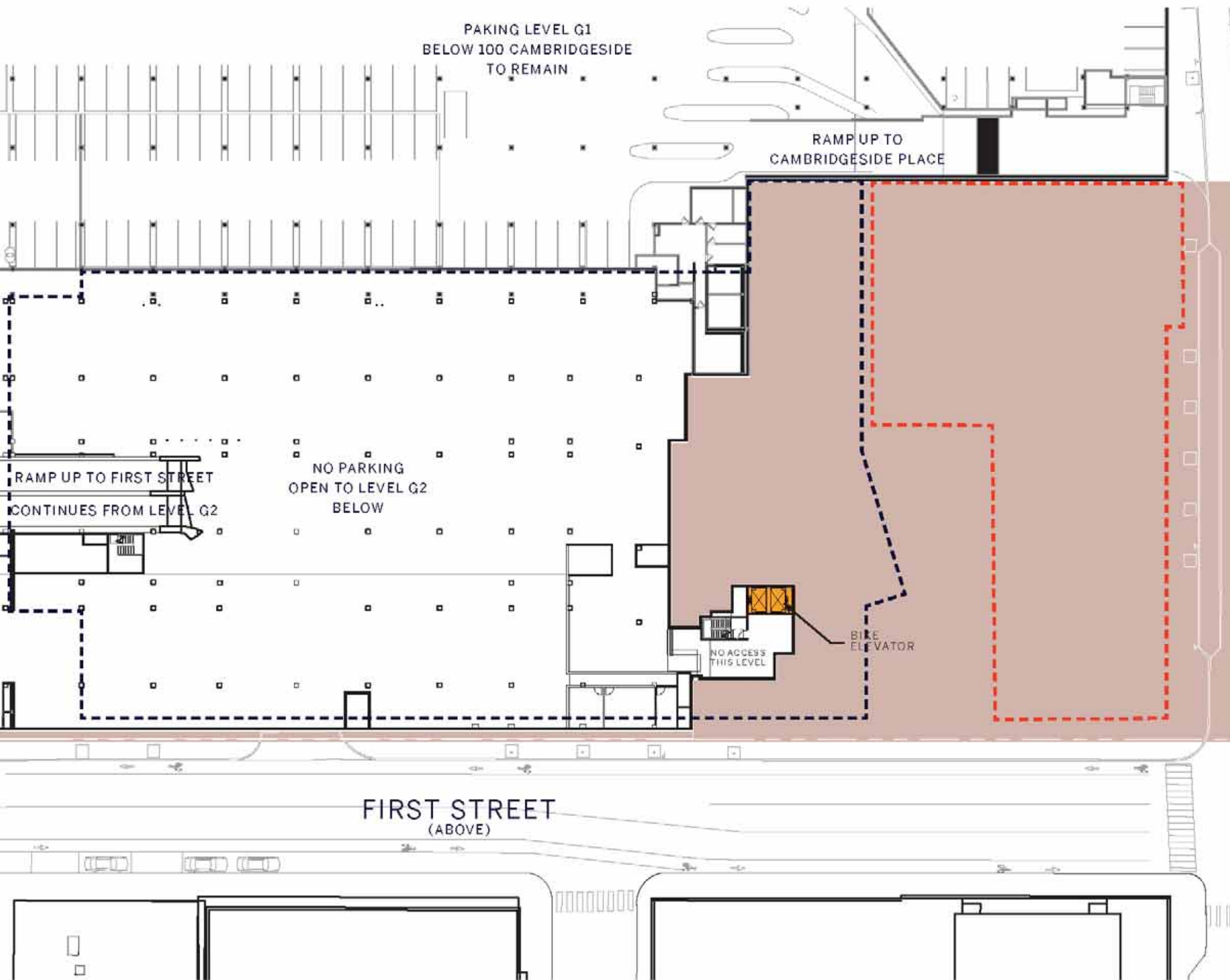
150 CambridgeSide

80 FIRST ST GARAGE LEVEL G1

EXHIBIT 50

Legend

- BUILDING SITE
- ADJACENT 80 FIRST STREET SITE
- UNEXCAVATED
- RESIDENT ACCESS TO PARKING



Building Design Review

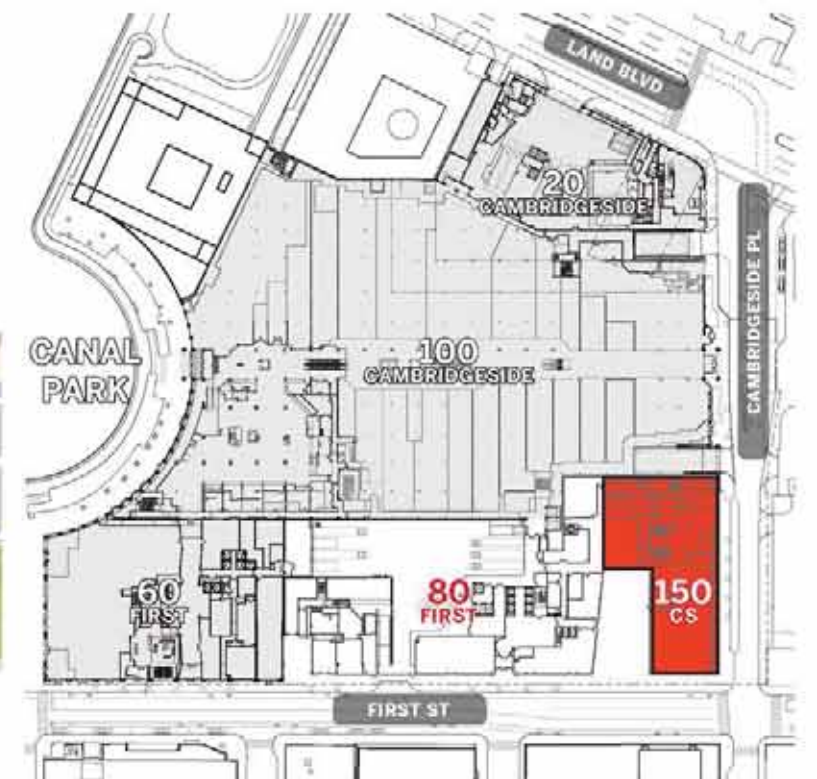
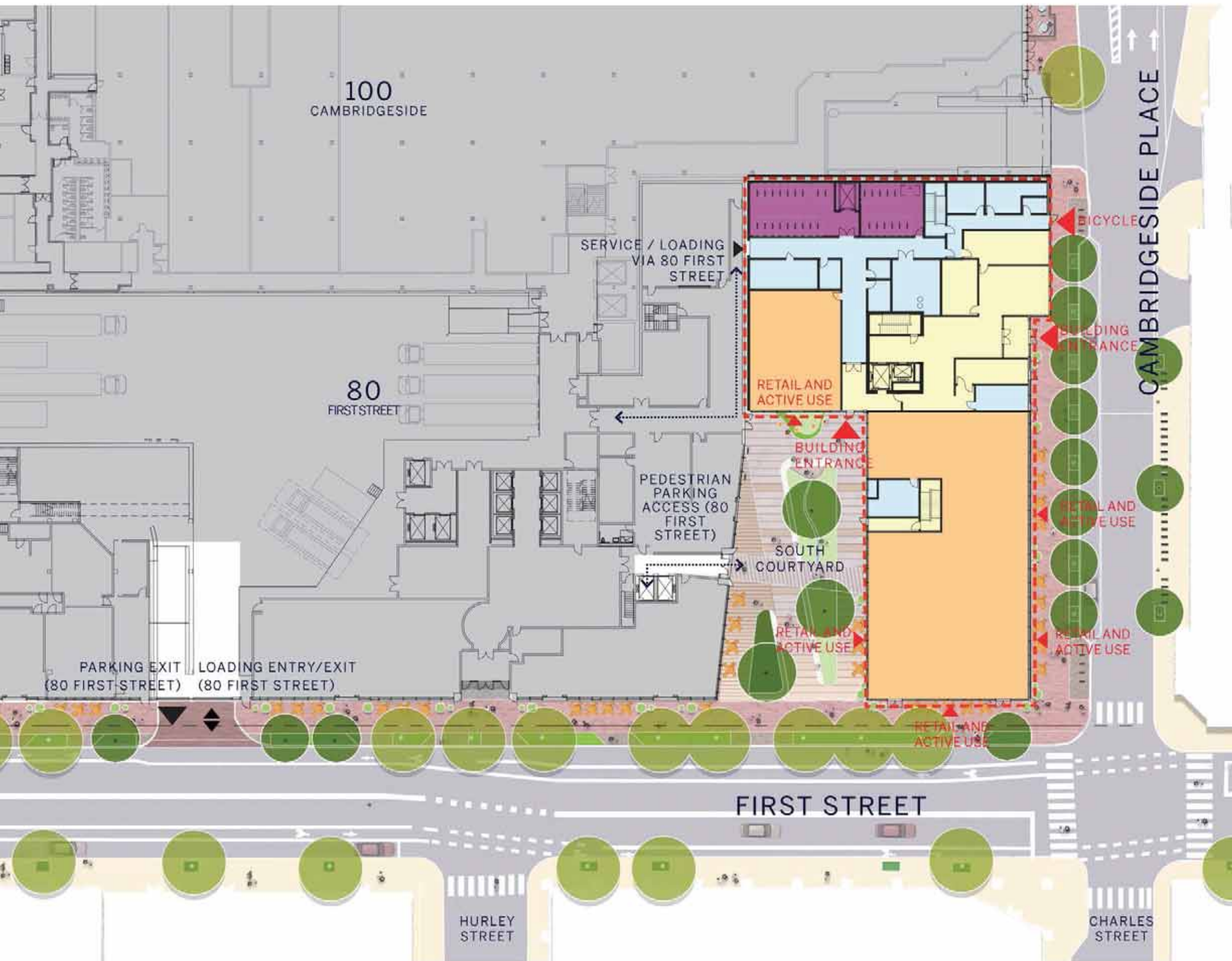
150 CambridgeSide

GROUND FLOOR ENTRY PLAN

EXHIBIT 51

Legend

- BUILDING SITE
- RETAIL AND ACTIVE STOREFRONT
- RESIDENTIAL
- ▲ BUILDING ENTRY
- ▲ POTENTIAL RETAIL ENTRY
- ◀ PARKING ENTRY
- ◀ SERVICE ENTRY



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Building Design Review

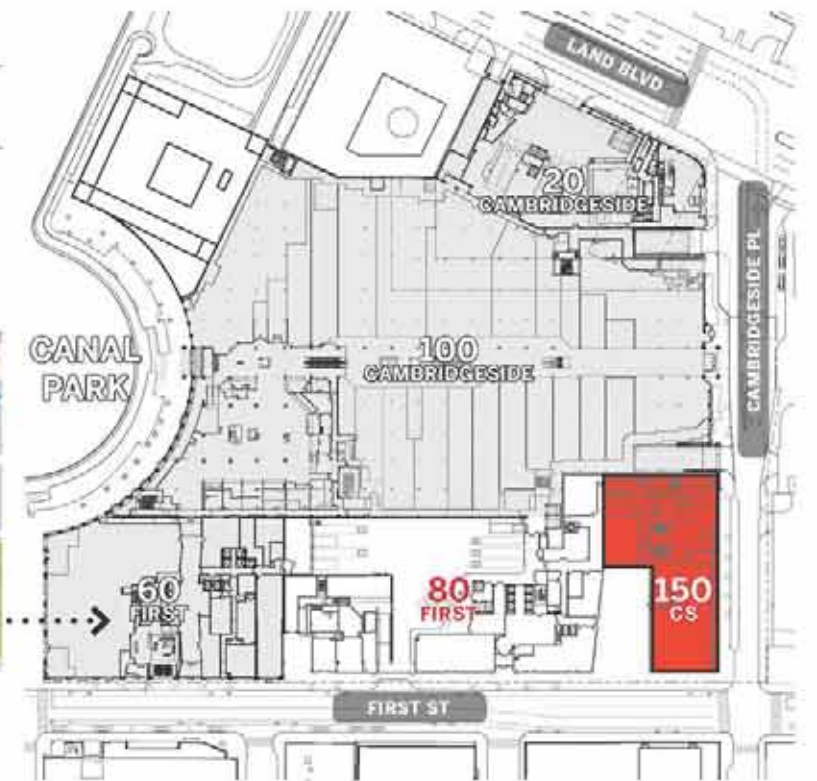
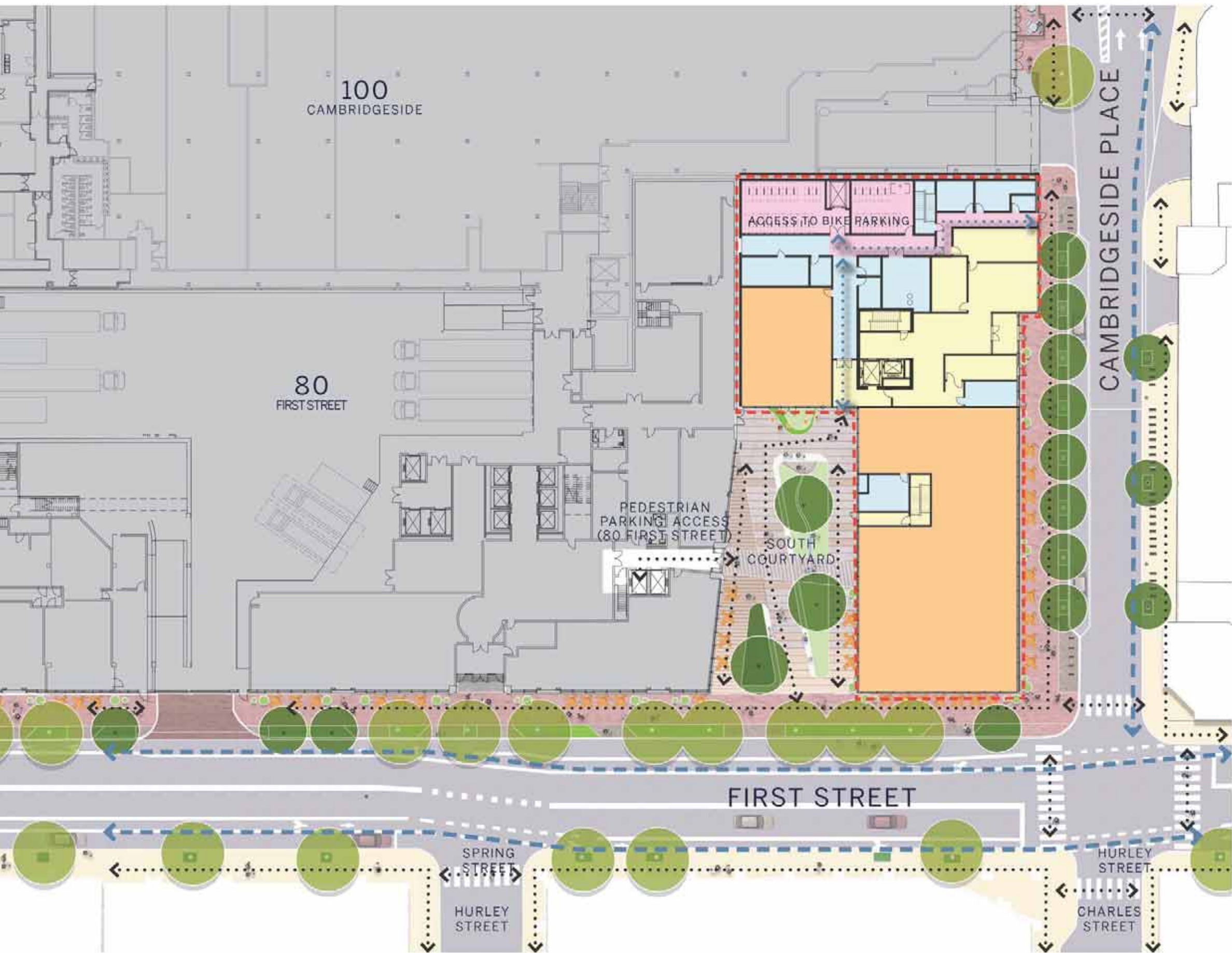
150 CambridgeSide

PEDESTRIAN/BICYCLE CIRCULATION DIAGRAM

EXHIBIT 52

Legend

- BUILDING SITE
- BUILDING LOBBY
- BIKE ACCESS AND PARKING
- PEDESTRIAN CIRCULATION
- WALKED BICYCLE CIRCULATION
- BICYCLE CIRCULATION



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Building Design Review

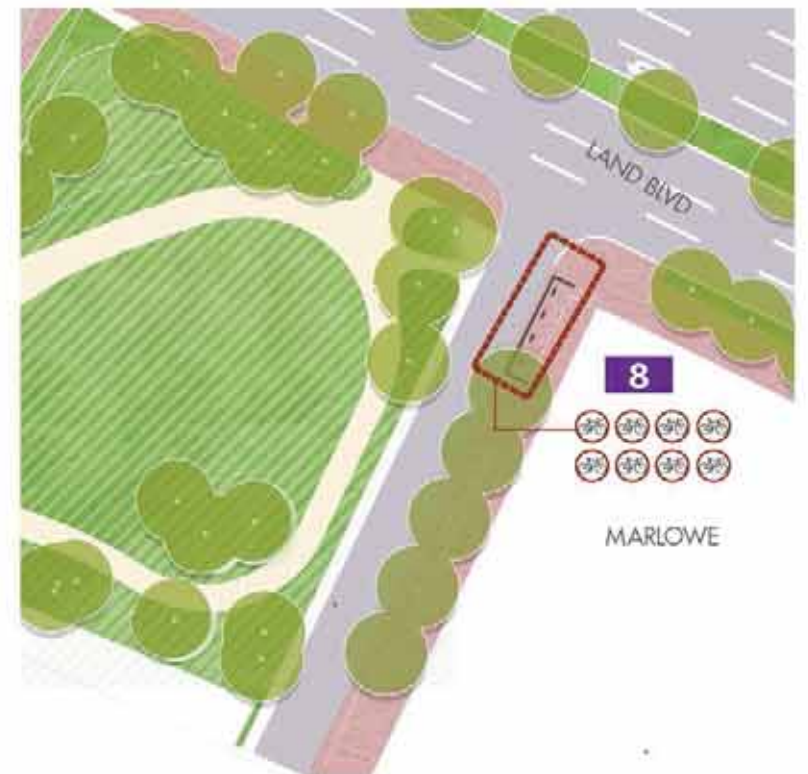
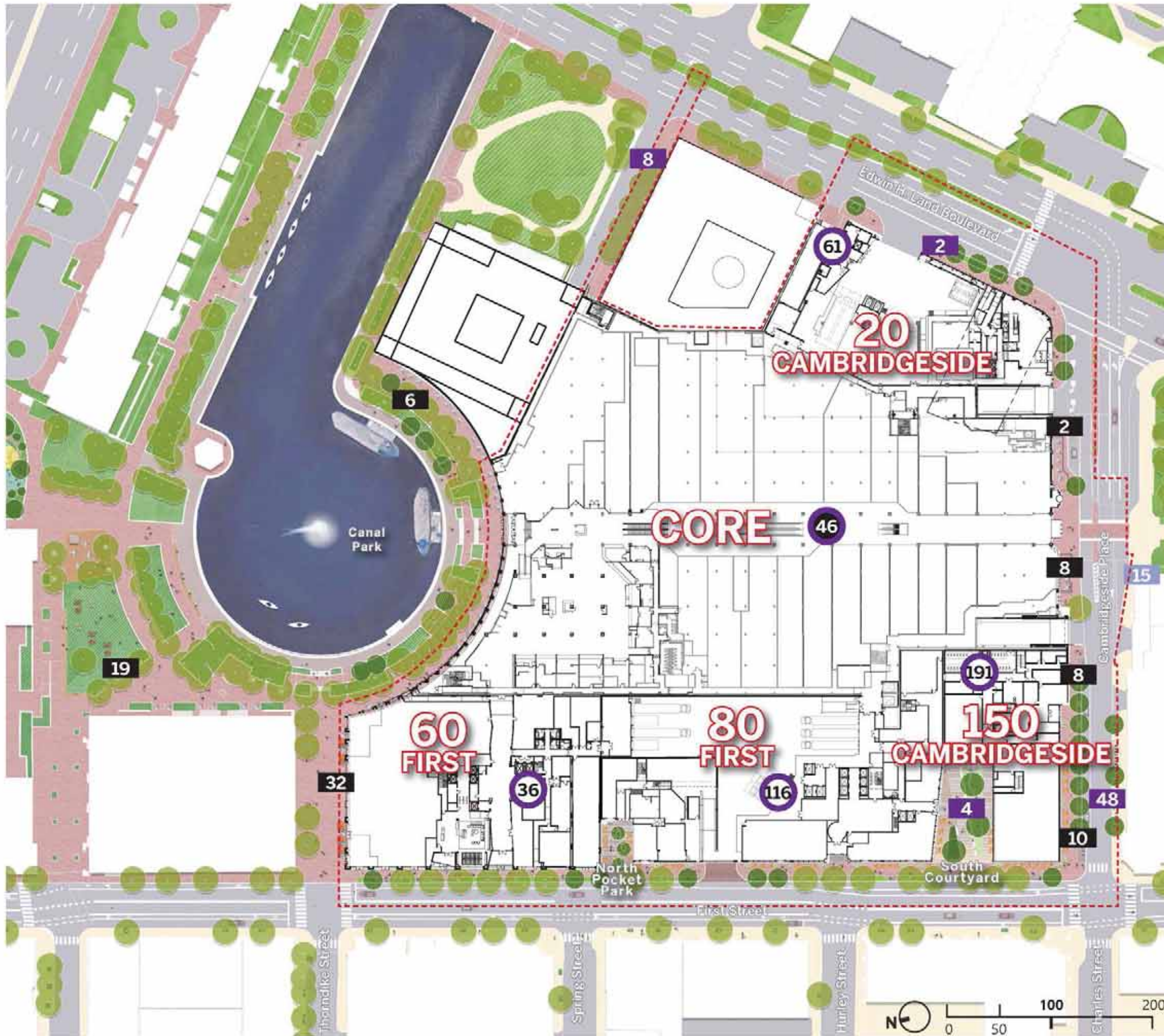
150 CambridgeSide

BICYCLE PARKING SITE DIAGRAM

EXHIBIT 53

Legend

- PUD-8 DEVELOPMENT PARCEL
- 46 EXISTING LONG-TERM BIKE STORAGE
- 404 PROPOSED LONG-TERM BIKE STORAGE (ESTIMATED)
- 85 EXISTING SHORT-TERM BIKE STORAGE
- 62 PROPOSED ON-SITE SHORT-TERM BIKE STORAGE
- 15 EXISTING BLUE BIKE STATION



Building Design Review

150 CambridgeSide

BIKE PARKING PLAN

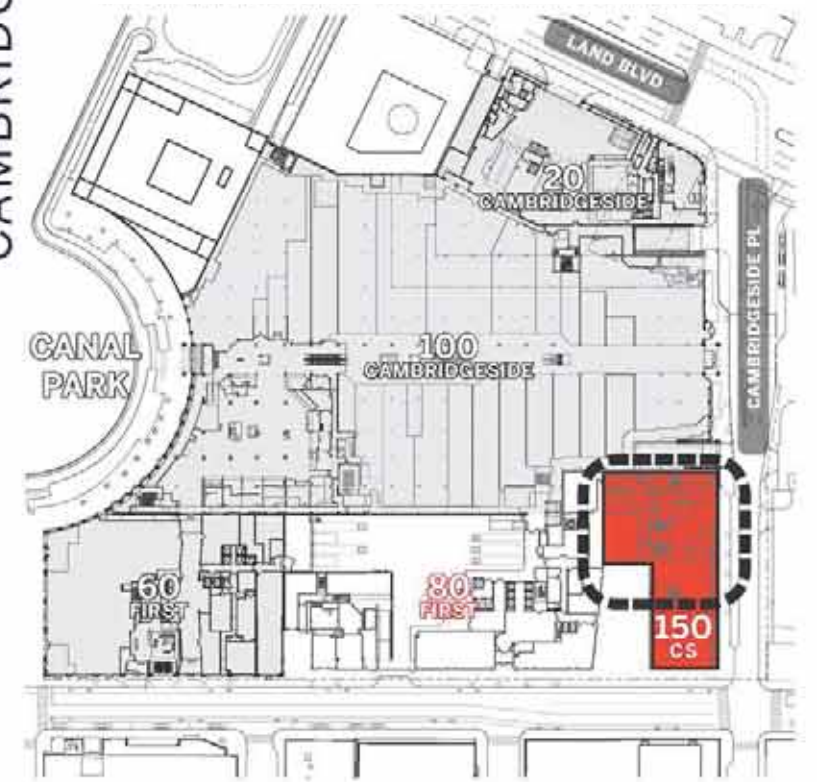
EXHIBIT 54

Legend

- BUILDING SITE
- LONG-TERM BIKE PARKING (191, INCL. 18 TANDEM)
- SHORT-TERM BIKE PARKING



CAMBRIGESIDE PLACE



* SHORT-TERM BIKE PARKING IS PROVIDED INDOORS AND IS MEANT TO SERVE RETAIL AND BUILDING STAFF.

NEW ENGLAND DEVELOPMENT



ELKUS | MANFREDI ARCHITECTS

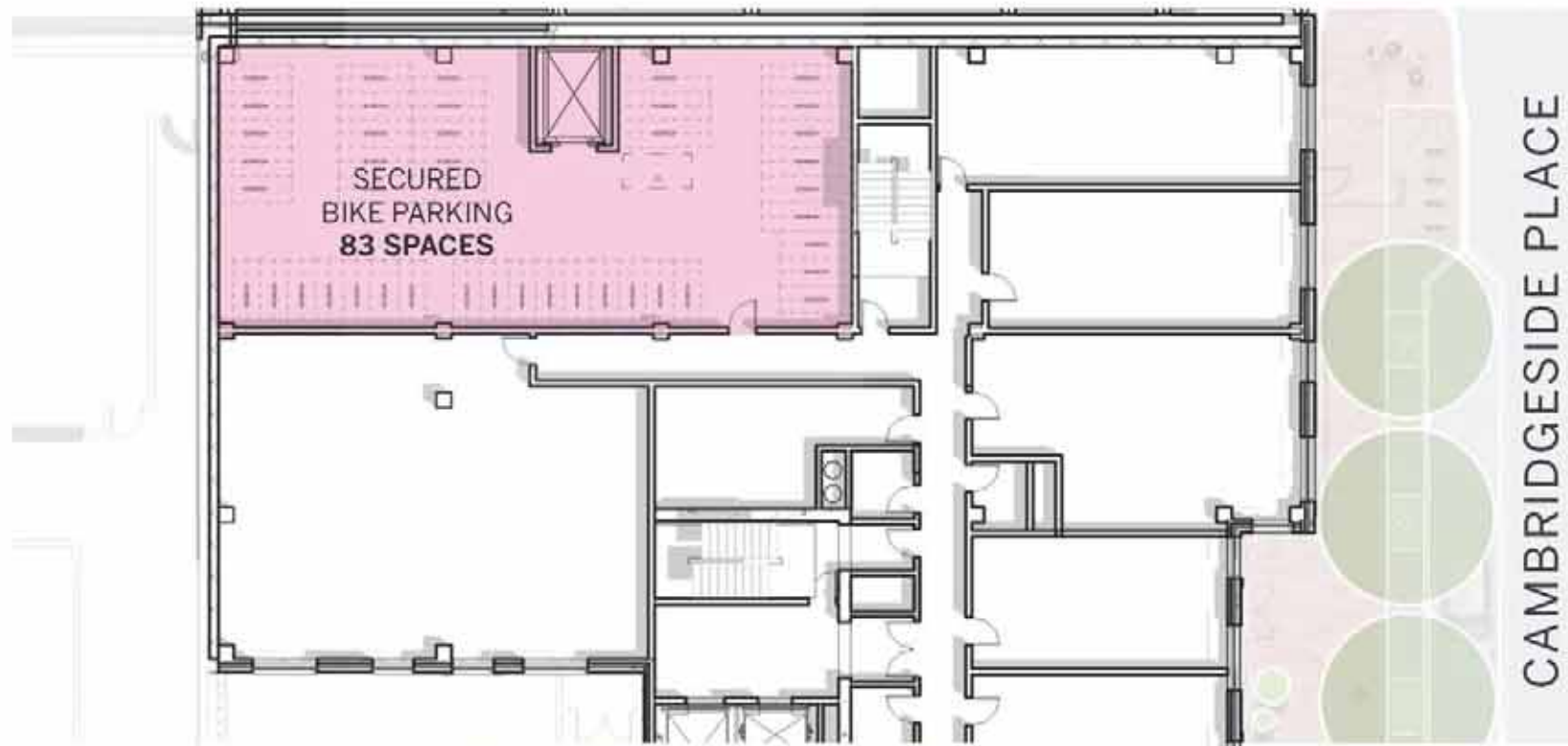


Building Design Review
150 CambridgeSide
 BIKE PARKING PLANS

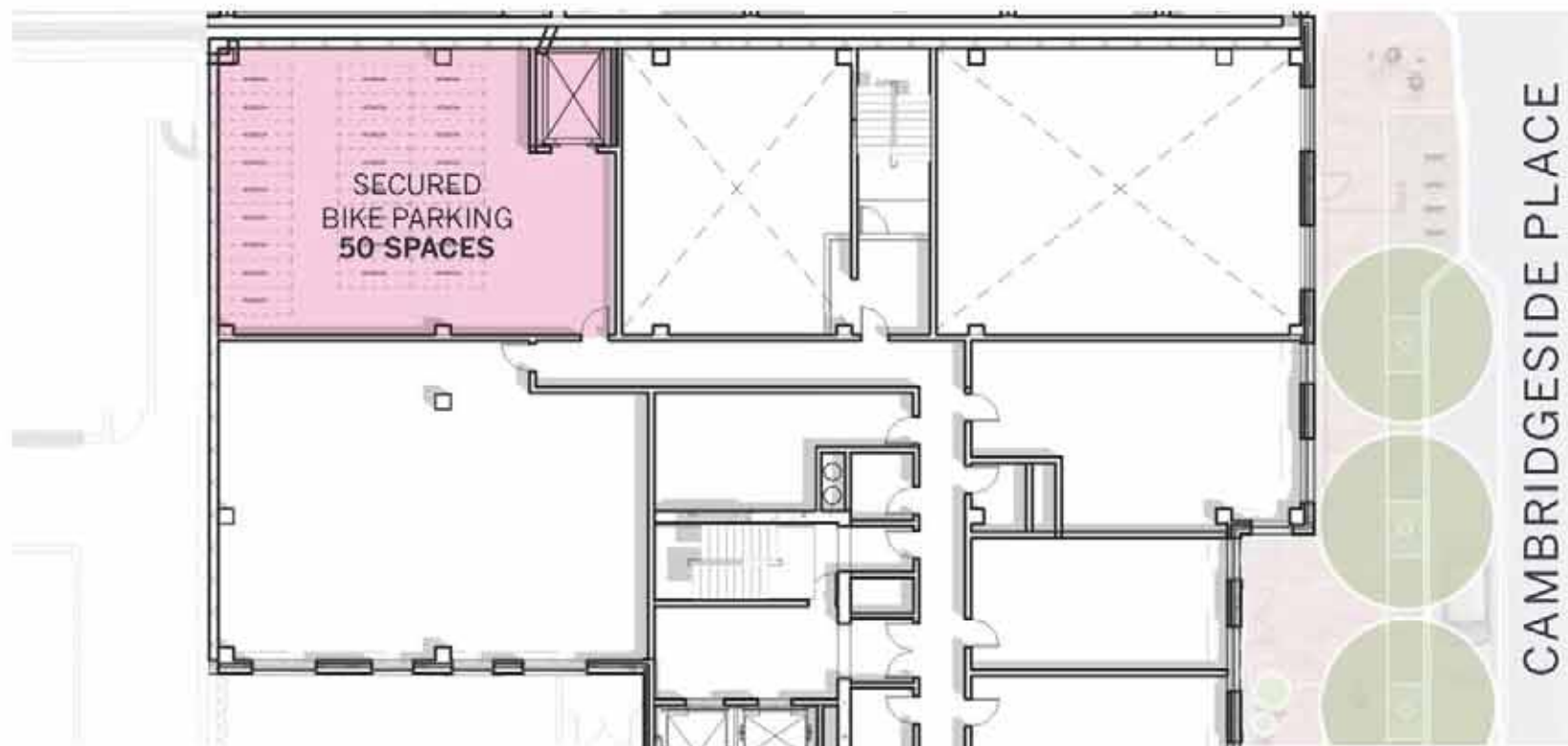
EXHIBIT 55

Legend

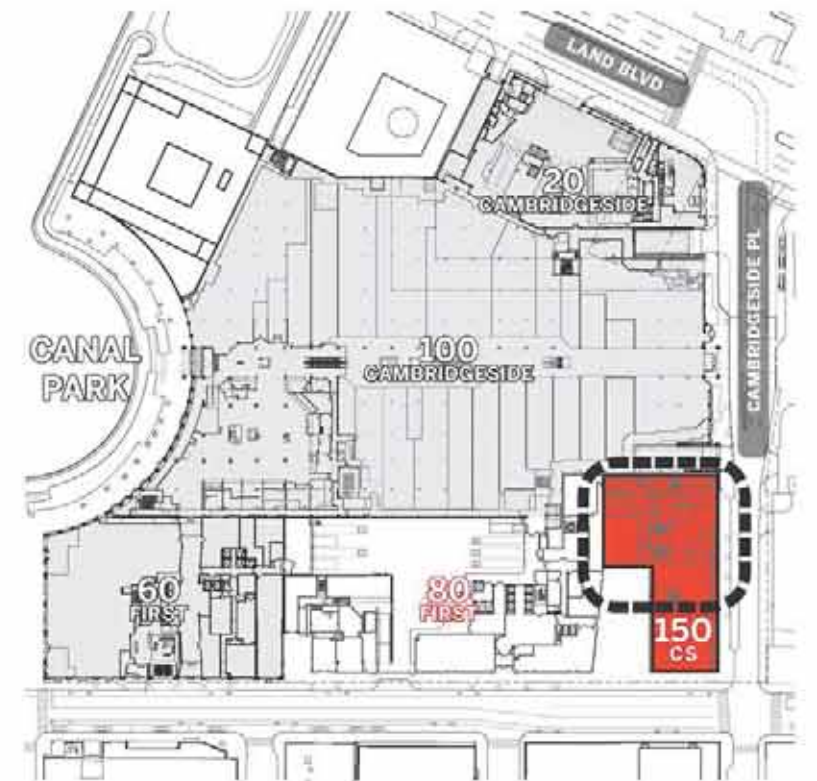
-  BUILDING SITE
-  LONG-TERM BIKE PARKING



LEVEL 4 DETAIL FLOOR PLAN

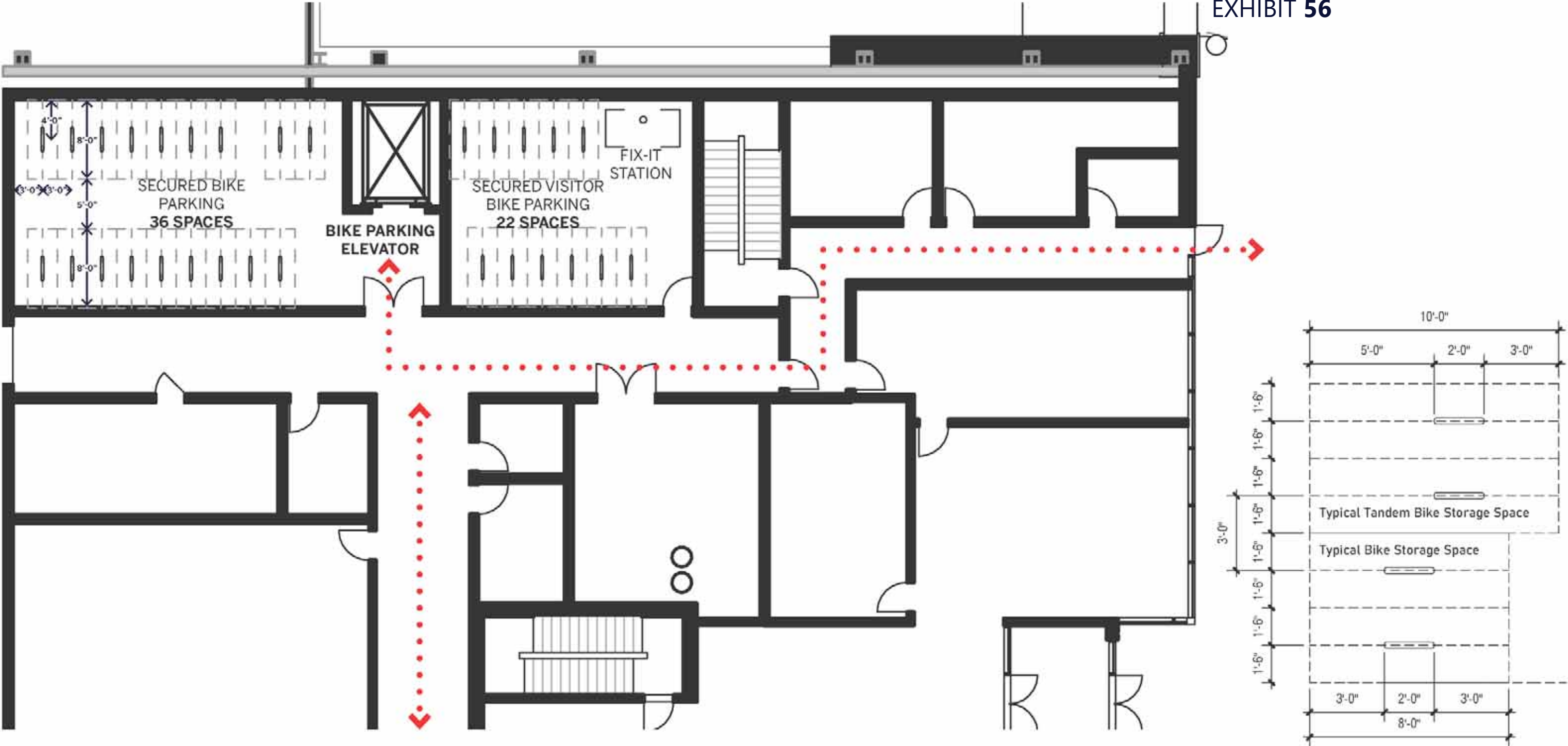


LEVEL 3 DETAIL FLOOR PLAN



Building Design Review
150 CambridgeSide
 BIKE PARKING DETAIL PLAN

EXHIBIT 56



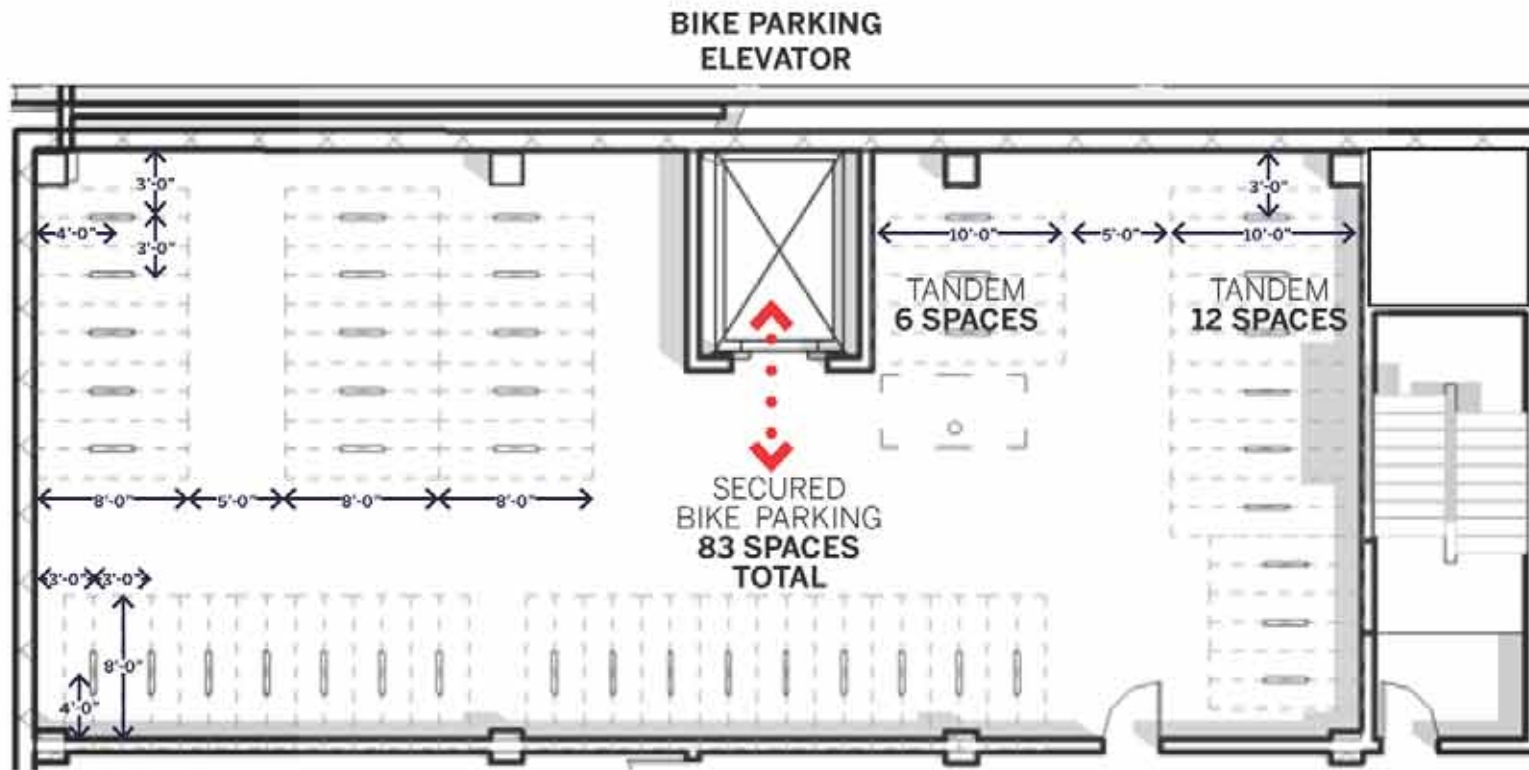
LEVEL 1 DETAIL FLOOR PLAN

TYPICAL BIKE PARKING DETAIL

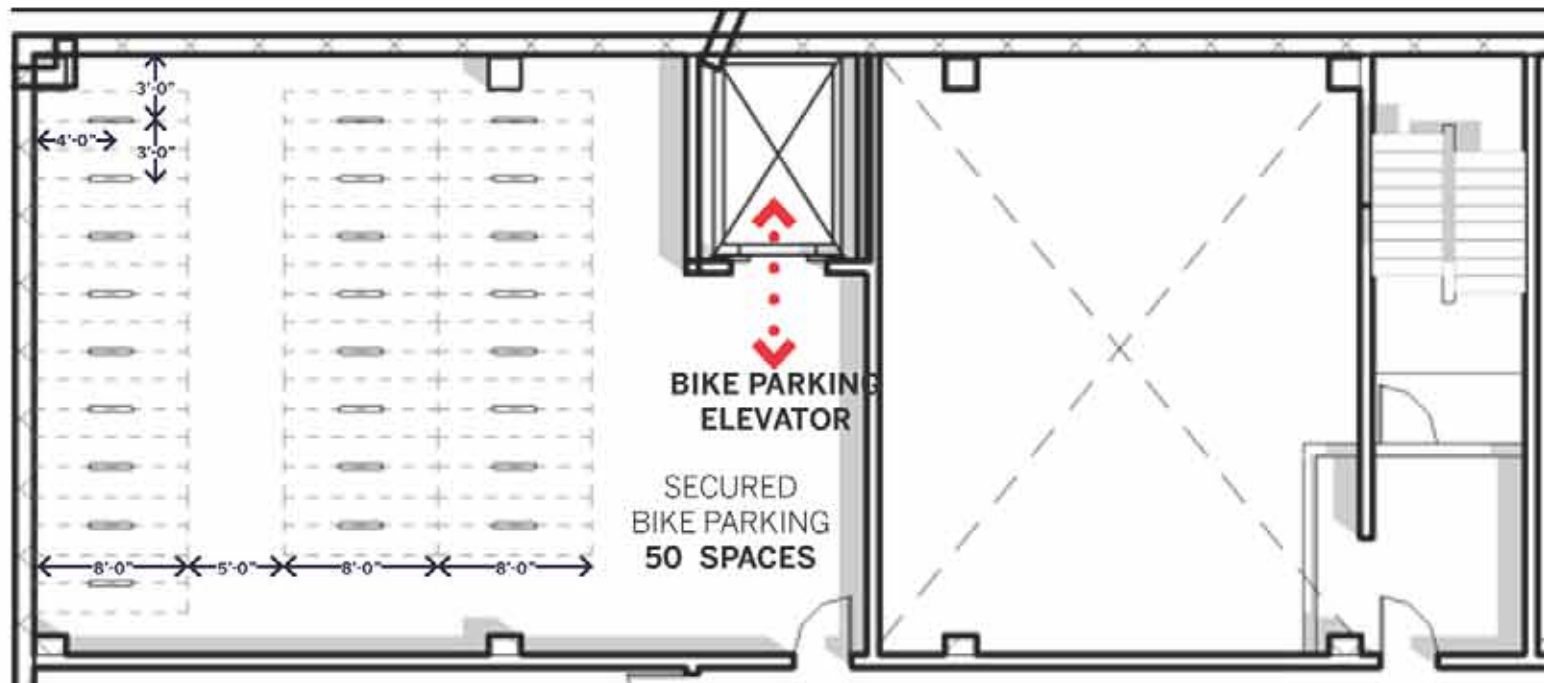


Building Design Review
150 CambridgeSide
BIKE PARKING DETAIL PLAN

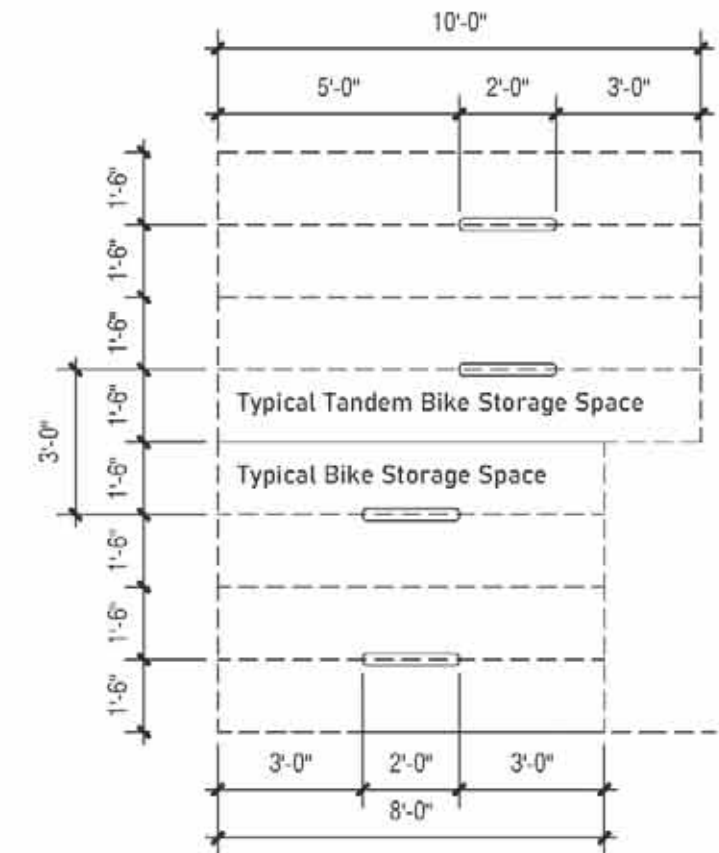
EXHIBIT 57



LEVEL 4 DETAIL FLOOR PLAN



LEVEL 3 DETAIL FLOOR PLAN






TYPICAL BIKE PARKING DETAIL

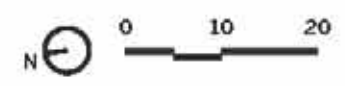
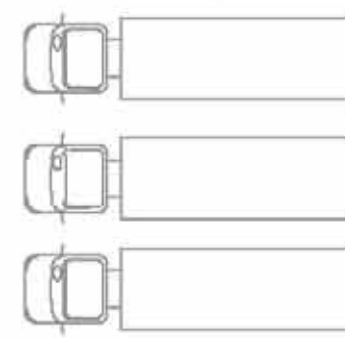
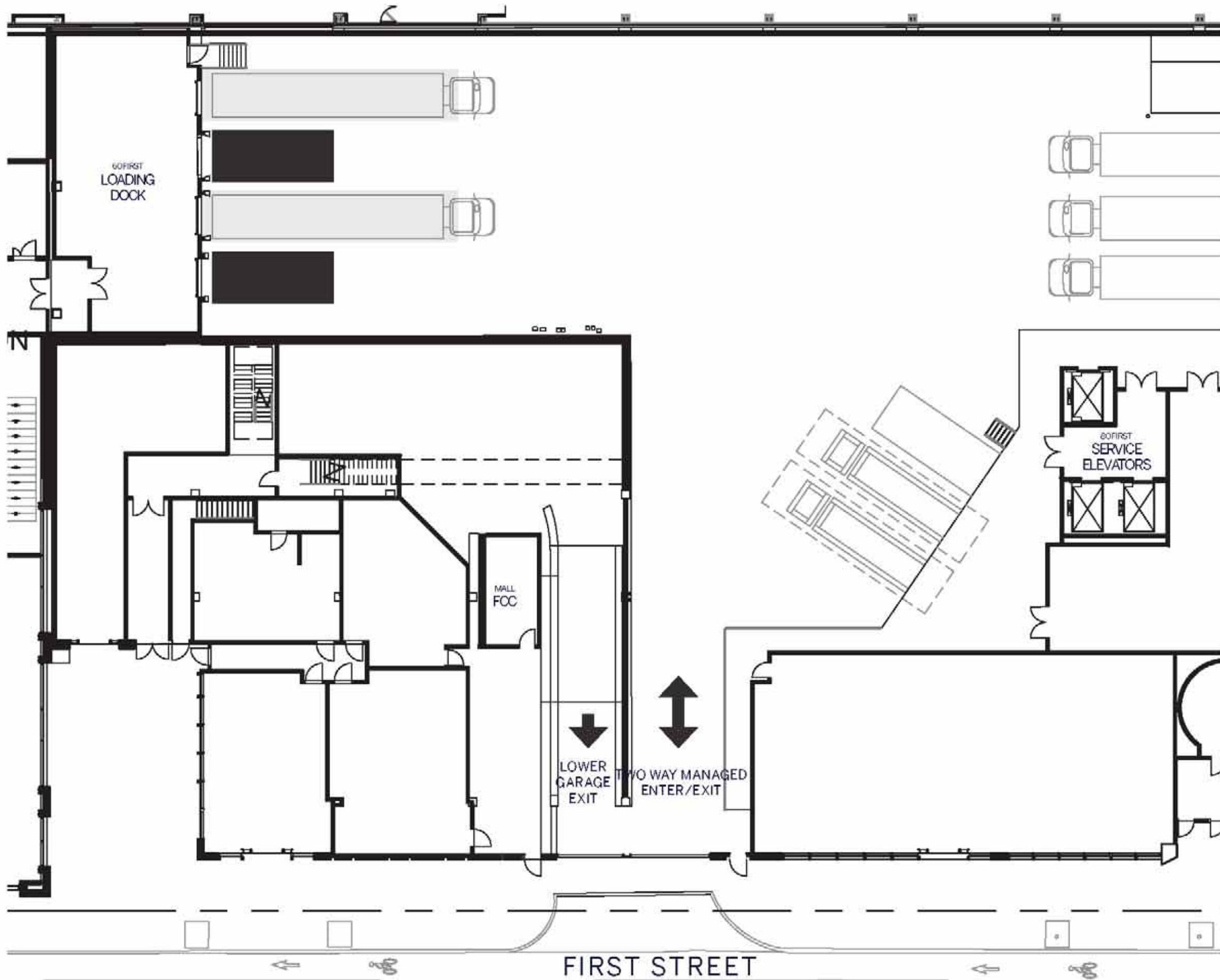


Building Design Review
150 CambridgeSide
 80 FIRST ST NORTH LOADING DOCK

EXHIBIT 58

Legend

-  DUMPSTER
-  10 X 30
-  10 X 50



Building Design Review

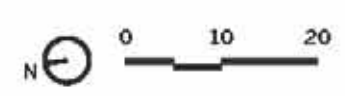
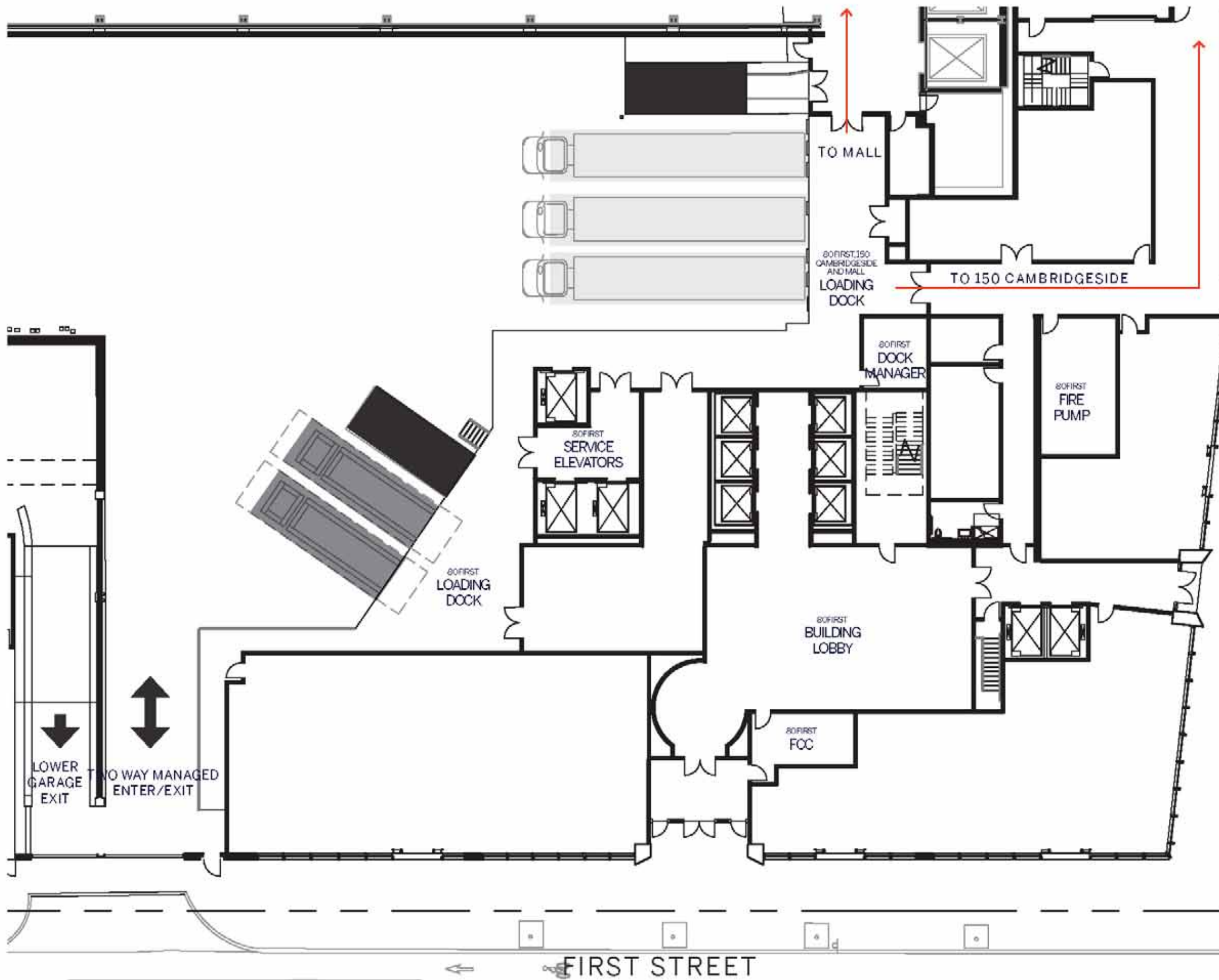
150 CambridgeSide

80 FIRST ST SOUTH LOADING DOCK

EXHIBIT 59

Legend

- DUMPSTER
- 10 X 30
- 10 X 50





Building Sustainability/ Green Building Review

Condition 11 Compliance

Building Sustainability/ Green Building Review

The 150 Cambridgeside Place building has been designed to meet the requirements of Section 22.20 of the CZO and will be registered with the United States Green Building Council under the LEED for New Construction version 4.1 rating system. The building is targeting 61 out of a possible 110 credit points with an additional 44 credit points still undergoing evaluation to determine feasibility of achievement. By targeting 61 credit points, the building anticipates meeting the City of Cambridge requirement to be LEED v4 Gold 'certifiable' and intends to seek such certification. Additionally, in accordance with Section 13.107.4 the following best practices have been incorporated into the 150 Cambridgeside Place building:

Energy and Emissions:

The building is designed to meet IECC 2018/ASHRAE 90.1-2013 energy efficiency requirements to comply with the requirements of the Massachusetts Stretch Energy Code. Based on current modeling, it is expected that the building will achieve a 33% annual energy cost savings when compared to the MA Stretch Code. Based on preliminary energy modeling, using the LEED Alternative Compliance Path for Alternative Energy Performance Metric, the Project will demonstrate at least an average of 30% performance savings for greenhouse gas emissions and source energy compared to the LEED v4 baseline.

Urban Site and Landscaping; Water Management:

Through the use of native/adaptive plant species selection, the building site's landscape water requirement (as calculated by the EPA WaterSense Water Budget Tool) will be reduced by at least 30% from the calculated baseline for the site's peak watering month. The landscape design will include softscape areas which will be planted with a diverse palette of materials which are native, adaptive, low-maintenance, with no irrigation requirements beyond establishment and have year-round aesthetic appeal. The building will meet the Cambridge DPW Stormwater Management Standards to the maximum extent practicable, including the implementation of best management practices (BMPs) such as permeable pavers and tree grates to provide additional water quality treatment measures and promote stormwater infiltration and groundwater recharge to the maximum extent practicable.

Cool Roofs & Site Cooling Strategies:

The roof and non-roof hardscape materials of the building will include light-colored surfaces to reduce the overall heat island effect impact on the building site. The roof membrane will be a high albedo roof product with an initial SRI value of 82 minimum.

Monitoring:

The building will conform to the requirements of the Cambridge Building Energy Use Disclosure Ordinance as required by Chapter 8.67 of the Municipal Code.

Healthy Living and Working:

The unit layouts will prioritize quality views. All of the residential units will have views to the outdoors which may include multiple lines of sight; unobstructed views; views to landscaped areas, sky, pedestrian walkways, and streetscapes.

Transportation:

The building's location within East Cambridge provides various transportation options. The Project is located within ½ mile walking distance of the Lechmere T station, which provides users of the site with access to 424 weekday rides and 264 weekend rides via the MBTA Green B, C, D, and E lines, and MBTA bus lines 69, 80, 87, and 88. As described earlier in this application, exterior short-term and covered long-term bicycle storage is also planned for visitors and regular occupants of the building. The immediate neighborhood provides a direct connection to a local bicycle network that links to a variety of services with pedestrian and cyclist access. 10 shower rooms are provided throughout the building that can be accessed by building occupants in order to support cycling to and from the site.

Flood Resiliency:

The Applicant has reviewed the Climate Change Vulnerability Assessment (CCVA) Report and identified potential locations to address the potential future flood elevations and has taken a conservative approach to reflect the projected 2070 100-year flood elevations. The following table outlines the potential future flood elevations for different scenarios.

Future Potential 2070 Flood Scenarios

Flood Scenario	Elevation in Feet (Cambridge City Base)
2070 – 100-year SLR/SS*	20.4
2070 – 100-year Precipitation	20.3
2070 – 10-year SLR/SS*	N/A
2070 – 10-year Precipitation	N/A

*SLR – sea level rise, SS – storm surge

The proposed first-floor elevation of the 150 Cambridgeside Place building is approximately at elevation 20.4' and will not be impacted by the projected 2070 100-year SLR/SS flood elevation. However, there may be potential locations which

could be improved and will be addressed during project construction. To protect the Project from the 2070 100-year SLR/SS flood elevation, the Applicant is considering the following resilience measures:

- Bulkheading entrances/egress locations that are below the 2070 100-year SLR/SS flood elevation.
- Raising the doorway elevations along Cambridgeside Place to be above the 2070 100-year flood elevations.

In accordance with Conditions 4 and 11 of the Decision, the Applicant submitted the required Green Building Report materials for the 80 First Street building on October 20, 2021, and was certified by CDD on December 29, 2021. A summary of the key components of the 150 Cambridgeside Place Green Building Report materials is included on Exhibit 60, and the full set of materials is on file with CDD.

**LEED V4.1 GOLD NEW CONSTRUCTION
61 POINTS**

HIGH PERFORMANCE ENVELOPE

30% WINDOW TO WALL RATIO
ENVELOPE CONSULTANT INTEGRAL TO TEAM
ENVELOPE COMMISSIONING INCLUDED

TRANSITION TO ELECTRIFICATION

ALL ELECTRIC RESIDENTIAL

LIMITED FOSSIL FUEL USE:
EMERGENCY POWER
RETAIL/RESTAURANT COOKING

ENHANCED PERFORMANCE

TO THE EXTENT REASONABLY PRACTICABLE, THE
BUILDING WILL INCORPORATE PASSIVE BUILDING
STANDARDS (E.G., THOSE PROMOTED BY THE PHIUS
OR SIMILAR CERTIFYING ENTITIES)

FUNDAMENTAL & ENHANCED SYSTEMS
COMMISSIONING INCLUDED



**Building Design Review
150 CambridgeSide
GREEN BUILDING REVIEW**

EXHIBIT 60

SOLAR /GREEN ROOF READY AREA

POTENTIAL TO INSTALL GREEN ROOF, SOLAR OR A COMBINATION

RESILIENCE

CRITICAL GEAR AND RESIDENTIAL LOBBY
ELEVATED ABOVE 2070 FLOOD ELEVATION

HIGH EFFICIENCY LED LIGHTING

INCREASED VENTILATION

HEALTHY INTERIOR AIR QUALITY

INDOOR WATER USE REDUCTION

EV CHARGING

BICYCLE STORAGE AND AMENITIES

ACCESS TO OPEN SPACE

CREATION OF NEW OPEN SPACE AT POCKET PARK, BIKE PATHS
AND AMENITIES



Environmental Comfort Plan Update

Wind & Shadow

Environmental Comfort Plan Update

In connection with establishing the development plan for the CambridgeSide 2.0 Project, the Applicant analyzed environmental conditions in the vicinity of the site and the potential impacts of the CambridgeSide 2.0 Project, as well as how to mitigate any such impacts.

The Applicant's environmental analysis focused on wind, shadow, lighting and noise impacts, and was approved by the Board in its issuance of the Decision.

In light of the reconfiguration of the Subsequent Phase buildings, as detailed in the Minor Amendment, the Applicant has attached updated wind and shadow studies to reflect such reconfiguration and its minimal impact on the previously approved studies.

The following sub-sections summarize the findings, and suggested mitigation measures (e.g., screening, building elements or other site improvements), resulting from these updated wind and shadow analyses. As further explained on the following pages, the potential impacts of the CambridgeSide 2.0 Project (including the reconfigured Subsequent Phase buildings) remain consistent with conditions that are typical in an urban environment and are minimal in comparison to the public benefits attributable to the CambridgeSide 2.0 Project.



Wind Study

Wind Study

Consistent with the Decision, which considered the effects of the entire CambridgeSide 2.0 Project, an updated Pedestrian Wind Study assessment was prepared for the entire CambridgeSide 2.0 Project, which includes the Initial Phase buildings (60 First Street and 20 CambridgeSide) and the proposed Subsequent Phase 80 First Street and 150 CambridgeSide, reconfigured as described in the Minor Amendment. The Wind Study is attached on the following pages, with backup data available upon request. The potential wind conditions were assessed based on actual wind tunnel testing of a constructed scale model of the CambridgeSide 2.0 Project, within a 1,600-foot radius of the site, with three different scenarios: “No Build”, “Build” and “Full Build” configurations. “No Build” is the existing buildings on the existing site with the existing surrounding buildings; “Build” is the proposed Project buildings with the existing surrounding buildings; and “Full Build” is the proposed Project buildings with the existing surrounding buildings and other proposed buildings in surrounding projects such as Cambridge Crossing. The testing, based upon local wind records, is compared to appropriate criteria for gauging wind comfort and safety in pedestrian areas.

The Pedestrian Wind Study analysis will be used during the design process to help guide the comfort of pedestrians along the street and around building access points. The key findings from the report are summarized below:

Mean Speed

- No dangerous mean wind speeds are predicted for the three configurations assessed.
- Relatively low mean speeds around the existing site are observed on an annual basis, with slightly higher wind activity to the south of the project site near Charles Park.
- Mean annual wind speeds on the streets bounding the project site are predicted to remain similar to those that currently prevail once the proposed development is added. These wind conditions are considered suitable for the intended pedestrian usages. An exception is the southwest corner of the 150 CambridgeSide Place where uncomfortable conditions are anticipated on an annual basis.
 - » According to the report, the uncomfortable conditions occur in winter and spring only. Refer to Table 2 in the Appendix.
 - » The location indicated may be used for pedestrians walking or waiting for the intersection crossing signal; however it is not intended for passive open space or seating.
 - » There is no existing data for this location to understand the comparison to the built condition.

- With the anticipated future surrounding buildings included, comparable mean speeds to the Build configuration are anticipated.
- Conceptual wind control measures have been presented for select areas where mean wind speeds are slightly higher than desired.

Effective Gust

For all tested configurations, wind speeds at all locations are predicted to meet the effective gust criterion for pedestrian wind safety on both an annual and seasonal basis. No design modifications or mitigations are required to address wind safety issues.

Mitigation

Resolution of the single exceedance indicated in the updated report will be addressed by employing suggested design modifications, which may include relocating passive outdoor seating and entries from the location.

Environmental Comfort Plan Wind Study REPORT

FINAL REPORT



80 FIRST STREET & 150 CAMBRIDGESIDE PLACE

CAMBRIDGE, MA

PEDESTRIAN WIND STUDY
RWDI # 2104370
November 8, 2021

SUBMITTED TO

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**NEW ENGLAND
DEVELOPMENT**

**ELKUS | MANFREDI
ARCHITECTS**



Environmental Comfort Plan Wind Study SUMMARY

PEDESTRIAN WIND STUDY
80 FIRST STREET & 150 CAMBRIDGESIDE PLACE
RWDI #2104370
November 8, 2021



EXECUTIVE SUMMARY

Rowan Williams Davies & Irwin Inc. (RWDI) was retained to conduct a pedestrian wind assessment for the proposed 80 First Street & 150 Cambridgeside Place in Cambridge, MA (Image 1). The potential wind conditions have been assessed based on wind tunnel testing of the project under the No Build, Build and Full Build configurations (Images 2A through 2C), and the local wind records (Image 3) and compared to the Mean Speed and Effective Gust pedestrian wind criteria. The results of the assessment are shown on site plans in Figures 1A through 2C, and the associated wind speeds are listed in Tables 1 and 2. The key findings are summarized as follows:

Effective Gust

- For all tested configurations, wind speeds at all locations are predicted to meet the effective gust criterion for pedestrian wind safety on both an annual and seasonal basis.

Mean Speed

- No dangerous mean wind speeds are predicted for the three configurations assessed.
- Relatively low mean speeds around the existing site are observed on an annual basis, with slightly higher wind activity to the south of the project site near Charles Park.
- Mean annual wind speeds on the streets bounding the project site are predicted to remain similar to those that currently prevail once the proposed development is added. These wind conditions are considered suitable for the intended pedestrian usages. An exception is the southwest corner of the 150 Cambridgeside Place where uncomfortable conditions are anticipated on an annual basis.
- With the anticipated future surrounding buildings included, comparable mean speeds to the Build configuration are anticipated.
- Conceptual wind control measures have been presented for select areas where mean wind speeds are slightly higher than desired.

rwdi.com

PEDESTRIAN WIND STUDY
80 FIRST STREET & 150 CAMBRIDGESIDE PLACE
RWDI #2104370
November 8, 2021



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1 INTRODUCTION

RWDI was retained to conduct a pedestrian wind assessment for the proposed 80 First Street & 150 Cambridgeside Place in Cambridge, MA. The project (site shown in Image 1) is located on the north side of Charles St between First St and Edwin H Land Blvd. The proposed buildings are located at southwest corner of the existing retail shopping complex with a central mall.

The objective of the study was to assess the effect of the proposed development on local conditions in pedestrian areas on and around the study site and provide recommendations for minimizing adverse effects, if needed.

This report presents the project objectives, background and approach, and discusses of the results from RWDI's assessment and provides conceptual wind control measures, where necessary.



Image 1: Aerial View of Site and Surroundings (Photo Courtesy of Google™ Earth)



2 BACKGROUND AND APPROACH

2.1 Physical Modeling

To assess the wind environment around the proposed project, a 1:400 scale model of the project site and surroundings was constructed for the wind tunnel tests of the following configurations:

- A - No Build: Existing site with existing surroundings (Image 2A),
- B - Build: Proposed project with existing surroundings (Image 2B), and,
- C - Full Build: Proposed project with existing and future surroundings (Image 2C).

The wind tunnel model included all relevant surrounding buildings and topography within an approximately 1600 ft radius of the study site. The wind and turbulence profiles in the atmospheric boundary layer beyond the modelled area were also simulated in RWDI's wind tunnel. The wind tunnel model was instrumented with 119 specially designed wind speed sensors to measure mean and gust speeds at a full-scale height of approximately 5 ft above local grade in pedestrian areas throughout the study site. Wind speeds were measured for 36 directions in a 10-degree increment. The measurements at each sensor location were recorded in the form of ratios of local mean and gust speeds to the mean wind speed at a reference height above the model. The placement of wind measurement locations was based on our experience and understanding of the pedestrian usage for this site and reviewed by design team.

Environmental Comfort Plan Wind Study MODEL

PEDESTRIAN WIND STUDY
80 FIRST STREET & 150 CAMBRIDGESIDE PLACE
RWDI #2104370
November 8, 2021



Image 2A: Wind Tunnel Study Model - No Build Configuration

PEDESTRIAN WIND STUDY
80 FIRST STREET & 150 CAMBRIDGESIDE PLACE
RWDI #2104370
November 8, 2021



Image 2B: Wind Tunnel Study Model - Build Configuration

Environmental Comfort Plan

Wind Study

MODEL AND DATA

PEDESTRIAN WIND STUDY
80 FIRST STREET & 150 CAMBRIDGESIDE PLACE
RWDI #2104370
November 8, 2021

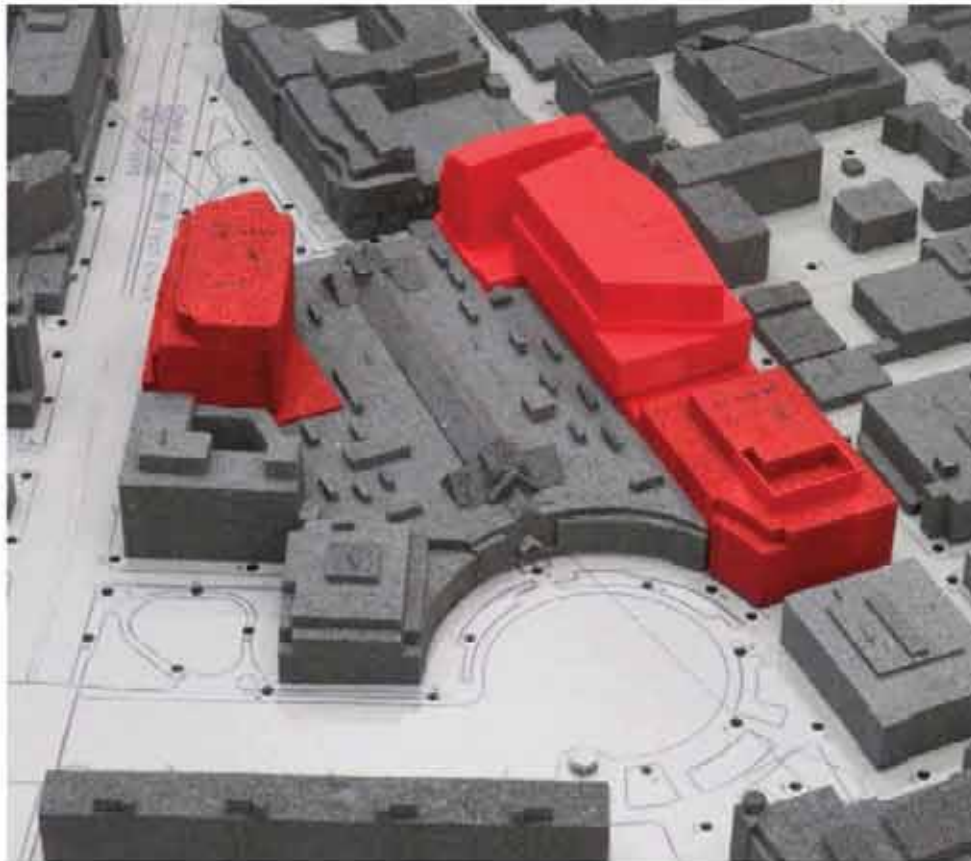


Image 2C: Wind Tunnel Study Model - Full Build Configuration

PEDESTRIAN WIND STUDY
80 FIRST STREET & 150 CAMBRIDGESIDE PLACE
RWDI #2104370
November 8, 2021



2.2 Meteorological Data

The data from the wind tunnel tests was combined with long term meteorological data recorded during the years 1995 through 2020 at Boston Logan International Airport to predict full scale wind conditions. The analysis was performed separately for the entire year and for each of the four seasons. Images 3 and 4 present "wind roses", summarizing the annual and seasonal wind climates in the Boston area, respectively, based on the data from Logan Airport.

On an annual basis, the most common wind directions are those between north-northwest and south-southwest. Winds from the east-northeast to the east-southeast are also relatively common. In the case of strong winds, west-northwest, northwest, west and northeast are the dominant wind directions. A similar directional distribution is seen in the seasonal wind roses as well (image 4).

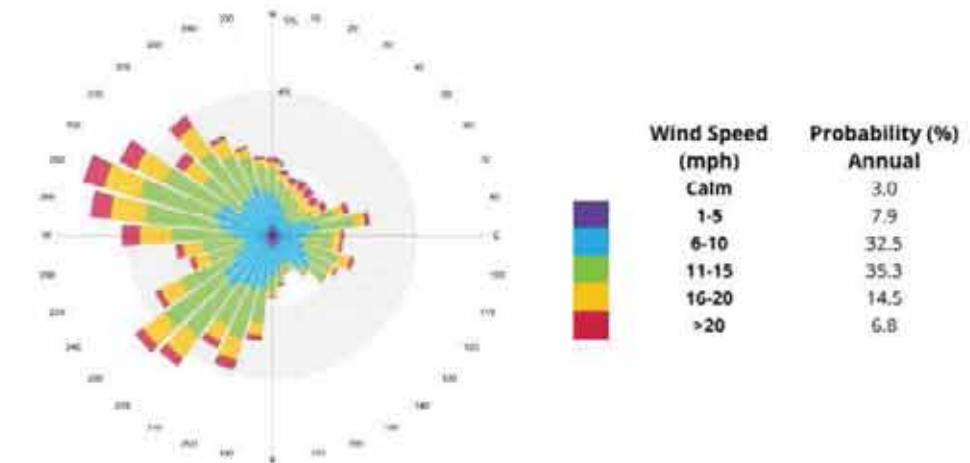


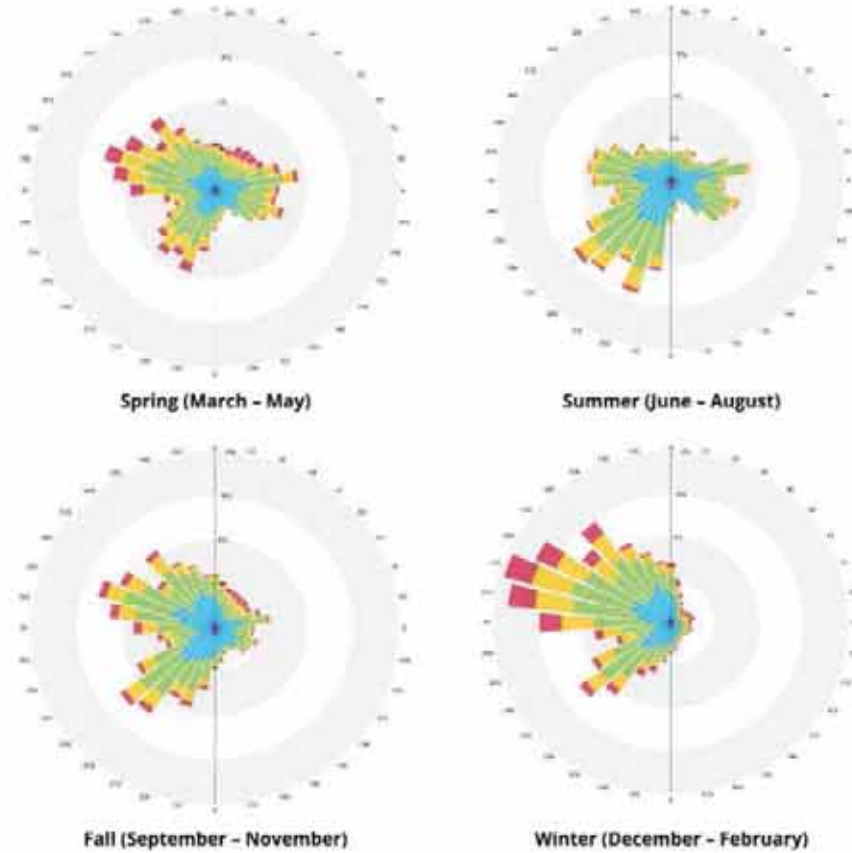
Image 3: Annual Directional distribution of winds approaching Boston Logan International Airport from 1995 through 2020

Environmental Comfort Plan

Wind Study

CRITERIA

PEDESTRIAN WIND STUDY
80 FIRST STREET & 150 CAMBRIDGESIDE PLACE
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Wind Speed (mph)	Probability (%)			
	Spring	Summer	Fall	Winter
Calm	2.7	3.1	3.4	2.6
1-5	6.8	9.5	8.7	6.6
6-10	28.6	39.9	34.5	28.2
11-15	35.9	36.7	34.6	34.2
16-20	17.2	9.9	13.0	17.7
>20	8.8	1.9	5.9	10.7

Image 3: Seasonal Directional Distribution of Winds Approaching Boston Logan International Airport from 1995 through 2020

PEDESTRIAN WIND STUDY
80 FIRST STREET & 150 CAMBRIDGESIDE PLACE
RWDI #2104370
November 8, 2021



2.3 Pedestrian Wind Criteria

The pedestrian wind criteria implemented for the current study uses two standards for assessing the relative wind comfort of pedestrians. First, the wind design guidance criterion states that an effective gust velocity (hourly mean wind speed + 1.5 times the root-mean-square wind speed) of 31 mph should not be exceeded more than 1% of the time.

The second set of criteria used to determine the acceptability of specific locations is based on the work of Melbourne. This set of criteria is used to determine the relative level of pedestrian wind comfort for activities such as sitting, standing, or walking. The criteria are expressed in terms of benchmarks for the 1-hour mean wind speed exceeded 1% of the time.

Wind Acceptability	Effective Gust Speed (mph)
Acceptable	≤ 31
Unacceptable	> 31

Comfort Category	Mean Wind Speed (mph)
Comfortable for Sitting	≤ 12
Comfortable for Standing	≤ 15
Comfortable for Walking	≤ 19
Uncomfortable for Walking	> 19
Dangerous	> 27

Effective gust and mean wind speeds are based on a 1% exceedance or 99 percentile wind speeds.

The consideration of wind in planning outdoor activity areas is important since high winds in an area tend to deter pedestrian use. For example, winds should be light or relatively light in areas where people would be sitting, such as outdoor cafes or playgrounds. For bus stops and other locations where people would be standing, somewhat higher winds can be tolerated. For frequently used sidewalks, where people are primarily walking, stronger winds are acceptable. For infrequently used areas, the wind comfort criteria can be relaxed even further. The actual effects of wind can range from pedestrian inconvenience, due to the blowing of dust and other loose material in a moderate breeze, to severe difficulty with walking due to the wind forces on the pedestrian.

The wind climate found in a typical downtown location in Boston is generally comfortable for the pedestrian use of sidewalks and thoroughfares and meets the effective gust velocity criterion of 31 mph. However, without any mitigation measures, this wind climate is likely to be frequently uncomfortable for more passive activities such as sitting.

This study involved state-of-the-art measurement and analysis techniques to predict wind conditions. Nevertheless, some uncertainty remains in predicting wind comfort, and this must be kept in mind. For example, the sensation of comfort among individuals can be quite variable. Variations in age, individual health, clothing, and other human factors can change a particular response of an individual. The comfort limits used in this report represent an average for the total population. Also, unforeseen changes in the project area, such as the construction or removal of buildings, can affect the conditions experienced at the site. Finally, the prediction of wind speeds is necessarily a statistical procedure. The wind speeds reported are for the frequency of occurrence stated (1% of the time). Higher wind speeds will occur but on a less frequent basis.



3 RESULTS AND DISCUSSION

The predicted wind conditions in terms of mean and effective gust speeds pertaining to the tested configurations are graphically depicted on site plans in Figures 1A through 2C located in the "Figures" section of this report. These conditions and the associated wind speeds are presented in Tables 1 and 2, located in the "Tables" section. The following summary of pedestrian wind comfort is based on the annual winds for each configuration tested. Typically, the summer and fall winds tend to be more comfortable than the annual winds while the winter and spring winds are less comfortable than the annual winds.

Wind conditions comfortable for walking are appropriate for sidewalks and walkways as pedestrians will be active and less likely to remain in one area for prolonged periods of time. Lower wind speeds conducive to standing are preferred at main entrances where pedestrians are apt to linger. Wind speeds comfortable for sitting are ideal during the summer for areas intended for passive activities, such as plaza spaces or outdoor dining areas.

3.1 Wind Safety

Positively, the annual and seasonal effective gust criteria are expected to be met at all of the sensor locations around the site in all the test configurations (Figure 2A, 2B and 2C, and Table 2). No design modifications or mitigations are required to address wind safety issues.

3.2 Wind Comfort

3.2.1 No Build Configuration

In general, the annual mean wind speeds on the existing site are comfortable for sitting or standing, with a few locations categorized for walking to the south of the proposed developments near the Charles Park (Locations 10, 13, 14, 16 and 19 in Figure 1A). These conditions are appropriate for the current intended uses. There are no dangerous wind speeds observed on an annual or seasonal basis; however, uncomfortable wind conditions during the winter months currently prevail near Location 14 (refer to Table 2).

3.2.2 Build Configuration

The existing wind environment, which is suitable for standing or for more passive uses (Figure 1B), is expected to remain similar at the majority of locations once the proposed project is added. Calm wind speeds, comfortable for sitting on an annual basis, are also predicted at the outdoor seating areas near Locations 99 and 106 in Figure 1B. These conditions are considered appropriate for passive pedestrian use such as lounging or dining. An exception is close to southwest corner of the 150 Cambridgeside Place building (Location 95 in Figure 1B) where uncomfortable conditions on an annual basis are predicted. These conditions could be improved by utilizing vertical wind control measures such as 5-5 ft tall planters or wind screens situated upwind (i.e., to the west) of this area. Some examples of these features are presented in image 5. Furthermore, mean wind speeds along the Lechmere Canal are predicted to be similar to those observed in the No Build configuration. Furthermore, no dangerous wind speeds are expected in the Build configuration on an annual or seasonal basis (Figure 1B and Table 2).



Image 5: Vertical Wind Control Features Applicable to Grade Level

The main entrance locations of the 80 First Street & 150 Cambridgeside Place buildings are situated near sensors 94, 98 and 102 in Figure 1B. The mean speeds at all these entrances are predicted to be comfortable for sitting on an annual basis, which is considered suitable for entrances where pedestrians may linger.

3.2.3 Updated Massing

The latest design of the 150 Cambridgeside Place has undergone some changes since the wind tunnel test according to the latest model received on November 2, 2021. The main difference from a pedestrian wind impact perspective is the removal of the tower setbacks along the south side of the building, as shown in Image 6. As this façade is not exposed to a primary wind direction, the results from the wind tunnel study are anticipated to remain similar with the new massing in place.

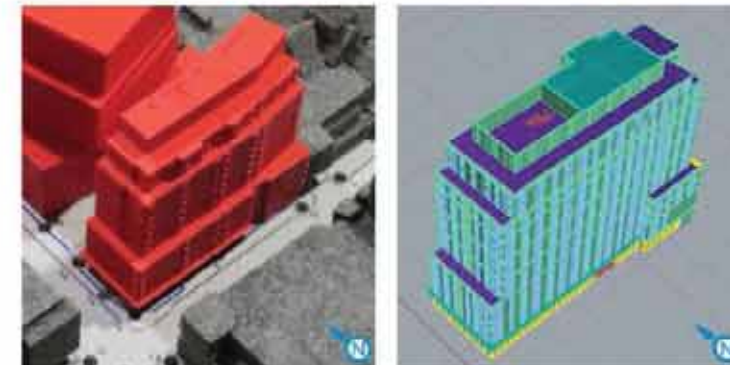


Image 6: Wind Tunnel Study Model (Left) Versus Updated Design (Right)

3.2.4 Full Build Configuration

With the anticipated future surrounding buildings included (shown in green in Image 2C), comparable mean speeds to the Build configuration are anticipated. Similarly, no dangerous mean wind speeds are predicted on an annual or seasonal basis (Figure 1C).

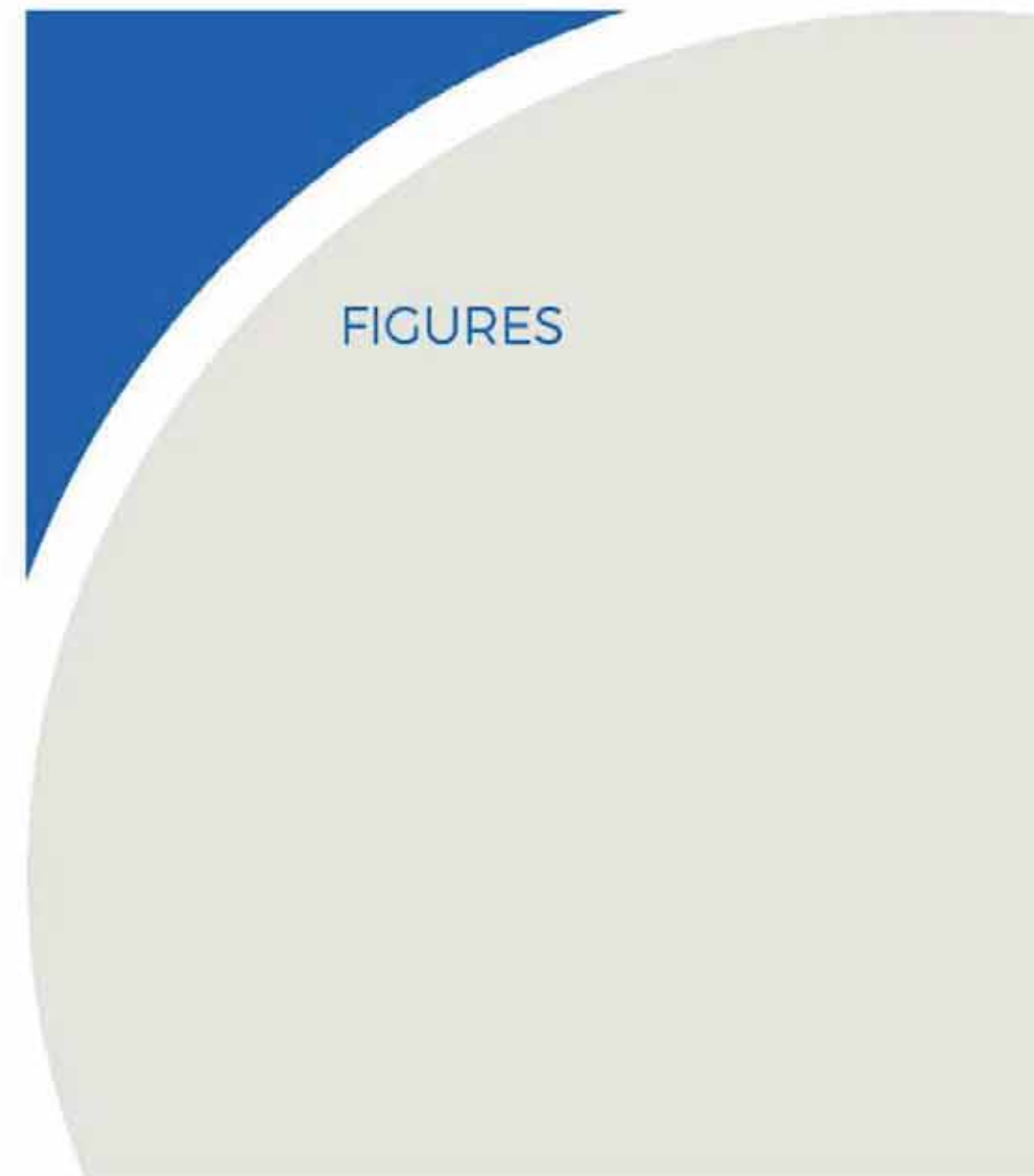
PEDESTRIAN WIND STUDY
 80 FIRST STREET & 150 CAMBRIDGESIDE PLACE
 RWDI #2104370
 November 8, 2021



4 APPLICABILITY OF RESULTS

The wind conditions presented in this report pertain to the model of the 80 First Street & 150 Cambridgeside Place constructed using the drawings and information listed below. Should there be any design changes that deviate from this list of drawings, the wind condition predictions presented may change. Therefore, if changes in the design are made, it is recommended that RWDI be contacted and requested to review their potential effects on wind conditions.

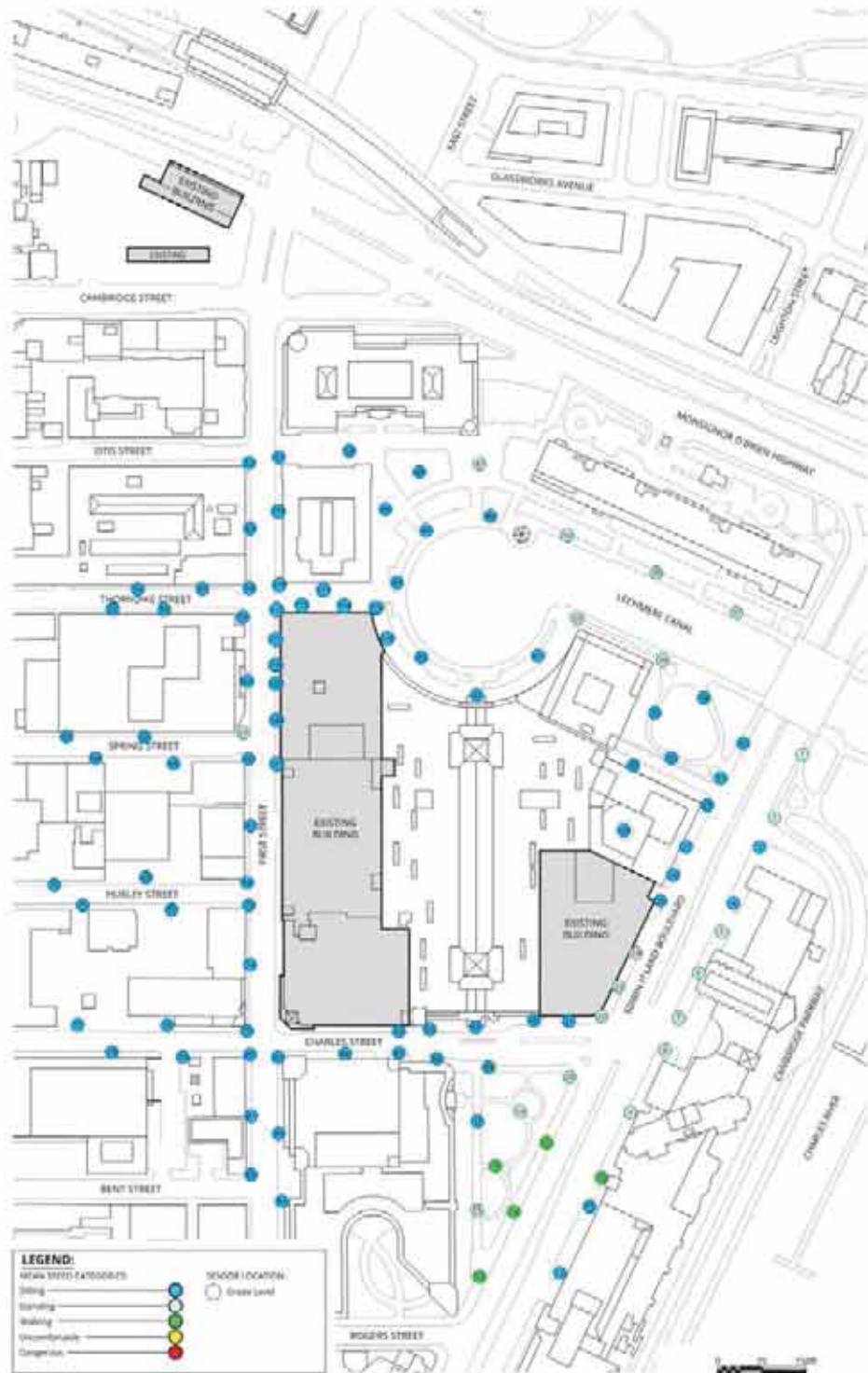
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CS-110_FIRST_STREET_MASSING-v18.rvt	3D Revit	24/08/2021
21_0824_CS_SitePlan	PDF	24/08/2021
Arch_Cambridgeside_110_First_Street_v18_Straight_detached.rvt	3D Revit	02/11/2021



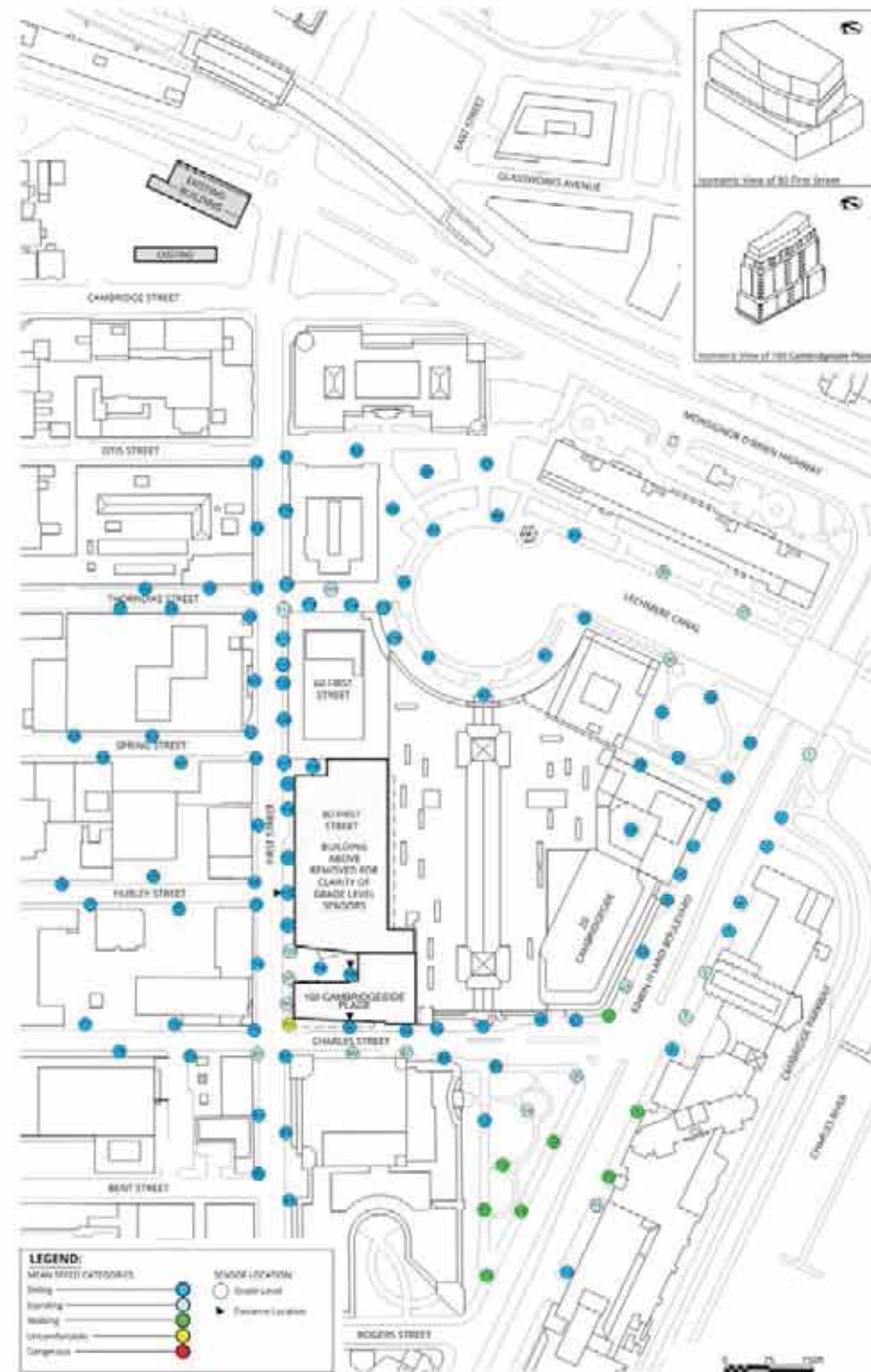
Environmental Comfort Plan

Wind Study

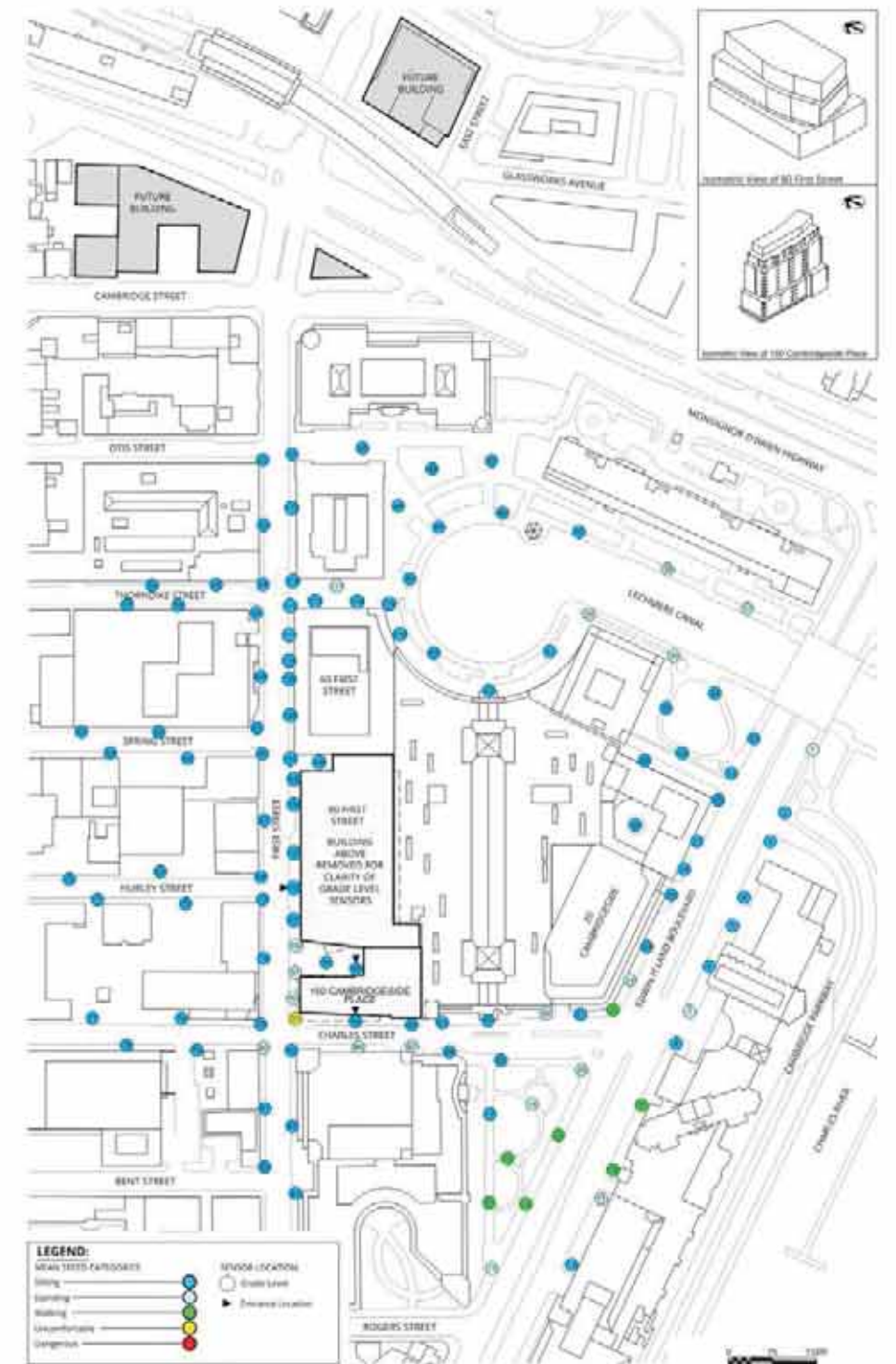
FIGURES : MEAN SPEED



Pedestrian Wind Conditions - Mean Speed
Full Build
Annual (January to December)
80 First Street & 100 Cambridge Place - Cambridge, MA
Drawn by: GRK | Figure: 1A
Approx. Scale: 1"=150'
Project #2104370 | Date Revised: Oct. 6, 2021



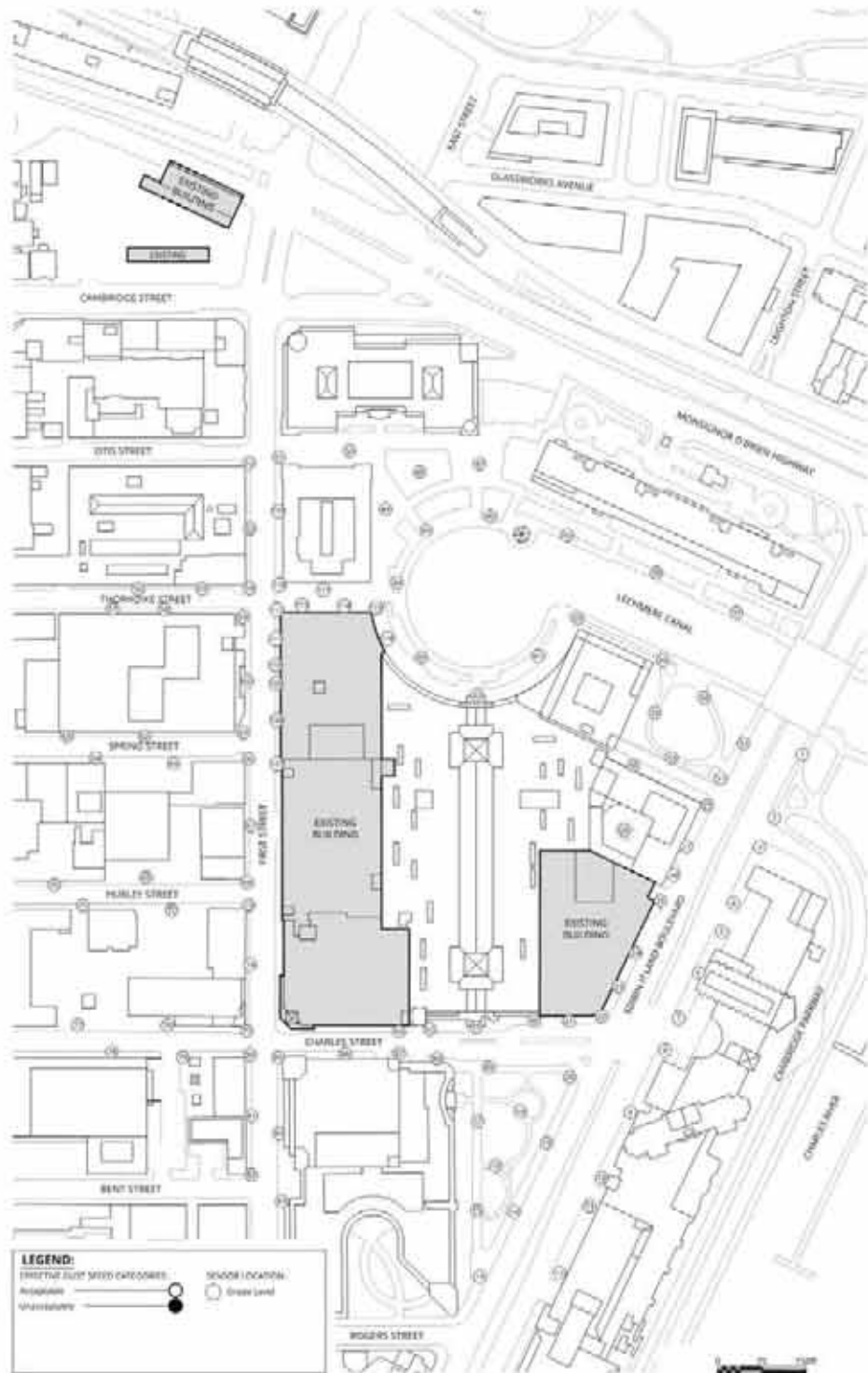
Pedestrian Wind Conditions - Mean Speed
Full Build
Annual (January to December)
80 First Street & 100 Cambridge Place - Cambridge, MA
Drawn by: GRK | Figure: 1B
Approx. Scale: 1"=150'
Project #2104370 | Date Revised: Oct. 6, 2021



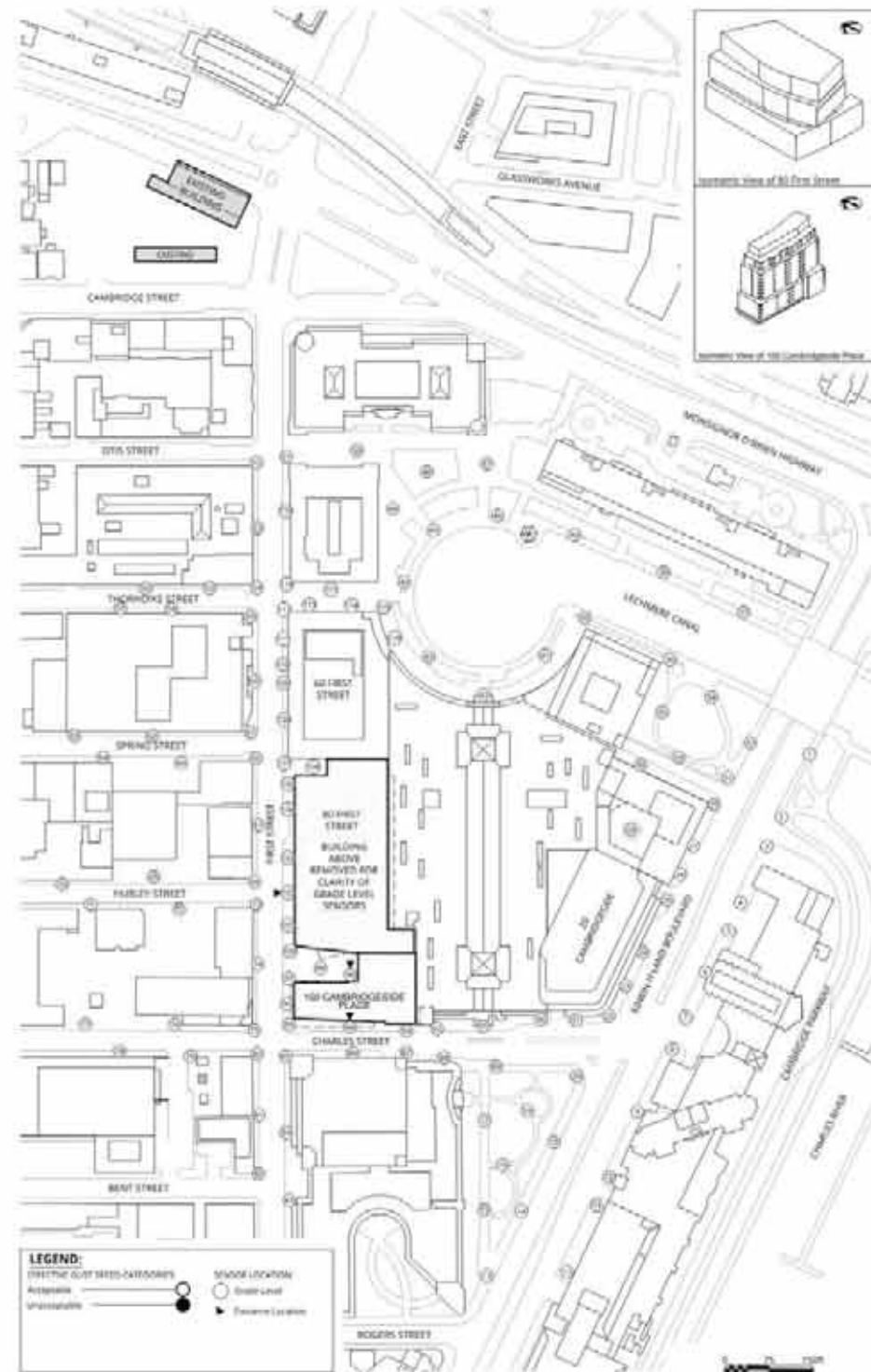
Pedestrian Wind Conditions - Mean Speed
Full Build
Annual (January to December)
80 First Street & 100 Cambridge Place - Cambridge, MA
Drawn by: GRK | Figure: 1C
Approx. Scale: 1"=150'
Project #2104370 | Date Revised: Oct. 6, 2021

Environmental Comfort Plan Wind Study

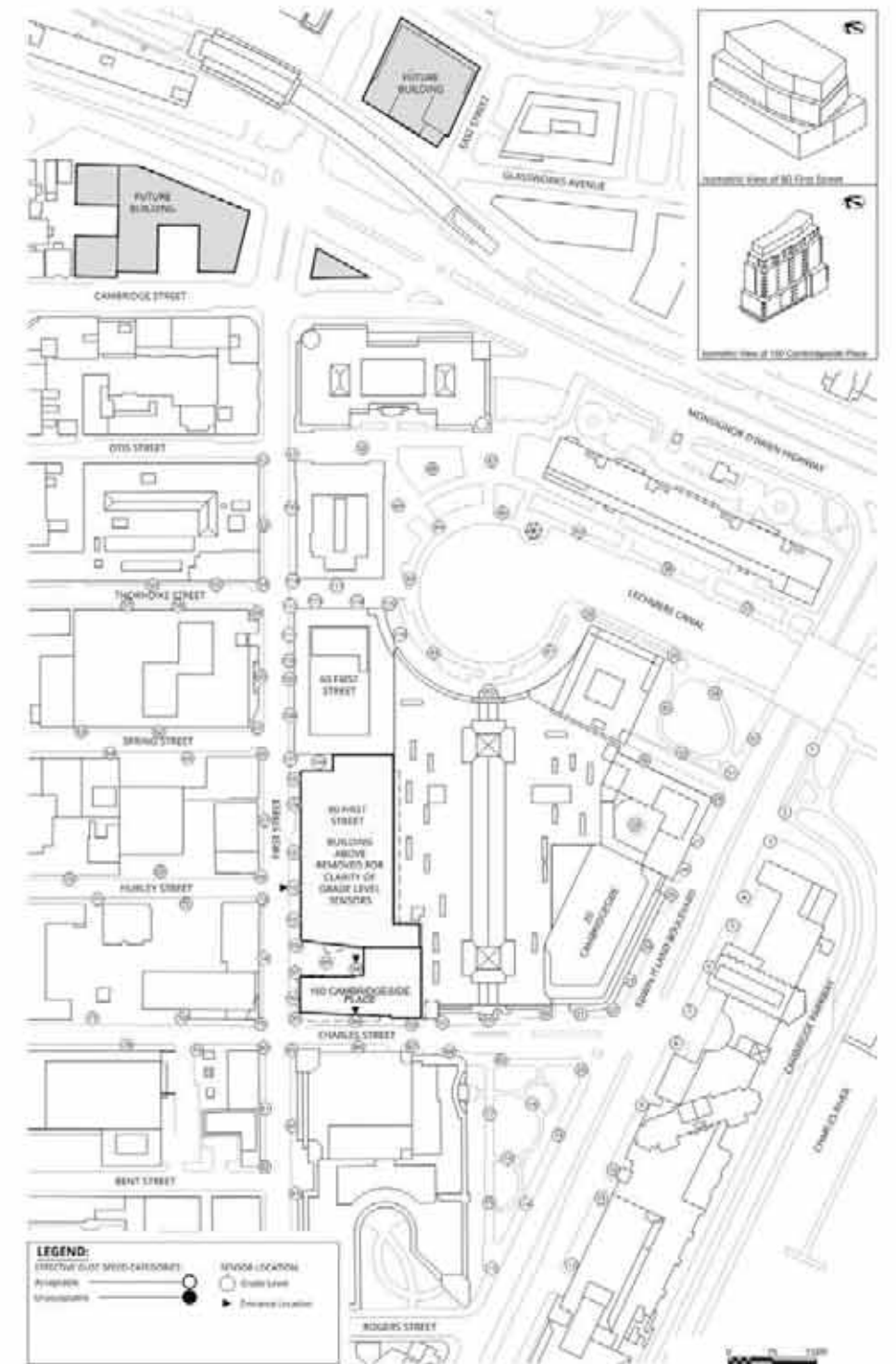
FIGURES : EFFECTIVE GUST SPEED



Pedestrian Wind Conditions - Effective Gust Speed
Full Build
Annual (January to December)
80 First Street & 100 Cambridge Side Place - Cambridge, MA
Project #2104370 Date Revised: Oct. 6, 2021



Pedestrian Wind Conditions - Effective Gust Speed
Full Build
Annual (January to December)
80 First Street & 100 Cambridge Side Place - Cambridge, MA
Project #2104370 Date Revised: Oct. 6, 2021



Pedestrian Wind Conditions - Effective Gust Speed
Full Build
Annual (January to December)
80 First Street & 100 Cambridge Side Place - Cambridge, MA
Project #2104370 Date Revised: Oct. 6, 2021



Shadow Study

Shadow Study

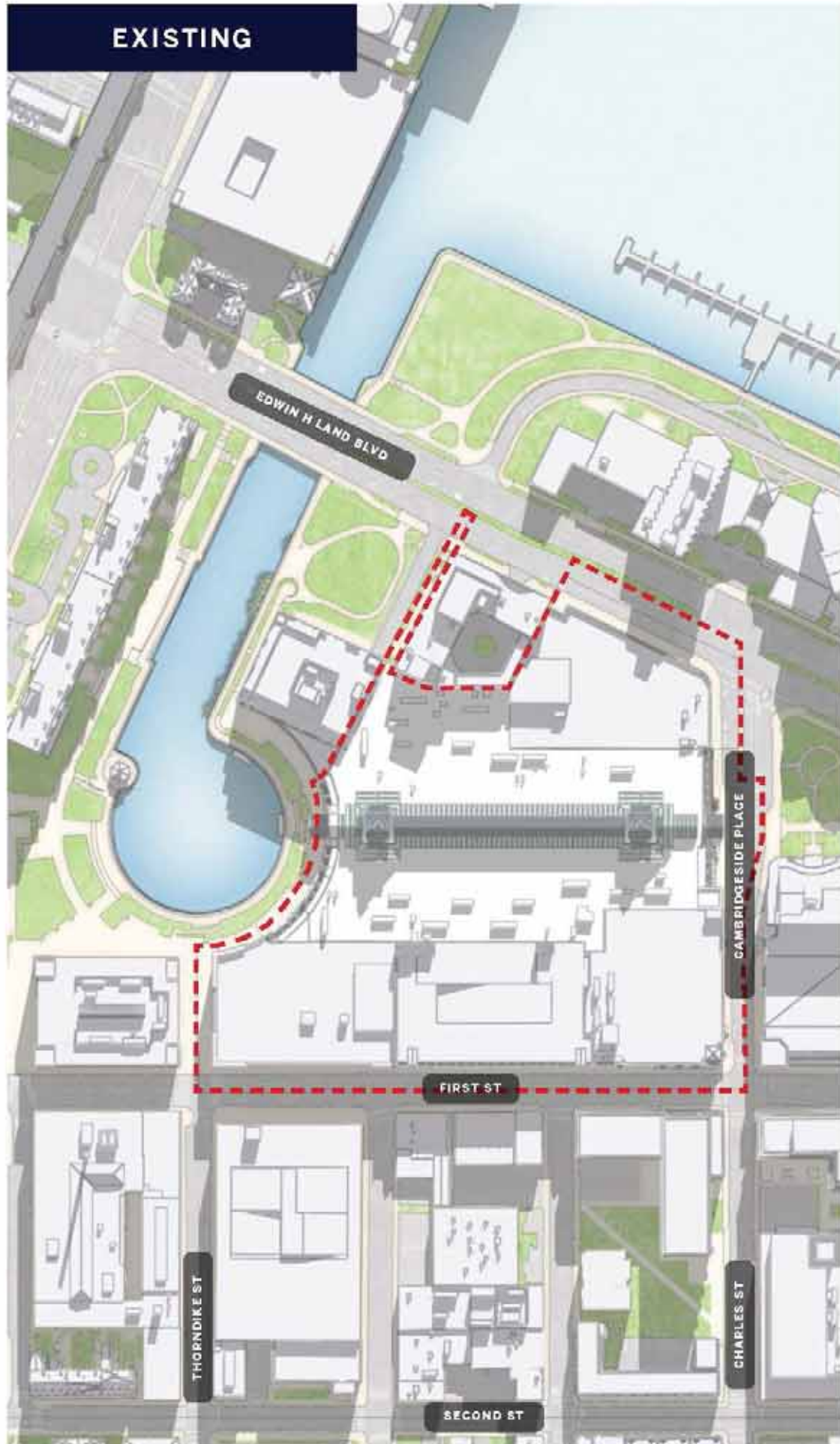
Consistent with the Decision, which considered the effects of the entire CambridgeSide 2.0 Project, an updated Shadow Study was undertaken to assess potential seasonal shadow impacts of the entire CambridgeSide 2.0 Project, which includes the Initial Phase buildings (60 First Street and 20 CambridgeSide) and the proposed Subsequent Phase 80 First Street and 150 CambridgeSide, reconfigured as described in the Minor Amendment, on the surrounding neighborhood and open space. This Shadow Study was performed out of an abundance of caution to confirm that the reconfiguration of the Subsequent Phase buildings resulted in condition similar to that which was previously approved by the Board, which is confirmed in the following shadow study diagrams.

Shadow impacts were analyzed resulting both from existing conditions and the proposed CambridgeSide 2.0 Project design for March/September 21, June 21, and December 21 – at 9:00 AM, 12:00 PM, 3:00 PM and 6:00 PM. The shadow study diagrams are included on the following pages.

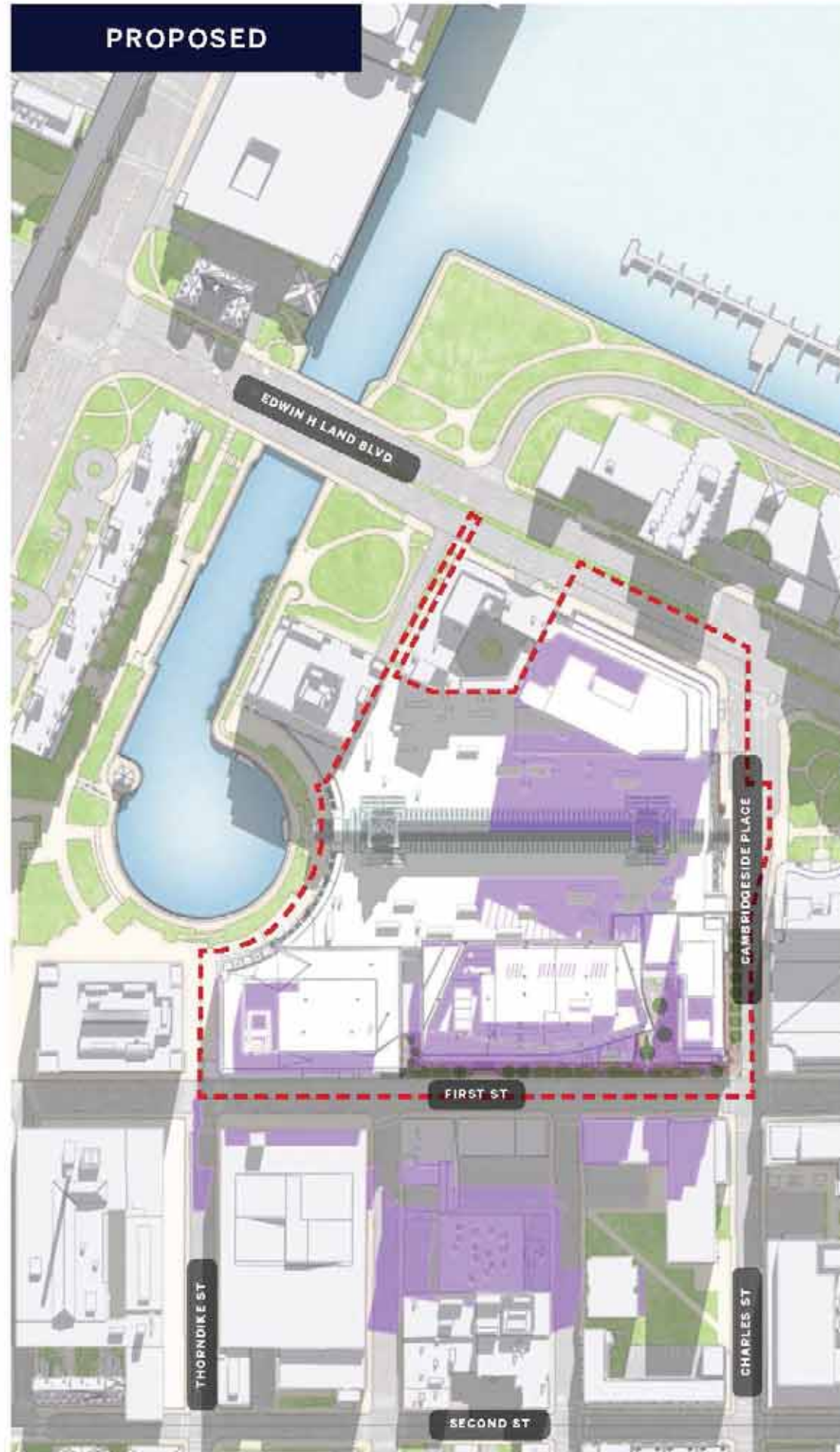
In summary, the scale and layout of the proposed CambridgeSide 2.0 Project buildings were designed to provide an environment that is compatible with the neighborhood, pedestrians, and for users of the water dependent facilities on adjacent properties. The proposed buildings are stepped on their eastern faces to lessen the impact of new shadows on the adjacent neighborhood and open spaces. New shadows generally fall on developed parcels, including the existing Mall, or on paved surfaces. New late day shadows in March, September and December fill in small areas in the existing, dense shadow map, primarily in areas where the pedestrian level is already shaded by trees.

As shown by the Shadow Study attached as Appendix B, the shadows produced by the reconfigured Subsequent Phase buildings (i.e., 80 First Street and 150 CambridgeSide Place) are similar to those previously approved by the Board for the CambridgeSide 2.0 Project.

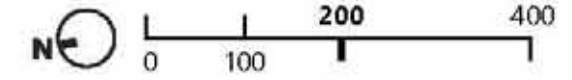
EXISTING



PROPOSED



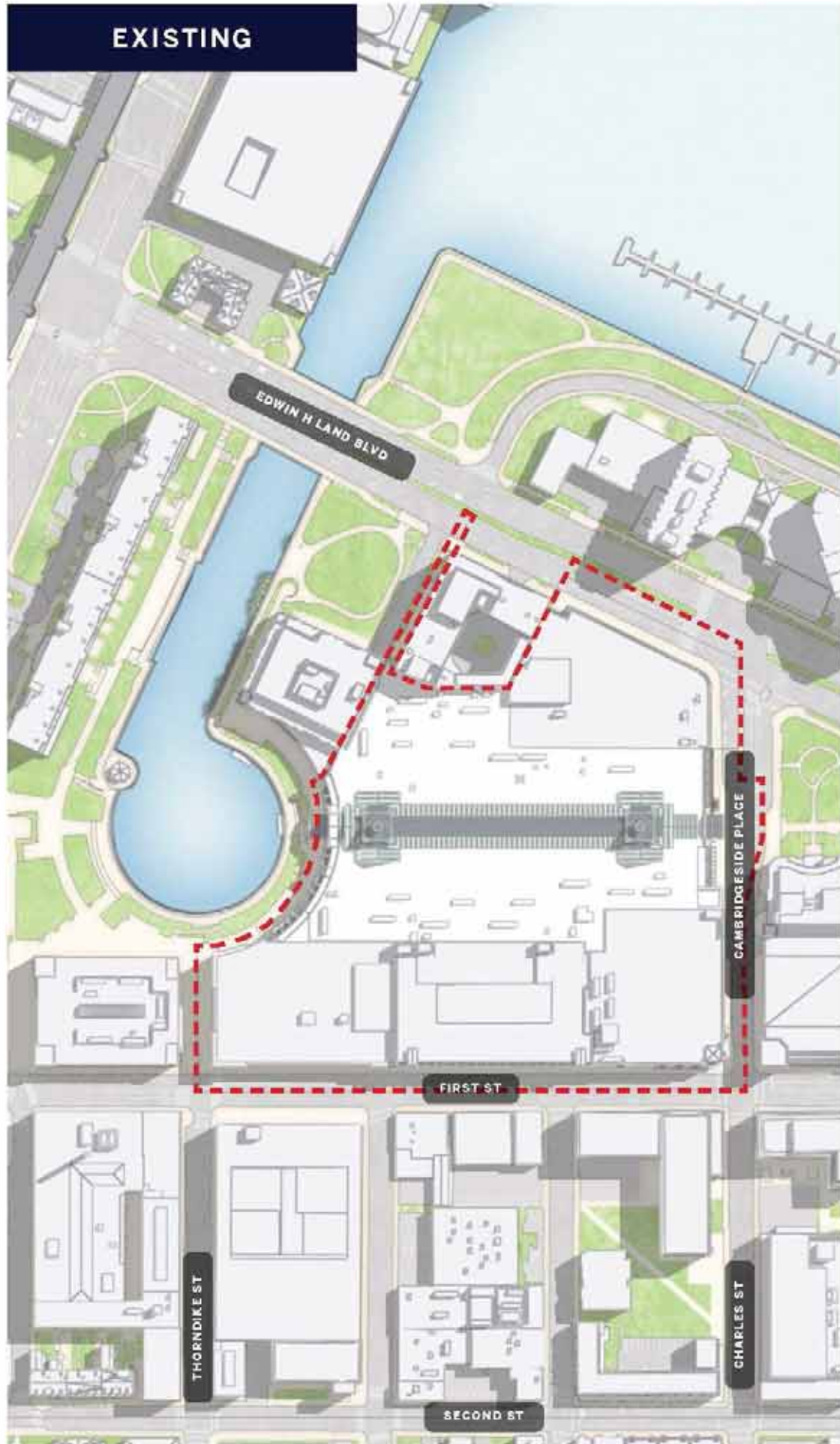
Environmental Comfort Plan
Shadow Study
 March / September 21
 09:00



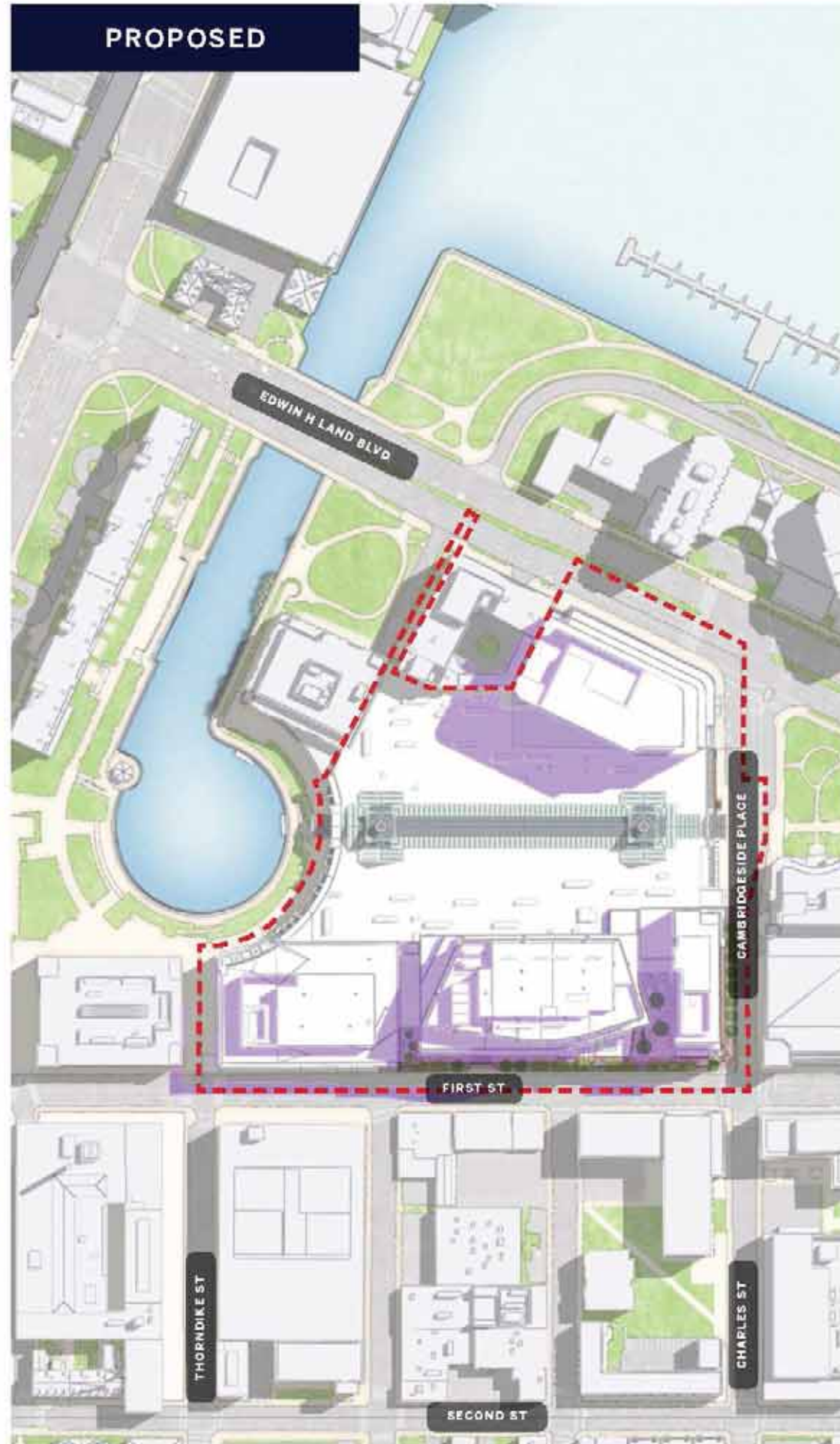
Legend

- PUD BOUNDARY
- GREEN SPACE
- EXISTING SHADOW
- PROPOSED BUILDING SHADOW

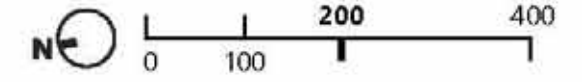
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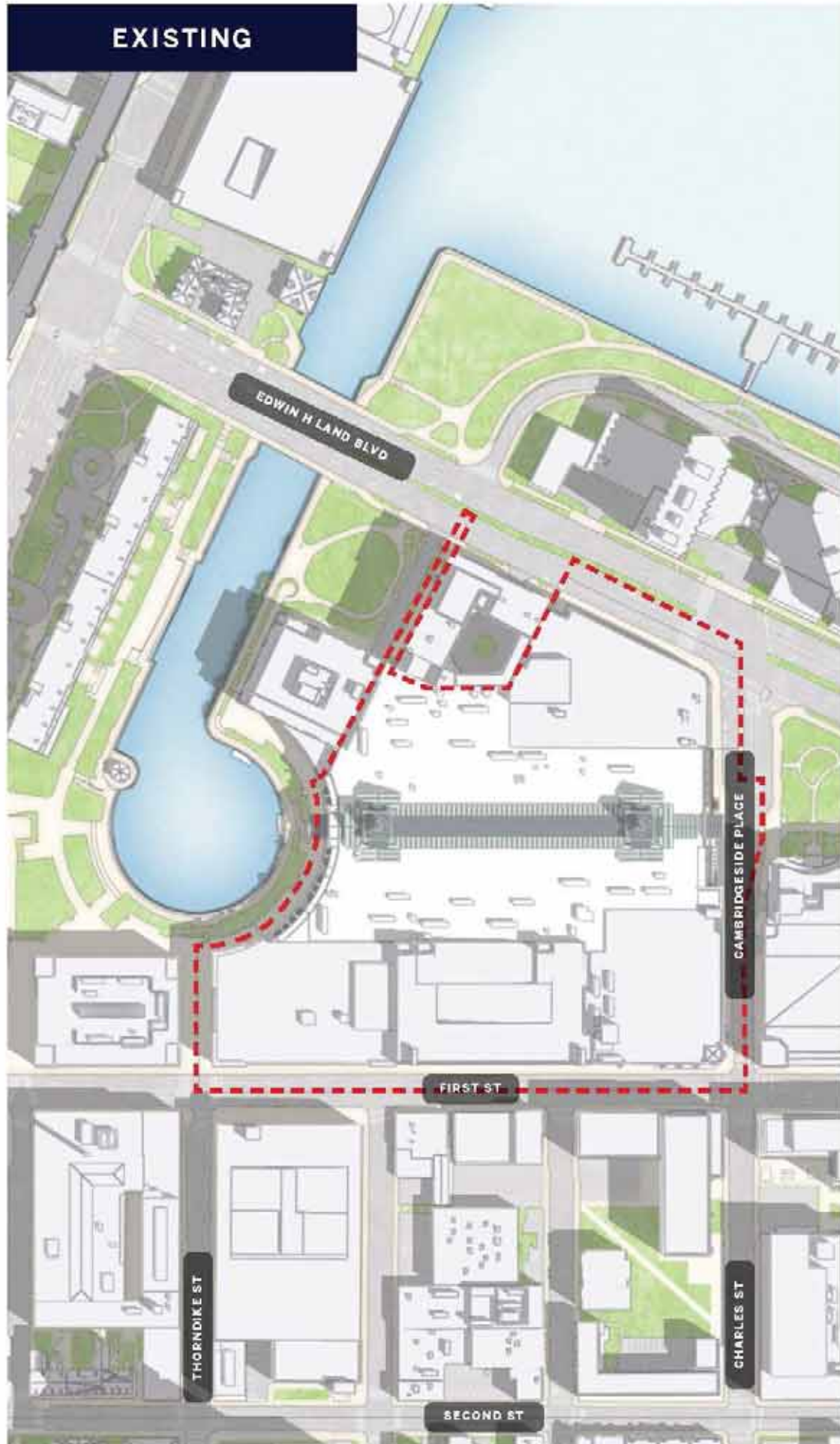
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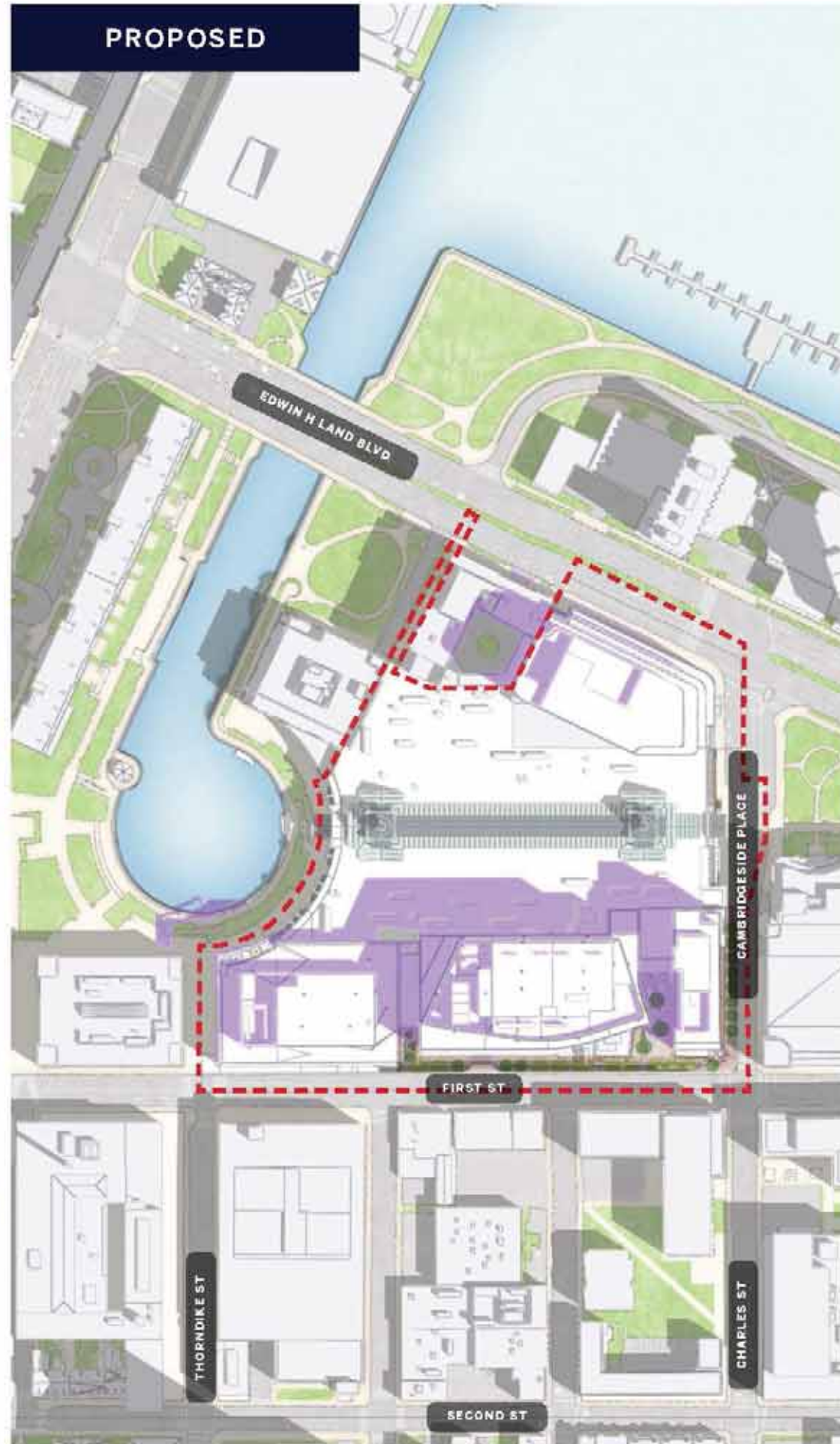
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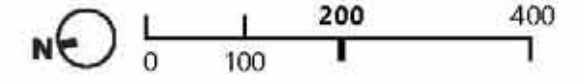
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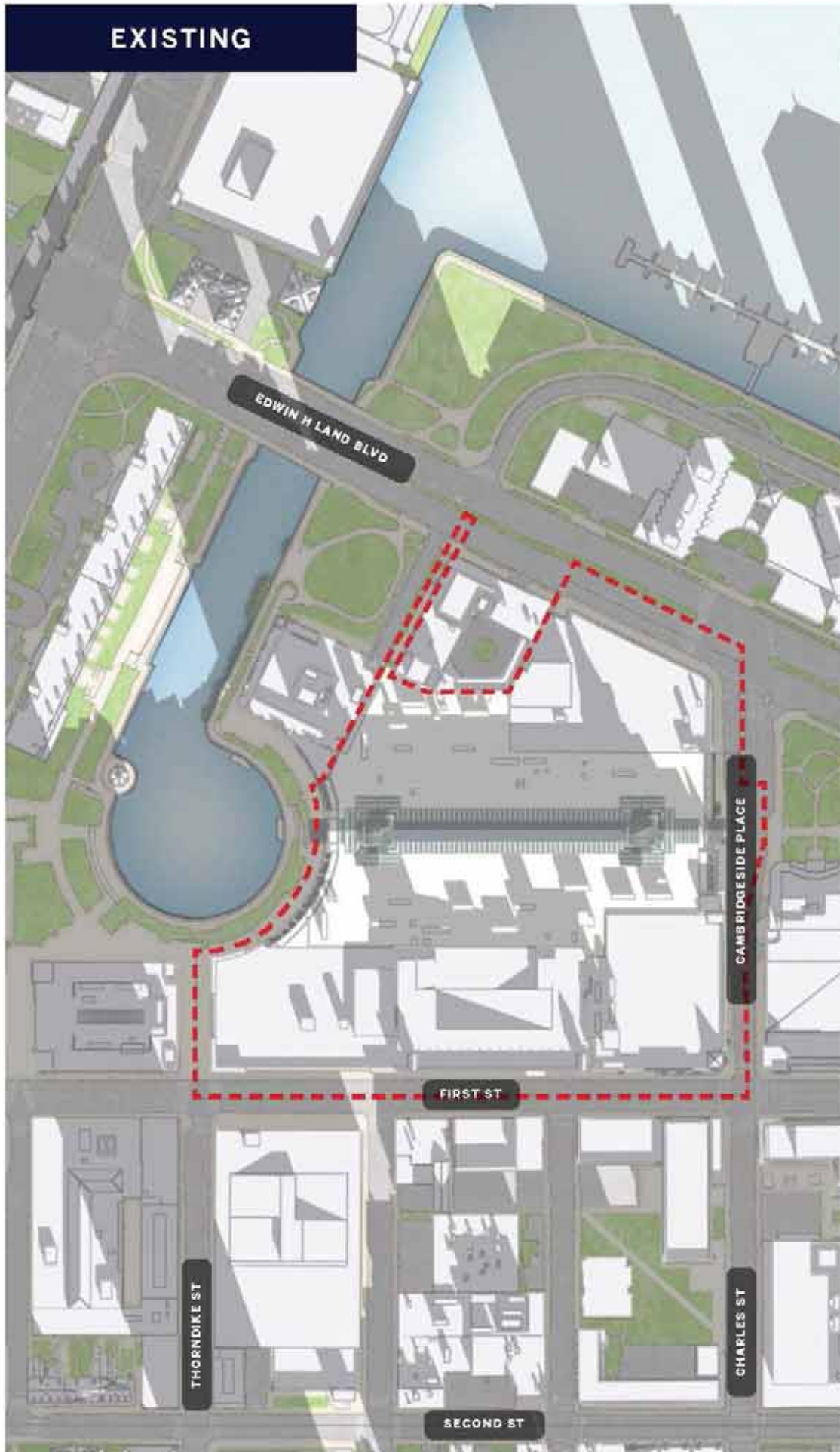
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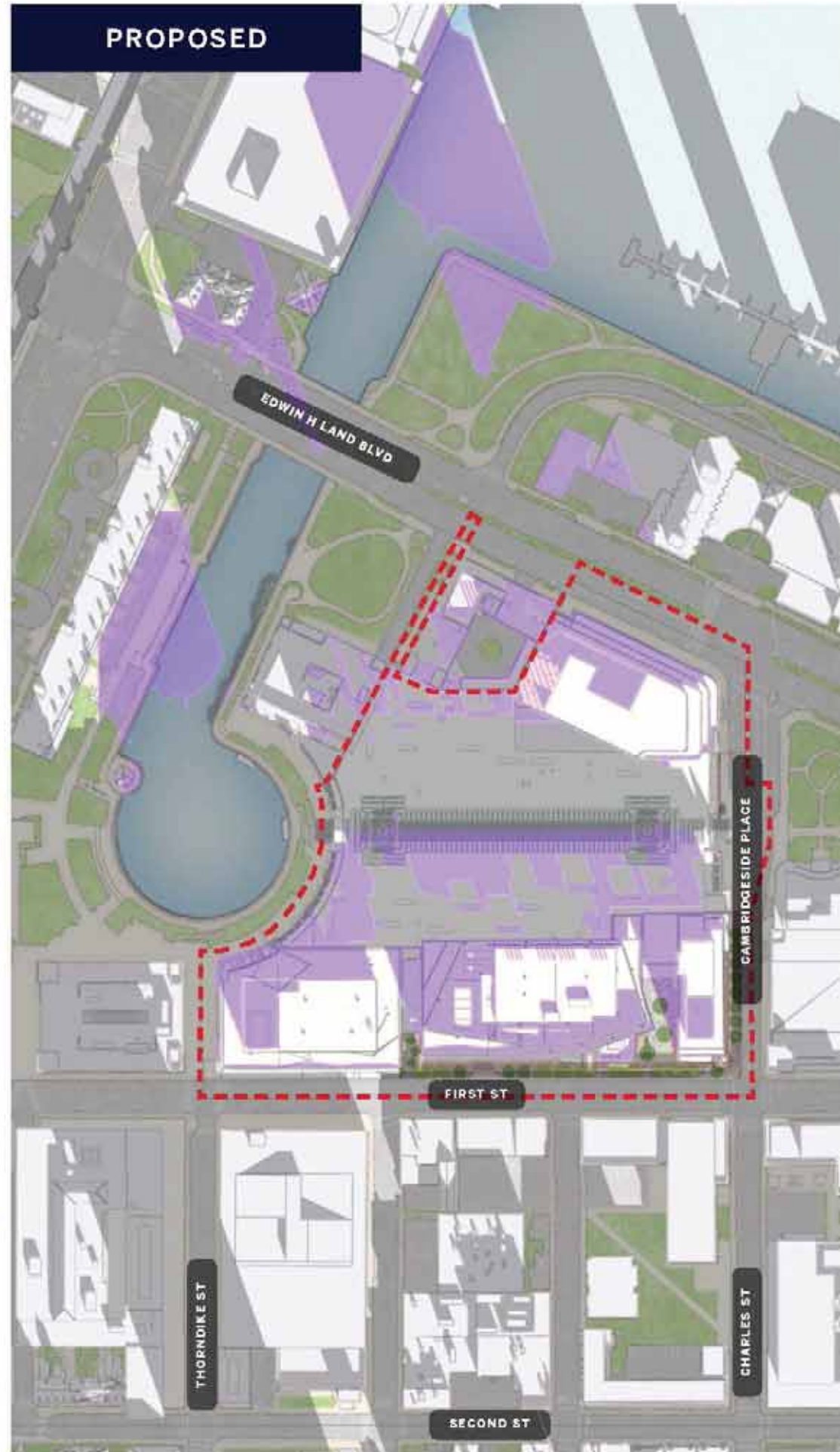
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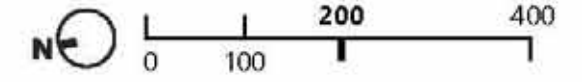
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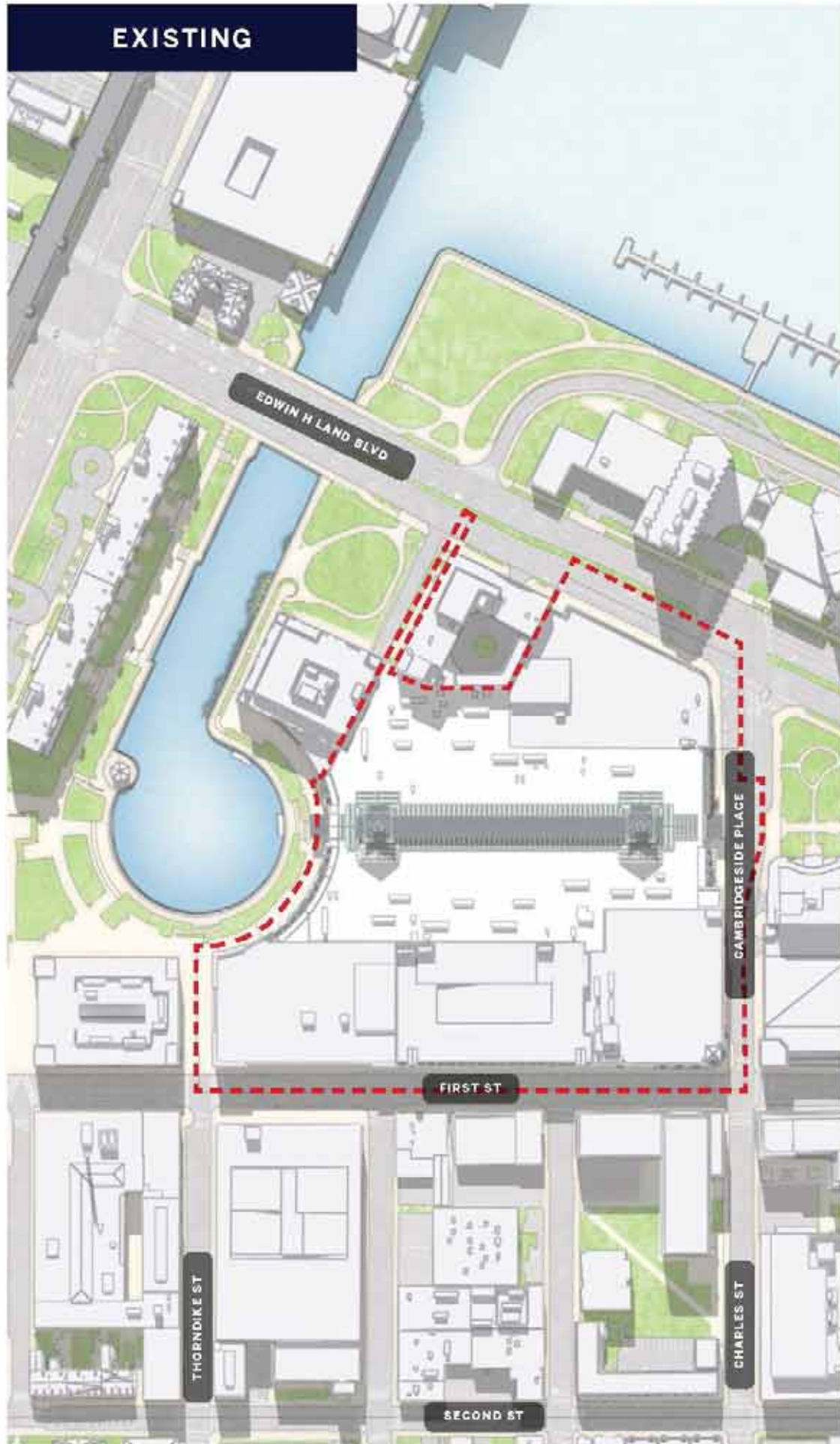
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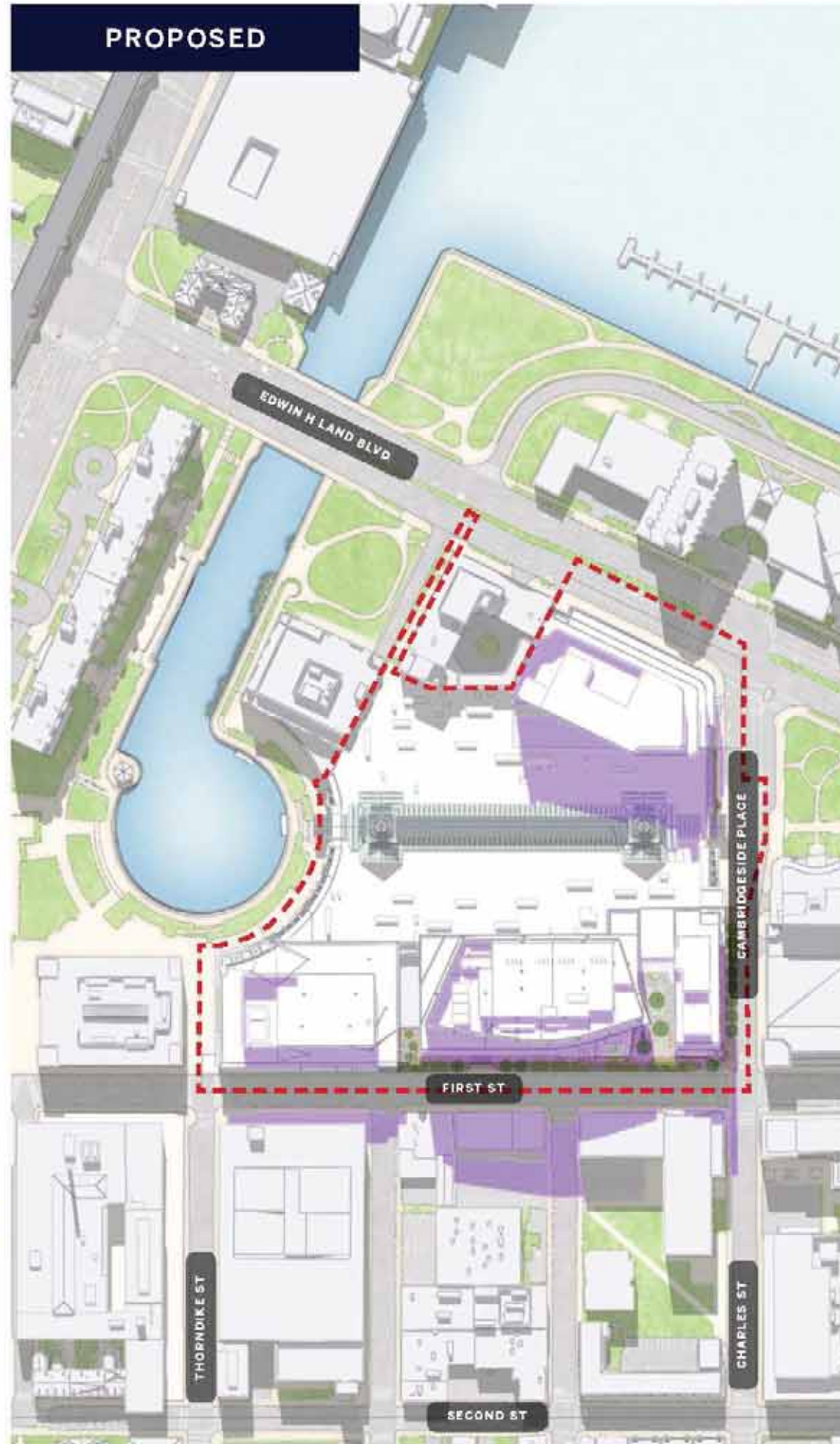
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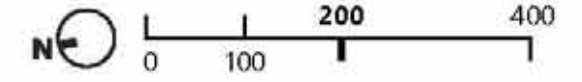


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June 21
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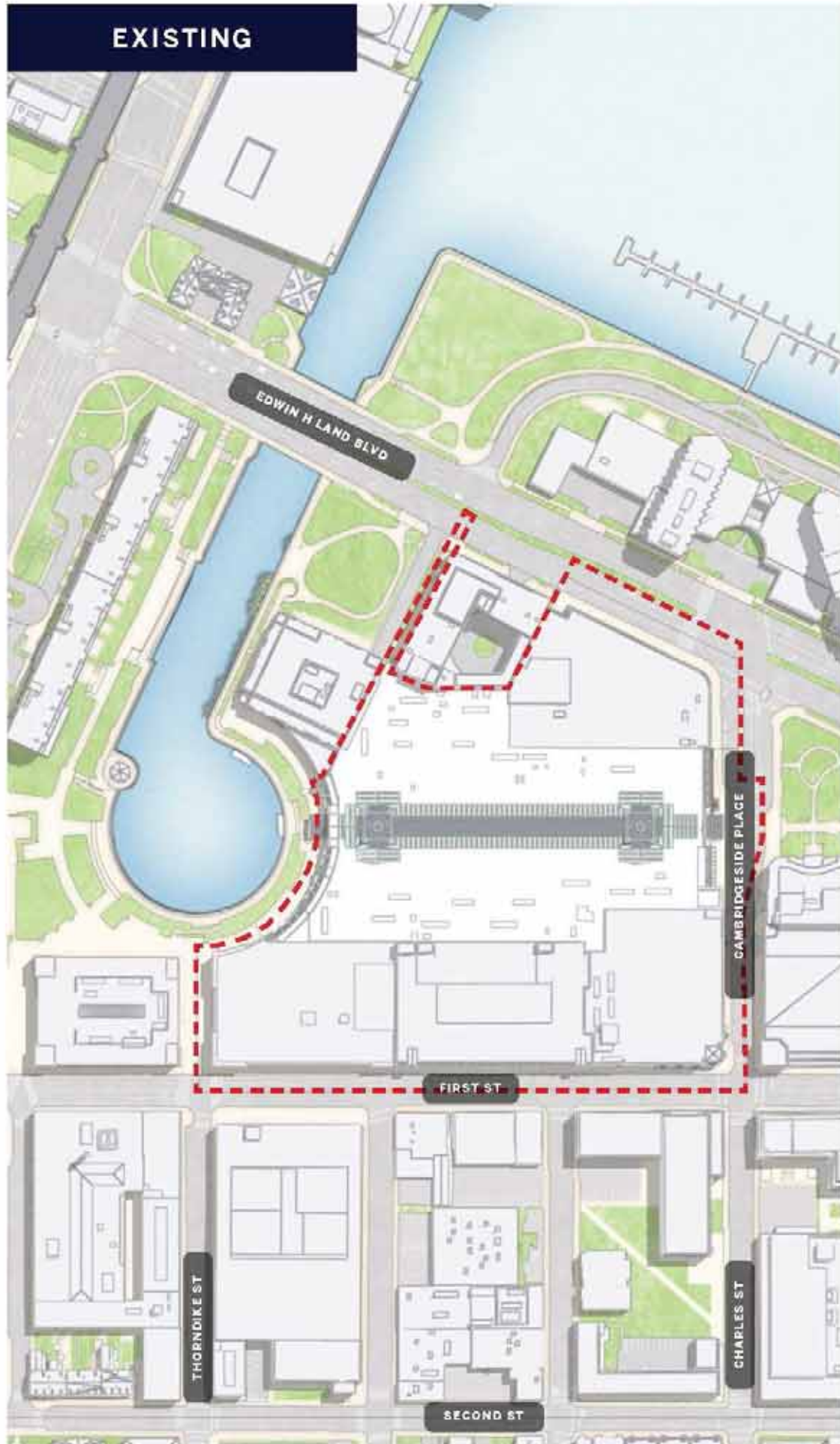
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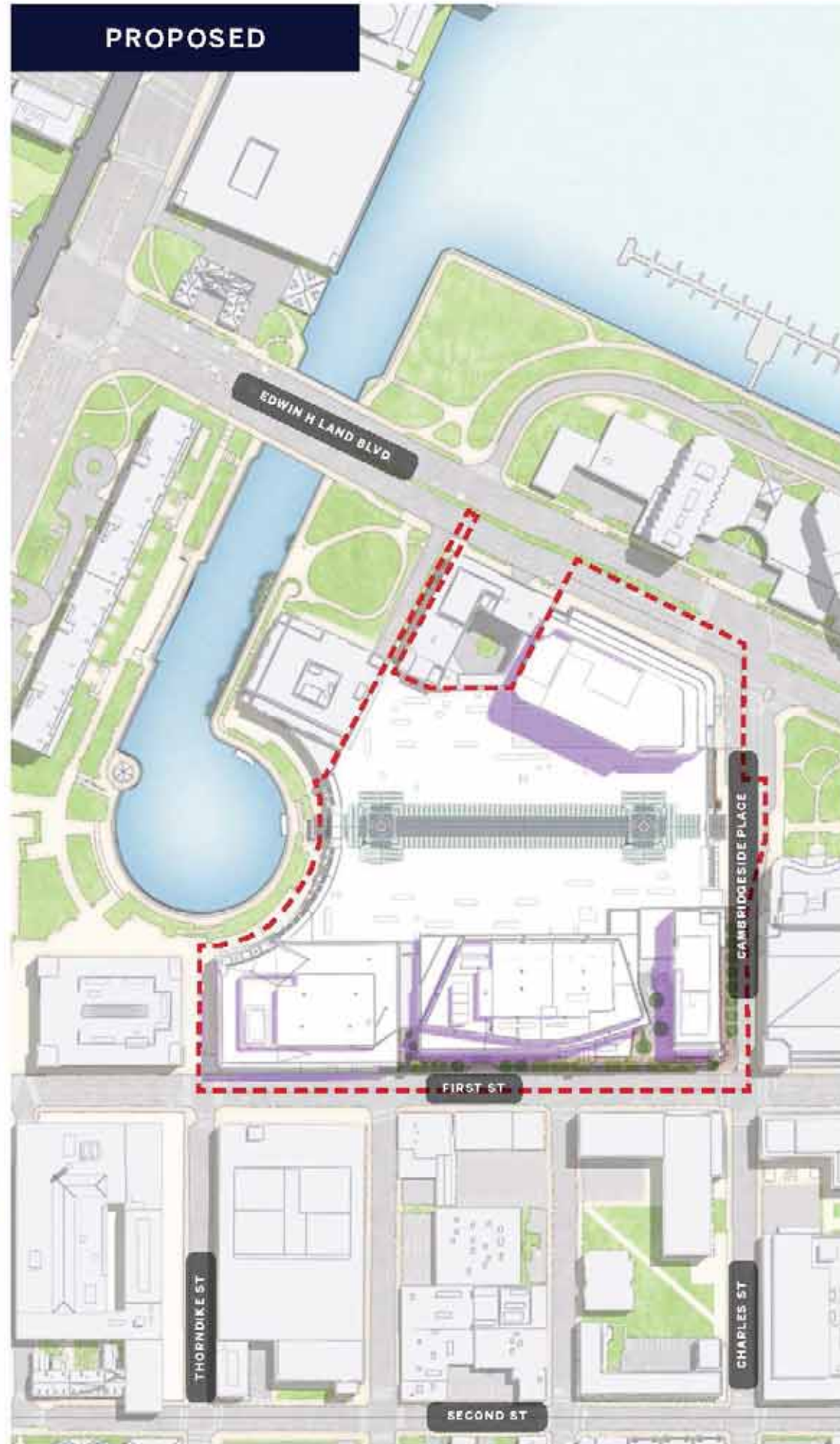
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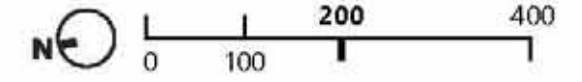


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Environmental Comfort Plan Shadow Study

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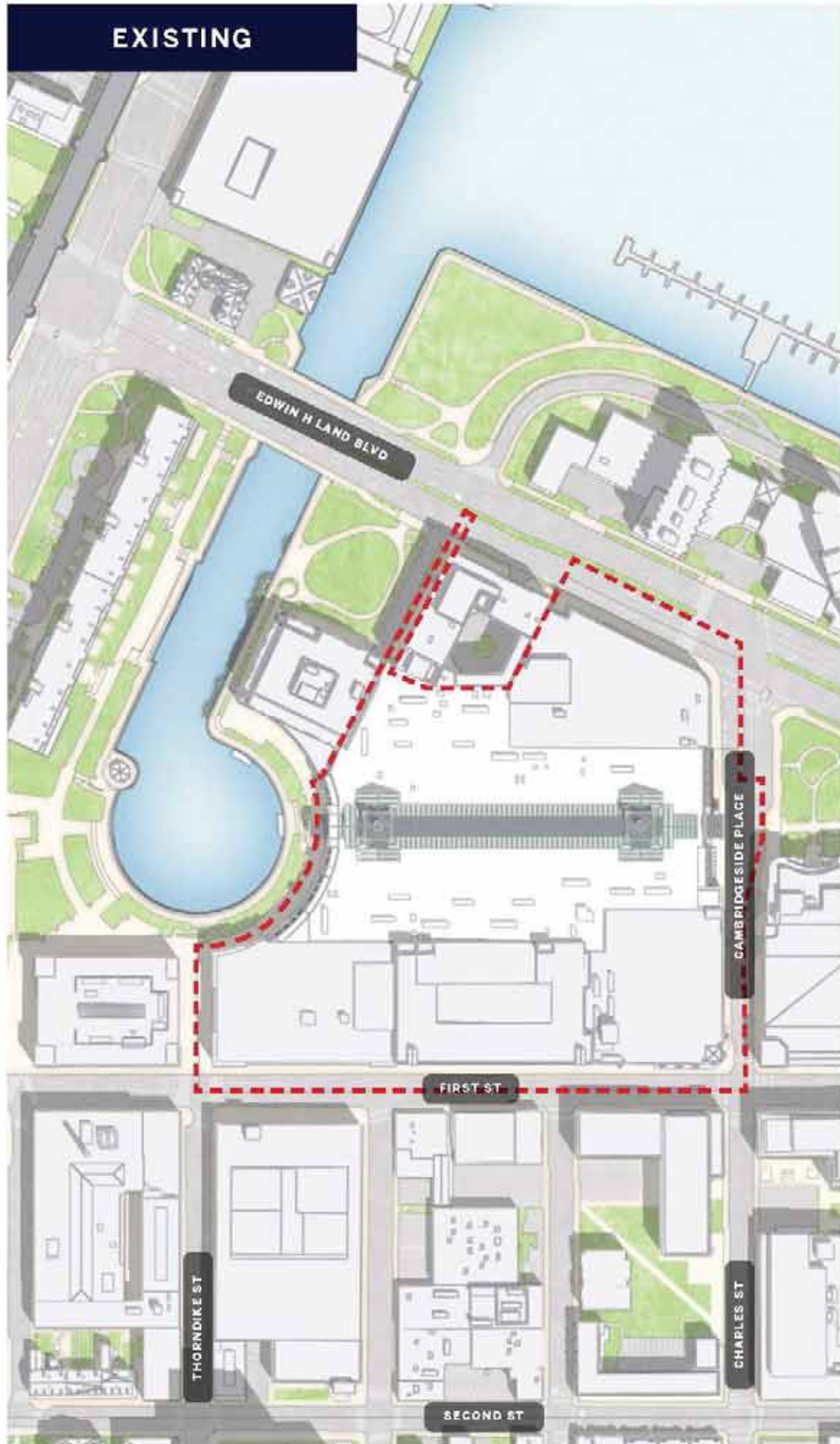
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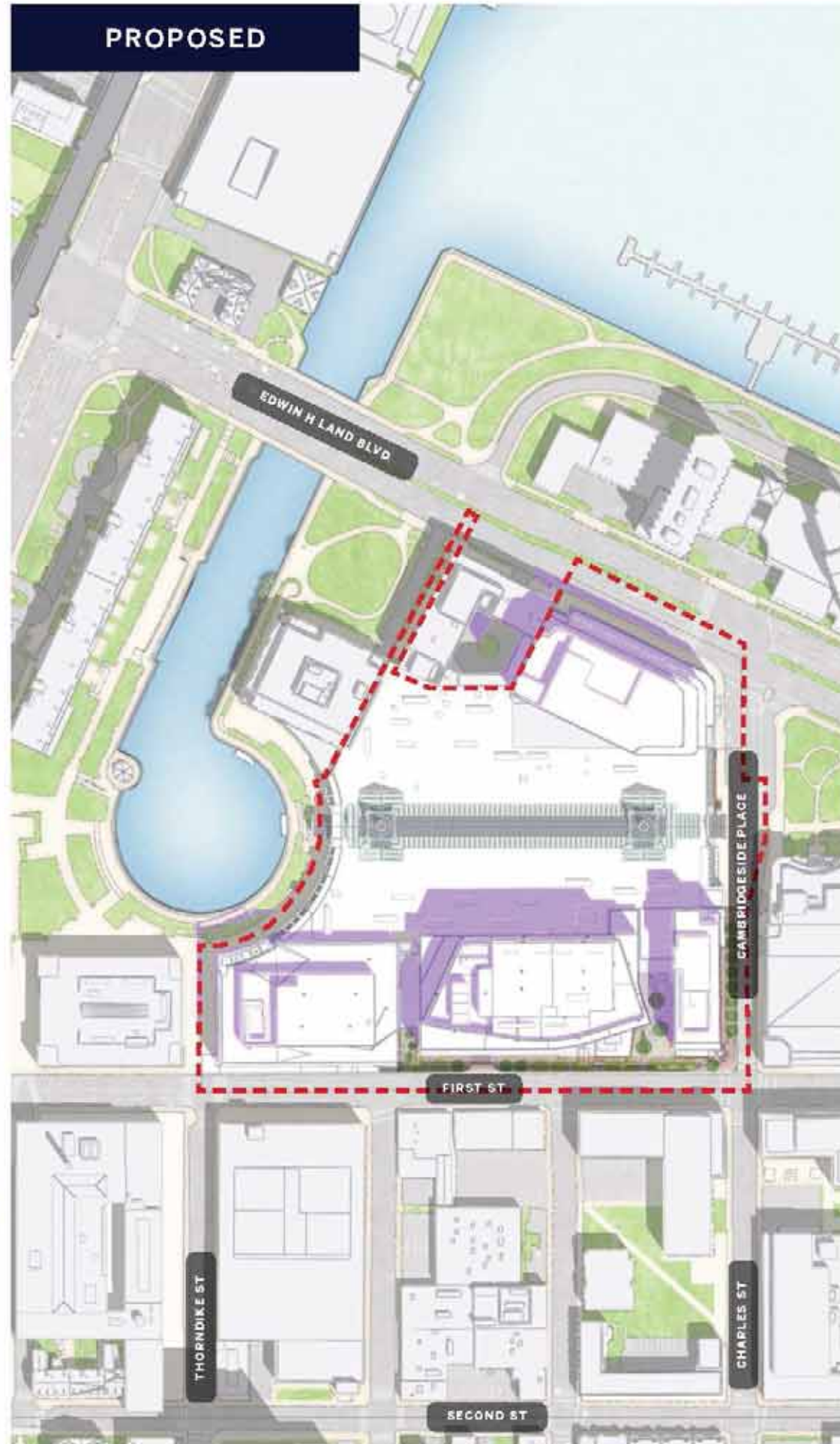
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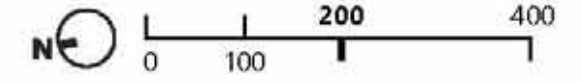


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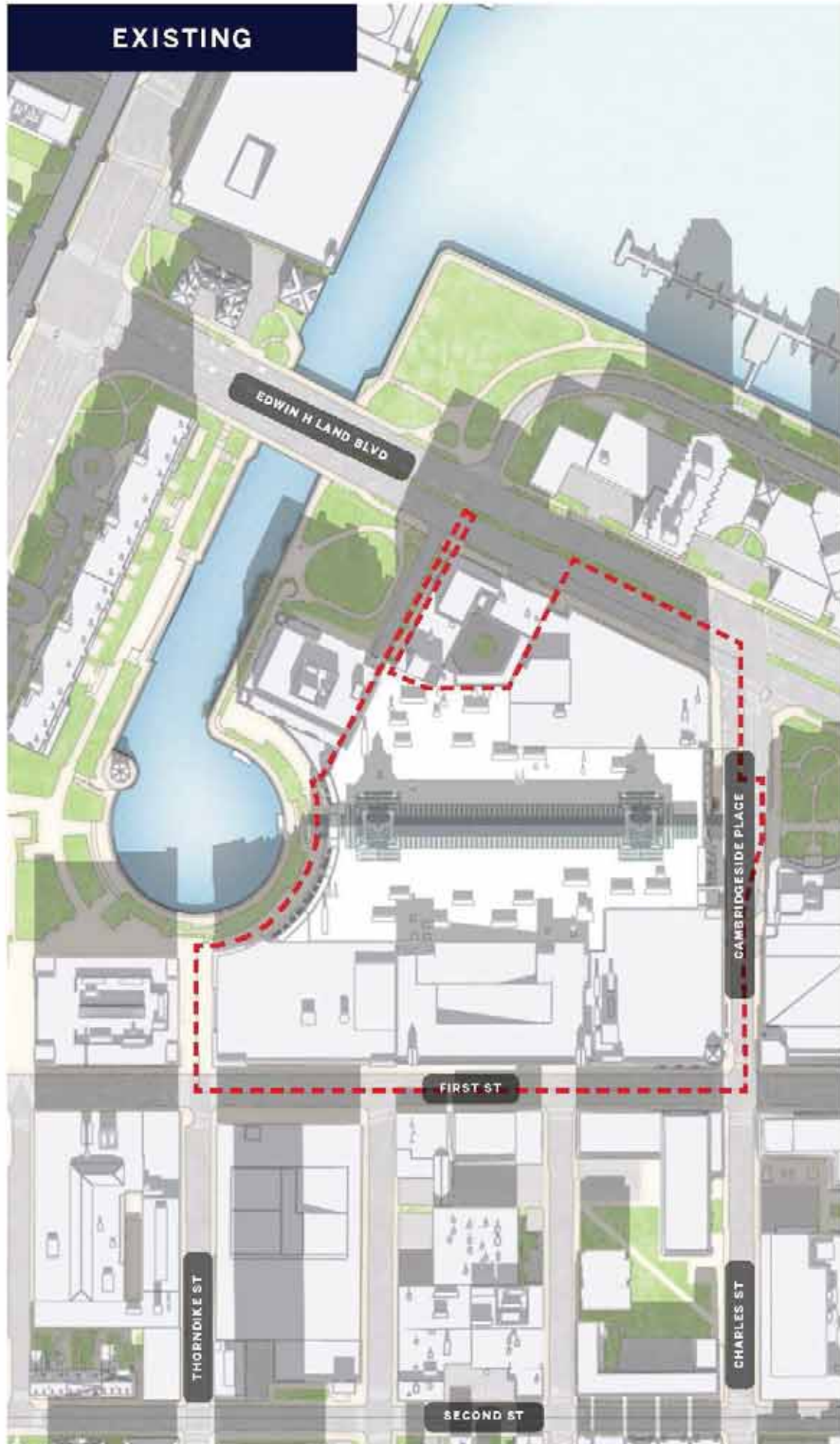


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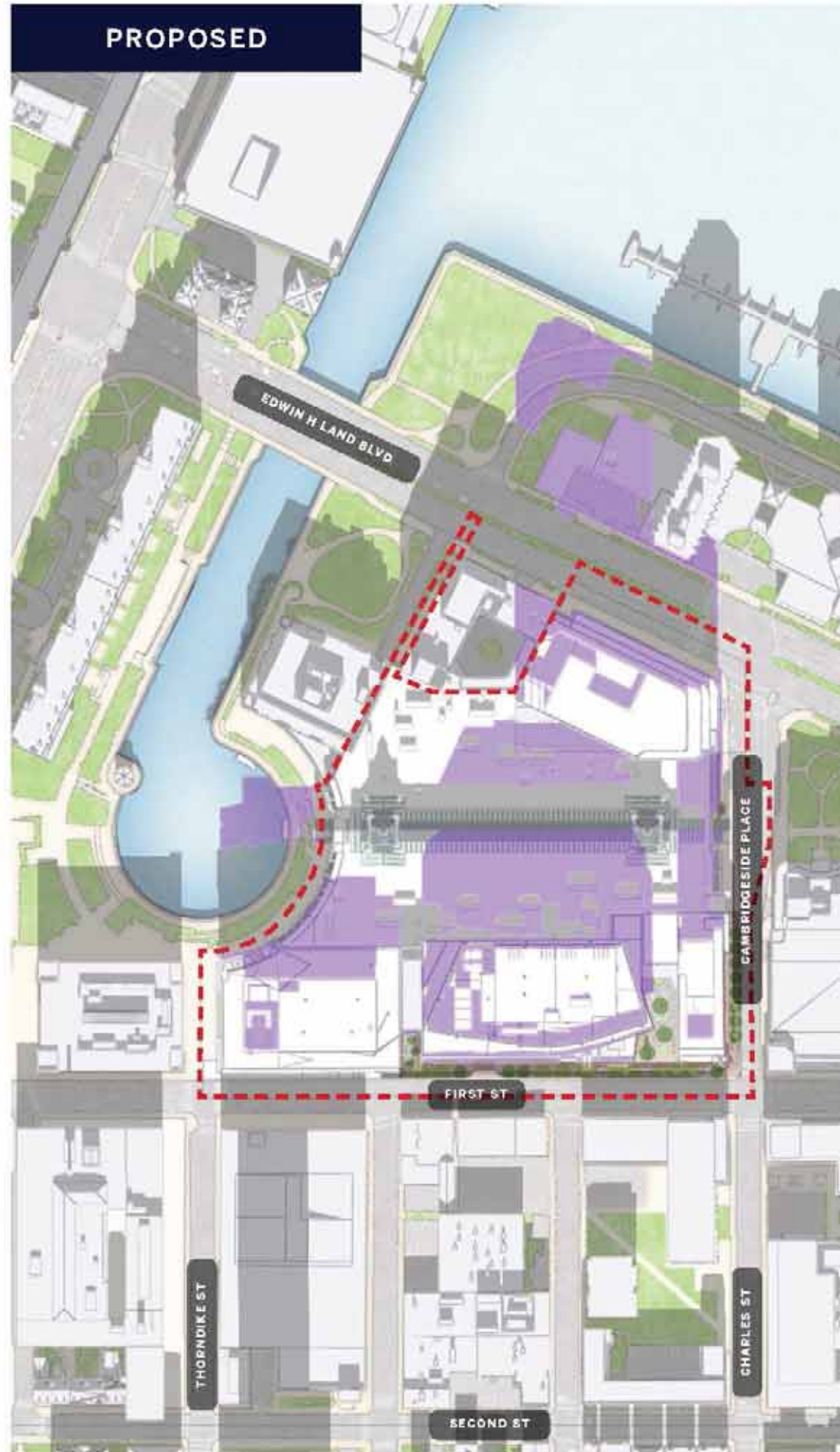
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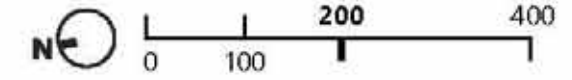


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Environmental Comfort Plan Shadow Study

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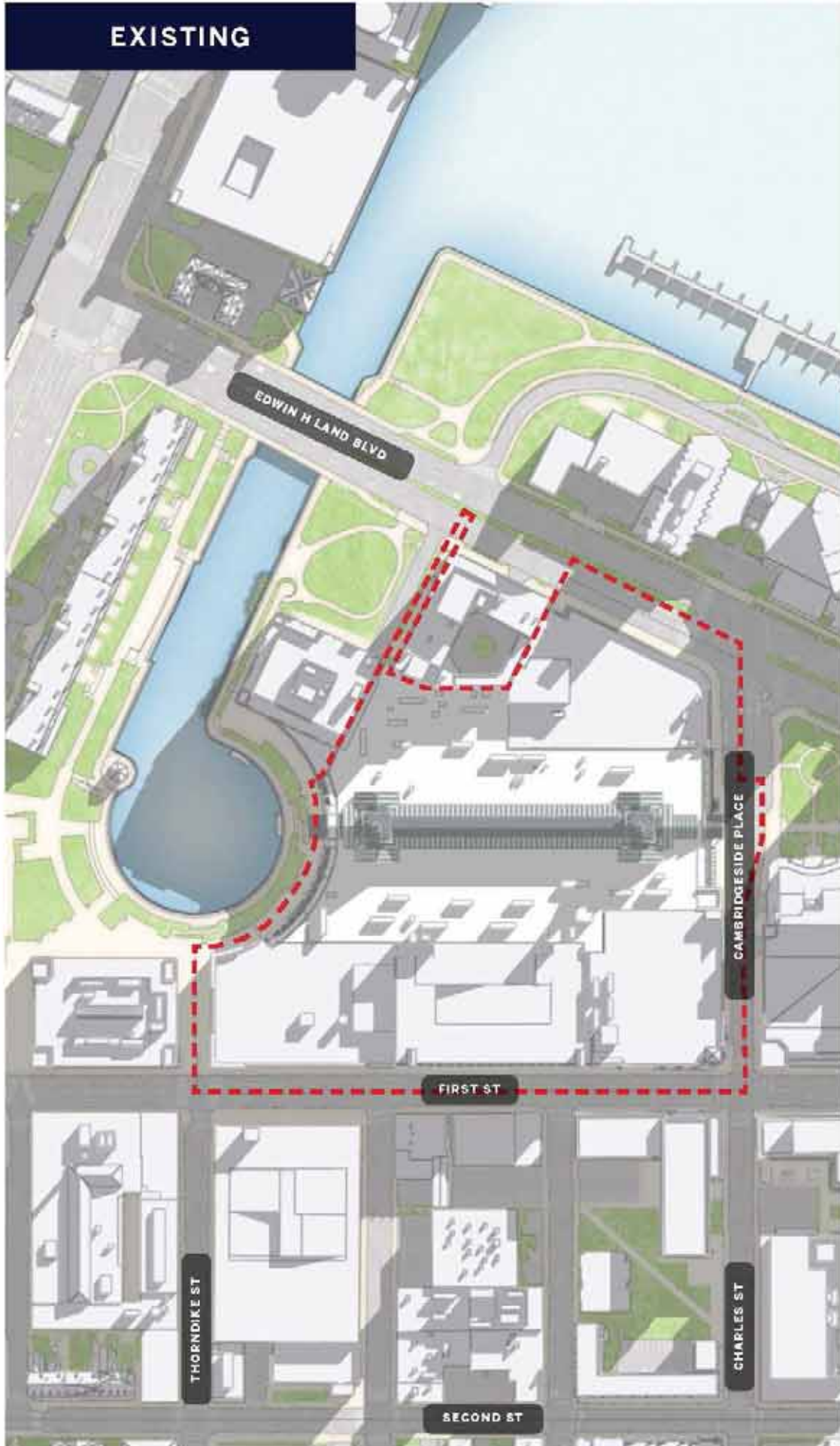


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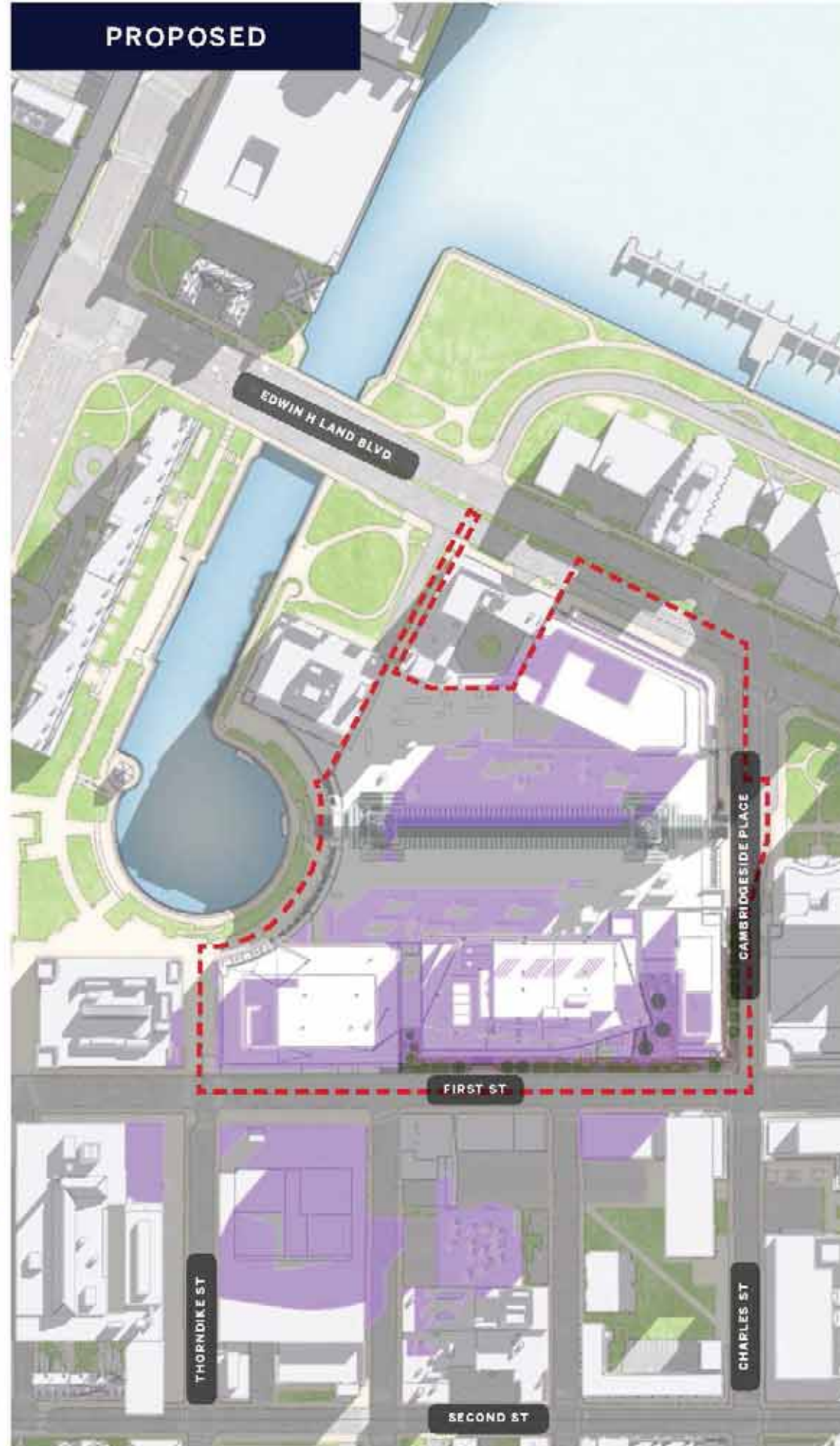
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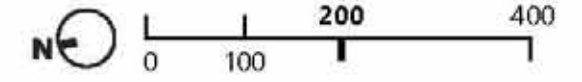
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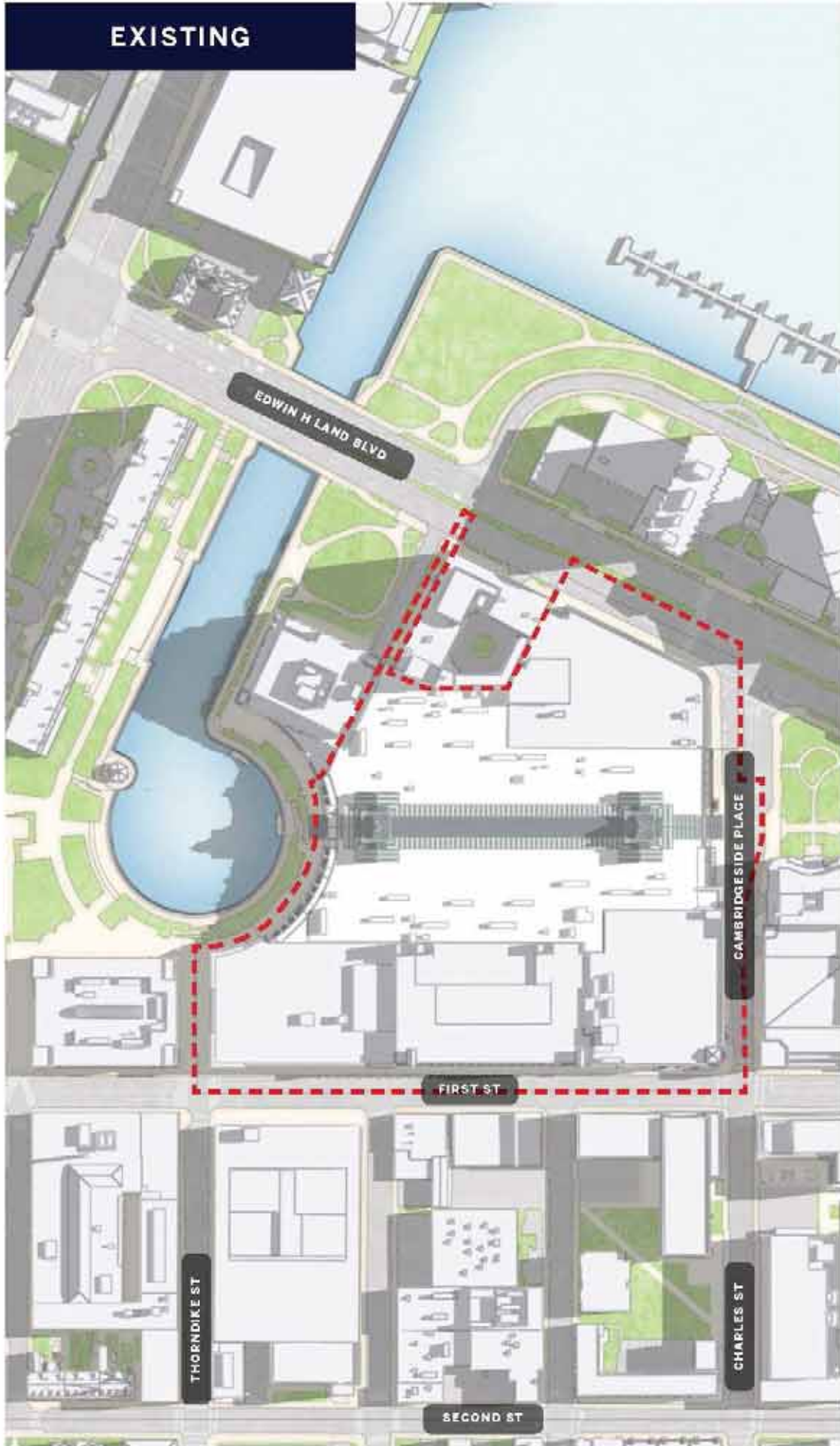
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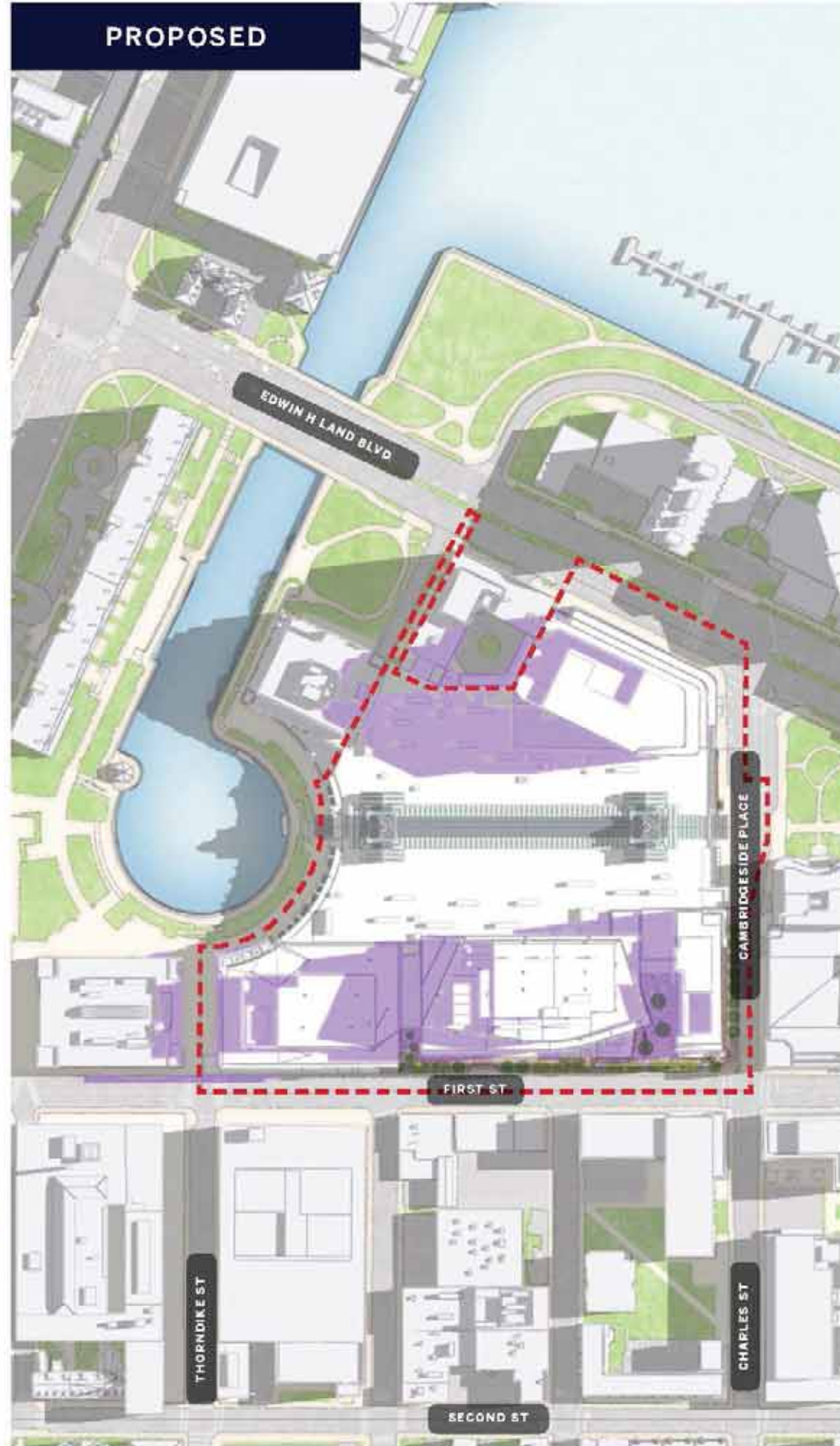
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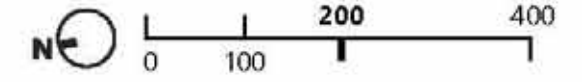


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Environmental Comfort Plan Shadow Study

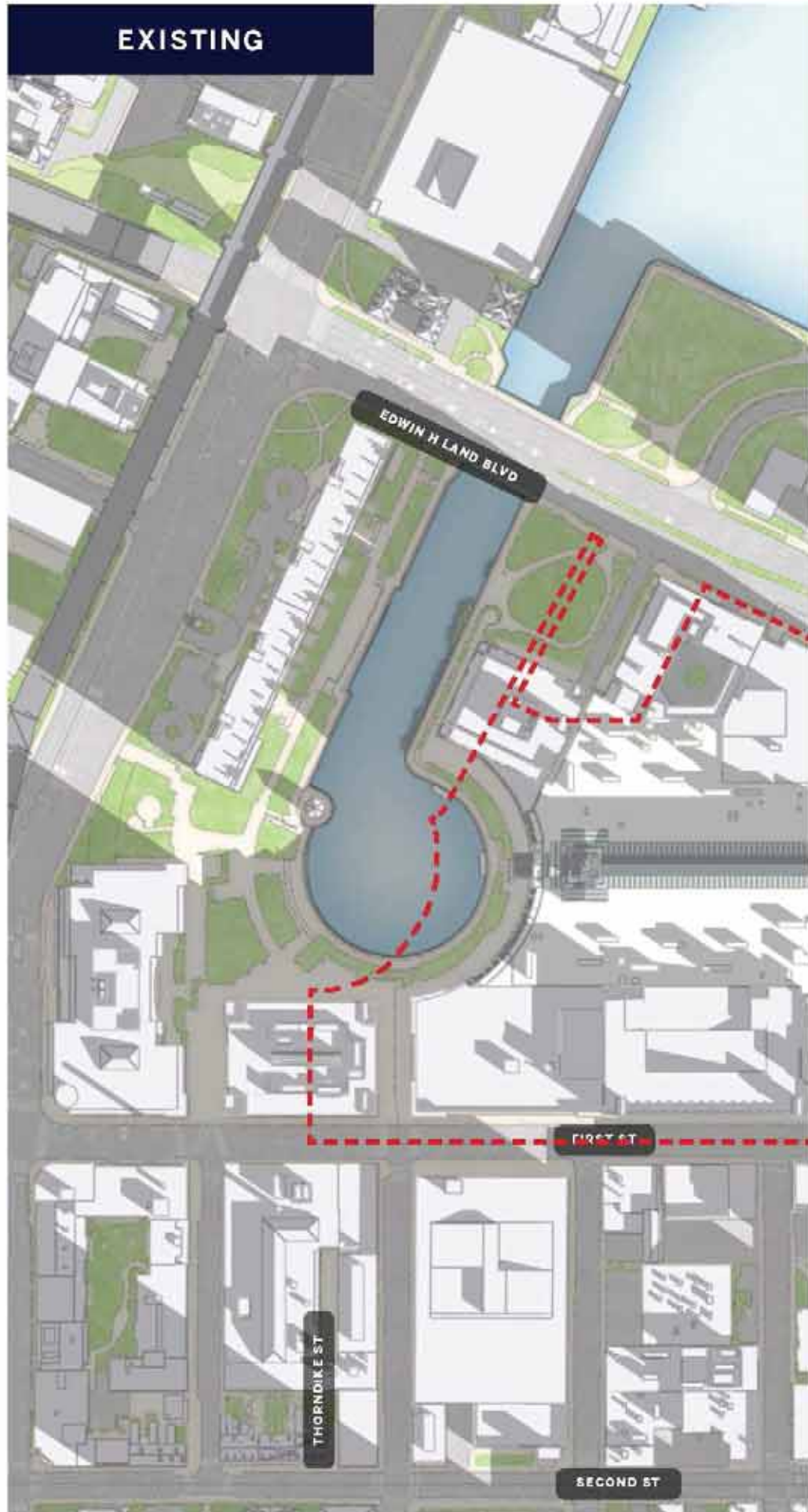
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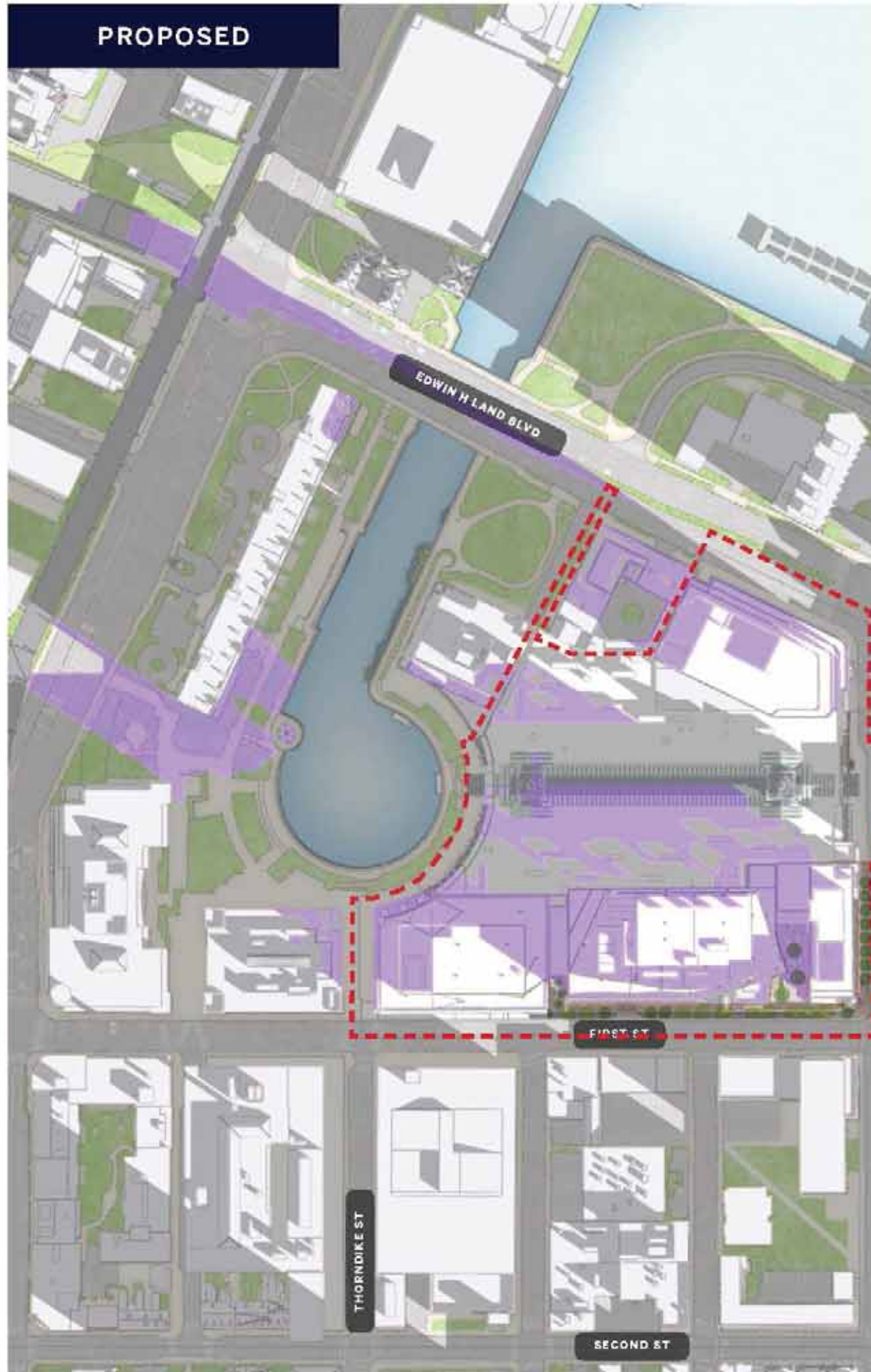
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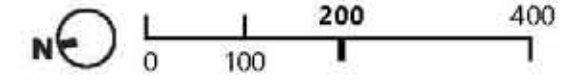
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Noise Mitigation

Section 13.107.2 Compliance

Noise Mitigation

As demonstrated by the immediately following Environmental Sound Analysis, the 150 Cambridgeside Place building will conform to the requirements of the City of Cambridge Municipal Noise Ordinance and the Decision, which incorporates Section 13.107.2 of the CZO, for noise or vibration emanating from the building. Refer to the memo on the following pages for a summary of noise analysis and confirmation of compliance with City of Cambridge requirements.

Environmental Comfort Plan Noise Study

INTRODUCTION

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Brian Roessler AIA, LEED AP
Senior Associate
Elkus Manfredi Architects
25 Drydock Avenue
Boston, MA 02210

Subject: 80 First Street and 150 CambridgeSide Place
Report on Rooftop Equipment Noise Controls and Exterior Noise Levels
Acentech reference: 634671b-80_First_&_150_CambridgeSide-Exterior Noise.docx

Dear Brian:

This letter presents a summary of our assessment of the noise levels expected to be emitted by the exterior rooftop mechanical equipment proposed for the last two major buildings under design for the CambridgeSide Redevelopment site: the core-and-shell laboratory/office building 80 First Street, and the multi-story residential building at 150 CambridgeSide Place. Reports on the individual acoustical performances of the other two major projects in the development, 20 CambridgeSide and 60 First Street, have been submitted previously. However, because noise emissions of the new projects along First Street (80 First and 150 CambridgeSide) will add to those produced by the rooftop equipment atop 60 First, the two new First Street buildings have the potential to affect overall ambient noise levels along First Street.

Figure 1, below, shows the First Street buildings in the context of the overall CambridgeSide master plan project:

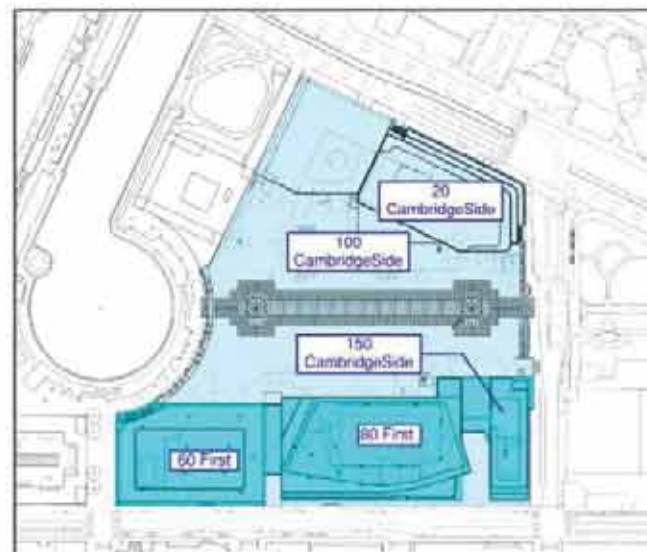


Figure 1: CambridgeSide Redevelopment project



This report will serve to supplement the analysis performed for 60 First, and will address both the noise emissions produced individually by the 80 First and 150 CambridgeSide buildings as well as the combined noise emissions of all three First Street buildings (60 and 80 First Street, and 150 CambridgeSide Place). The building at 20 CambridgeSide is sufficiently far from First Street that noise from its rooftop equipment will not appreciably affect sound levels expected along any of the noise-sensitive receivers along First Street.

As was done for the assessment of community noise from the other CambridgeSide projects, our analyses for 80 First Street and 150 CambridgeSide Place are based on manufacturers' data on the acoustical performance of the equipment to be installed and the effects of the various noise controls we have recommended that have been incorporated into the architectural and mechanical design of the building.

When each of these two projects is complete, each building individually, as well as the overall complex of buildings operating as a combined noise source, will comply with the noise level limits established in the City of Cambridge Noise Ordinance. They will also comply with the environmental noise guidelines outlined by the Massachusetts Department of Environmental Protection (MassDEP).

APPLICABLE NOISE REGULATION AND REQUIREMENTS

Massachusetts

The Massachusetts Department of Environmental Protection (MassDEP) prohibits facilities from creating a condition of "noise pollution." A noise source will be considered to be violating the Department's noise regulation (310 CMR 7.10) if the source:

- Increases the broadband sound level by more than 10 dB(A) above ambient, or
- Produces a "pure tone" condition – when any octave band center frequency sound pressure level exceeds the two adjacent center frequency sound pressure levels by 3 decibels or more.

These criteria are measured both at the property line and at the nearest inhabited residence. "Ambient" is defined as the background A-weighted sound level that is exceeded 90% of the time, measured during equipment operating hours, but may also be established by other means with consent of the Department.

City of Cambridge

The City of Cambridge Noise Ordinance regulates levels of noise allowed to be emitted from one property to another. The Ordinance establishes maximum permissible sound levels at the lot line of the property receiving the noise, depending on the use of the receiving property. Table 1, below, presents the sound limits established for Residential and Business/Commercial uses.

Octave Band Center Frequency of Measurement (Hz)	Residential Use, Daytime* (dB)	Residential Use, All Other Times (dB)	Commercial/Business, Anytime (dB)
31.5	76	68	79
63	75	67	78
125	69	61	73
250	62	52	68
500	56	46	62
1000	50	40	56
2000	45	33	51
4000	40	28	47
8000	38	26	44
Single Number Equivalent	60 dBA	50 dBA	65 dBA

*Daytime is defined as the period between 7AM and 6PM daily except Sundays and holidays.

Table 1: City of Cambridge Maximum Allowable Octave Band Sound Pressure Levels

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For the CambridgeSide project, the existing background sound levels are expected to be high enough in the project area that meeting the City of Cambridge Noise Ordinance will be the more stringent regulatory criteria.

80 FIRST STREET

Rooftop Mechanical Equipment

A list of outdoor rooftop mechanical equipment most likely to affect community sound levels in the area surrounding the 80 First Street project site is presented below:

- Four air handling units (AHUs), 126,000 cfm each, similar to Hakkon Industries, each with ten supply fans ("AcoustiFlow" plug fans) drawing outside air through Kinetics Model KCAL-1-12 acoustical louvers located on east face of sound-insulated penthouse; units enclosed in penthouse.
- Four exhaust air handling units (EAHUs), 126,000 cfm each, similar to Hakkon Industries, each with four exhaust fans (44" centrifugal fans); each fan exhaust stack equipped with tubular exhaust silencer similar to Vibro-Acoustics Model 48-CD-AR; unit housings located in a sound-insulated penthouse.
- One four coil cooling tower, similar to a Marley NC Steel tower, Model NC8409TCN4, with Ultra Quiet Fans on VFDs. The cooling towers are surrounded by sound absorptive screen walls.
- One 10-cell bank of MultiStack ARA030L Air Source Heat Pumps, equipped with exhaust silencers and compressor-wrap noise control packages
- Two 750 kW Caterpillar C27 Diesel Generator with Level 2 sound enclosure, with Miratech Model RC52-4234 exhaust muffler.

Figure 2, below, presents a layout plan of the mechanical equipment penthouse and outdoor equipment pen located on the roof of the 80 First Street building. The heavy blue line shows the outline of the enclosed mechanical equipment penthouse, and the dashed magenta line indicates the location of the appearance screen / noise barrier wall around the outdoor equipment sitting outside on the roof.

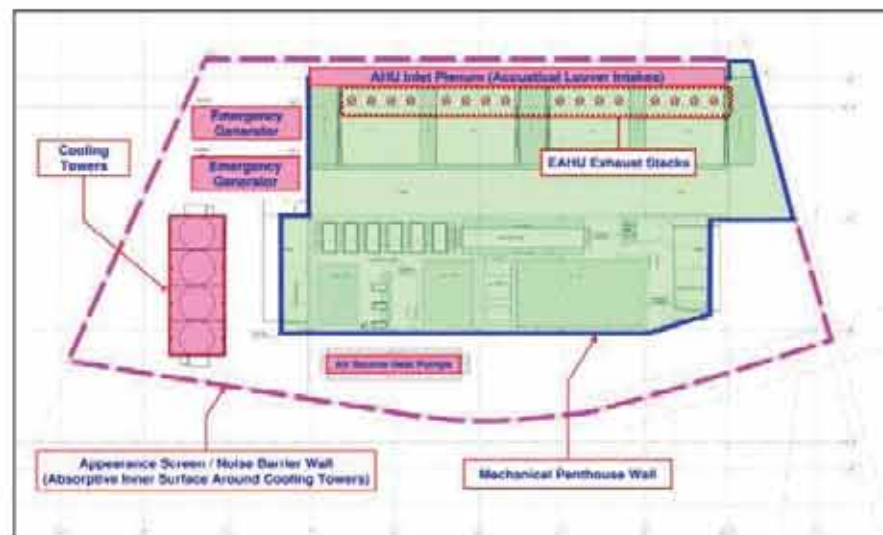


Figure 2 – 80 First Street: Outdoor Rooftop Mechanical Equipment

Sound Attenuating Features

A number of sound-attenuating features have been incorporated into the architectural and mechanical design of the project to mitigate noise emissions to the surrounding community, including:

- A 2-story appearance screen / noise barrier wall will be erected around the outdoor mechanical equipment on the penthouse mechanical level, shielding the neighboring area from noise emitted by the cooling towers, air source heat pumps, and the two generator sets. The portion of the screen-wall/noise barrier that surrounds the cooling towers will be sound-absorptive.
- The four cells of the cooling tower will all be equipped with the manufacturer's "Ultra Quiet" fans and variable-frequency drives.
- The exhaust stacks for the fans in the exhaust air handling units will be equipped with tubular sound attenuators.
- The main air handling units will draw outside air through a set of acoustical louvers in the east face of the mechanical penthouse.
- The bank of Air Source Heat Pumps will be equipped with discharge silencers on the fan decks and sound-attenuating wrap on the compressors.
- The two emergency generators will each be enclosed in the manufacturer's "Level 2" sound enclosures, and the diesel exhaust noise will be reduced through controlled by 10-foot long exhaust mufflers.

Predicted Equipment Sound Levels, 80 First Street Building

The physical locations and acoustical performance data (supplied by the project's mechanical engineers) for each of the major noise sources in the 80 First Street building was entered into the computer noise model, CadnaA, along with a 3-D representation of the project building and the buildings in the surrounding community. CadnaA uses industry-standard acoustical propagation calculations to estimate the resultant sound levels at various positions around the site.

Figures 3 and 4, below, present graphical representations of the community sound levels predicted by the CadnaA model for the 80 First Street building by itself; the levels are represented as A-weighted sound level contours for the nighttime period (the "All Other Times" category of the Cambridge Noise Ordinance) and daytime period, respectively. Because emergency generators will be tested only during daytime hours, the nighttime results include the acoustical contributions from all rooftop equipment except the emergency generators; the daytime results include noise produced by the emergency generators.

In both figures, the predicted sound levels from the rooftop mechanical equipment at 80 First Street are shown in the circled numbers on the residential buildings in the immediate vicinity of the First Street projects. The first number is the predicted maximum level at any point on the building façade produced by the operation of all equipment except the emergency generators (essentially the maximum "nighttime" level at the building); the second (higher) number is the maximum level predicted when the emergency generators atop the 80 First Street building are added to the mix. (The circled numbers are the same in both figures; only the sound level contours reflect the different nighttime and daytime sound levels predicted.)

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80 FIRST STREET

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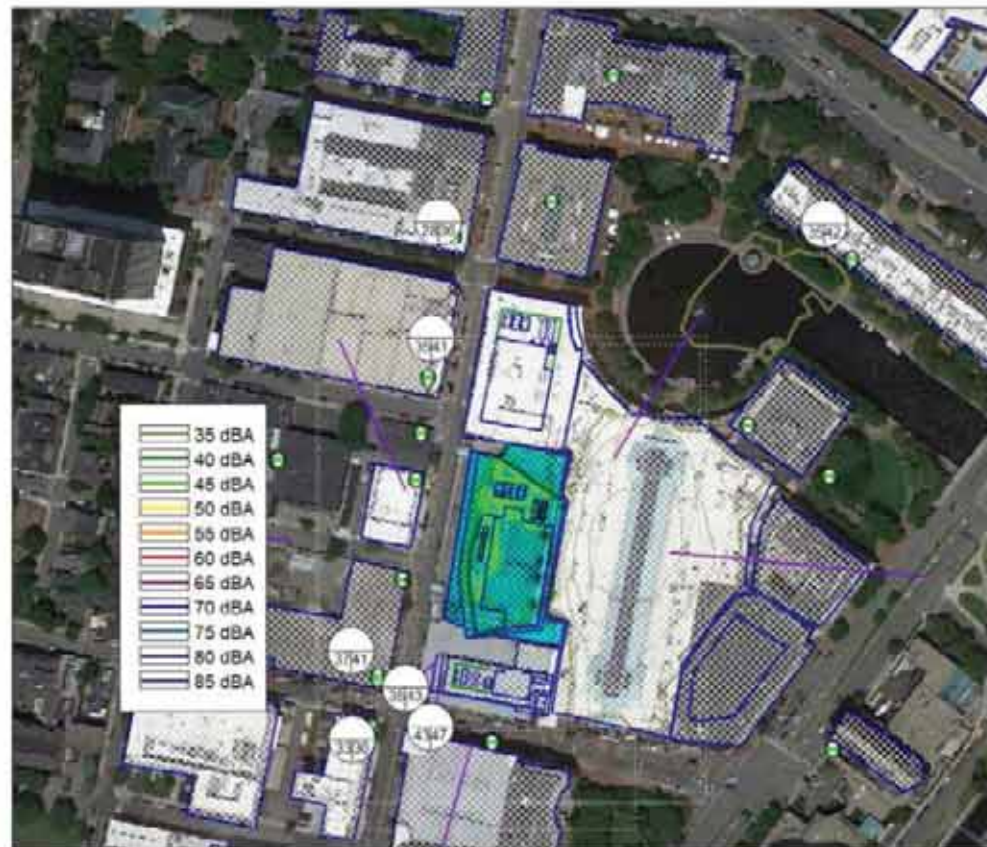


Figure 3 – 80 First Street: Predicted Community Noise Levels, "ALL OTHER TIMES" (Nighttime)
All equipment operating except emergency generators

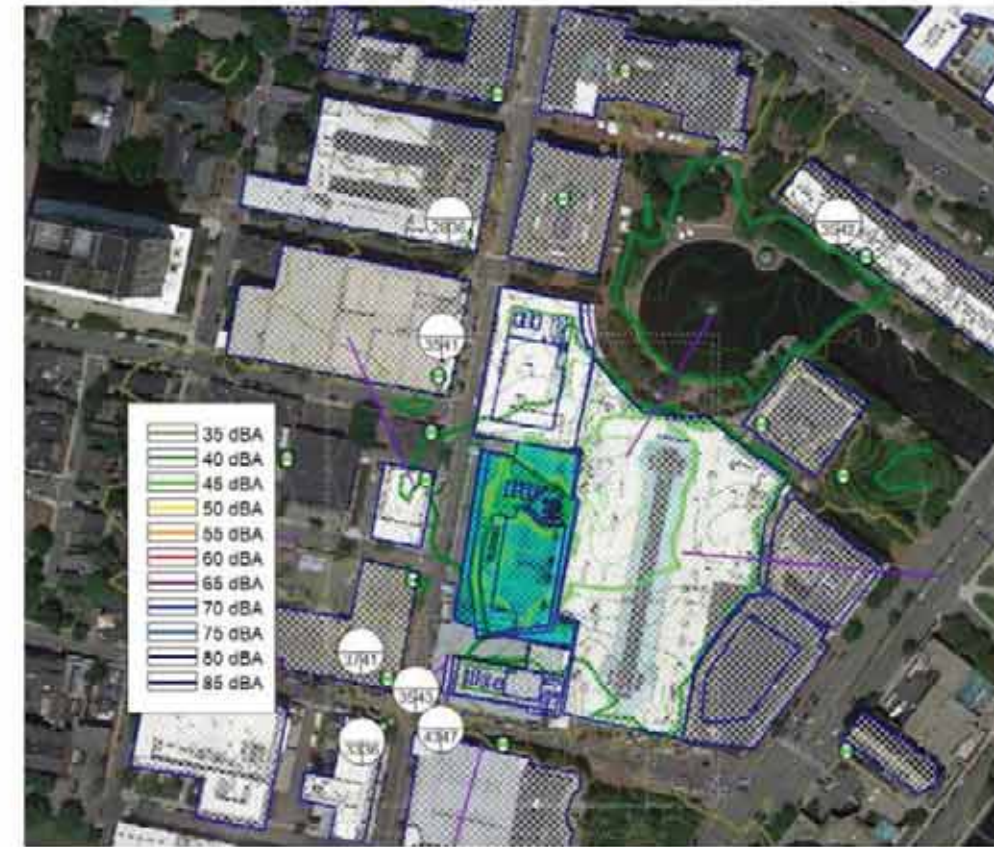


Figure 4 – 80 First Street: Predicted Community Noise Levels, "DAYTIME"
All equipment operating including emergency generators

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150 CAMBRIDGESIDE PLACE

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150 CAMBRIDGESIDE PLACE

Rooftop Mechanical Equipment

A list of outdoor rooftop mechanical equipment most likely to affect community sound levels in the area surrounding the 150 First Street project site is presented below:

- One two-cell cooling tower, similar to a Baltimore Air Coil Model S15E-1285-06KN, with "Whisper Quiet" fans on VFDs. The cooling towers are surrounded by sound absorptive screen walls.
- One 4-cell and one 3-cell banks of MultiStack ARA030L Air Source Heat Pumps, equipped with exhaust silencers and compressor-wrap noise control packages
- Two air-handling Energy Recovery Units (ERUs), similar to XNRGY Model P800-32, each with two 30,000 cfm supply fans and two 24,000 cfm exhaust fans.
- One 400 kW Caterpillar C13 Diesel Generator with Level 2 sound enclosure, with Miratech Model RCS2-4234 exhaust muffler.

Figure 3, right, presents a layout plan of the mechanical equipment penthouse and outdoor equipment pen located on the roof of the 150 CambridgeSide Place building. The heavy blue line shows the outline of the enclosed mechanical equipment penthouse, and the dashed magenta line indicates the location of the appearance screen / noise barrier wall around the outdoor equipment sitting outside on the roof.

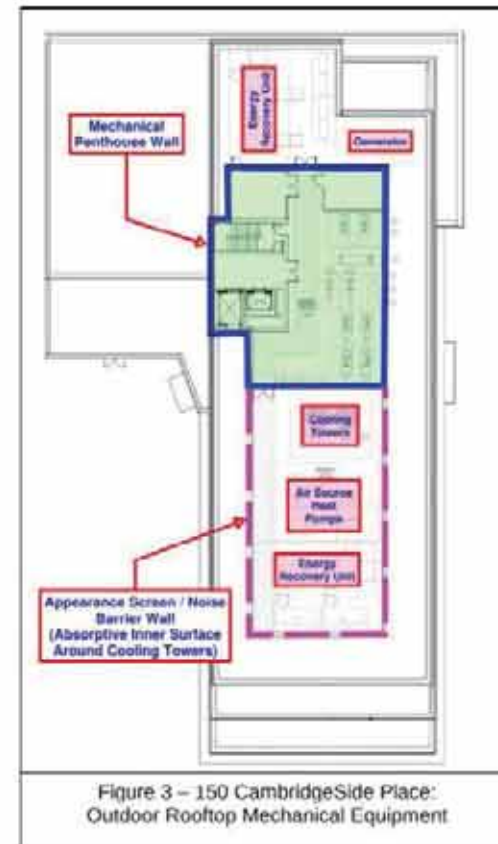


Figure 3 – 150 CambridgeSide Place: Outdoor Rooftop Mechanical Equipment

Sound Attenuating Features

A number of sound-attenuating features have been incorporated into the architectural and mechanical design of the 150 CambridgeSide Place building to mitigate noise emissions to the surrounding community, including:

- An appearance screen / noise barrier wall will be erected around the outdoor mechanical equipment on the penthouse mechanical level, shielding the cooling towers, air-source heat pumps and ERU. The portion of the screen-wall/noise barrier near the cooling towers will be sound-absorptive.
- The two cells of the cooling tower will all be equipped with the manufacturer's "Whisper Quiet" fans and variable-frequency drives.
- The two banks of Air Source Heat Pumps will each be equipped with discharge silencers on the fan decks and sound-attenuating wrap on the compressors.
- The emergency generator will be enclosed in the manufacturer's "Level 2" sound enclosures, and the diesel exhaust noise will be reduced through controlled by 10-foot long exhaust mufflers.

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Predicted Equipment Sound Levels, 150 CambridgeSide Place

As was done for the 80 First Street project, the physical locations and acoustical performance data supplied by the project's mechanical engineers for each of the major noise sources in the 150 CambridgeSide Place building was entered into the computer noise model, CadnaA, which was run to generate an estimate of the resultant operational sound levels in the community.

Figures 5 and 6, below, present the community sound levels predicted by CadnaA for the 150 CambridgeSide Place building by itself. Again, the levels are shown as A-weighted sound level contours for the nighttime ("All Other Times") and daytime periods, respectively. Again, emergency generators will be tested only during daytime hours, so the nighttime results include the acoustical contributions from all rooftop equipment except the emergency generators; the daytime results include noise produced by the emergency generators.

And again, in both figures, the predicted sound levels from the rooftop mechanical equipment are shown in the circled numbers on nearby residential buildings: the first number is the predicted maximum level at the building produced by the operation of all equipment except the emergency generators; the second (higher) number is the maximum level predicted when noise from the emergency generator is added to the mix.



Figure 5 – 150 CambridgeSide Place: Predicted Community Noise Levels, "ALL OTHER TIMES" (Nighttime)
All equipment operating except emergency generators

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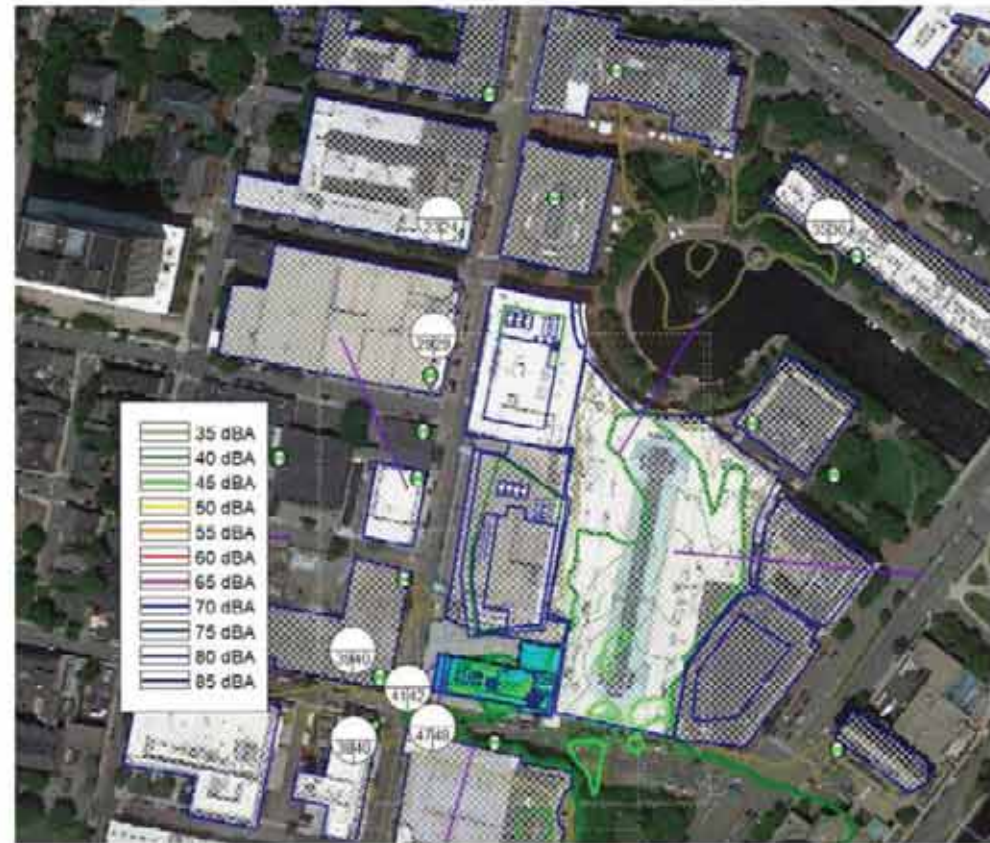


Figure 6 – 150 CambridgeSide Place: Predicted Community Noise Levels, "DAYTIME"
All equipment operating including emergency generators

PREDICTED OVERALL SOUND LEVELS FROM ALL THREE FIRST STREET PROJECTS COMBINED

A comprehensive noise study of the CambridgeSide 2.0 Development Plan was approved in February 2020 (PB-364 Decision). Understanding that this would be a phased project, it was determined that the multiple projects within the CambridgeSide 2.0 proposal would be aggregated and treated as one project. The CadnaA model we first created for the analysis of the acoustical performance of the 60 First Street project (documented in Acentech's 17 December 2020 report), was updated and used to assess the noise emissions of the 80 First Street and 150 CambridgeSide Place buildings, as described in this current report. The model was ultimately amended to include all the noise-producing mechanical equipment associated with the three First Street projects – 60 First Street, 80 First Street, and 150 CambridgeSide Place – and re-run to predict the noise levels from concurrent operation of all three CambridgeSide projects facing onto First Street.

Figure 7, below, presents a "bird's eye" view of the building geometry used by the CadnaA model to estimate the sound levels produced by the combined operation of the mechanical equipment at 60 First Street, 80 First Street, and 150 CambridgeSide Place projects.



Figure 7 – "Bird's-Eye" view of CadnaA noise model geometry

Figures 8 and 9, below, present the CadnaA-generated sound level contours around the three First Street projects, again for the nighttime (no generator operation) and daytime periods, respectively. The numbers in the circles again reflect the maximum nighttime (no generators) / daytime (with generators operating) levels expected at each building.

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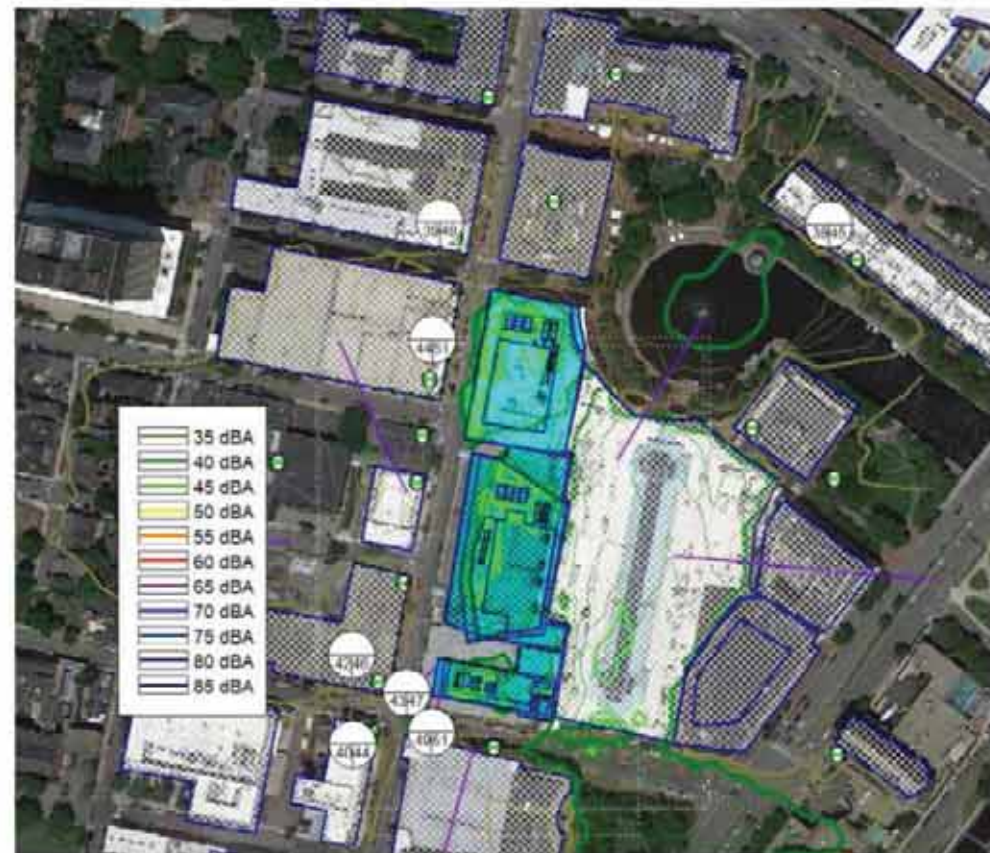


Figure 8 – Predicted First Street equipment noise levels, "ALL OTHER TIMES" (Nighttime)
All equipment operating except emergency generators

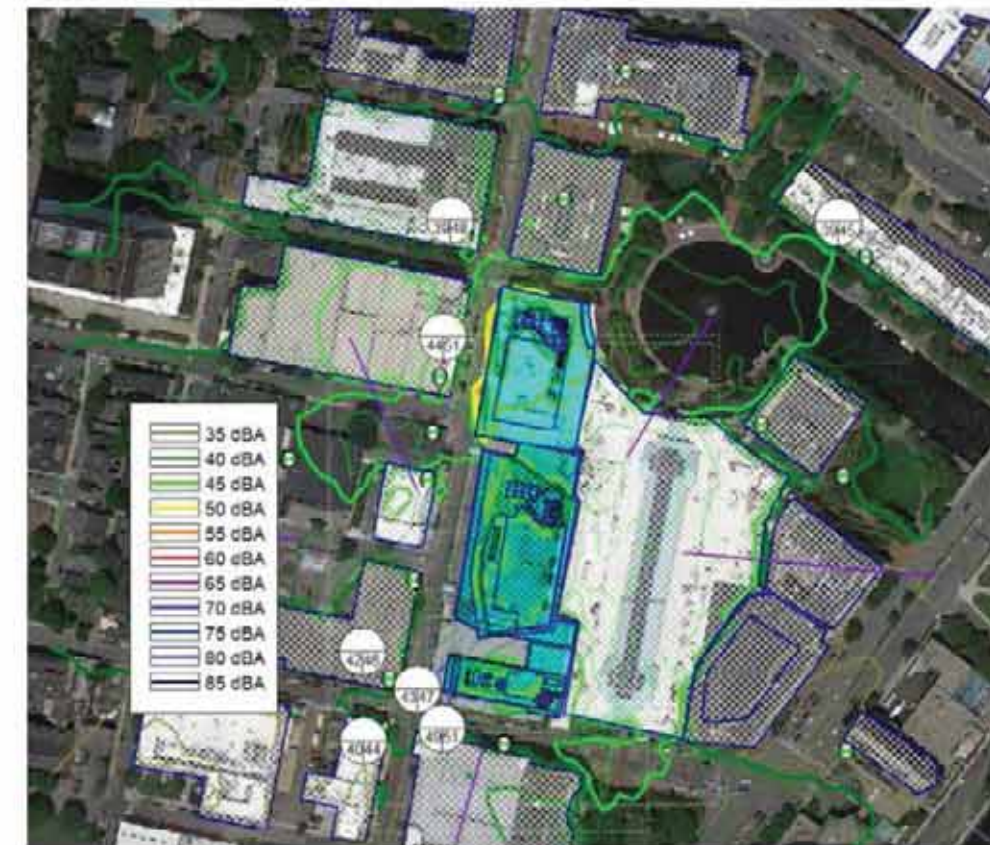


Figure 9 – Predicted First Street equipment noise levels, "DAYTIME"
All equipment operating including emergency generators

Comparison with Master Plan Projections

Back in 2020, Tech Environmental and the Master Plan team developed a similar CadnaA noise model of the whole CambridgeSide Redevelopment project to help ensure that the overall project would comply with the requirements of the Cambridge Noise Ordinance. Figure 10, below, is reproduced from Tech Environmental's 28 July 2020 report, "Acoustic Study for CambridgeSide", which documented their analyses of noise from rooftop equipment and exterior noise levels from the overall CambridgeSide Redevelopment project; the figure is used here to show the location of the individual noise-sensitive receivers at which Tech Environmental and the Master Plan team estimated community sound levels from the development's mechanical equipment.

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Figure 10 – Noise-Sensitive Receiver Locations Evaluated for Tech Environmental's Assessment of CambridgeSide Redevelopment Project Rooftop Noise Emissions

Compliance of Individual and Combined Noise Emissions from CambridgeSide Projects

The current CadnaA model used for the predictions documented in this report was also used to generate noise level estimates at the specific locations delineated in Tech Environmental's report.

Tables 2 and 3, below, present the applicable property-line limits outlined in the Cambridge Noise Ordinance for each of the specific receptor locations identified in Tech Environmental's study (Column 3), and compares the community sound levels of the Tech Environmental report (Column 4) with the levels calculated at those locations for each of the individual buildings discussed in this report (Columns 5-7); the last column of the table shows the levels predicted for the concurrent operation of the mechanical equipment of all three buildings. Table 2 presents the comparison for the nighttime period (the "All Other Times" category in the Cambridge Noise Ordinance); Table 3 presents a similar comparison for the daytime period.

As can be seen, Acentech's CadnaA model predicts levels well below those projected for the project by the Master Plan team. In addition, compliance with the City's noise level limits is predicted everywhere.

ID	Address	Cambridge Noise Ordinance Nighttime ("All Other Times") Limit	Tech Environmental Predicted Levels (dBA)	Acentech predictions for 60 First St (dBA)	Acentech predictions for 80 First St (dBA)	Acentech predictions for 150 CambridgeSide (dBA)	Acentech predictions for All three together (dBA)
R1	106-108 Second St	50	47	42	35	26	43
R2	43 Cambridge Pkwy	50	46	37	39	39	43
R3	23 Cambridge Pkwy	50	43	29	33	28	34
R4	17 Otis St #403	50	48	44	36	22	44
R5	4 Canal Park #606	50	49	41	40	34	44
R6	2-12 Canal Park	65	65	44	36	23	45
R7	One Canal Park	65	64	40	39	34	43
R8	21 Thorndike St	65	65	47	37	25	48
R9	61-69 First St	65	64	51	40	28	52
R10	75 First St	65	63	44	40	28	45
R11	14-24 Spring St	65	63	44	37	30	45
R12	18 Hurley St	50	49	44	41	36	46
R13	113-115 First St	65	60	38	36	40	43
R14	150 First St	65	64	31	36	43	44
R15	10 Canal Park	65	64	44	47	39	49
R16	10 Rogers Street	50	42	36	41	38	43
R17	25 Edwin H Land Blvd	50	43	42	35	26	43
R18	107 First St	50	46	37	39	39	43
R19	159 First St	50	47	29	31	28	34

Table 2: Comparison of Master Plan Predictions with Projected Nighttime Project Sound Levels (no operation of emergency generators)

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ID	Address	Cambridge Noise Ordinance Daytime Limit	Tech Environmental Predicted Levels (dBA)	Acentech predictions for 60 First St (dBA)	Acentech predictions for 80 First St (dBA)	Acentech predictions for 150 CambridgeSide (dBA)	Acentech predictions for All three together (dBA)
R1	106-108 Second St	60	54	34	31	26	36
R2	43 Cambridge Pkwy	60	53	28	34	37	39
R3	23 Cambridge Pkwy	60	47	19	23	25	28
R4	17 Otis St #403	60	54	36	32	21	38
R5	4 Canal Park #606	60	54	35	34	33	39
R6	2-12 Canal Park	65	64	36	28	23	37
R7	One Canal Park	65	61	32	32	33	37
R8	21 Thorndike St	65	64	38	31	25	39
R9	51-69 First St	65	64	44	35	28	44
R10	75 First St	65	62	36	33	28	38
R11	14-24 Spring St	65	62	36	32	30	38
R12	18 Hurley St	60	58	36	37	36	41
R13	113-115 First St	65	58	30	33	38	40
R14	150 First St	65	61	22	32	40	41
R15	10 Canal Park	65	60	37	39	39	43
R16	10 Rogers Street	60	43	28	39	36	41
R17	25 Edwin H Land Blvd	60	45	34	37	36	41
R18	107 First St	60	55	33	34	37	40
R19	159 First St	60	55	27	29	31	34

Table 3: Comparison of Master Plan Predictions with Projected Daytime Project Sound Levels (includes noise from emergency generators)

Pure Tone Evaluation

Based on the equipment sound data and the predicted sound levels to the closest receivers, we do not anticipate any of the buildings to emit tonal sound as defined by MassDEP.

CONCLUSION

The A-weighted community sound levels predicted from the operation of the rooftop mechanical equipment planned for the 60 First Street, 80 First Street, and 150 CambridgeSide Place projects will everywhere comply with the property-line sound level limits set in the Cambridge Noise Ordinance, both during the daytime and at "all other times." In addition, project noise emissions are expected to comply with the MassDEP's "10 dB over background" limits and will not result in a "pure tone" condition. Finally, predicted offsite equipment noise levels from the three First Street projects are well below the levels set by the Master Plan team at all offsite locations evaluated.

* * * * *

I trust this letter provides the information that you need at this time. If you have questions, please call me on my direct line at 617-499-8028, or e-mail me at rberens@acentech.com.

Sincerely,



Robert Berens
Principal Consultant