

D: Public Realm

Vision

The public realm of the Volpe Parcel will be a vibrant, one-of-kind district that thrives on Kendall Square's natural resource of innovation and brings together researchers, residents, students, neighbors and visitors – daytime and nighttime.

The following guidelines describe a public realm that is at once inclusive, innovative, resilient and flexible. The exterior fabric of the district — its streetscapes, parks, plazas, passages, tree canopy, furnishings, and more — must reinforce and complement the identity, vibrancy, and connectivity of the Volpe site. The space of the public realm will extend beyond the walls of the proposed buildings, linking the interior with the exterior and creating continuity in use and program.

Principles

- Establish order and connectivity
- Promote pedestrian-oriented character
- Activate a vibrant district
- Enable identity and flexibility
- Be inclusive and accessible.

1. The Porch / Philadelphia, PA

Figure D1: Public Realm Precedent





Figure D2: Public Realm

Open Space Character and Programming

Varied in size and character, the Volpe Development Plan's parks, squares, pocket parks, passages and streets will provide opportunities for active and passive use for a diverse population. A large civic park at Third Street and Broadway will provide for the flexible use of large gatherings while its periphery is to be supported by active retail and food and beverage. Smaller pocket parks and passages will create more intimate gathering places for smaller groups and individuals. These varied open spaces have been planned to be distributed throughout the greater site, located to take advantage of adjacencies and designed to create a highly connected open space network drawing people into and through the site, weaving the new development into the fabric of Cambridge:

- Parks are to be varied in character, yet evident as part of an interconnected whole. They should be designed as shared elements of the public realm, relating equally to streets and buildings both inside and outside of the Volpe site.
- Urban squares and plazas act as punctuation marks within the open space network. They should be understood as public places to pause, gather, people-watch and to feel part of a greater urban community.

- Pocket parks should be intimate in scale, employing smaller-scale landscape elements and relating specifically to the buildings that define them, and offer opportunities for community recreation.
- Passages should be designed to be both transient spaces intended to connect the open space network and static spaces intended to provide a reservoir of pre-function and spillover space associated with adjacent public uses.
- Streets are the primary connective tissue of the public realm. They should be efficient in the circulation of pedestrians, bicyclists and vehicles, and safe in their accommodation of each, while offering a wonderful, tree-lined, urban path along which to stroll, shop, dine or rest.

1. Central Wharf Pavilion (RH) / Boston, MA
2. Marion Square / Chicago, IL
3. City Square / Washington DC



Figure D3: Open Space Character Precedents



Figure D4: Open Space Typologies



Third Street Park

A substantial new park at Third Street and Broadway will establish the identity of the Volpe Development Plan as a network of publicly beneficial open spaces. The tree-lined shaded park will promote communal gathering and individual respite from the activity of the surrounding city. The space is to be designed for flexibility and resiliency, adaptable to the changing needs of future generations while promoting environmental stewardship.

Characteristics:

- The park is to be civic in presence and scale, with high visibility from the surrounding district.
- Flexible in nature, the space should accommodate large gatherings while still feeling comfortable for smaller groups of users.
- The park is to be designed to provide shade and cooling through preserved existing and new canopy trees, while minimizing the heat island effect in the neighborhood.
- Entry points are to be clear and evident, and designed without barriers.
- Peripheral spaces should complement the active edges, while providing a slight buffer from the adjacent streets.

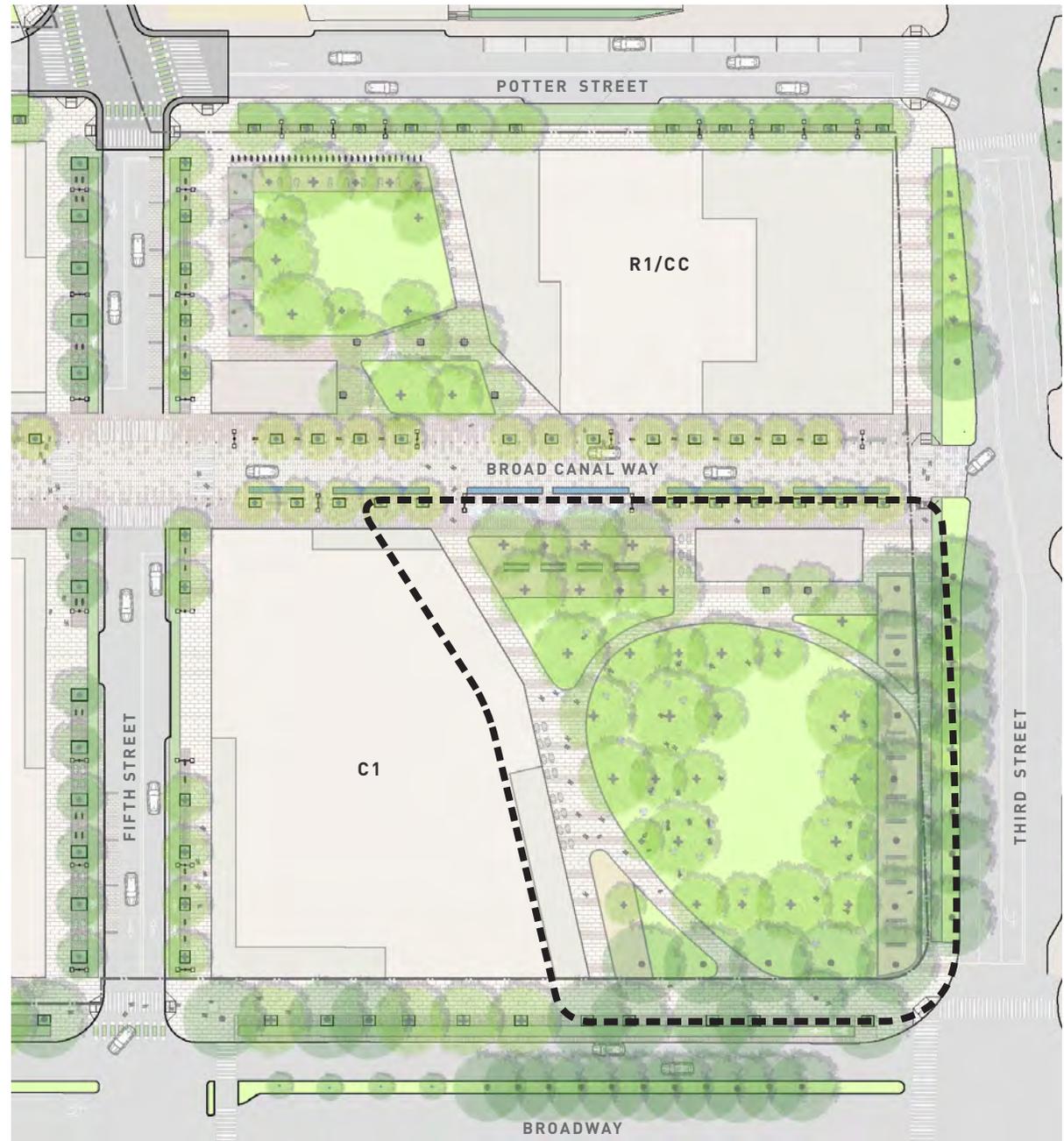


Figure D5: Third Street Park Plan





1. Dallas Art District / Dallas, TX
2. Group Fitness
3. Bryant Park / New York, NY
4. Copley Square / Boston, MA
5. Madison Square Park / New York, NY
6. Zuccotti Park / New York, NY

Figure D6: Third Street Park Precedents

Sixth Street Park

The Sixth Street Park is to expand the tree-lined allée of the Loughrey Walkway to create an enhanced park that will host a varied set of recreation and casual leisure spaces that serve the neighborhood and community. The Sixth Street Park is to provide a wide buffer from the edge of the new buildings to the existing trees of Loughrey Walkway, helping to ensure their preservation.

Characteristics:

- To be designed for programmed and unprogrammed activities to serve the needs of the neighborhood, such as children's play spaces, a dog run, and passive respite.
- The park design is to have no impact on the edge of the existing allée of trees at Loughrey Walkway.
- The park is to provide shade and cooling with both preserved existing and new canopy trees, while minimizing the heat island effect in the neighborhood.

Passage to Loughrey Walkway

This sheltered passage between Buildings C3 and R3 is to provide a pedestrian open space connection from Broad Canal Way to the Sixth Street Park and Loughrey Walkway. The space is to operate as forecourt and pre-function space to the Entertainment Venue and as an active, lively corridor for community arts.

Characteristics:

- To be designed to encourage visual and physical connectivity between Loughrey Walkway and Broad Canal Way.
- Architectural elements should be both open and sheltering, encouraging both movement and pause.

1. Seating Under the Canopy
2. Hammocks
3. Public Board Games
4. Dog Park
5. Play Lawn
6. Light Installation
7. Play Features
8. Half Court Basketball
9. Court Games

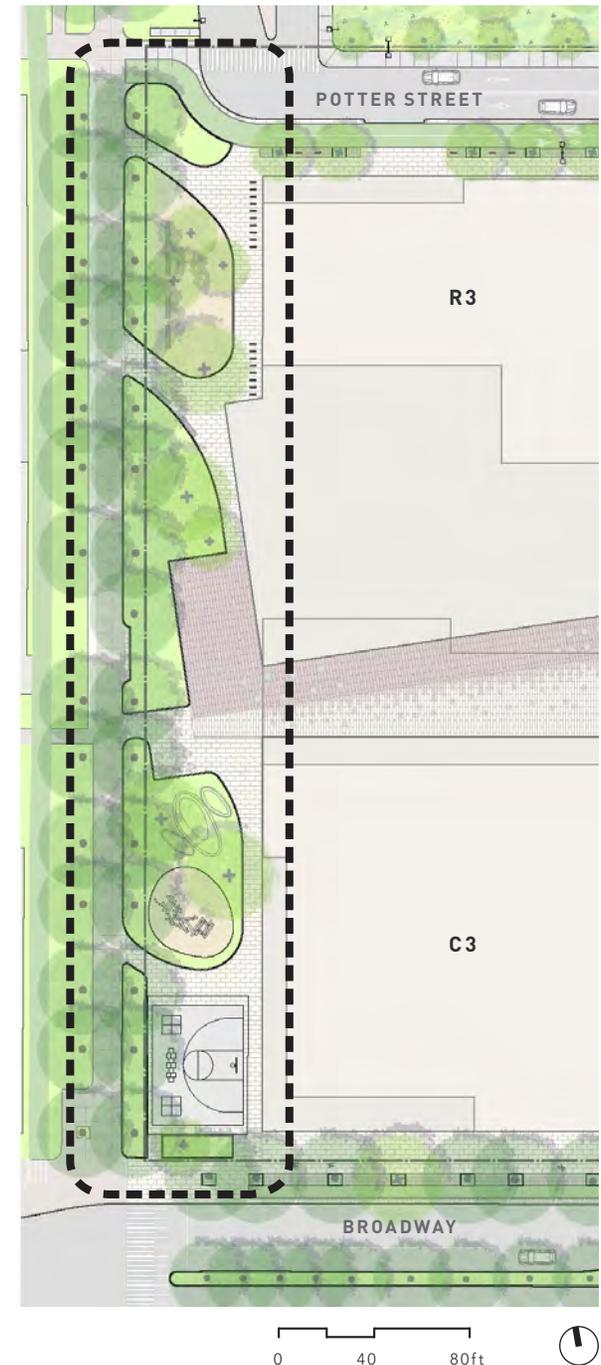


Figure D7: Sixth Street Park Plan



Figure D8: Sixth Street Park Precedents

Community Center Park

The Community Center Park, at the corner of Broad Canal Way and Fifth Street, extends opportunities for local gatherings related to the Community Center itself. Envisioned as an active and programmable site at the heart of the project, it is a place for shade, play, group exercise, outdoor classes, and more. Beyond its role in complementing the programming of the Community Center, the Park can also be integrated into larger events and festivals on Broad Canal Way and the Third Street Park. In this way it provides the possibility of continuously occupied event space from Third and Broadway up to the Volpe Art Lawn at the DOT site.

Characteristics:

- Placed in the heart of the Volpe development, the Community Park is fully accessible by sidewalks on Potter Street, Fifth Street, and Broad Canal Way. It will be a hub of activity for locals.
- The park has fixed elements of seating and game tables, but also allows flexibility for both programmed and casual recreation.
- There is a component of retail activation space on the corner at Fifth and Broad Canal Way—imagined as a food and beverage amenity for shoppers and park users, with shaded sitting

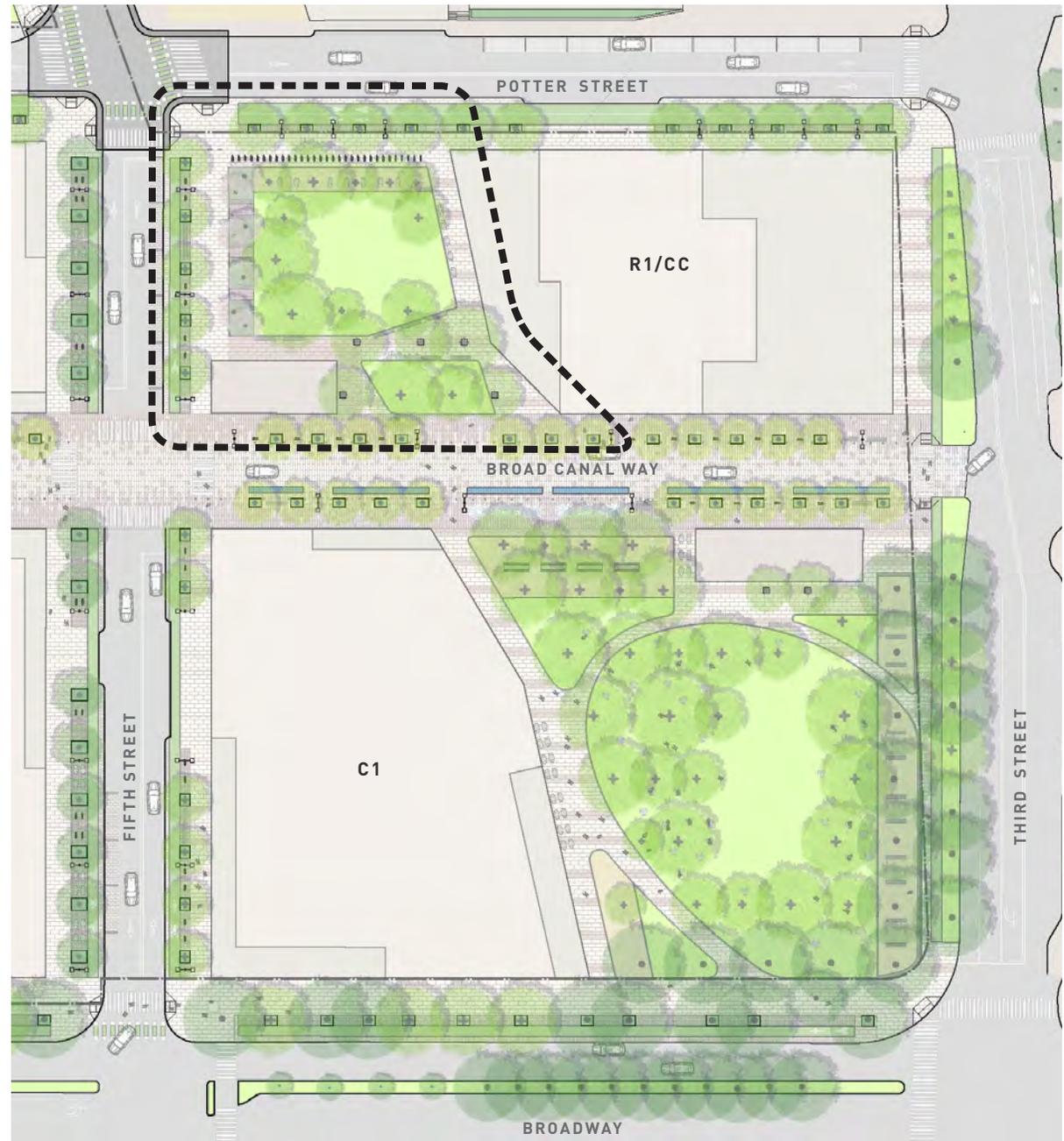
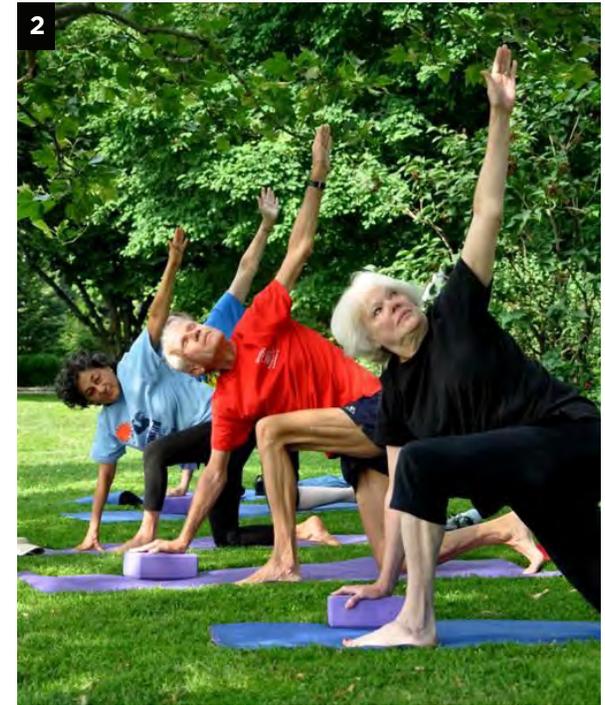


Figure D9: Community Center Park Plan



areas immediately proximate with a view onto the park lawn space.

- The park is anticipated to have a distinctly local focus and daily rhythm: Programmed activities for seniors in the mornings, casual uses around mid-day, and spill-out functions from the Community Center after-school programs.



1. Public Horticulture
2. Group Fitness
3. Science Festival
4. Outdoor Classroom

Figure D10: Community Center Park Precedents

Binney Street Pocket Park

The proposed Binney Street Pocket Park provides a shaded play space between Binney and Munroe Streets for residents, visitors, and the surrounding neighborhood. Programmed with climbing structures and other play equipment, the space takes advantage of the solar exposure and limited traffic on Munroe Street to create a needed amenity for the neighborhood, promoting social life and interaction. Ample space allows for temporary bicycle storage, shaded gardens, and spillover from adjacent retail.

Characteristics:

- The space should be intimate, and appropriate scaled for its surrounds.
- Landscape elements should focus on children.

1. Section Perspective of Binney Street Pocket Park looking North
2. Playscape
3. Climbing Structure
4. Sandbox

Figure D11: Binney Street Pocket Park Plan





Figure D12: Binney Street Pocket Park Precedents

Street Character and Circulation

The public realm of the street plays a number of vital roles within the life of a city. Beyond circulation, the components of streets provide opportunities to support local businesses through retail frontage and spillover, while also creating spaces for relaxation and gathering. In order to accommodate its many functions, the streets are to be divided into several components as described below.

Typical Street Components

- Pedestrian walkway – to include a clear travel walking area plus an area of retail frontage and spillover, both sized appropriately to the scale and use of the street.
- Furnishing zone – to include street lighting, trees and other plantings, a variety of street furniture, bike racks and signage, and storm water capture.
- Separated bike lane – to be designed per City of Cambridge standards, the bike lane is to be dedicated for cyclist travel.
- Buffer – to provide a safe space between the separated bike lane and the vehicular lane.
- Active curb zone / short-term parking – location and frequency to vary by street, intended to allow for vehicles to safely and briefly stop along the curb.

- Travel lane – will convey vehicular traffic through the district and may either be dedicated to vehicles or shared with pedestrians and bicyclists.

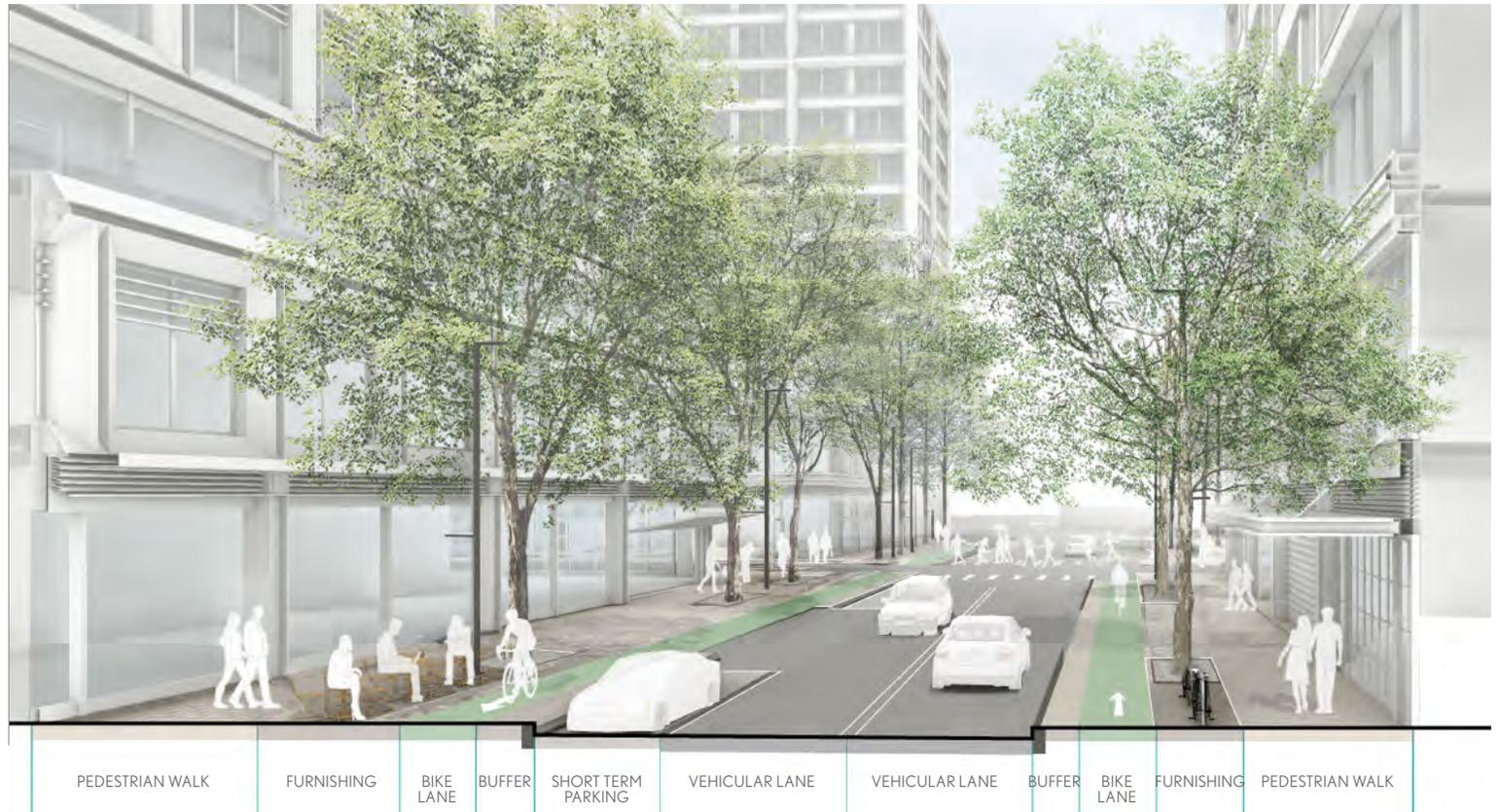


Figure D13: Typical Street Components

Fifth Street

Neighborhood Connector

Fifth Street will accommodate a broad pedestrian walk and furnishing zone on the west side of the street from Binney Street to Broadway, reinforcing the street's presence as a primary north-south connector. Materials, furnishings, lighting and planting should delineate places for gathering and movement.

Characteristics:

- Fifth Street is to be a two-way neighborhood street with active retail.
- Curb lines and materials are to define distinct areas of travel for pedestrians, bicycles and vehicles.
- The vehicular street width is to be consistent, with asymmetrical planting, walkway and bicycle zones.
- Short term parking and active curb drop-offs are to be located on both sides of the street.



1. The Avenue / Washington DC
2. Plaza at the Met / New York, NY
3. Street Furniture

Figure D14: Fifth Street Precedents

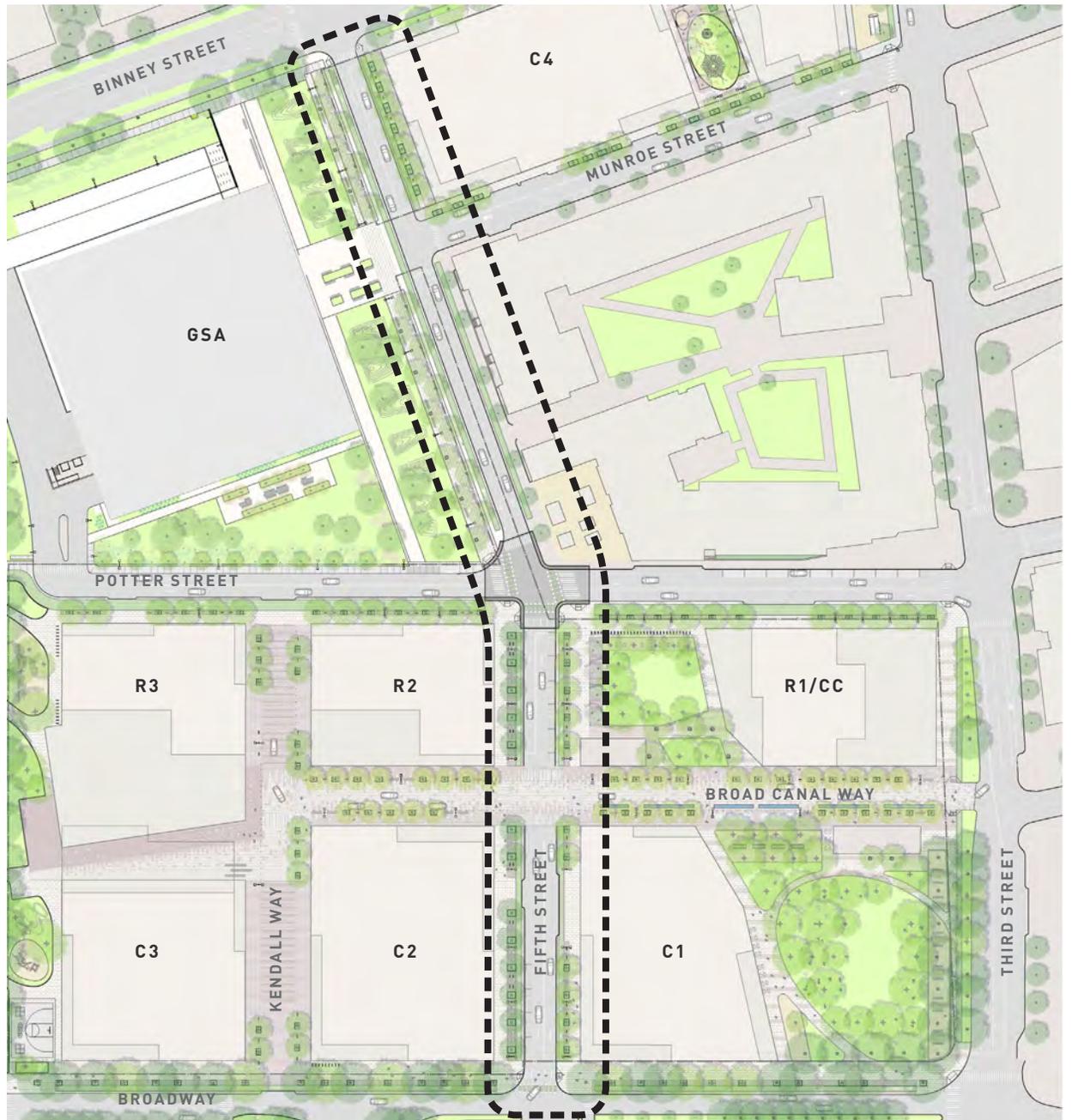
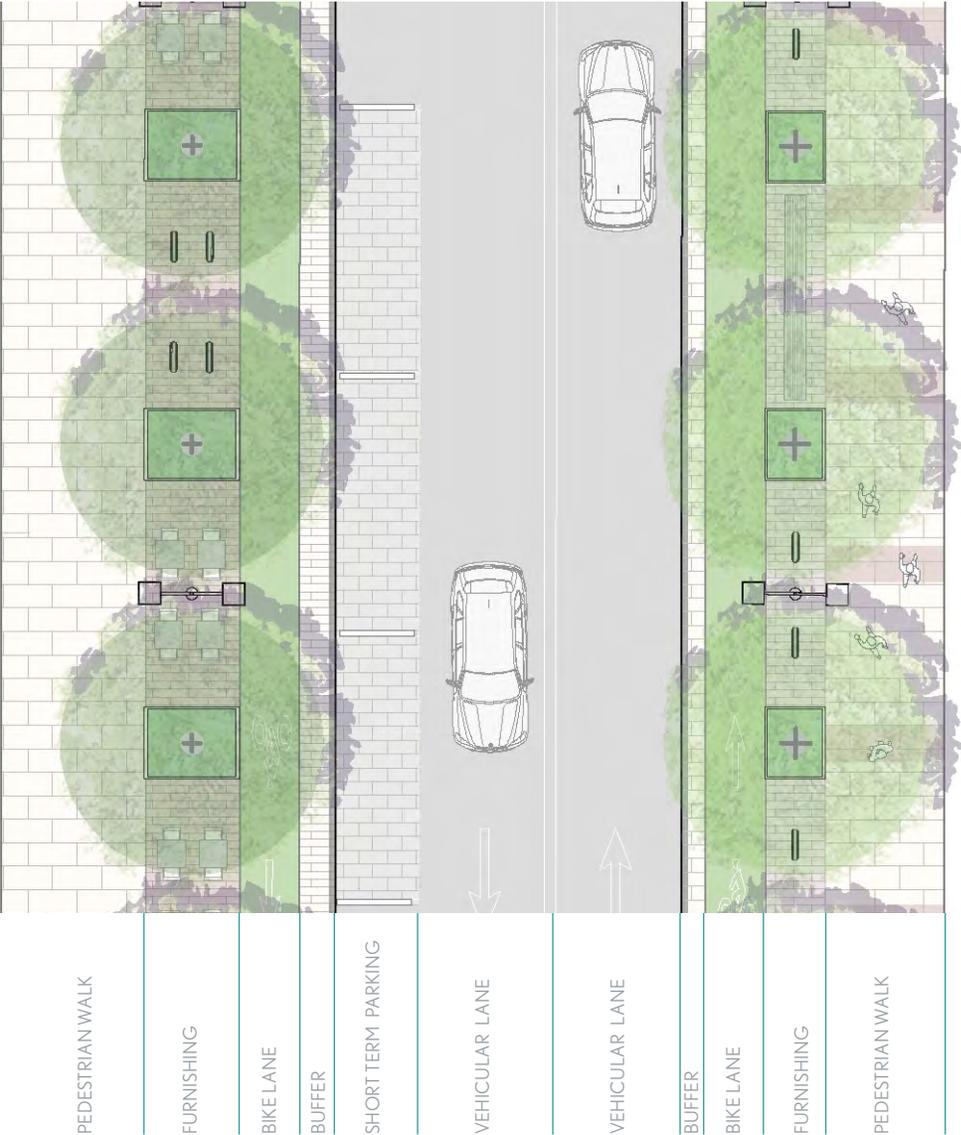


Figure D15: Fifth Street Plan

Fifth Street at Broadway

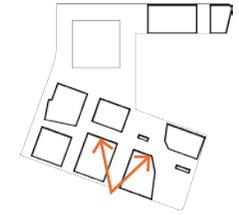
Fifth street between Broadway and Potter takes advantage of an asymmetric street section on its western edge to create an active commercial zone. Informed by the northern end of Fifth Street, the wider sidewalk and furnishing zone expresses a major north-south pedestrian connection that draws neighbors into and through the development.



- PEDESTRIAN WALK
- FURNISHING
- BIKE LANE
- BUFFER
- SHORT TERM PARKING
- VEHICULAR LANE
- VEHICULAR LANE
- BUFFER
- BIKE LANE
- FURNISHING
- PEDESTRIAN WALK



Figure D16: Fifth Street Corridor



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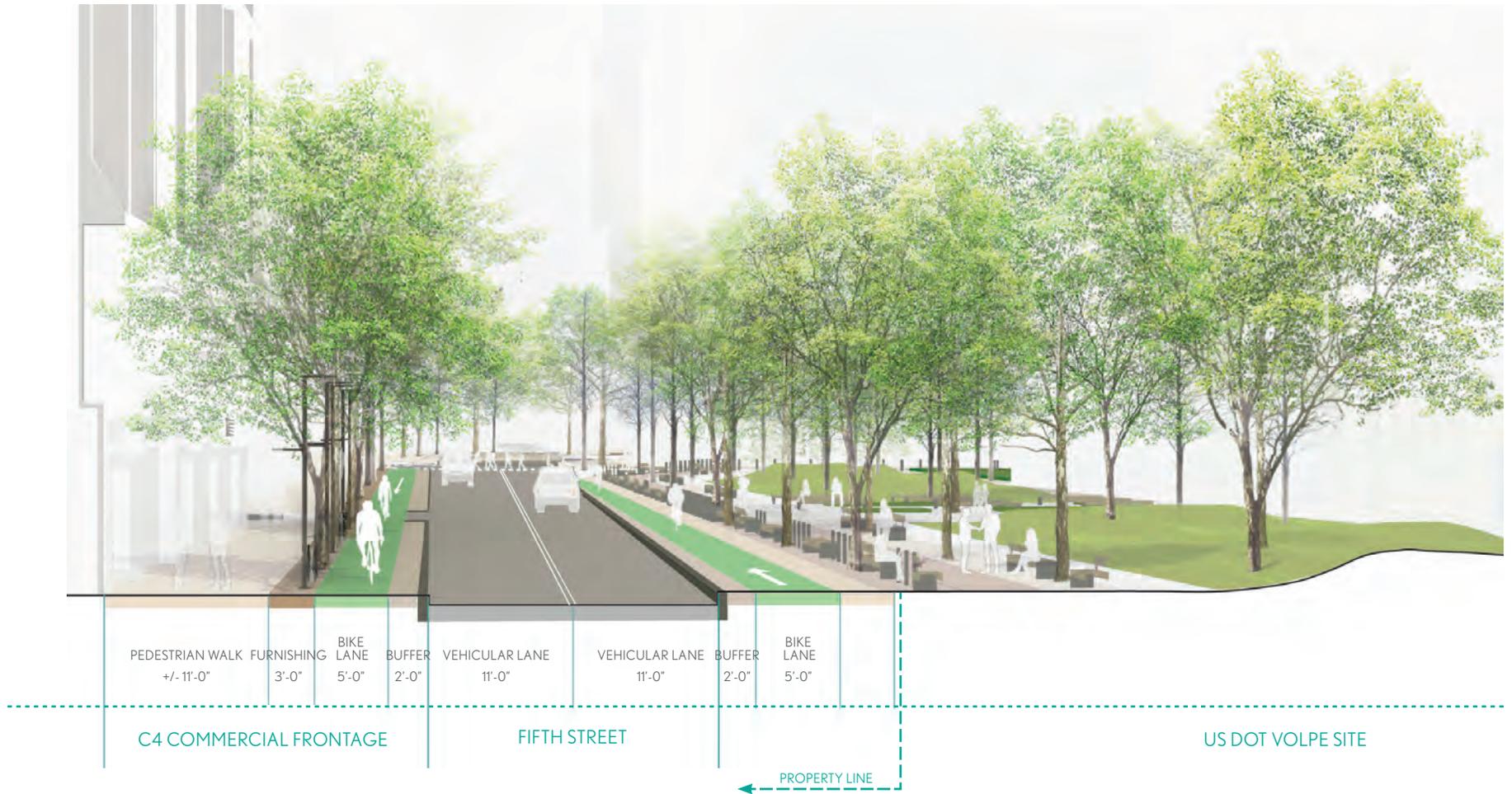
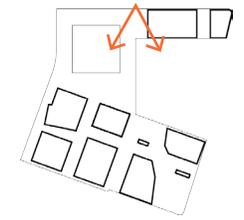
Figure D17: Street Section - Fifth Street South of Potter

**Fifth Street at Binney:
Promenade and Art Lawn**

At the northern end of Fifth Street, the western edge is designed to create a seamless expanse of promenade and art lawn - a feature developed separately as part of the new Volpe National Transportation Center site. The volume of space at the north end opens to welcome and drawn neighbors into the greater development.



Figure D18: Fifth Street at Binney Street



*DIMENSIONS ARE APPROXIMATE

Figure D19: Street Section - Fifth Street at Binney

Broadway

An Active Commercial Edge

With the Volpe Development Plan, Broadway will be transformed into a double-sided commercial street from Third Street to Ames Street with a consistent streetwall. The existing condition of the boulevard and existing street trees provides pedestrian scale and ample shade for the active retail frontage. For resiliency against future potential flooding, the floor elevations will be raised, creating an elevated porch along the southern edge of at least two of the commercial buildings.

Characteristics:

- Ground floor and streetscape design should convey a transparent, urban commercial edge.
- Existing, mature street trees should be protected and preserved.



1. Old Market / Omaha, NE
2. Boston Design Center / Boston, MA
3. Ink Block / Boston, MA

Figure D20: Broadway Precedents

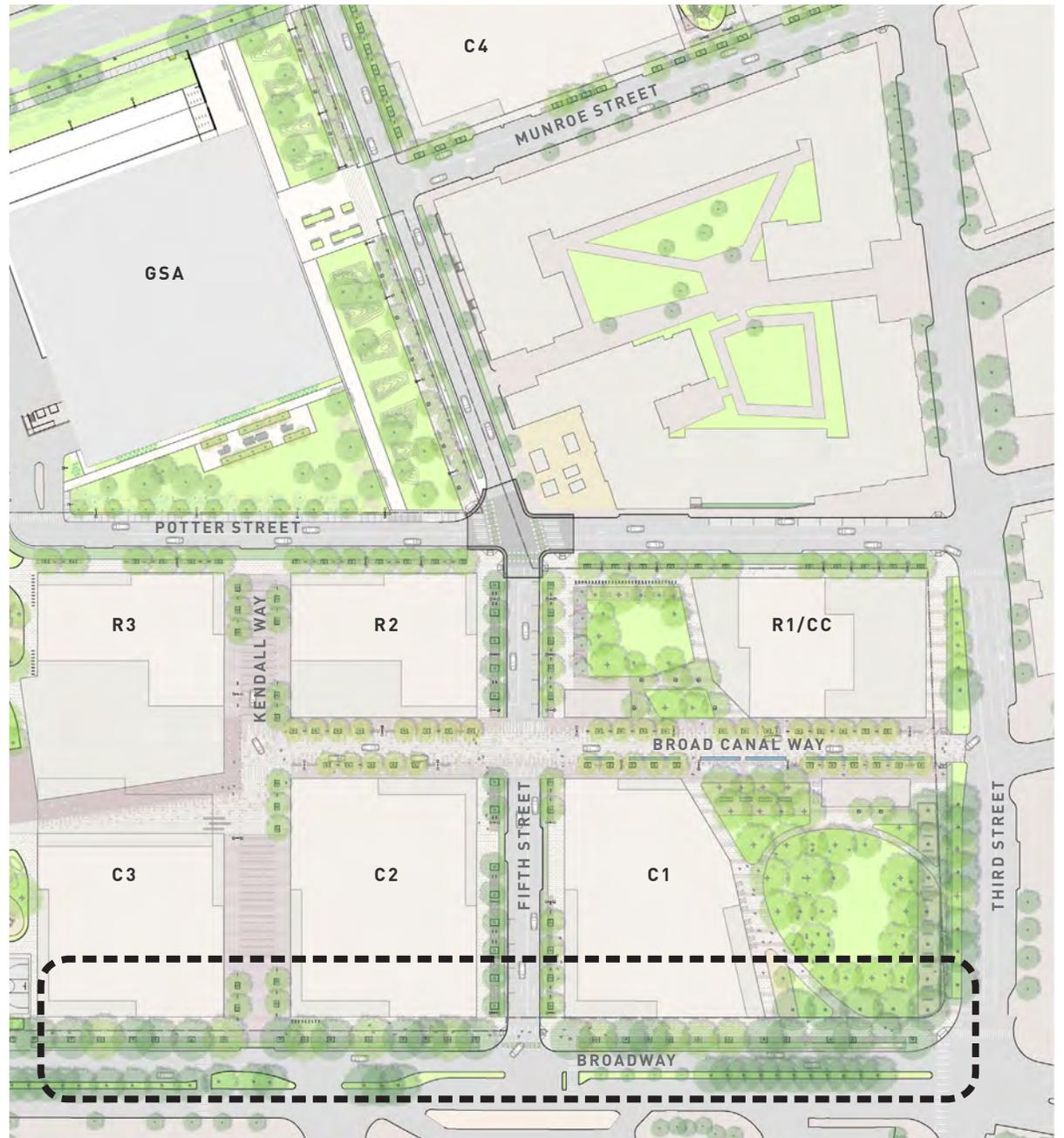


Figure D21: Broadway Plan



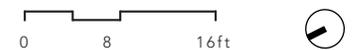
Broadway Resiliency: A View from the Street

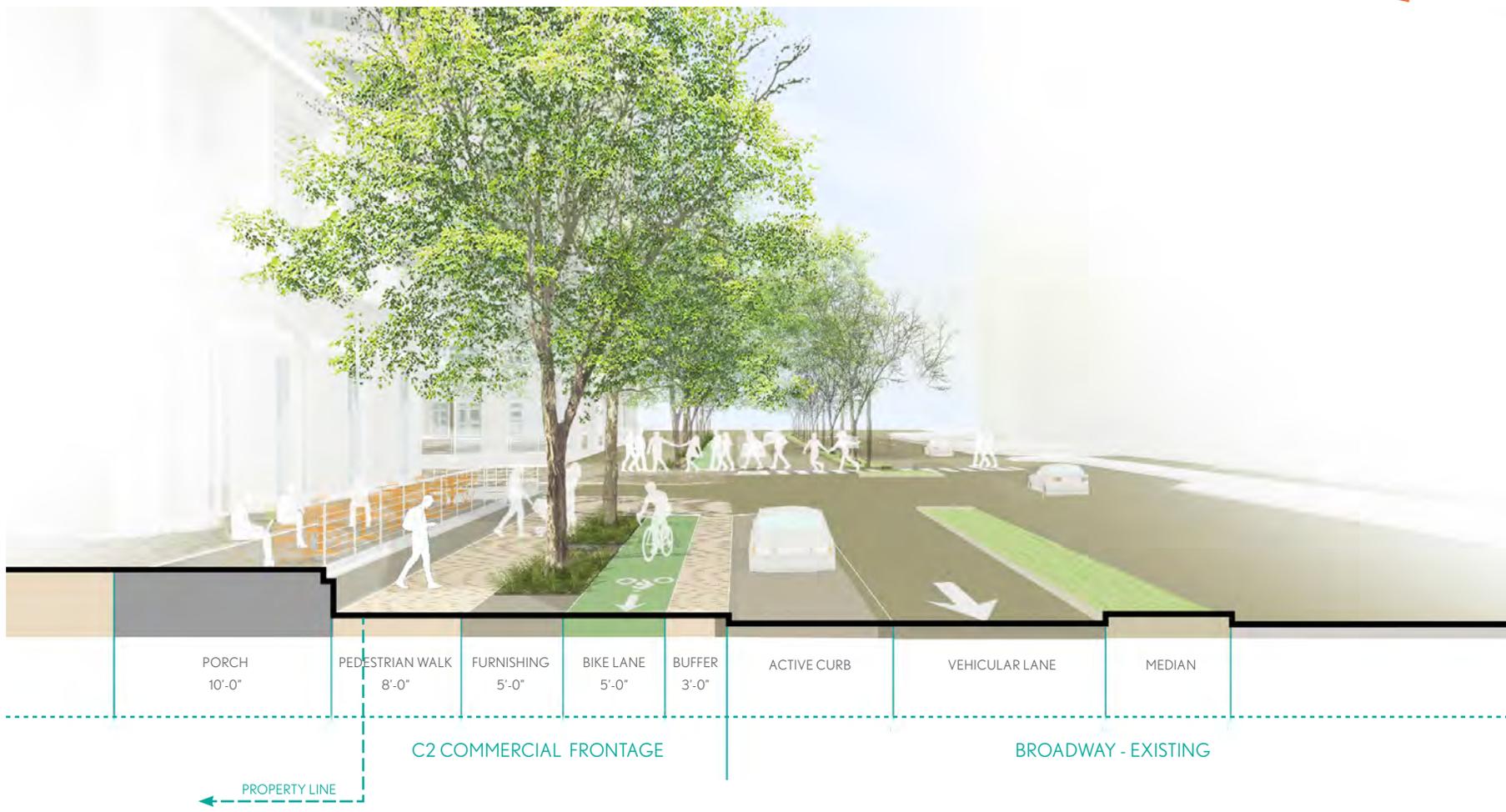
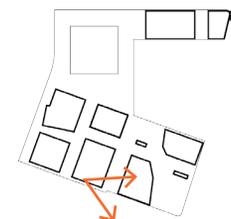
The finished floor elevation for all buildings in the Project will be set to a minimum elevation of 21.4 CCB to allow for buildings to be resilient towards the 2070 100-year storm elevation. The building frontage along Broadway is anticipated to have an approximate 18-inch grade change to meet the resiliency elevation of 21.4' CCB.

The raised ground floor elevation to accommodate sea-level rise should be embraced as an opportunity to create a raised deck for dining and sitting that affords a slight separation from and view over the pedestrian flow of Broadway.



Figure D22: Broadway Porch at Fifth Street





*DIMENSIONS ARE APPROXIMATE

Figure D23: Street Section - Broadway

Binney Street and Third Street

Binney Street: An Accessible Public Realm

Binney Street is a broad, commercial street with a series of relatively new, large-scale buildings lining most of its north side. Yet its nature is somewhat chimerical. In a sense, it acts as a threshold to the residential neighborhood to its north, with the commercial scale of its buildings acting as a buffer between the scale of Kendall Square and that of the East Cambridge neighborhood. Within the length of the Volpe Development Plan, building use along Binney Street varies from governmental at the new Volpe National Transportation Center, to commercial at parcel C4, and residential at parcel R4.

Characteristics:

- Landscape and streetscape elements should relate to the scale of buildings along Binney Street and to the commercial and vehicular-arterial nature of the roadway.
- The density of tree planting may be modulated in response to commercial or residential character of the proposed buildings, but it should also create a sense of cohesiveness via growth habits, if not rhythm.

Third Street: Active Retail

Third Street will remain one of the main commercial corridors of East Cambridge: a double-loaded street, extending the active retail streetwall south from Potter Street to Broad Canal Way, and engaging with the active civic park at Third Street and Broadway and the CRA Parcel at the corner of Binney and Third Streets. The strong presence of street trees and the wide sidewalk of Third Street are to be continued along its length within the Volpe Development Plan.

Characteristics:

- Ground floor building frontage and streetscape design at parcel R1/CC should relate to the active retail of Third Street.
- At its north and south extremities, the public realm of Third Street's western sidewalk should actively engage with the CRA plaza adjacent to parcel R4 and the civic park at Third Street and Broadway, each of which act as as shared open space and provide spatial relief to the retail frontage and opening up to the scale and pace of Binney Street and Broadway.

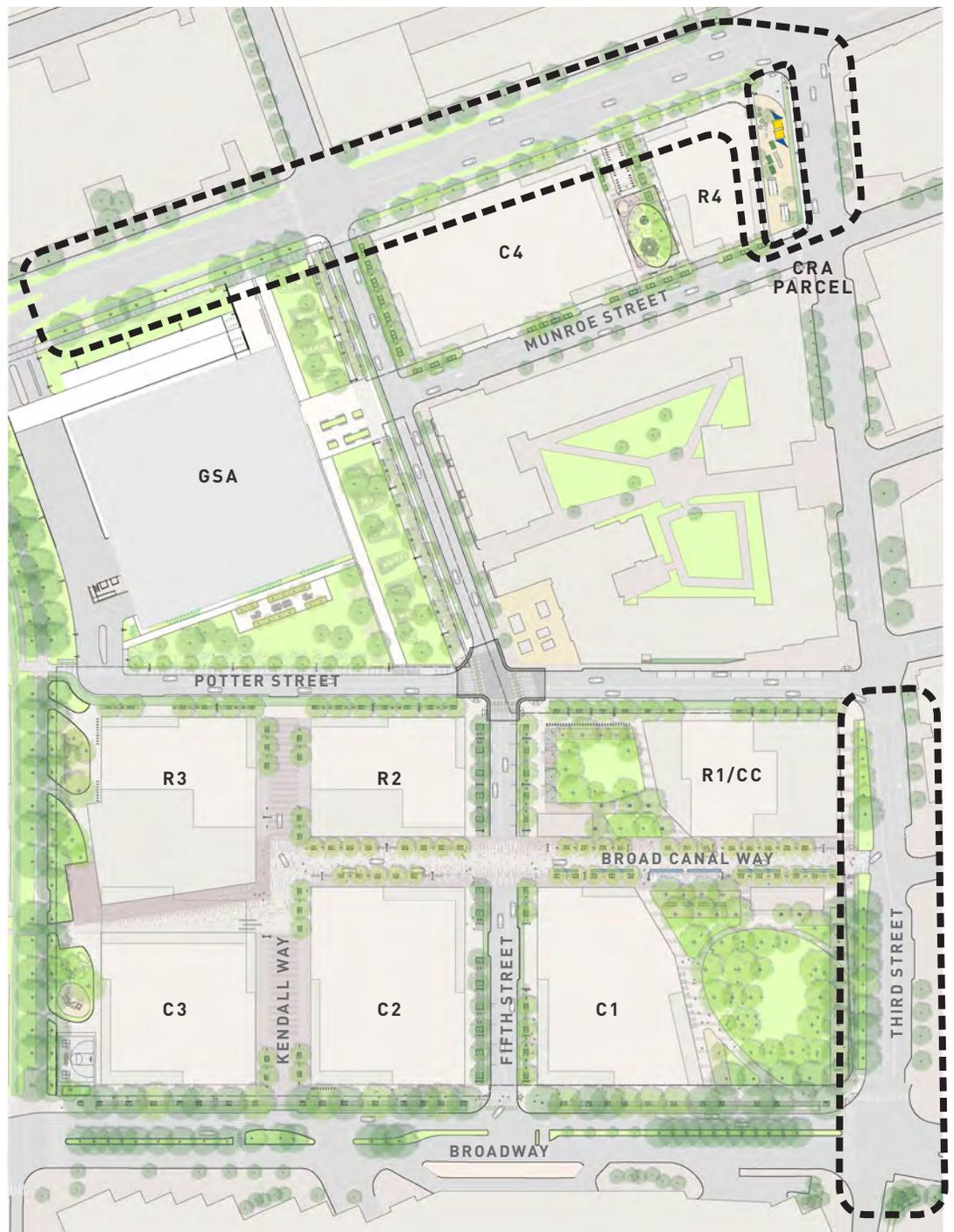


Figure D24: Binney and Third Street Plan

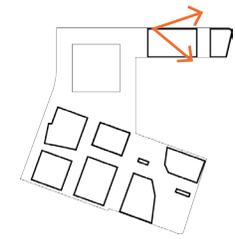
Binney Street: Planting Connectivity

Existing street trees should be supplemented with new trees to create variety and increased planting density. Species should be selected to relate to existing trees along Binney Street and to transition to the tree typologies to be used within the Volpe Development Plan.



Figure D25: Binney Street Detailed Plan





*DIMENSIONS ARE APPROXIMATE

Figure D26: Street Section - Binney Street

Potter Street

Residential in Scale and Function

The extension of Potter Street further subdivides the former superblock while providing access to the new Volpe National Transportation Center site. This street will provide parking access and curbside front door addresses to three of the residential buildings in the development, as well as a wide continuous pedestrian sidewalk.

Characteristics:

- Potter Street is to be developed as a two-way residential street with residential amenities.
- The roadway is to be curb-lined, with wide continuous sidewalks along the residential frontage.



1. 19th and Mercer / Seattle, WA

Figure D27: Potter Street Precedent

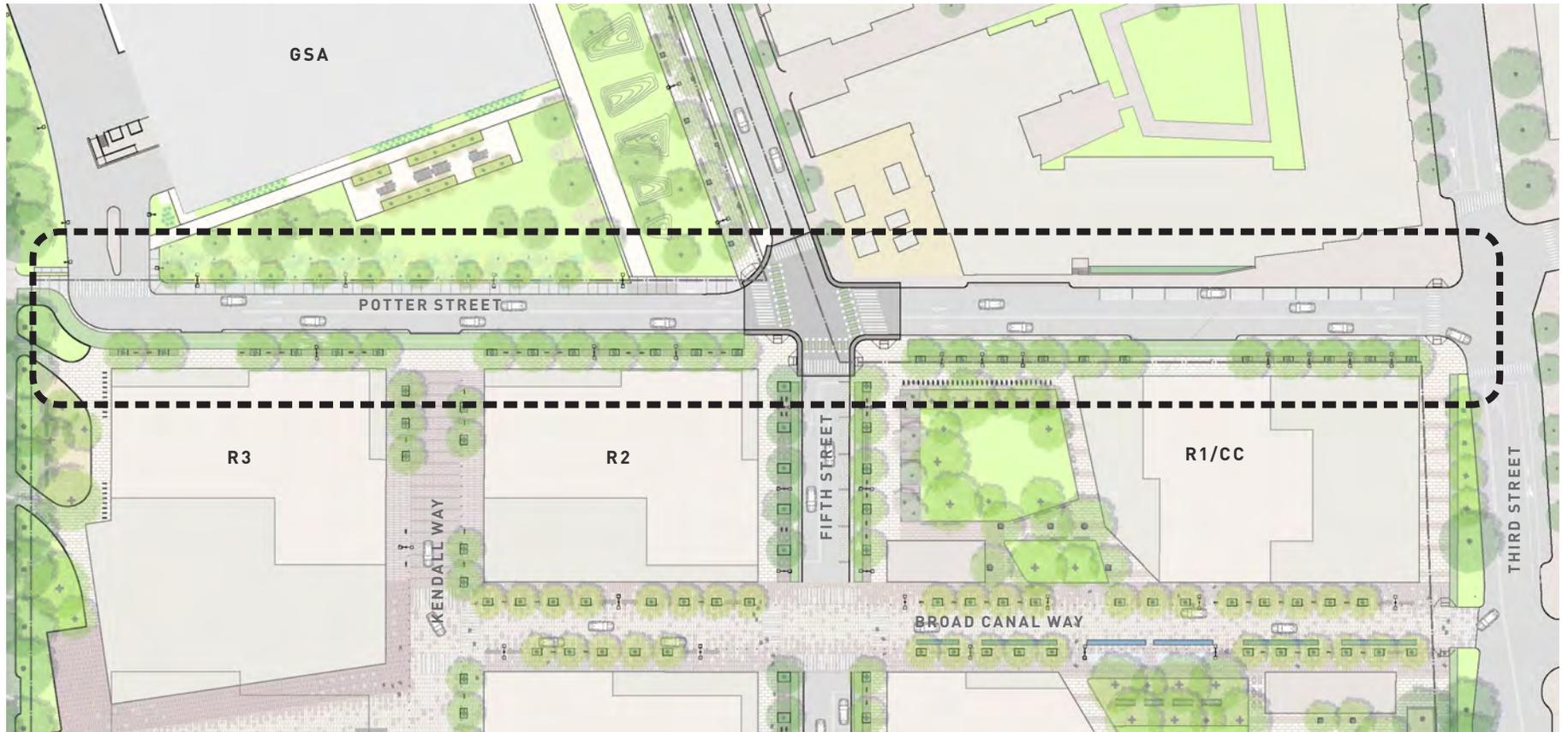
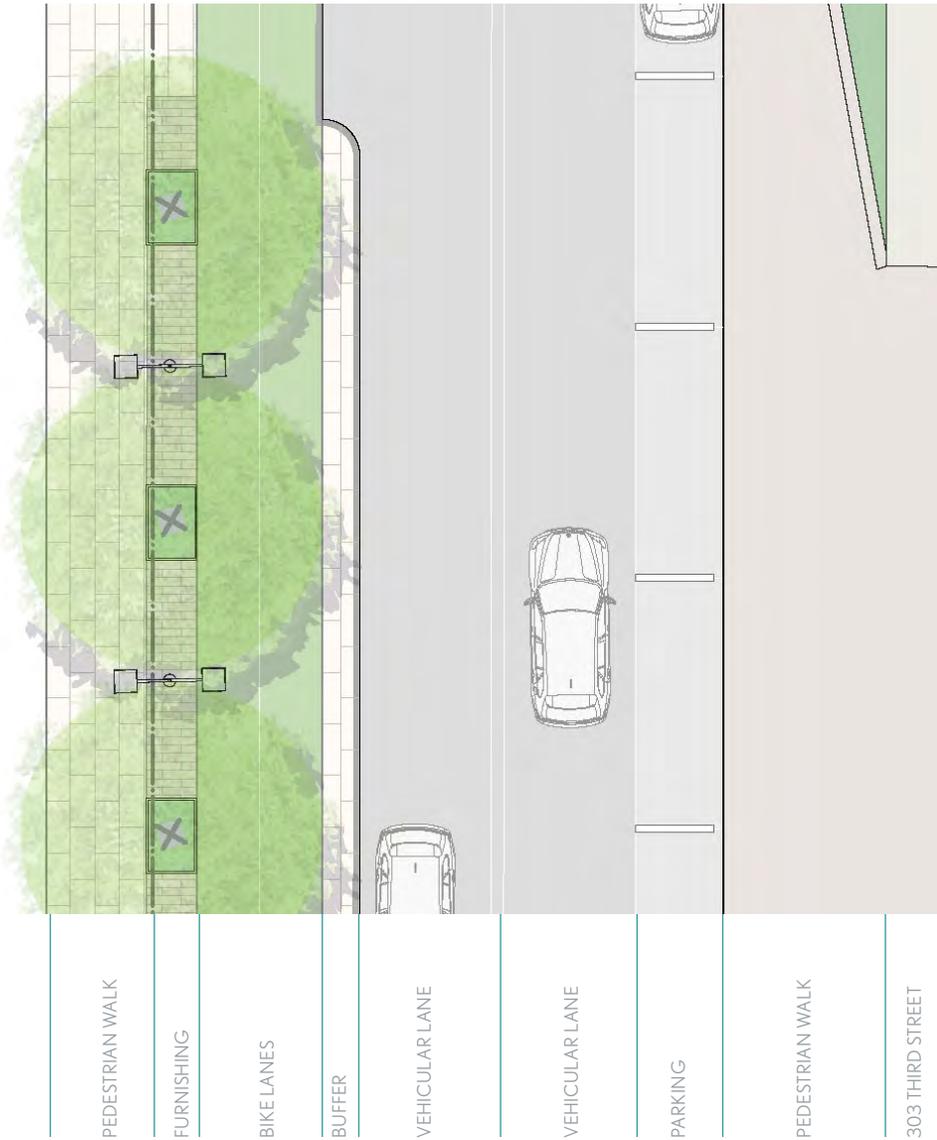


Figure D28: Potter Street Plan



**Potter Street: Good Trees
Make Good Neighbors**

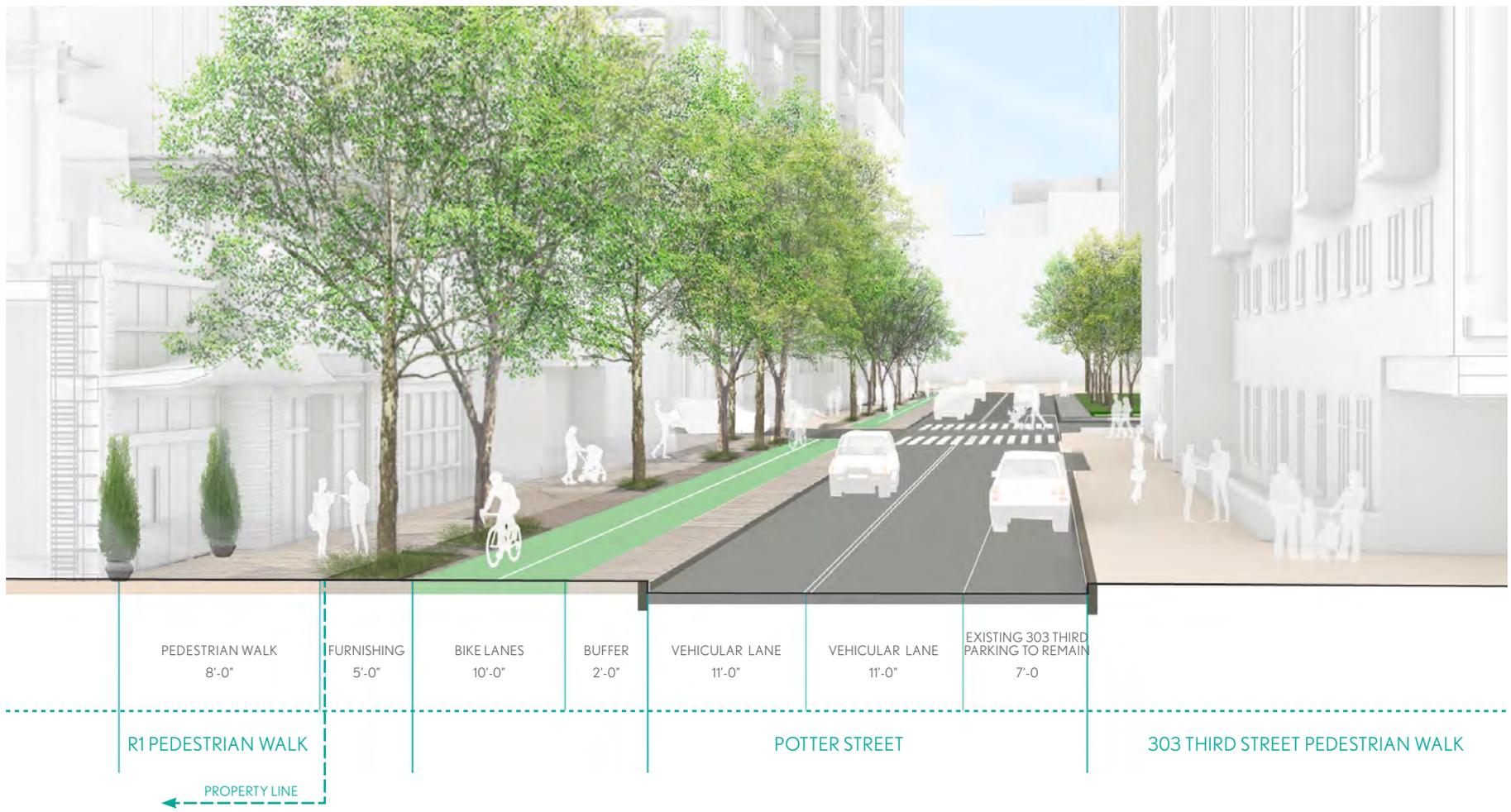
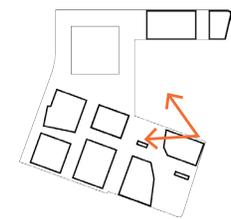
The east end of Potter Street, opposite the 303 Third Residences, is intended to emphasize the residential character of this neighborhood street. A dense line of street trees along the north side of parcel R1/CC should be planted to establish that residential character and to act as counterpoint to the more hardscaped nature of the sidewalk south of 303 Third.



PEDESTRIAN WALK
FURNISHING
BIKE LANES
BUFFER
VEHICULAR LANE
VEHICULAR LANE
PARKING
PEDESTRIAN WALK
303 THIRD STREET

Figure D29: Potter Street Detailed Plan





*DIMENSIONS ARE APPROXIMATE

Figure D30: Street Section - Potter Street

Broad Canal Way

Shared Street in the District Center

The Broad Canal Way extension will create a vibrant pedestrian-oriented destination for an active commercial district. Canopy trees are to provide a ceiling for the street, bringing the scale down to pedestrian life. Broad Canal Way will be punctuated by the Community Center at mid-length and the Performance Venue at its western end, and will support the diverse social and communal aspects of the district through active drop-off zones and spill-over space for gatherings.

Characteristics:

- Broad Canal Way is to be a one-way street with active retail, and managed vehicular traffic. It is planned to be one way west from Third Street to Fifth Street and one way east from Kendall Way to Fifth Street.
- The roadway shall be pedestrian-oriented, with flush curbs and uniform materials creating a continuous surface for free mobility along its length.
- A landscape and site-furnishing zone of street trees, lighting, benches, bollards and bike racks is to act as a buffer, separating vehicular access from pedestrians.
- Varied and distributed areas of short-term parking and active curb drop-offs are to be located along the length of the street.

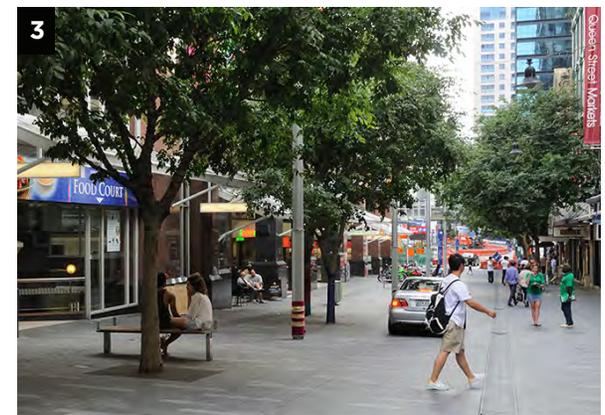
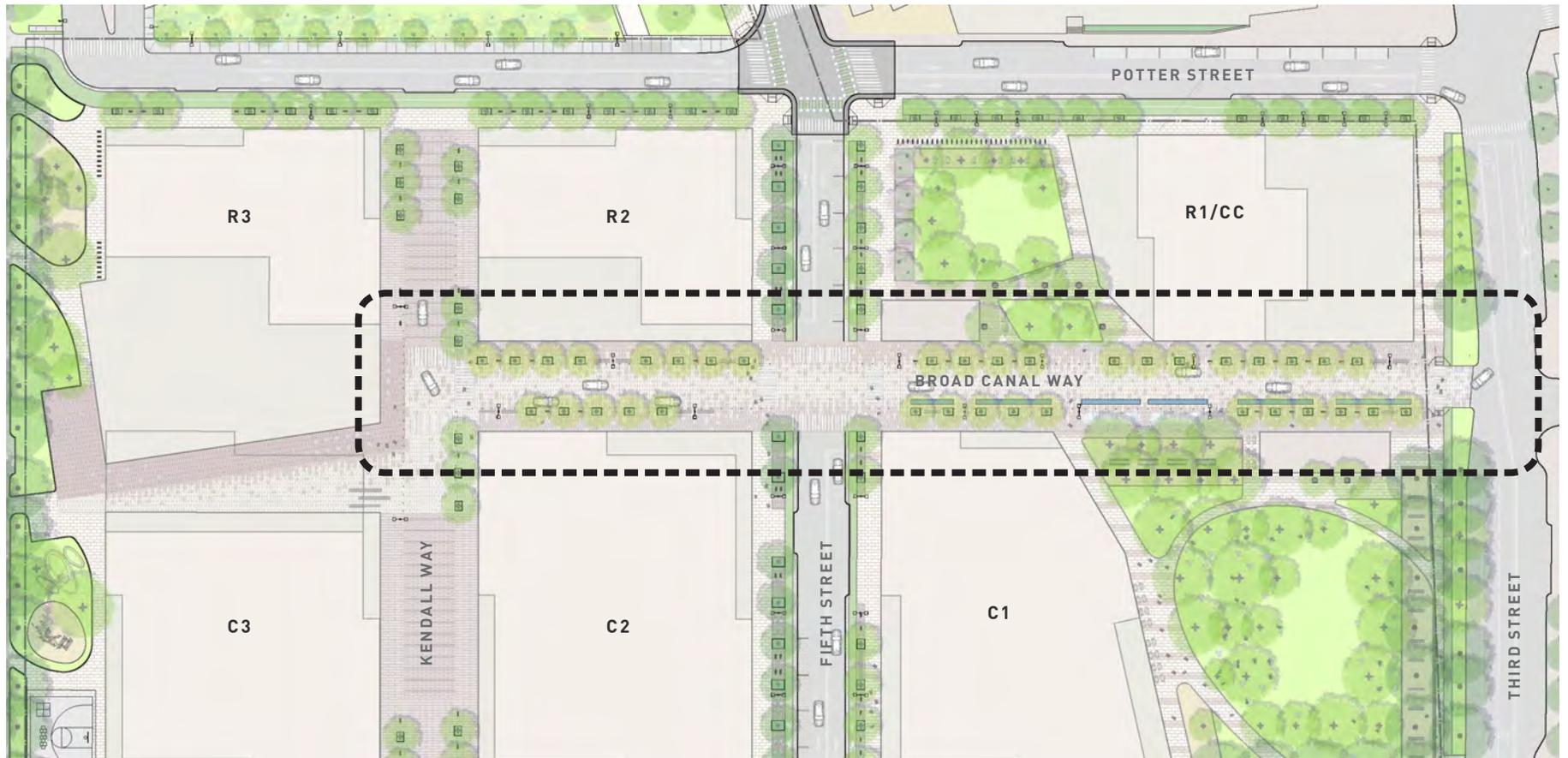


Figure D31: Broad Canal Way Precedents



1. New Road / Brighton, UK
2. Washington Street/ Boston, MA
3. Elliot Street / Auckland, NZ

Figure D32: Broad Canal Way Plan

Broad Canal Way at Third Street Park: Blurring the Edge

The multi-modal nature of Broad Canal Way will be integral to Third Street Park. As a paved, pedestrian-focused zone immediately south of the retail frontage of Building R1/CC, it will act as both terrace and promenade, blurring the edge between inside and outside. Similarly, a single story, transparent retail pavilion is intended to provide both separation and connection of Broad Canal Way and Third Street Park, simultaneously allowing the street to be part of the park and the park to be part of the street.

The history of the Broad Canal is interpreted and celebrated through a thin water sheet, punctuating the length of the east block, and culminating with a series of jets adjacent Third Street Park. This water feature animates the street edge, creating a lively atmosphere and a draw for families.

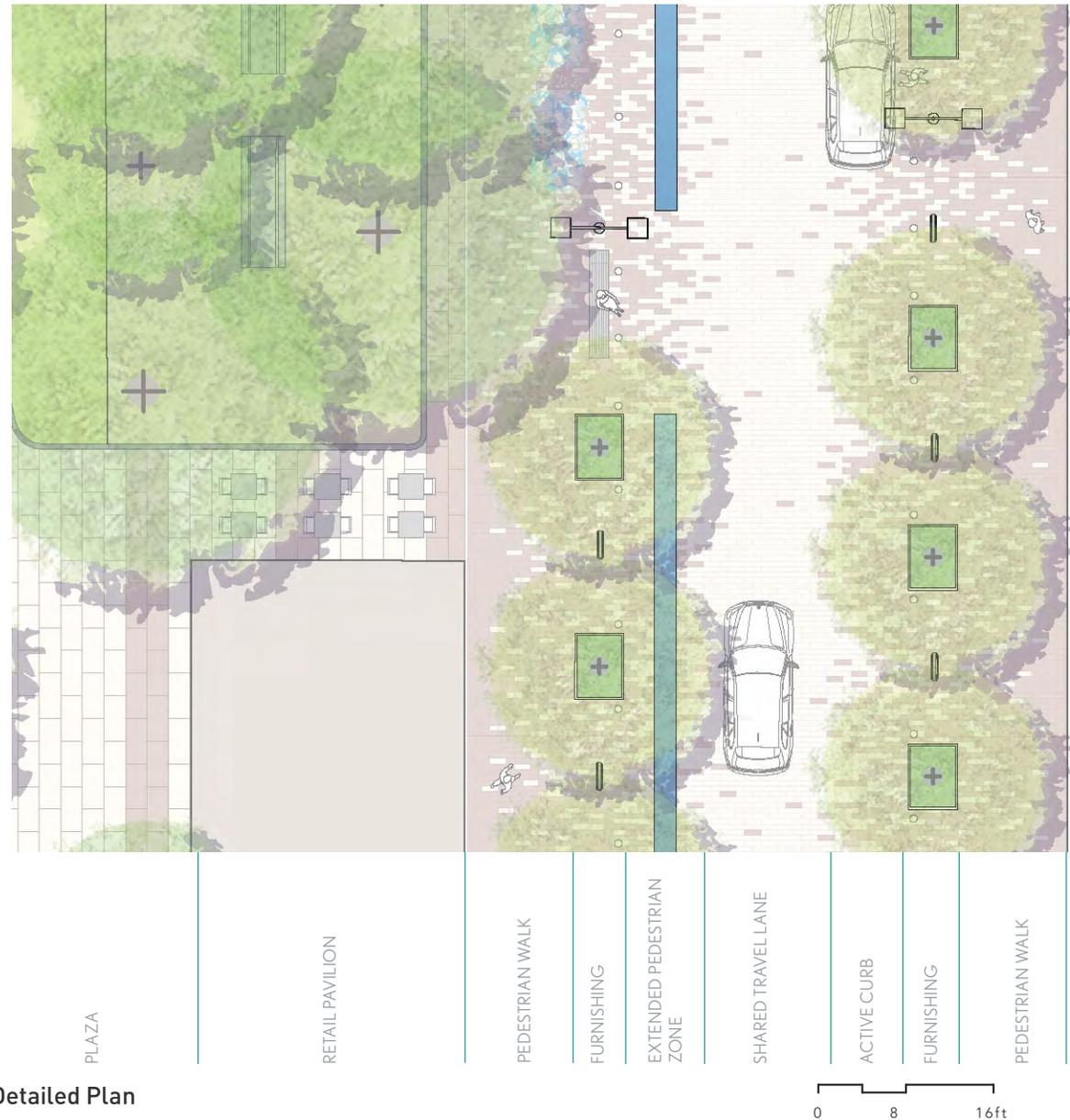
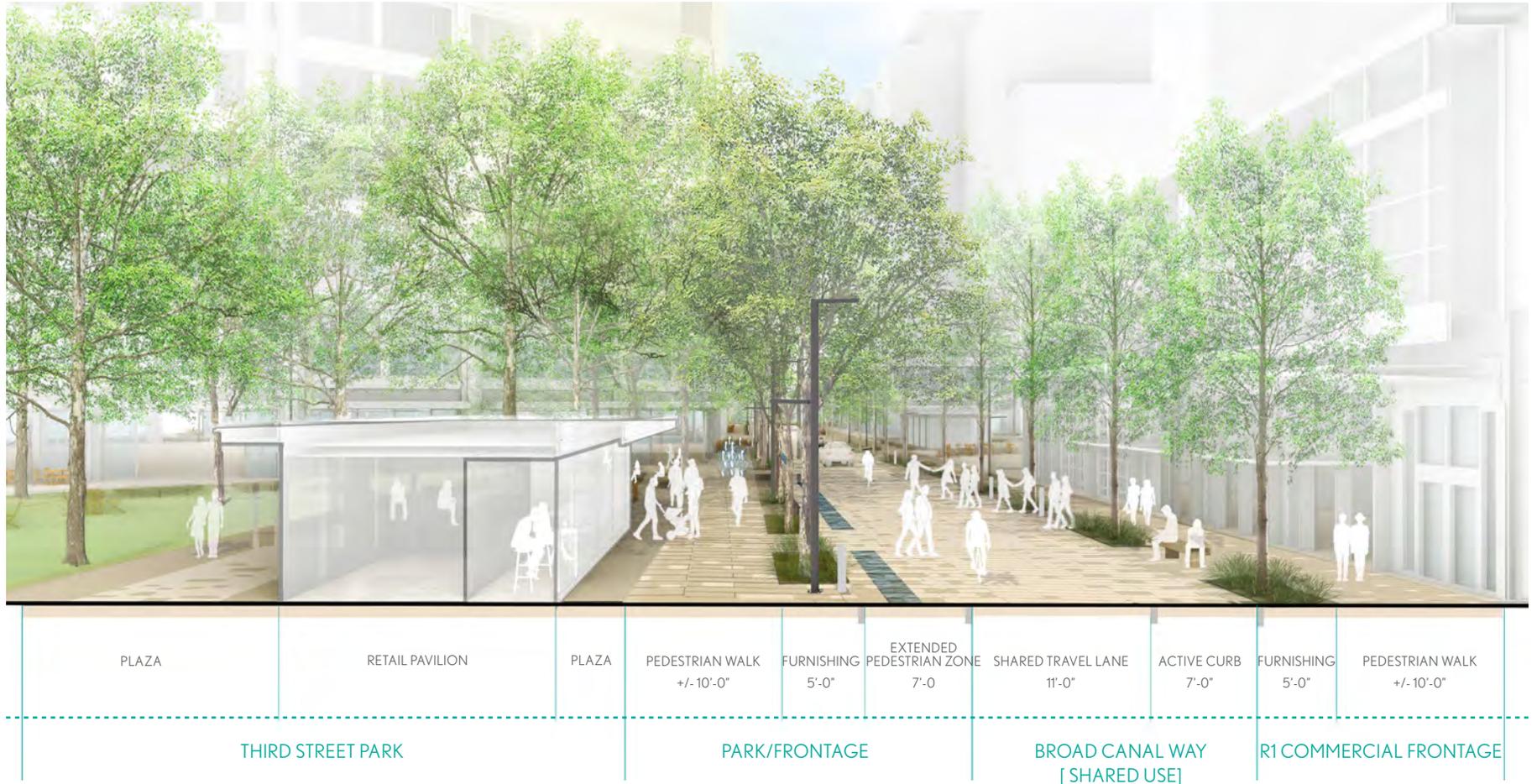
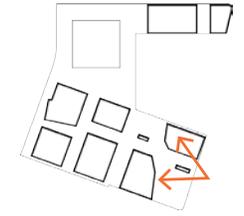


Figure D33: Broad Canal Way at Third Street Park Detailed Plan



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Figure D34: Street Section - Broad Canal Way East

Broad Canal Way Mid-Block: Street Entertainment

Between parcels R2 and C2, Broad Canal Way will continue as a multi-modal, pedestrian-focused street. Flush curbs and continuous street trees will emphasize its character, and the location of the proposed Entertainment Venue at its western terminus will accentuate its nature as an active and entertaining pedestrian zone. Both the streetscape and the architectural form of the Entertainment Venue should be developed to suggest connections through the passageway to Loughrey Walkway.

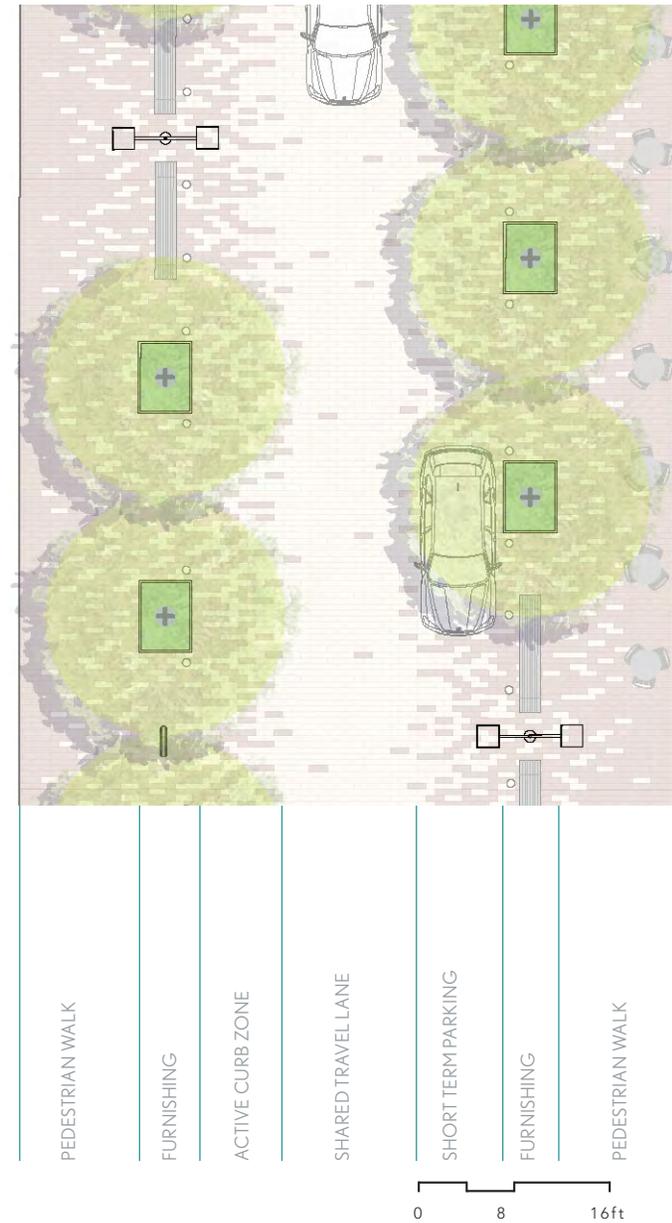
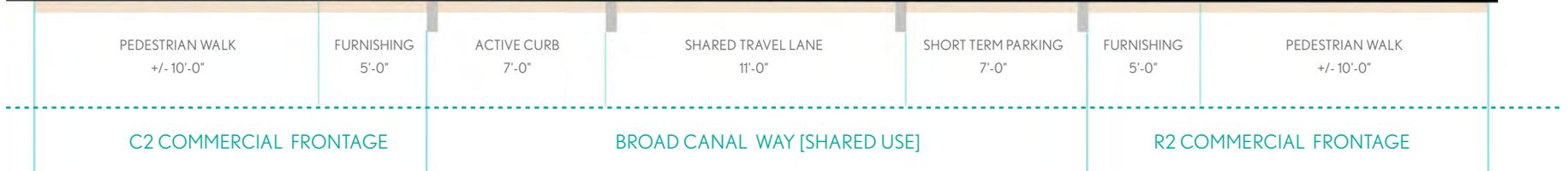
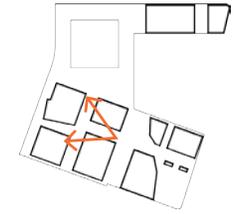


Figure D35: Broad Canal Way Mid- Block Detailed Plan



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Figure D36: Street Section - Broad Canal Way West

Kendall Way

Pedestrian- Oriented Shared Use Street

Kendall Way will serve functionally as a service street for the adjacent buildings, yet is to emphasize the pedestrian experience by eliminating raised curbs and dedicated parking zones.

Characteristics:

- The roadway is to be a two-way, curbless street with managed vehicular traffic
- Though it provides service access to the planned buildings, it is to be pedestrian oriented and plaza like.



1. Pearl Street / Washington DC

Figure D37: Kendall Way Precedent

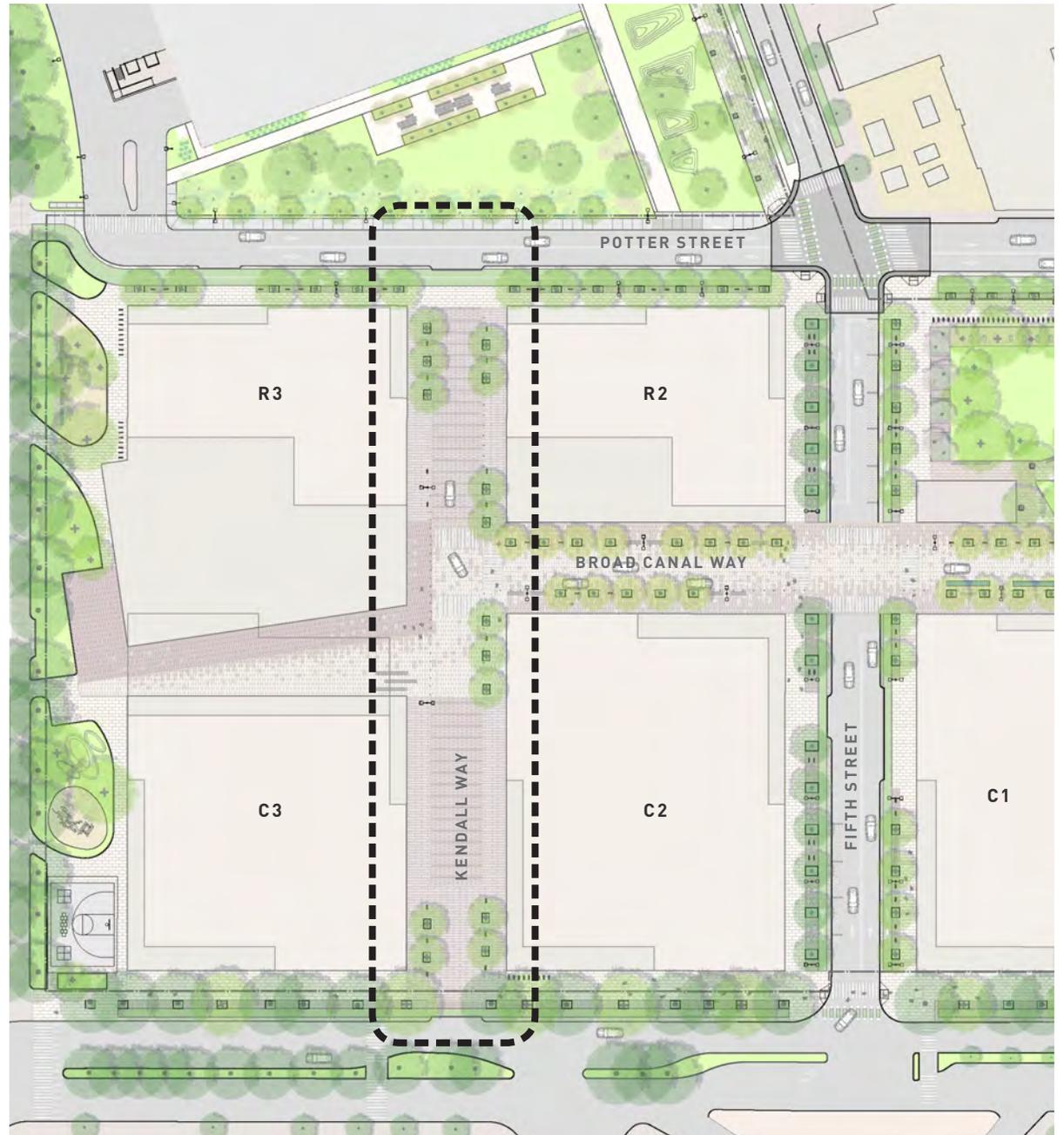


Figure D38: Kendall Way Plan

Kendall Way: Trucks and Bikes and Trees

Kendall Way is not intended as a vehicular through street. Instead, it will serve multiple functions, accommodating service traffic to Buildings R2 and R3 from Potter Street, Buildings C2 and C3 from Broadway, and pedestrian connections from Broadway to Potter Street and the Volpe National Transportation Center. Paving should utilize unit pavers across the surface to visually emphasize pedestrian use over service traffic, while the use of bollards and furnishings control vehicular traffic. Trees should be selected for canopy forms that will accommodate truck traffic.

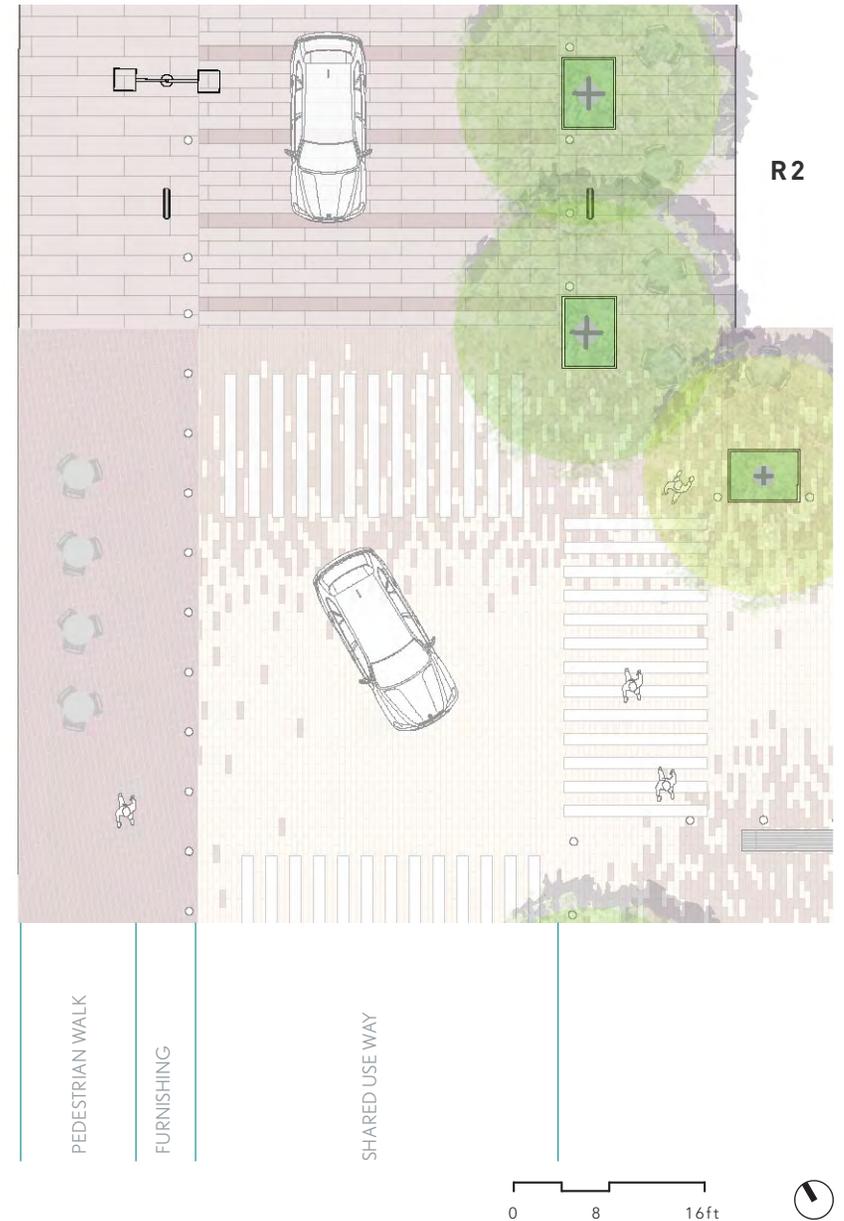
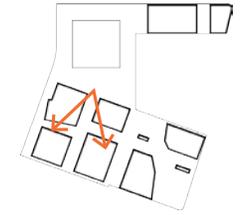


Figure D39: Kendall Way Detailed Plan



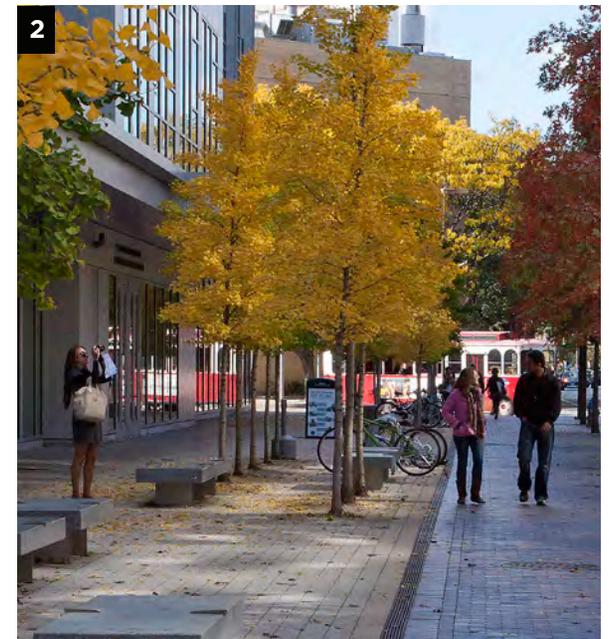
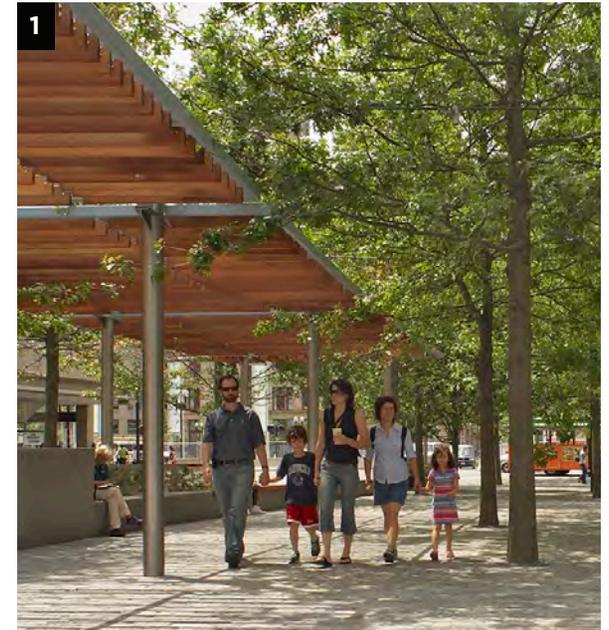
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Figure D40: Street Section - Kendall Way

Street Trees and the Urban Forest

Street Tree Typologies

The intent of the planting design is a high-performance street tree planting with continuous shade to support the urban forest of Cambridge, create a long-lived canopy for the Volpe site, and provide the environmental benefits that accrue from tree plantings. Tree plantings should be diverse and resilient, contributing to the biodiversity and the green infrastructure of the site, and be selected based on character, form, tolerance to urban conditions, concern for maintenance, and consideration for climate resiliency and diversity. All new trees, including those over the garage, are to be planted in generous and continuous soil volumes supported by aeration, irrigation and sub-drainage.



1. Central Wharf / Boston, MA
2. MIT / Cambridge, MA

Figure D41: Street Tree Typologies



Figure D42: Street Tree Character



Park Trees

The character of the park trees should be broad and reaching, varying in species and loosely organized as a combination of groves and individual specimen trees. Examples of appropriate species are elms, various oaks, maples, catalpa, katsura trees, and tulip poplars.

Broad Canal Way

Street Trees along the shared street of Broad Canal Way should be light and airy in canopy while providing dappled shade on the street. These trees should be arranged in lines of singular species alternating in bands down the length of the street. Examples of appropriate species are honey locusts, coffee trees, ginkgoes, and Japanese pagoda trees.

Fifth Street

As part of the longest street internal to the Volpe Development Plan, Fifth Street affords opportunities for a generous pedestrian zone shaded by street trees. To achieve a holistic landscape and streetscape, integral with its adjacent conditions, the street trees along Fifth Street should be chosen from the species planted at the Volpe National Transportation Center.

Kendall Way

The shared use street of Kendall Way calls for consistent spacing of trees that are vertical and upright in form or vase-shaped and arching to extend over the height of service trucks. Examples of appropriate species are elms, hackberries, tupelo, and columnar varieties of oaks, beech, or others.

Commercial Streets

Third Street, Broadway and Binney Street each has a well-established existing street tree presence, with a regular spacing that provides a consistent rhythm to the streetscape. This character should be maintained and infilled as necessary with matching species of London plane trees, lindens, and honey locusts.

Residential Street

The canopy trees of Potter Street help bring a pedestrian and residential scale to the street. Regular in spacing, additional trees should provide a consistent canopy along the length of the street. Species shall be selected for their shade tolerance, such as hackberry, lindens, tupelos, and American hop hornbeams.



Pocket Park

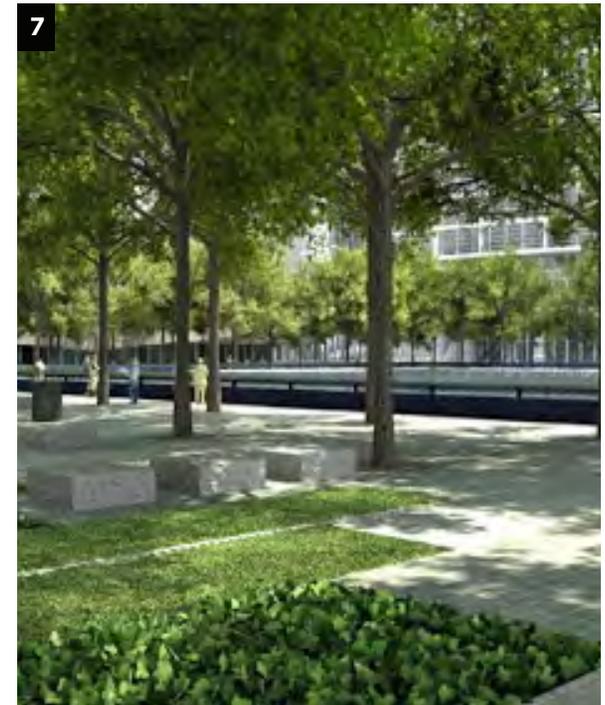
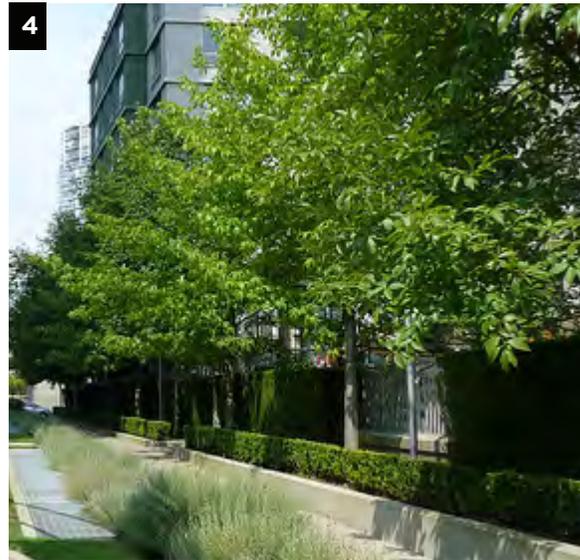
The courts provide an opportunity for smaller and more intimate scale planting of understory trees and small to mid-sized canopy trees. These trees should exhibit seasonal characteristics of distinctive bark, flower blooms, and fall color. Examples of appropriate understory species are cherries, dogwoods, and tree lilac. Mid-story canopy trees could include river birches, ironwood, hornbeams, or tupelos.

Street Tree Typologies

The intent of the planting design is to support the urban forest of Cambridge, and create a long-lived canopy for the Volpe site. Tree plantings will be diverse and resilient, contributing to the biodiversity and the green infrastructure of the site, and selected based on character, form, tolerance to urban conditions and with concern for maintenance. New trees will be planted in generous and continuous soil volumes supported by aeration, irrigation and subdrainage.

1. Tulip Tree
2. Katsure Tree
3. Honeylocust Tree
4. Black Tupelo
5. London Plane Tree
6. Princeton Elms
7. Swamp White Oak Tree

Figure D43: Street Trees



Streetscape Paving

Streetscape Paving

Simple, durable and elegant, the paving material palette should help unify the development site while providing subtle and necessary variations in material, size of pavers, and pattern to differentiate changes in use:

Pedestrian Walk Paving

- Stone or pre-cast concrete unit pavers;
- Light and neutral in color to meet SRI ratings;
- Highly durable;

Furnishing Zone Paving

- Stone or pre-cast concrete unit pavers with wide, open joints for permeability;
- Light and neutral in color to meet SRI ratings;
- Highly durable;

Bike Lane Paving

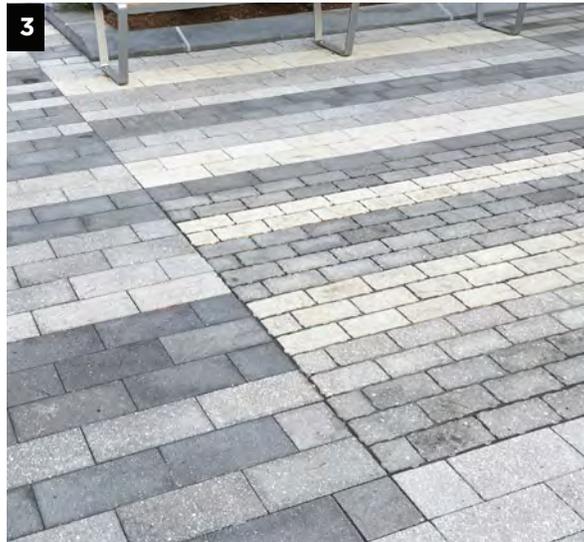
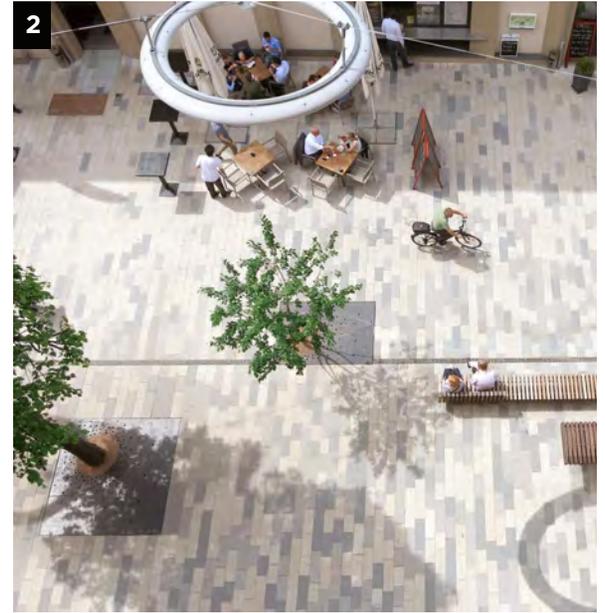
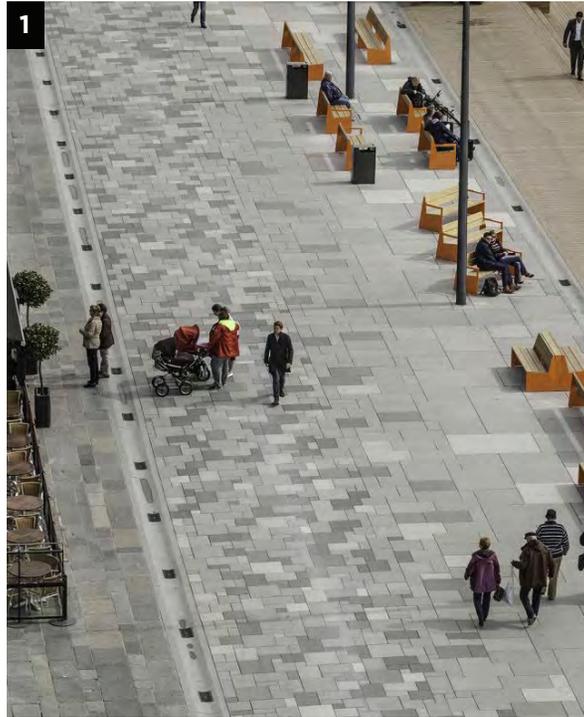
- Smooth continuous surfaces;
- Complete with City-regulated striping and markings.

Buffer Paving

- Stone or pre-cast concrete unit pavers;
- Light and neutral in color to meet SRI ratings;
- Highly durable.

Active Curb/ Short Term Parking

- Unit pavers to help reduce the visual width of the vehicular circulation zone;
- Highly durable;
- Light and neutral in color to meet SRI ratings;



1. Aker Brygge / Oslo, Norway
2. Bahnhofsstrasse / Boblingen, Germany
3. Seaport Square / Boston, MA
4. Boston Public Library / Boston, MA

Figure D44: Streetscape Paving Precedents

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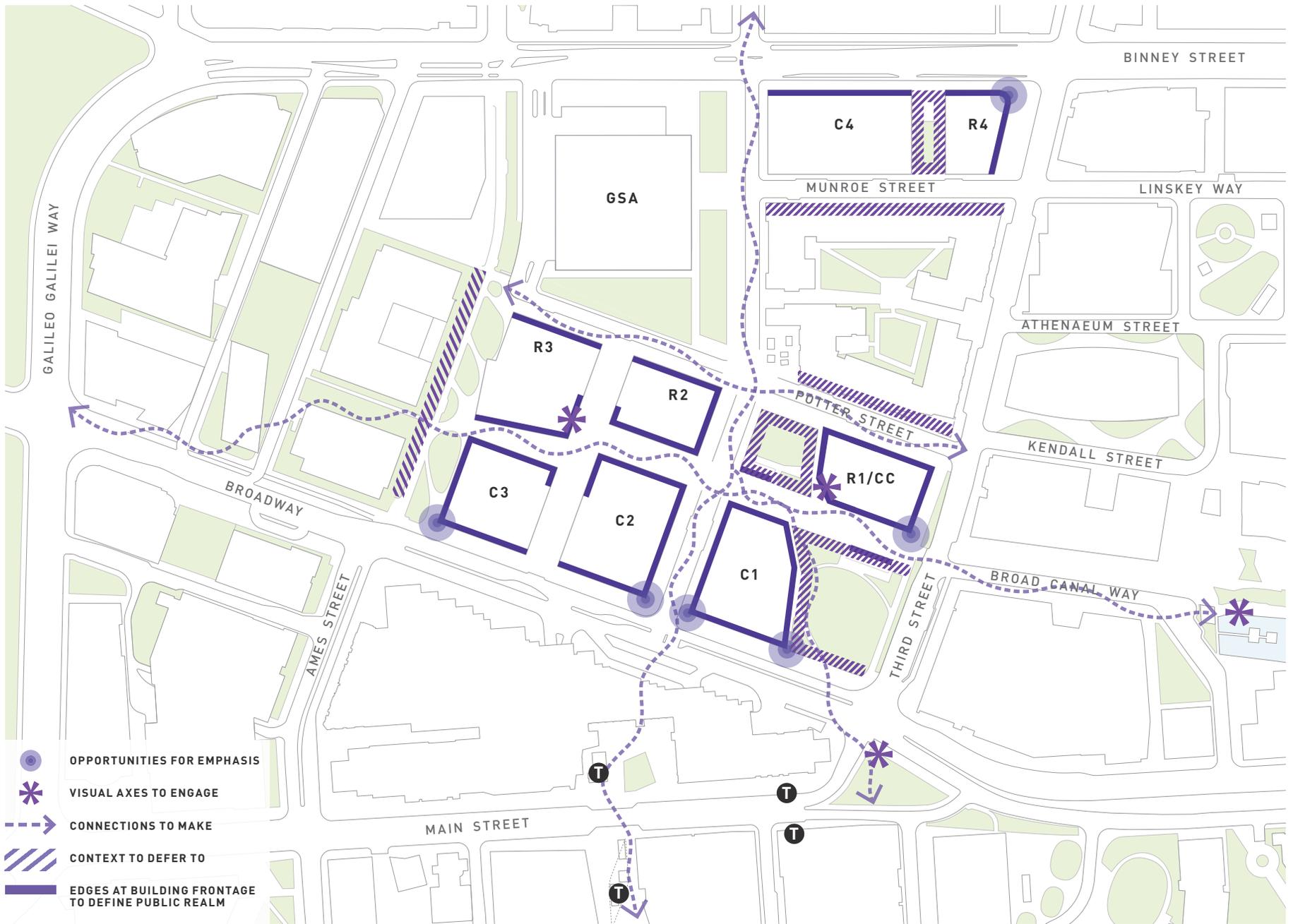


Figure E1: Site Development Plan - Massing Strategy



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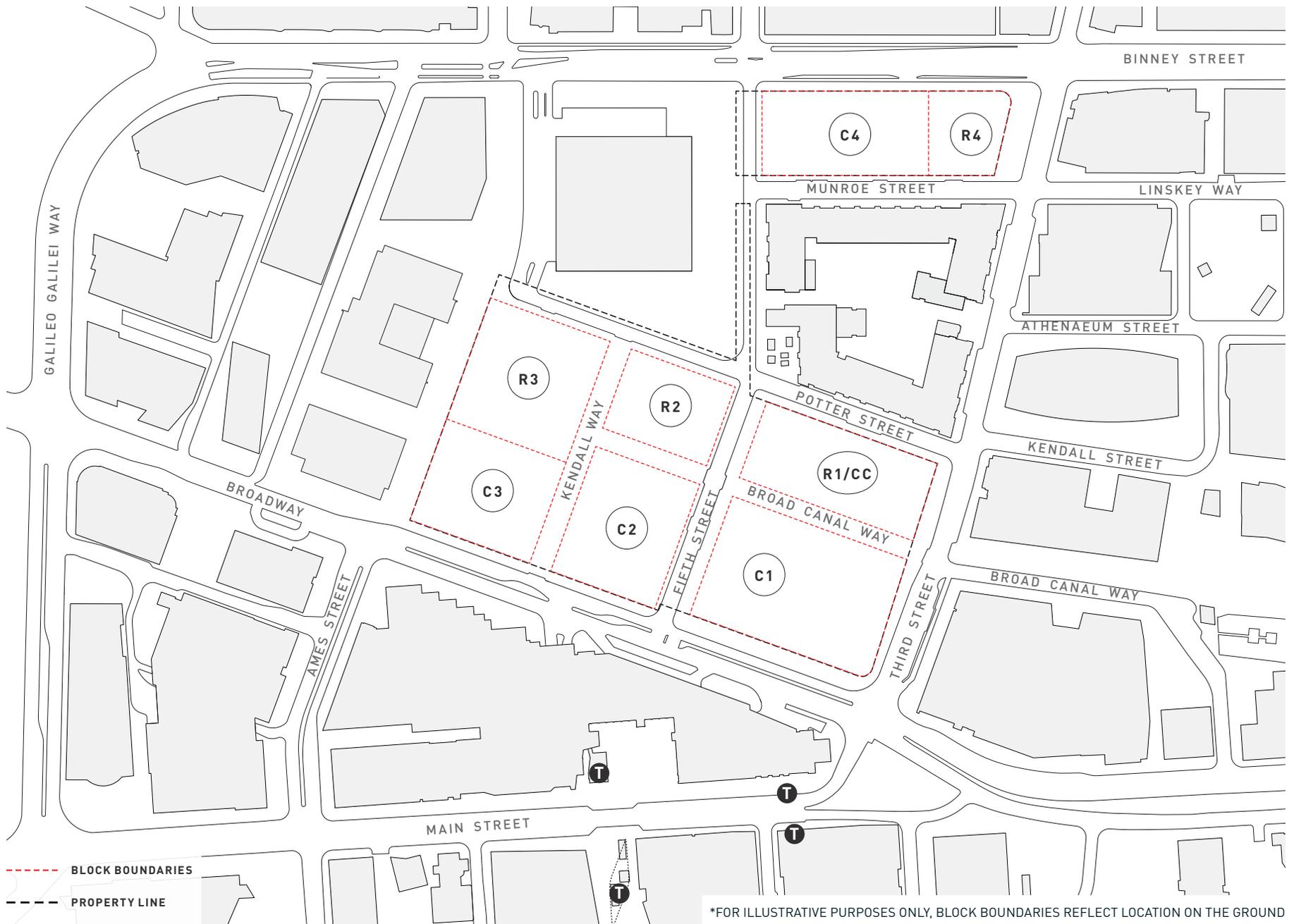


Figure E2: Site Development Plan - Block Plan



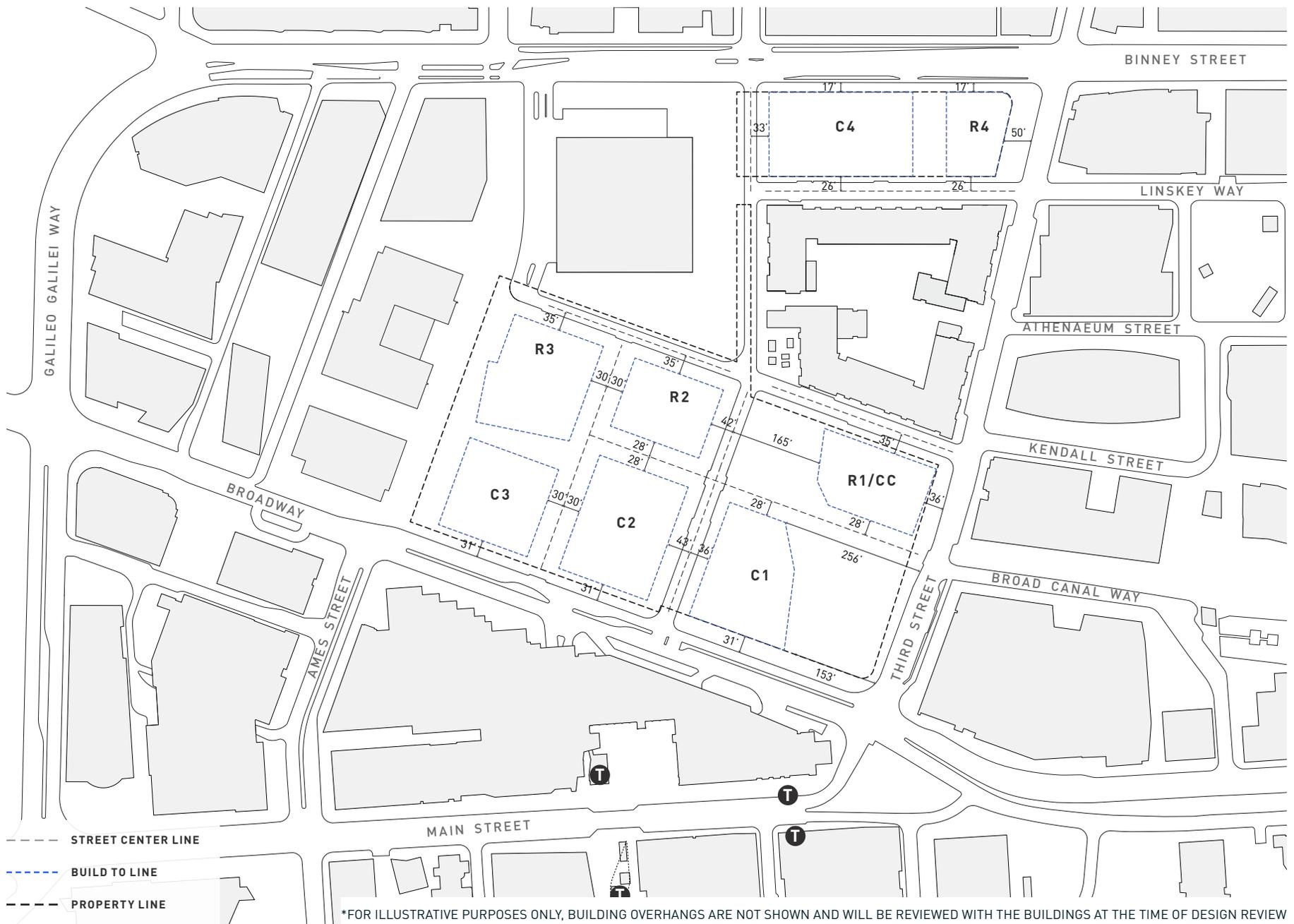


Figure E3: Site Development Plan - Build to Line

Block R1/CC

- Approximate GFA :** 175,000 - 225,000 SF
Maximum height : 250FT (and with conditions up to 500FT)
Use : Residential, Retail and Communiity Center

Block R1/CC is a residential building parcel that also includes the Community Center, bounded by Third Street to the east, Potter Street to the north, and Broad Canal Way to the south. Building R1/CC will be a gateway building, highly visible from Broadway, Galaxy Park, Broad Canal Way and Third Street.

- The tower massing for R1/CC should recognize

that it is located across Potter Street from the residential property at 303 Third Street. The massing variations are specifically designed to minimize view impacts for the condominium owners at 303 Third Street. The pedestrian frontage and streetwall should contribute to the residential character of Potter Street.

- The street wall along Third Street is to be appropriate in height and compositional scale with other buildings along Third Street.
- The design should recognize that R1/CC abuts the public open space of Third Street Park and Community Center Park, and take into consideration views, shadows, sound and the public character of the open space.

- Create a special visual terminus at the Community Center that enhances its visibility from Third Street Park and Community Center Park;
- The pedestrian frontage and streetwall are to engage Broad Canal Way and are important elements with which to articulate the character of this street and create a comfortable pedestrian experience.
- The ground floor along Broad Canal Way and Third Street is to be lined with active uses and contribute to the vibrancy of the district.
- The street level at Community Center Park may be operable to connect interior uses with the park.

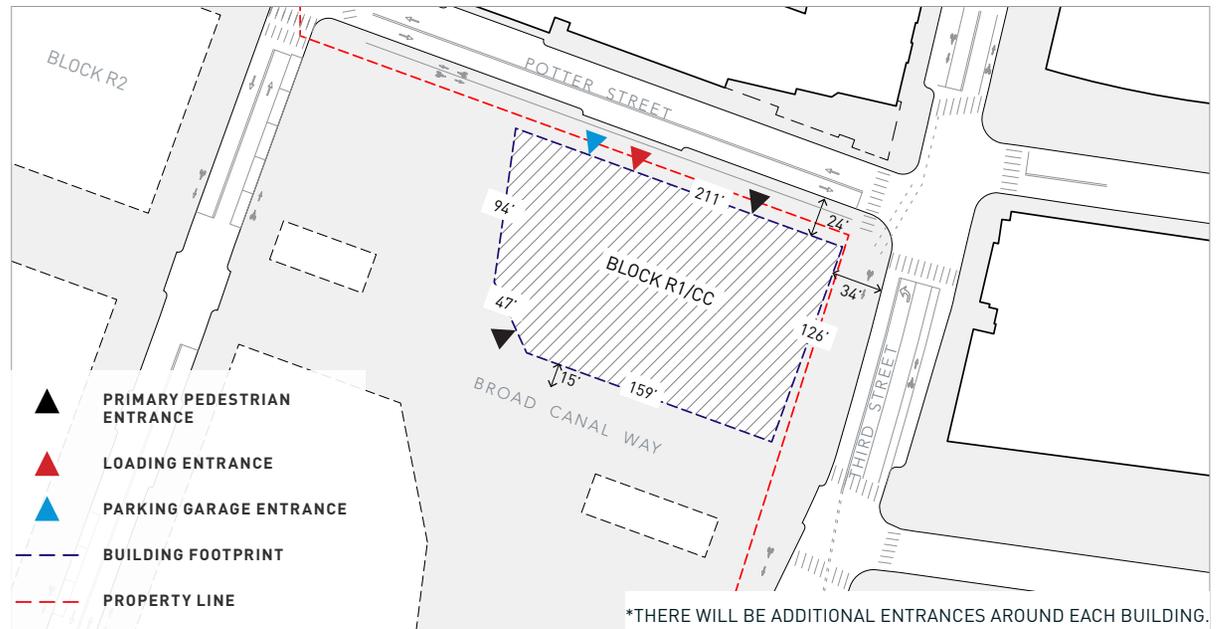
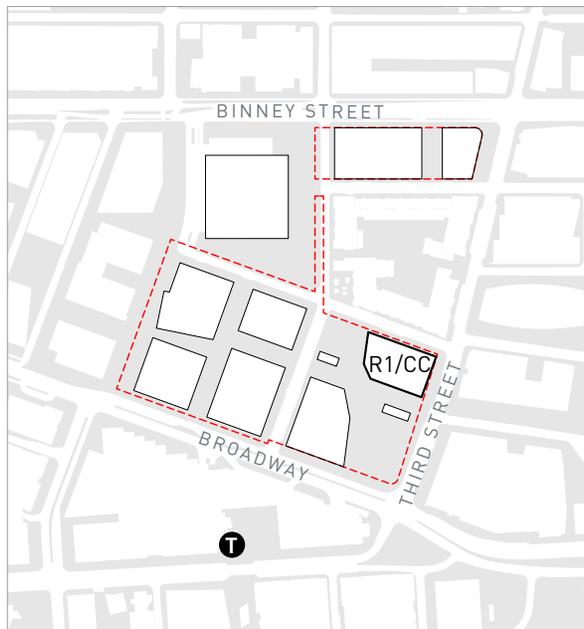
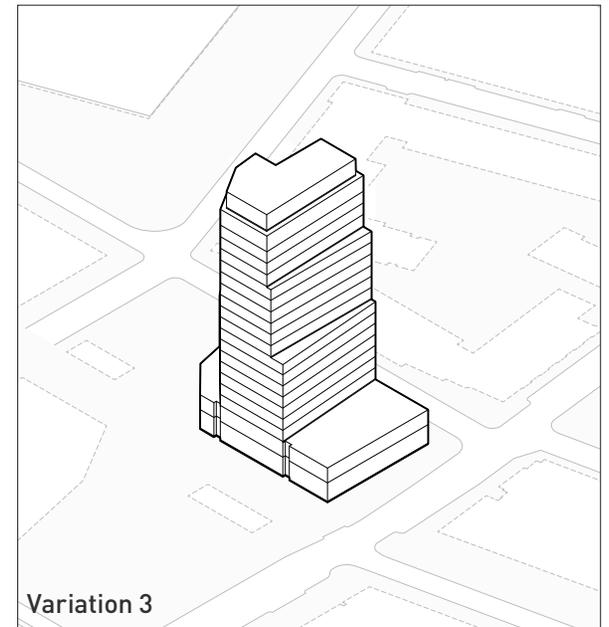
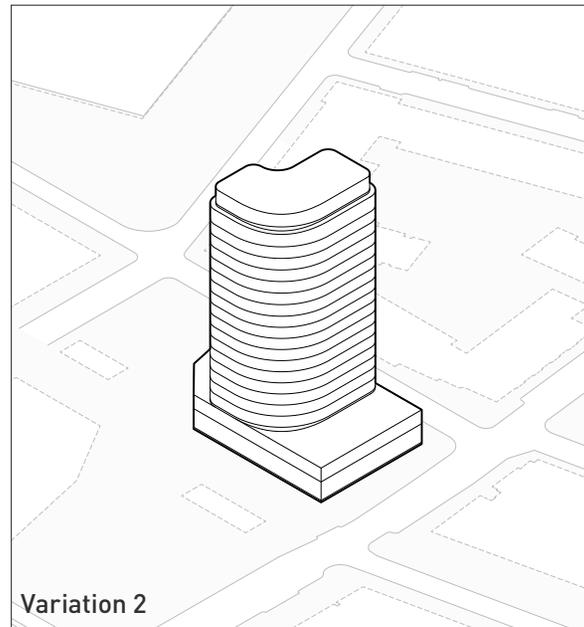
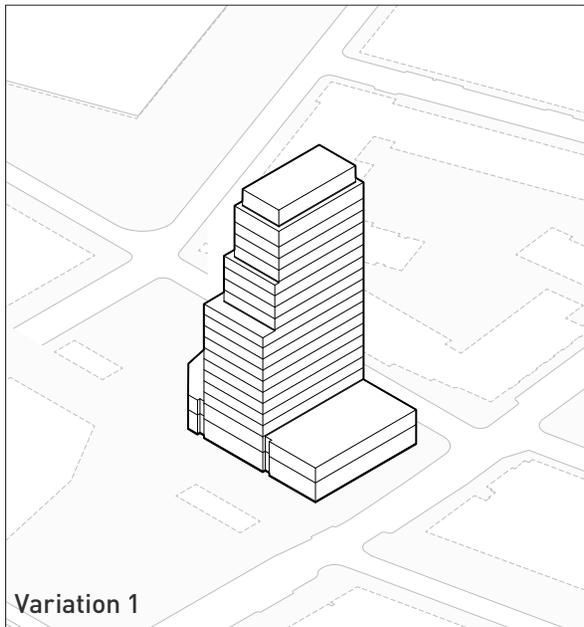
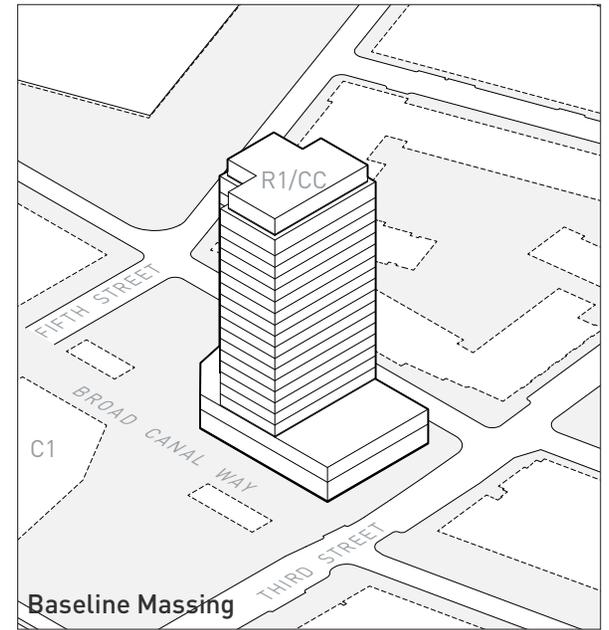
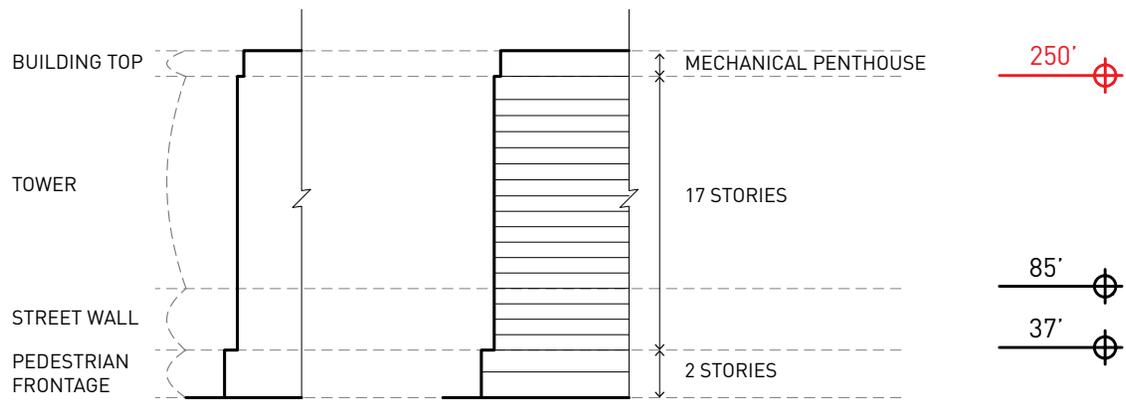


Figure E4: Block Guidelines - R1/CC



Block R2

Approximate GFA :	275,000 - 325,000 SF
Maximum height :	250FT (and with conditions up to 500FT)
Use :	Residential and Retail

Block R2 is a residential building parcel, bounded by Fifth Street to the east, Potter Street to the north, Kendall Way to the west, and Broad Canal Way to the south. Building R2 will be highly visible along Broad Canal Way and will play an important part in creating the identity of Broad Canal Way.

- The relationship between R2, C2 and R3 will be carefully studied. Consider tower setbacks

from the streetwall along Broad Canal Way and Kendall Way to maintain distance from adjacent towers to maximize daylight and views.

- The design should recognize that R2 abuts Fifth Street and the public open space of Community Center Park, and take into consideration views, shadows, sound and the public character of the open space.
- The pedestrian frontage and streetwall are to engage Broad Canal Way. They are important elements with which to articulate the character of this street and create a comfortable pedestrian experience.
- The ground floor along Broad Canal Way and

Fifth Street is to be lined with active uses and contribute to the vibrancy of the district.

- The pedestrian frontage and streetwall along Potter Street are to contribute to the residential character of the street.
- Consider enhancing the view corridor from Broad Canal Way to Loughrey Walkway with adjustment to building configuration. Maintain visibility of active uses such as the entertainment venue at the base of R3.

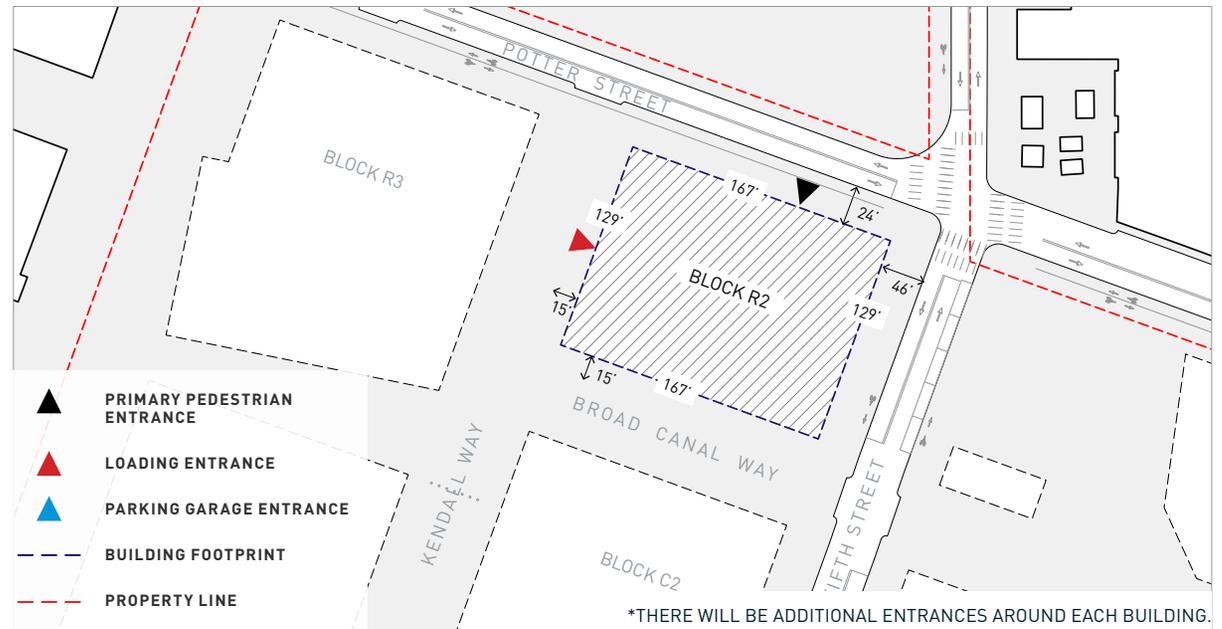
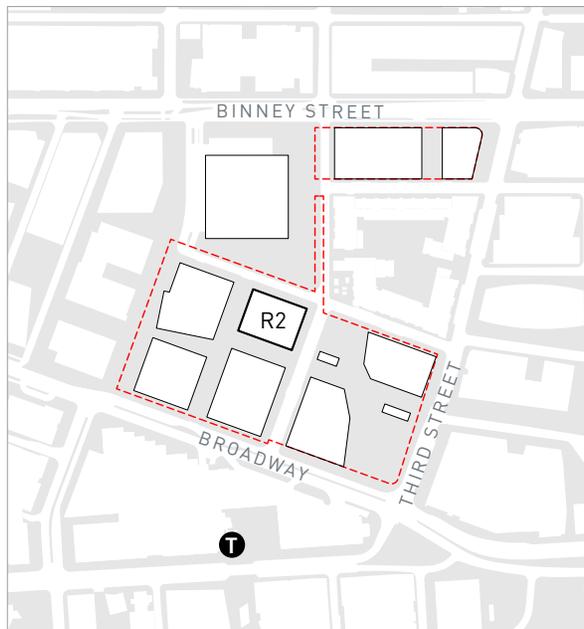
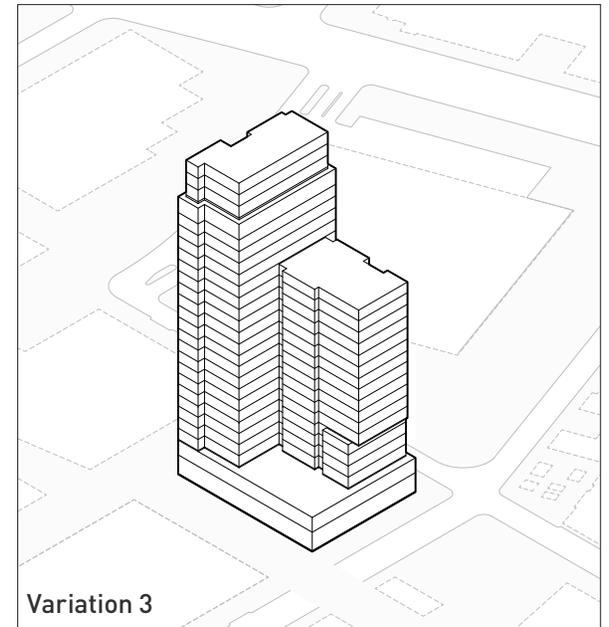
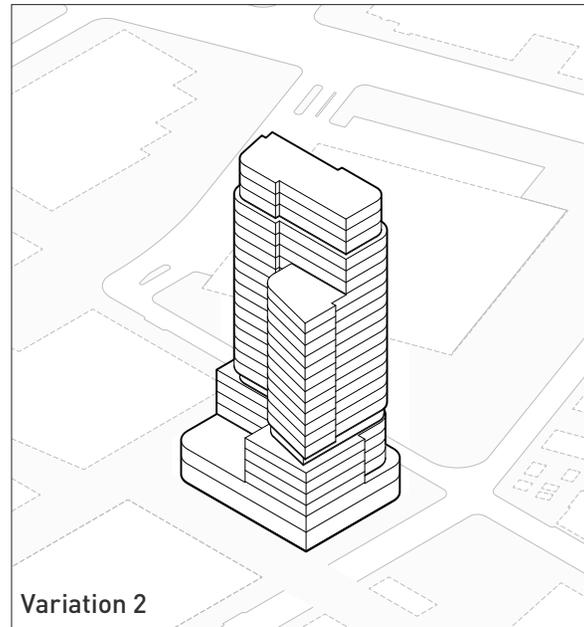
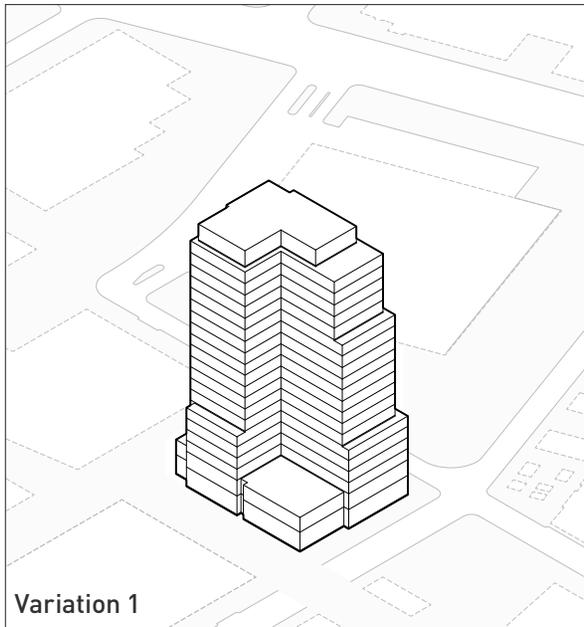
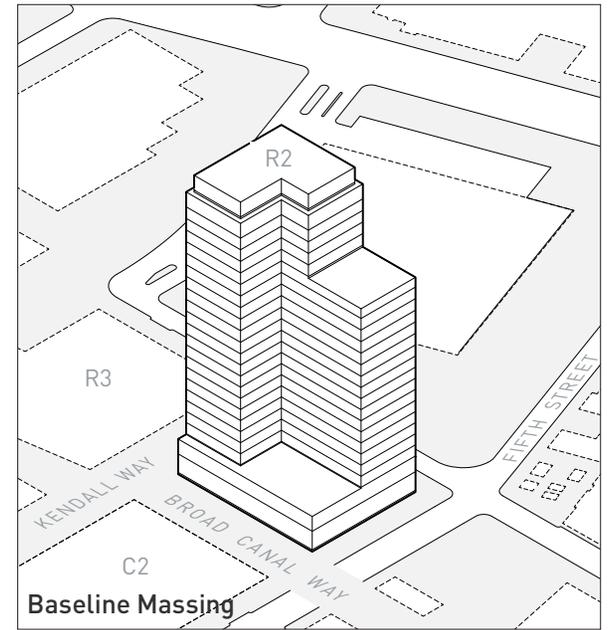
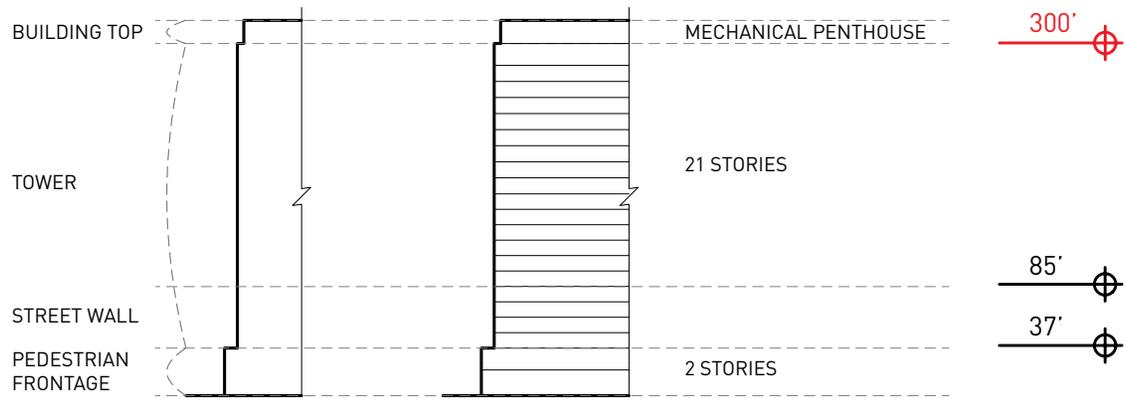


Figure E5: Block Guidelines - R2



Block R3

- Approximate GFA :** 400,000 - 450,000 SF
- Maximum height :** 250FT (and with conditions up to 500FT)
- Use :** Residential and Retail

Block R3 is a residential building parcel bounded by Kendall Way to the east, Potter Street to the north, the public open space of Sixth Street Park to the west, and the covered passage to Loughrey Walkway to the south.

- The relationship between R3, C3 and R2 will be carefully studied. Consider tower setbacks from the streetwall along Broad Canal Way

and Kendall Way to maintain distance from adjacent towers to maximize daylight and views.

- Consider the orientation of R3 to take advantage of exposure to view corridors.
- Create a special visual terminus at the end of Broad Canal Way that enhances the connection to the Loughrey Walkway while maintaining the visibility of active uses at the base of R3, such as the entertainment venue;
- The design should recognize that R3 abuts the public open space of Sixth Street Park and the covered passage to Loughrey Walkway, and take into consideration views, shadows, sound and the public character of the open space.

The tower massing is to be set back from these edges to enhance the open space.

- The pedestrian frontage and streetwall are to engage Kendall Way and are important elements with which to articulate the character of this street and create a comfortable pedestrian experience.
- The ground floor and uses along the west facade should engage Sixth Street Park.
- The pedestrian frontage and streetwall along Potter Street are to contribute to the residential character of the street.
- Consider enhancing the passage to Loughrey Walkway with adjustment to building configuration.

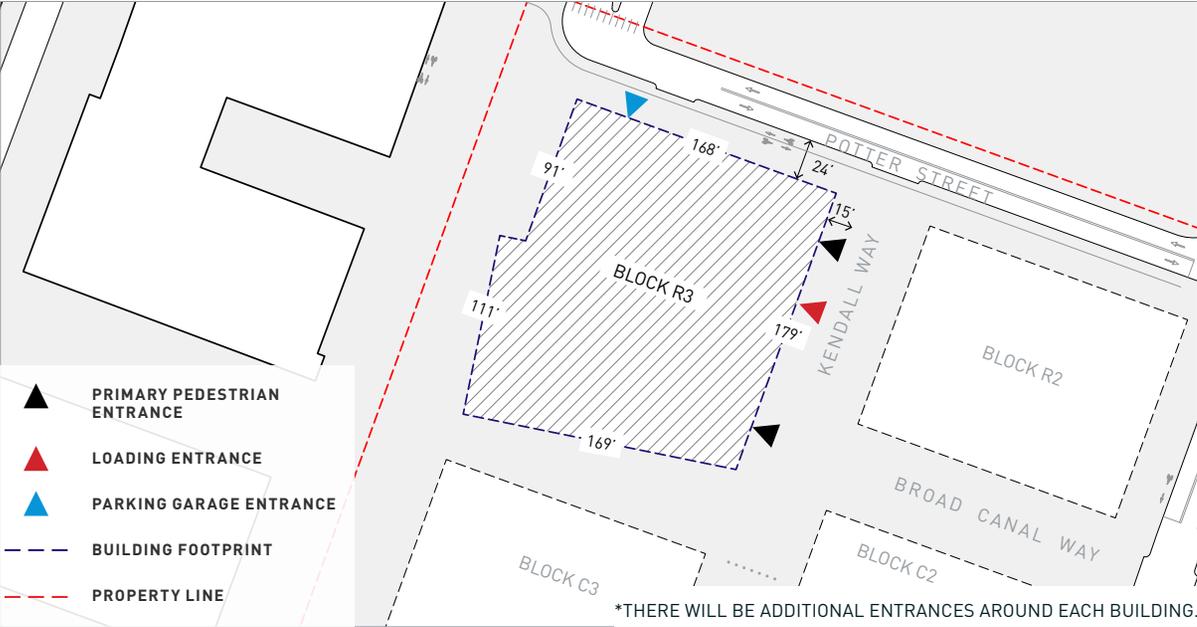
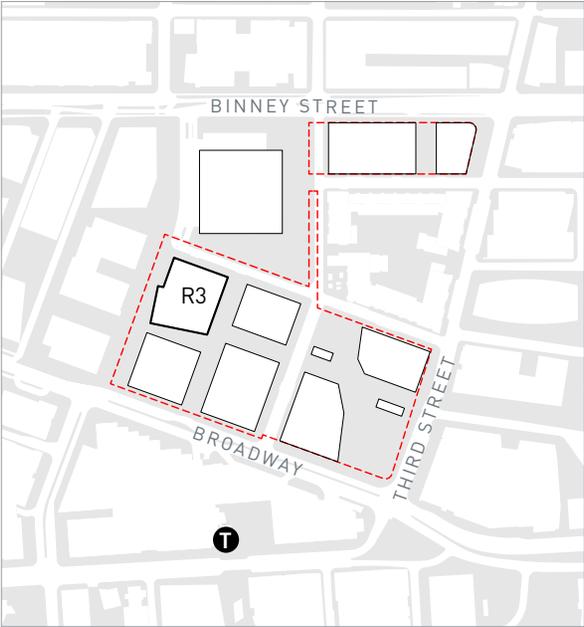
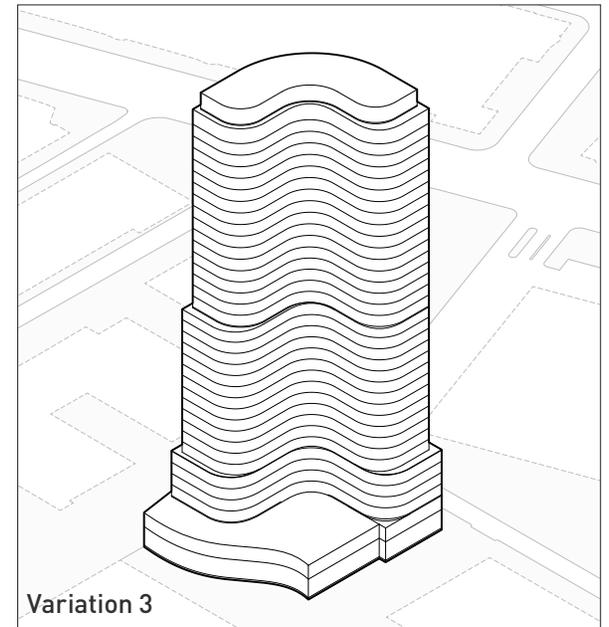
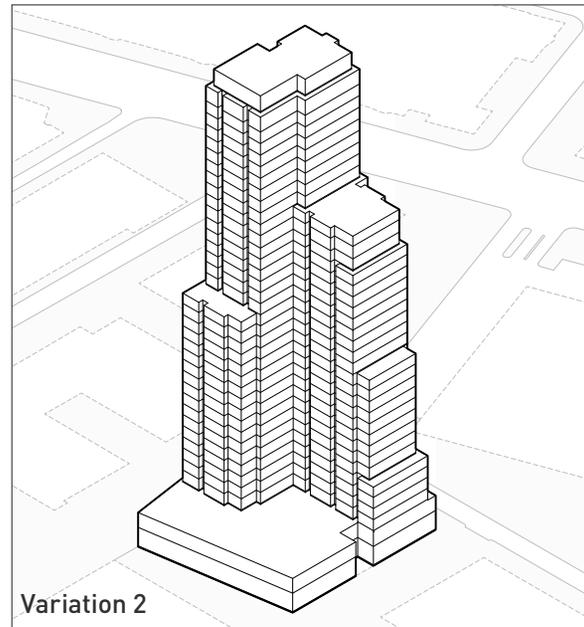
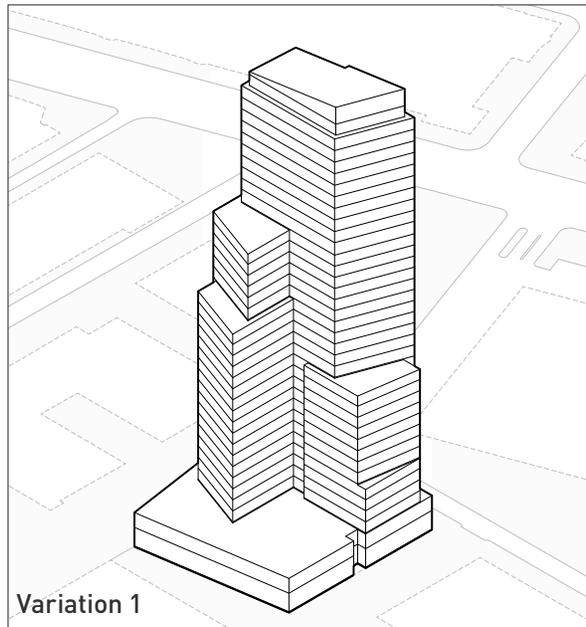
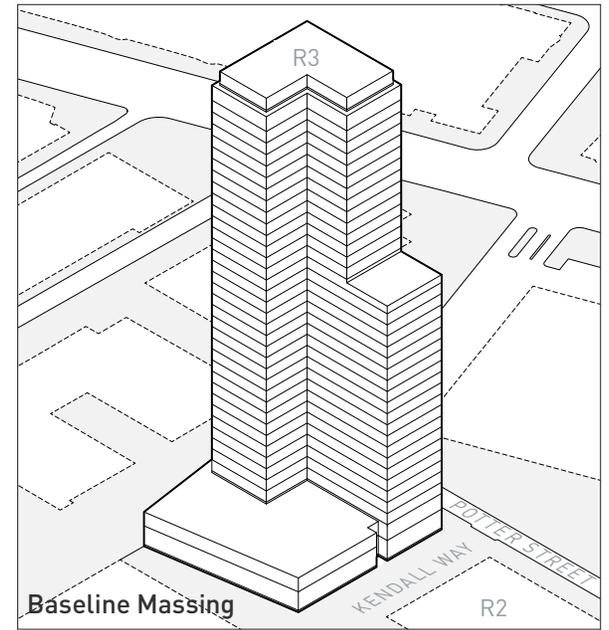
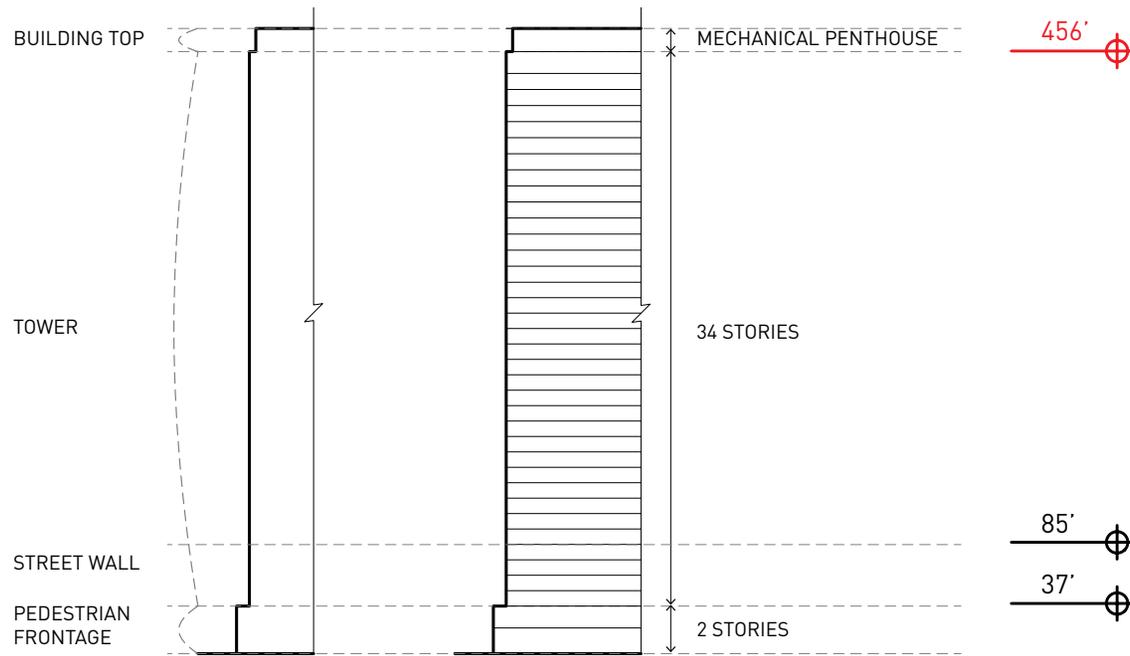


Figure E6: Block Guidelines - R3



Block R4

Approximate GFA : 200,000 - 250,000 SF
Maximum height : 250 FT
Use : Residential and Retail

Block R4 is a residential building parcel bounded by a small parcel of land owned by the CRA and Third Street to the east, Binney Street to the north, and Munroe Street to the south. Building R4 will be highly visible from both Binney Street and Third Street.

- The relationship between R4 and 303 Third Street Residential Apartments will be

carefully studied. The pedestrian frontage and streetwall are to contribute to the residential character of Munroe Street.

- The streetwall along Third Street and Binney Street is to be consistent in height and compositional scale with other buildings along these urban edges.
- Consider the orientation of R4 to take advantage of exposure to view corridors.
- The design should recognize that R4 is located between open space to the east and Binney Street Pocket Park to the west, and take into consideration views, shadows, sound and the public character of these open spaces. Consider tower setbacks from these edges to

enhance those open spaces.

- The pedestrian frontage and streetwall are to engage Third Street and are important elements with which to articulate the character of this street and create a comfortable pedestrian experience.
- The ground floor along Binney Street and Third Street is to be lined with active uses and contribute to the vibrancy of the district.

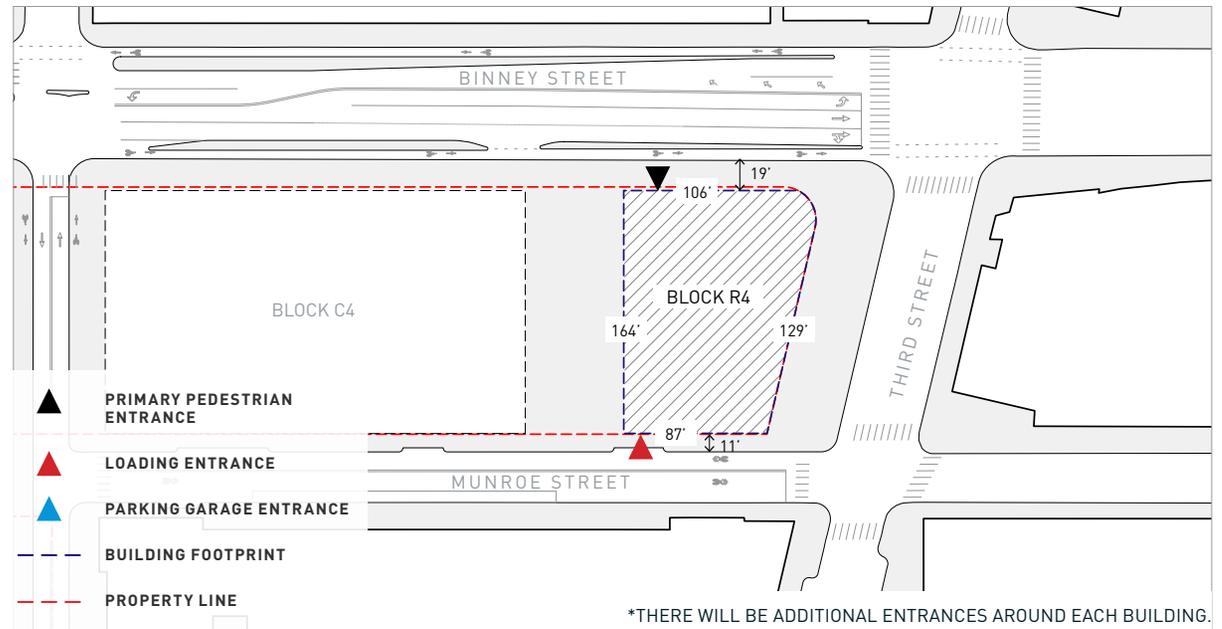
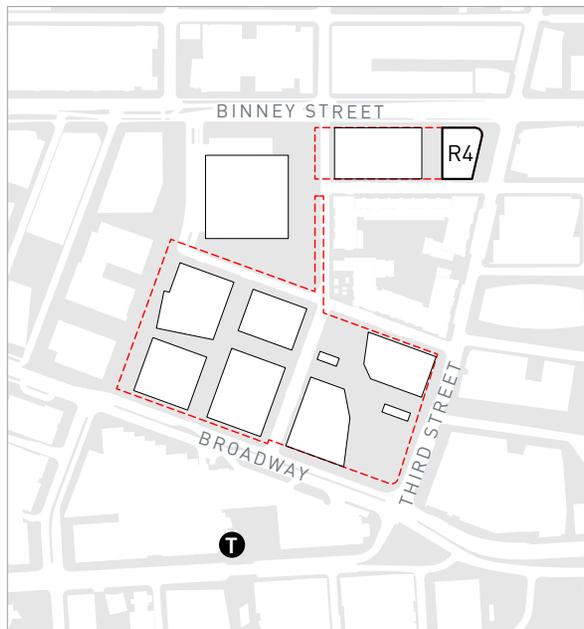
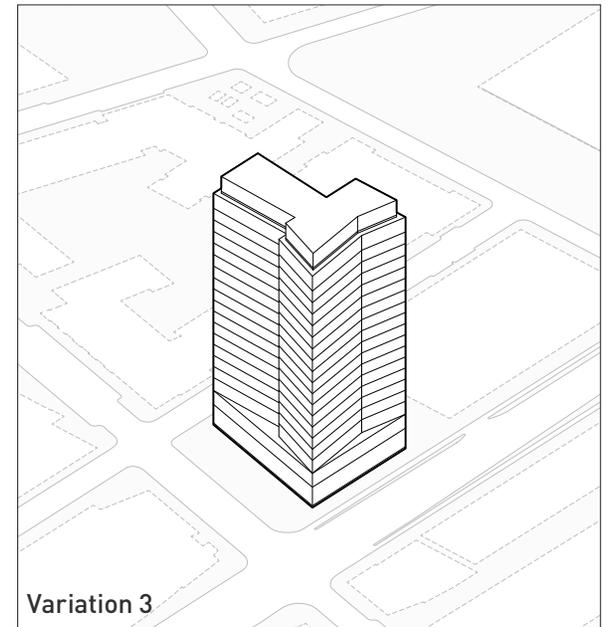
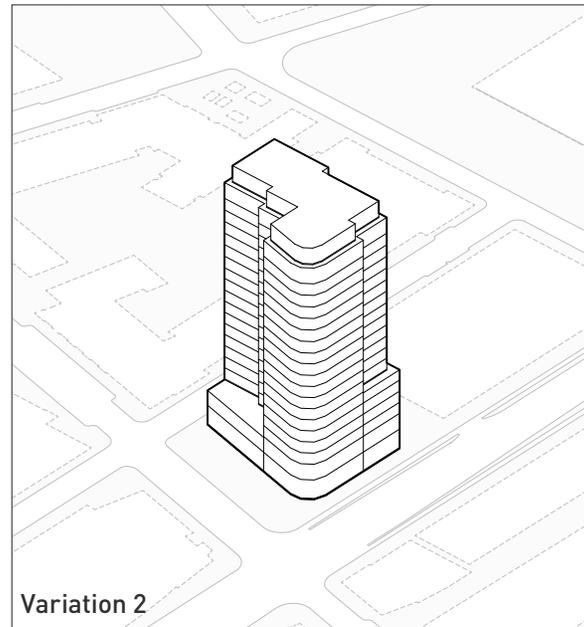
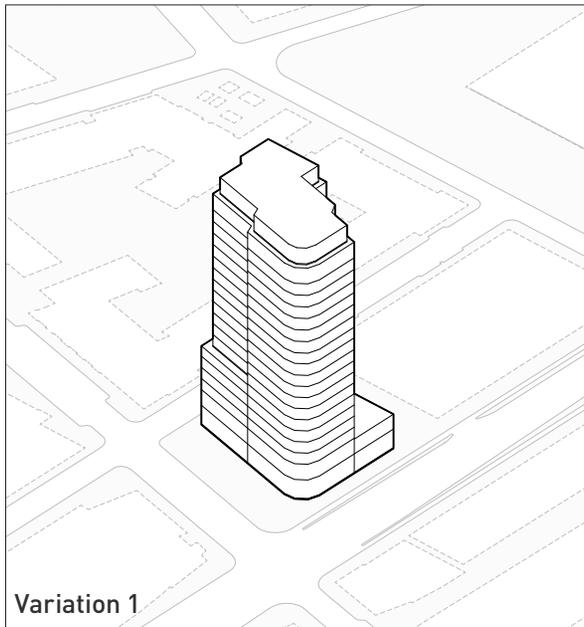
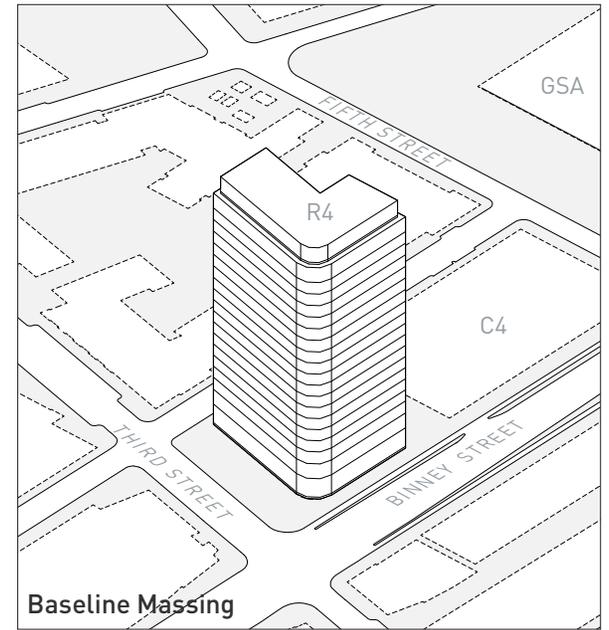
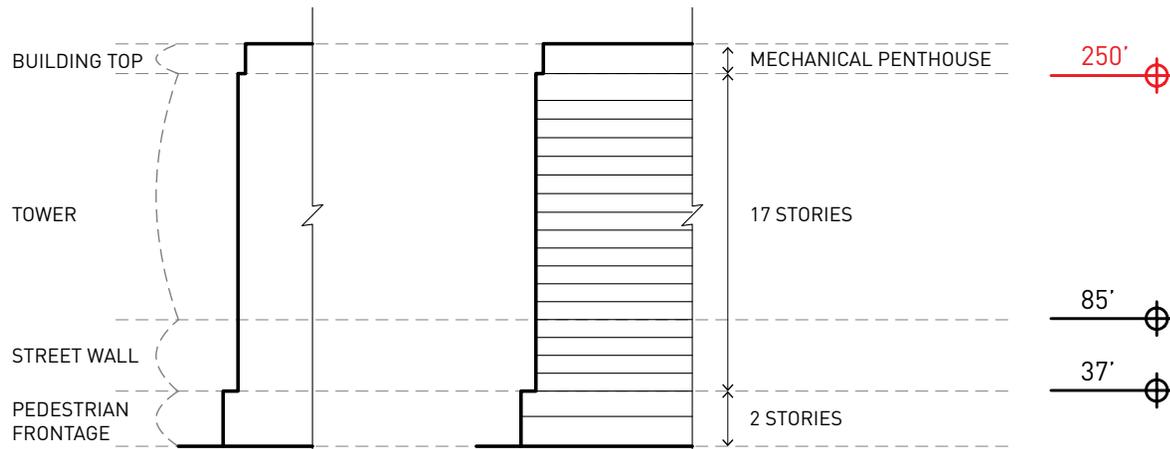


Figure E7: Block Guidelines - R4



Block C1

Approximate GFA : 400,000 - 450,000 SF

Maximum height : 250FT (and with conditions up to 300FT)

Use : Technical Office and Retail

Block C1 is a commercial building parcel bounded by Third Street Park to the east, Broad Canal Way to the north, Fifth Street to the west, and Broadway to the south. Building C1 will be a gateway building, highly visible from Broadway, Galaxy Park, Broad Canal Way and Third Street.

- C1 is an important landmark for the site and is highly visible from Broadway and

the approach to Kendall Square from the Longfellow Bridge. Consider the orientation of C1 to take advantage of exposure to view corridors. Special corner treatment should be considered at Broadway and Third Street Park.

- The location of building entrances and ground floor active use are to consider pedestrian crossings along Broadway.
- The design should recognize that C1 abuts the public open space of Third Street Park, and take into consideration views, shadows, sound and the public character of the open space.
- The ground floor and uses along the east facade should engage Third Street Park.

- The design should recognize that C1 abuts Fifth Street - an important north-south pedestrian connection that leads to the Kendall Square T-station. The massing is to minimize the impact of wind along Fifth Street.
- The pedestrian frontage and streetwall are to engage Broad Canal Way and are important elements in the retail continuity of the street.

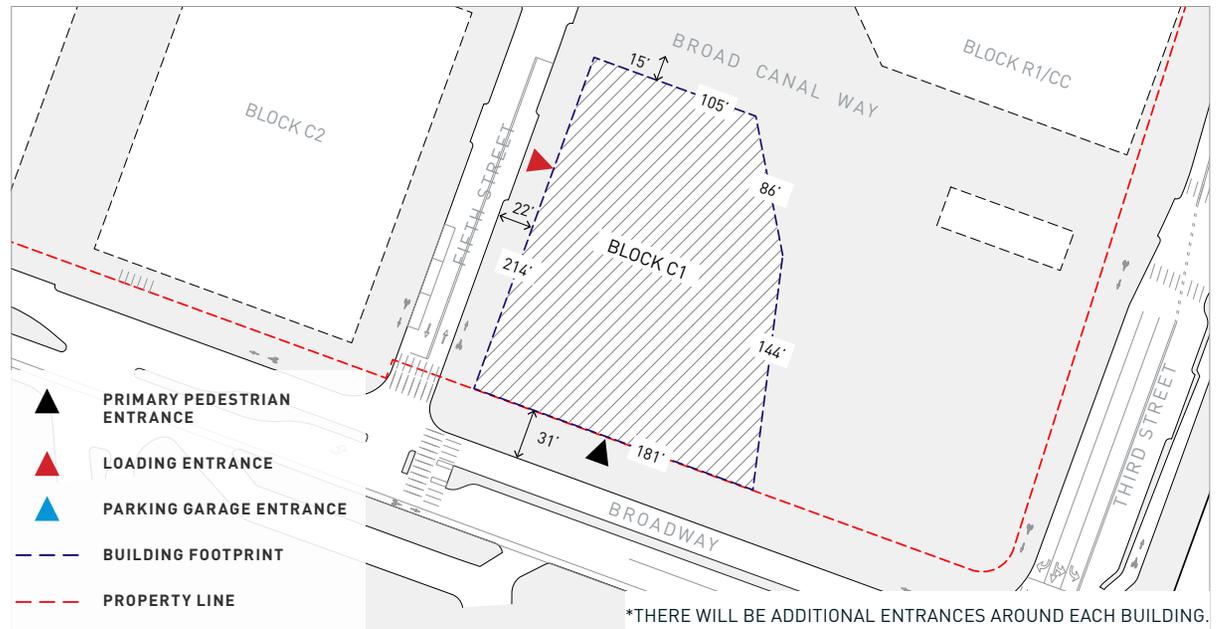
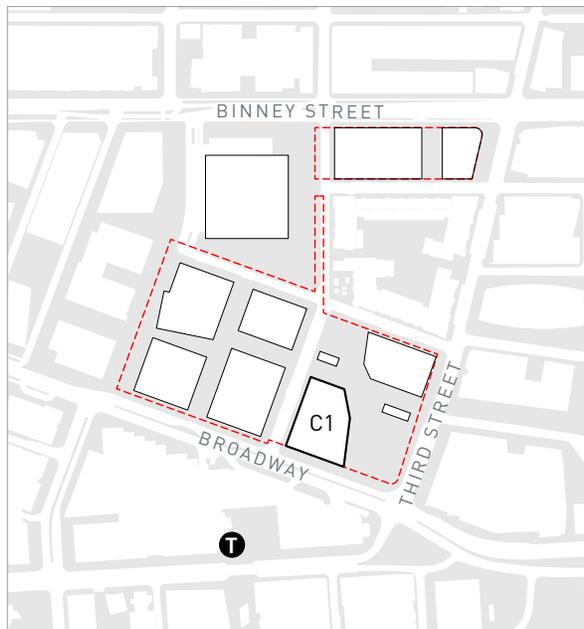
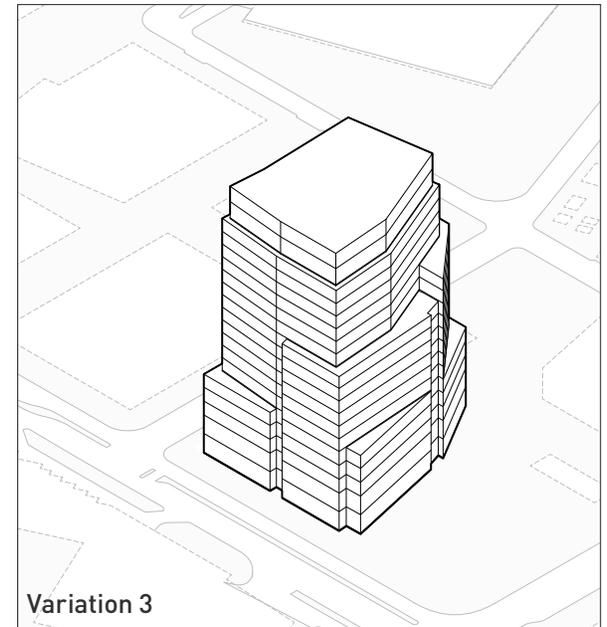
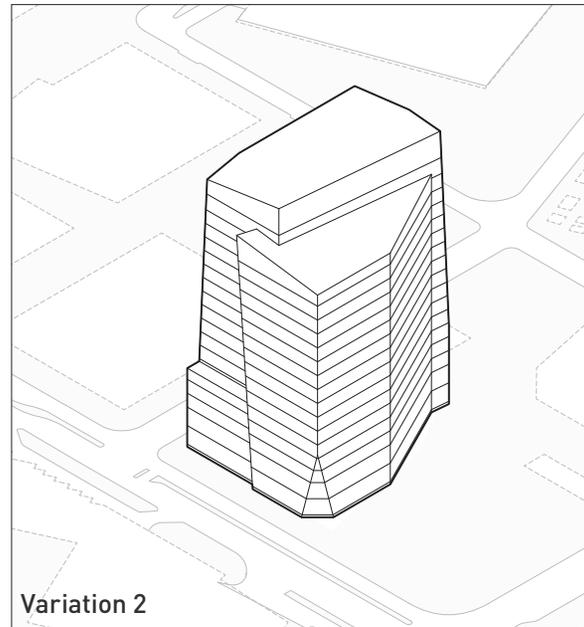
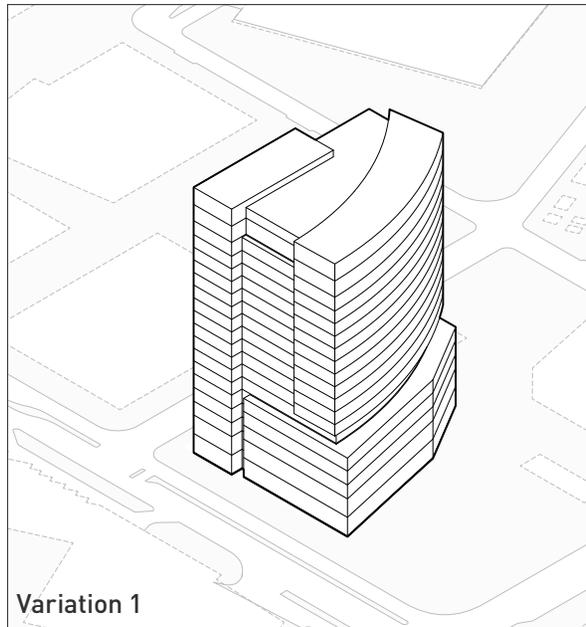
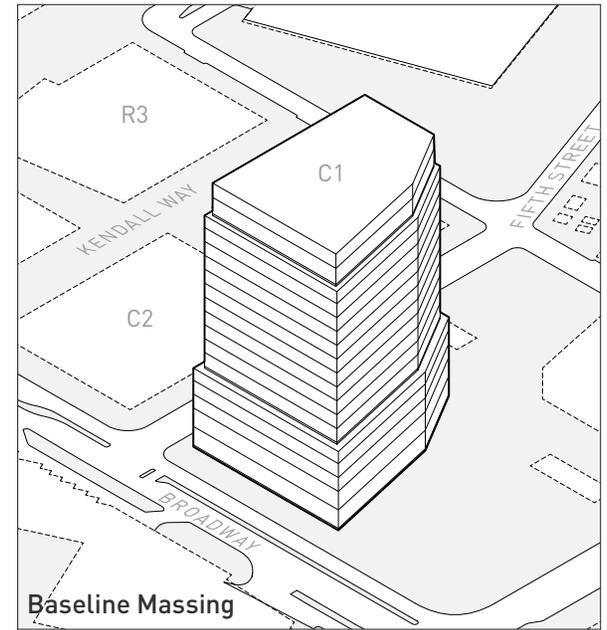
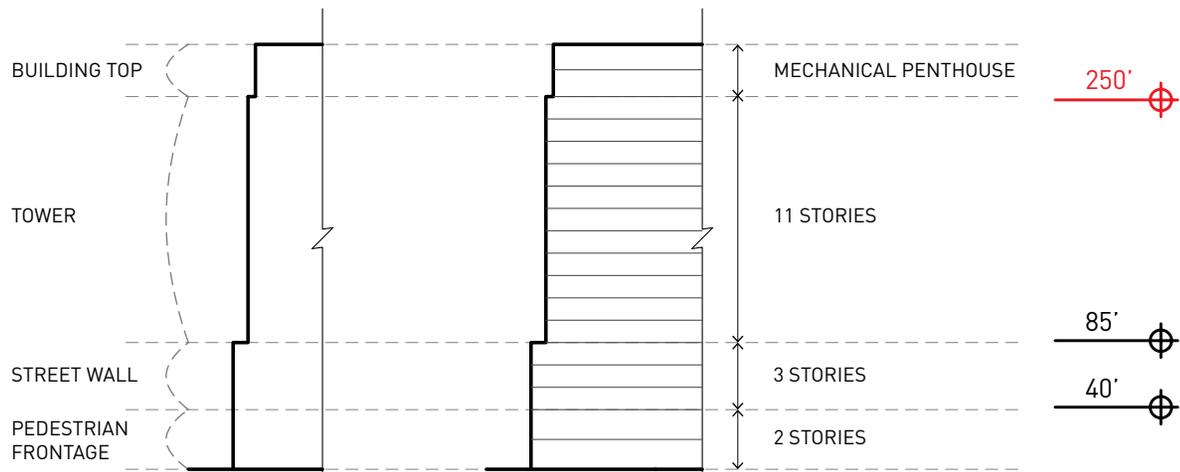


Figure E8: Block Guidelines - C1



Block C2

Approximate GFA : 500,000 - 550,000 SF

Maximum height : 250FT (and with conditions up to 300FT)

Use : Technical Office and Retail

Block C2 is a commercial building parcel bounded by Fifth Street to the east, Broad Canal Way to the north, Kendall Way to the west, and Broadway to the south.

- The relationship between C2 and Kendall Center will be studied. The street wall along Broadway is to be consistent in compositional scale with buildings along Broadway. The

massing and articulation of the south facade will be important in defining the character of Broadway.

- The location of building entrances and ground floor active use are to consider pedestrian crossings along Broadway.
- The design should recognize that C2 abuts Fifth Street - an important north-south pedestrian connection that leads to the Kendall Square T-station. The massing is to minimize the impact of wind along Fifth Street.
- The pedestrian frontage and streetwall should engage Broad Canal Way and are important elements with which to articulate the character of this street and create a

comfortable pedestrian experience.

- Consider enhancing the view corridor from Broad Canal Way to Loughrey Walkway with adjustment to building configuration. Maintain visibility of active uses such as the entertainment venue at the base of R3.

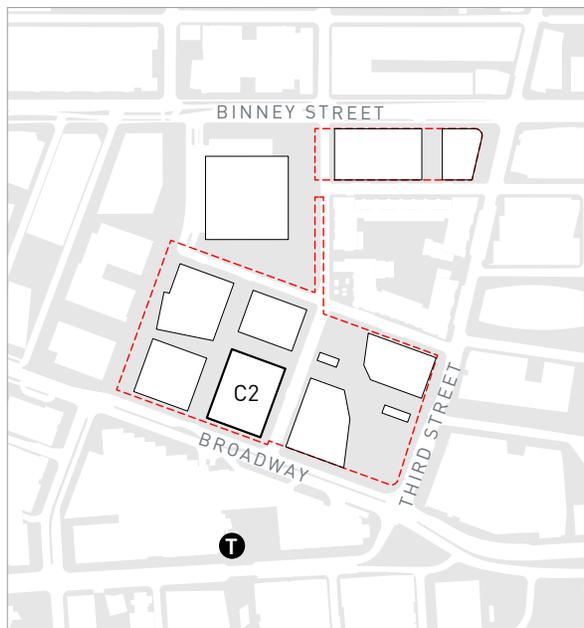
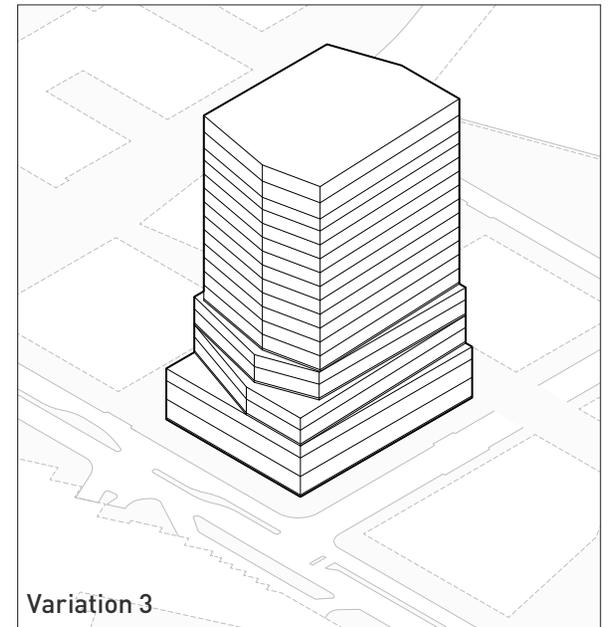
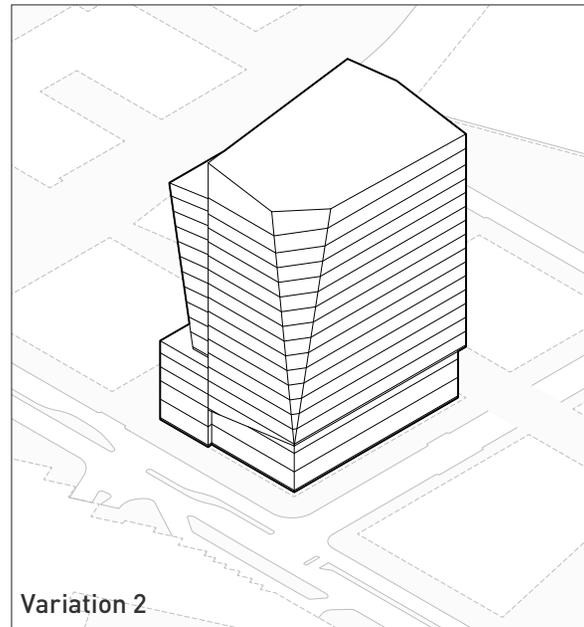
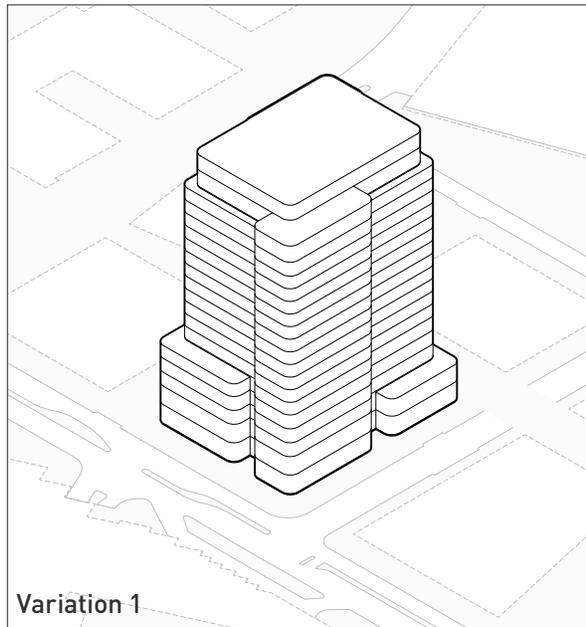
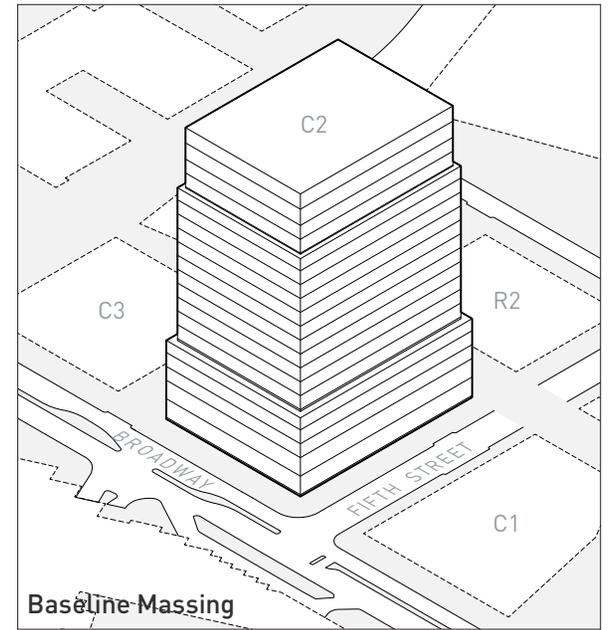
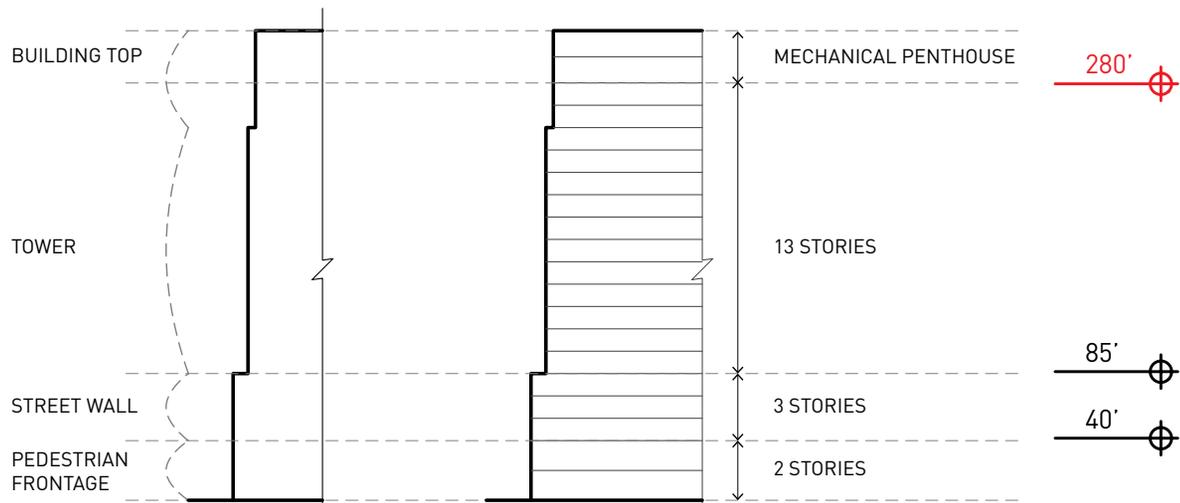


Figure E9: Block Guidelines - C2



Block C3

Approximate GFA : 450,000 - 500,000 SF

Maximum height : 250FT (and with conditions up to 300FT)

Use : Technical Office and Retail

Block C3 is a commercial building parcel bounded by Kendall Way to the east, the covered passage to Loughrey Walkway to the north, the public open space of Sixth Street Park to the west, and Broadway to the south.

- The relationship between C3 and Kendall Center will be studied. The streetwall along Broadway is to be consistent in compositional

scale with buildings along Broadway. The massing and articulation of the south facade will be important in defining the character of Broadway.

- The location of building entrances and ground floor active use are to consider pedestrian crossings along Broadway.
- Consider the orientation of C3 to take advantage of exposure to view corridors.
- The design should recognize that C3 abuts the public open space of Sixth Street Park and a pedestrian passage, and take into consideration views, shadows, sound and the public character of these open spaces. The design is to enhance the active street

experience and inviting nature of those open spaces. Consider tower setbacks from the streetwall along Sixth Street Park.

- The pedestrian frontage and streetwall are to engage Kendall Way and are important elements with which to articulate the character of this street and create a comfortable pedestrian experience.
- The ground floor and uses along the west facade should engage Sixth Street Park.
- Consider enhancing the passage to Loughrey Walkway with adjustment to building configuration.

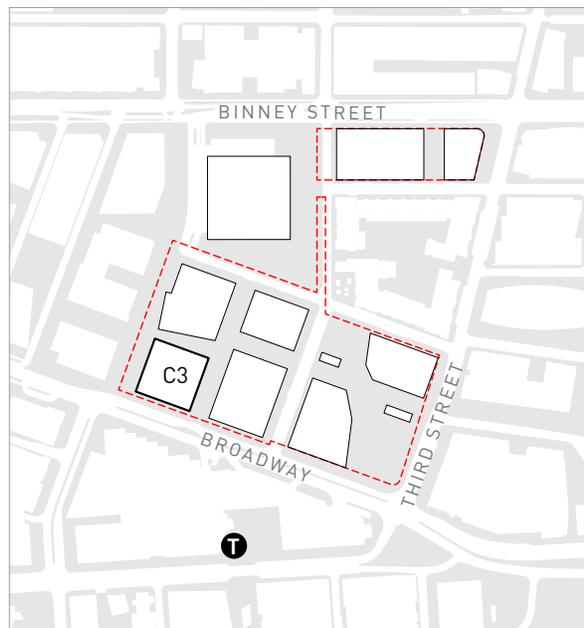
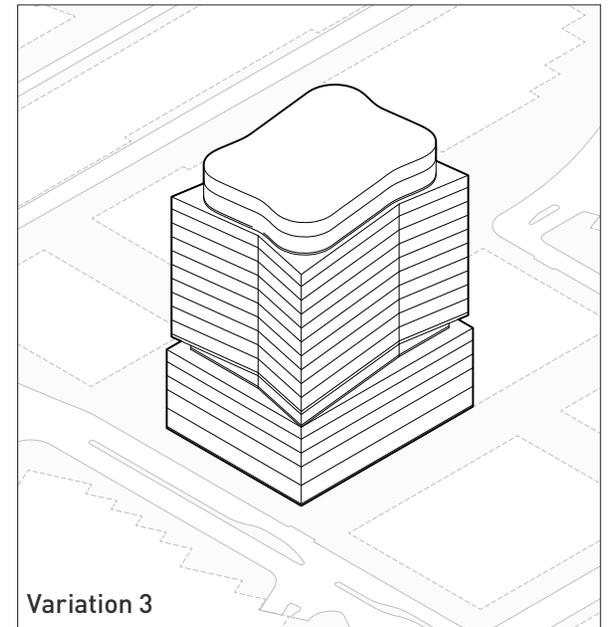
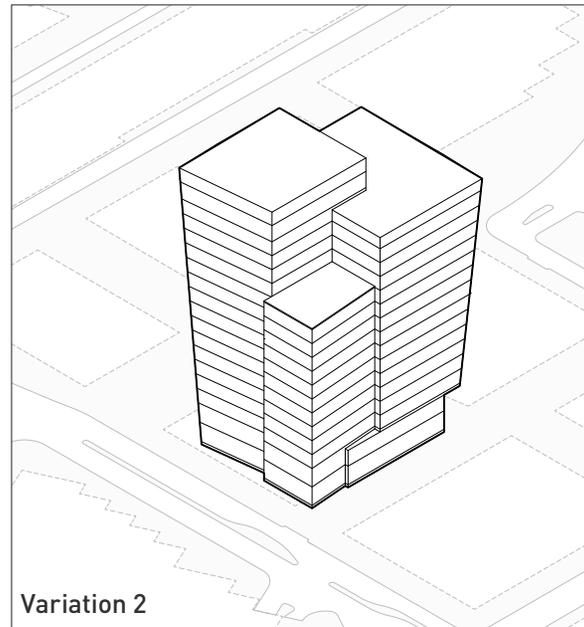
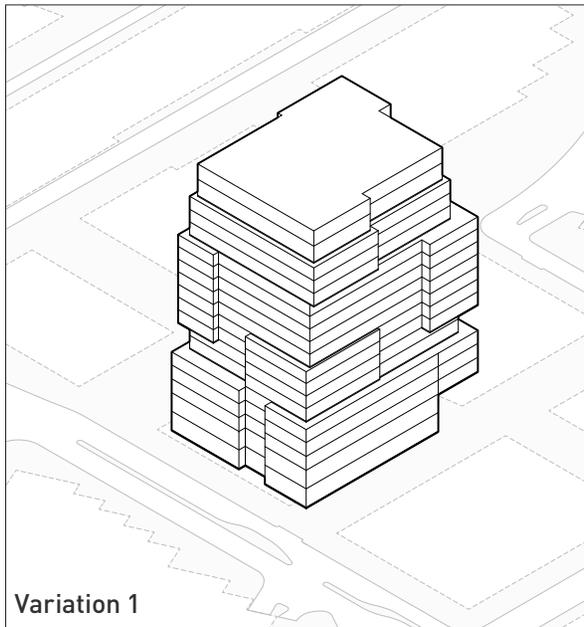
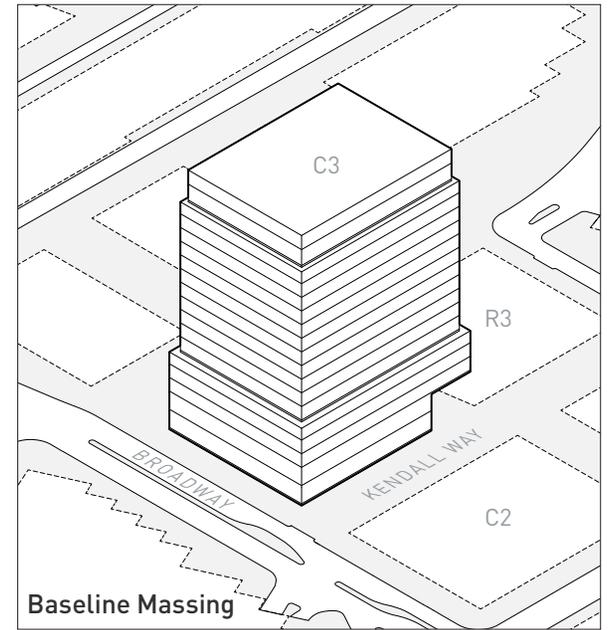
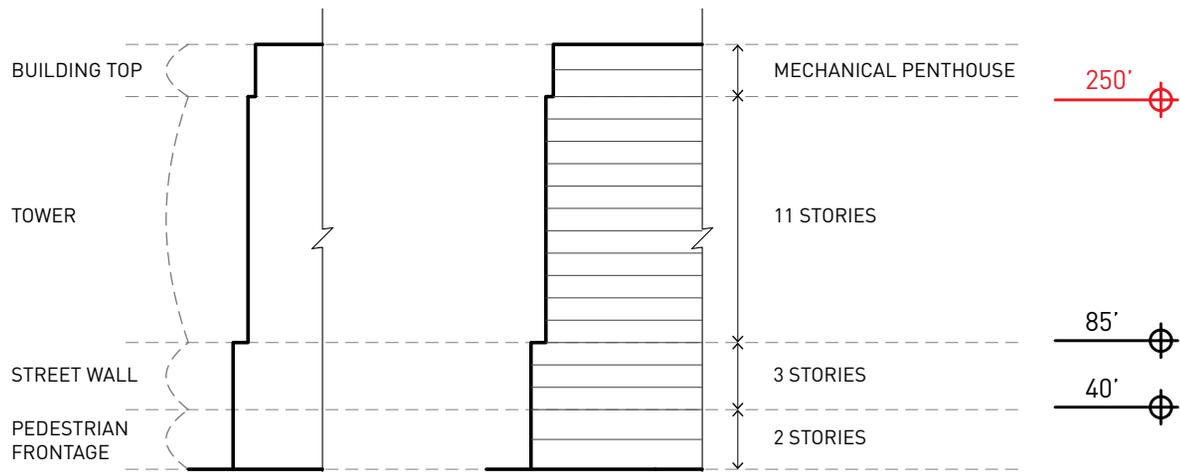


Figure E10: Block Guidelines - C3



Block C4

Approximate GFA : 350,000 - 400,000 SF

Maximum height : 170 FT

Use : Technical Office and Retail

Block C4 is a commercial building parcel bounded by Binney Street to the north, Fifth Street to the west and Munroe Street to the south.

- The relationship between C4 and 303 Third Street Residential Apartments will be carefully studied. The pedestrian frontage and streetwall are to contribute to the residential character of Munroe Street.

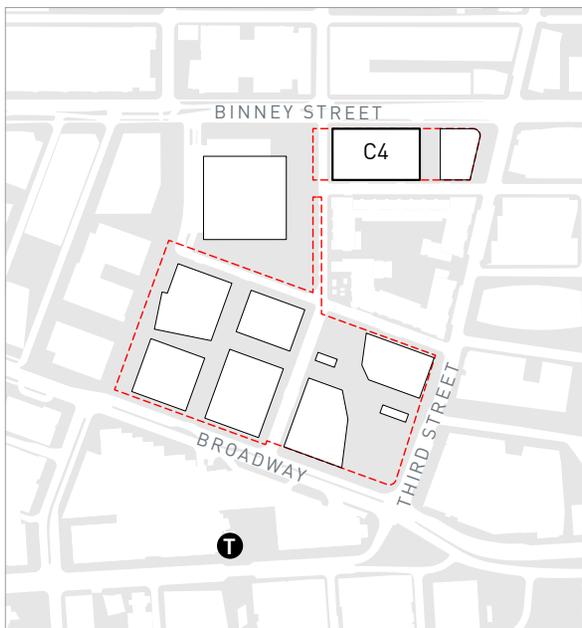
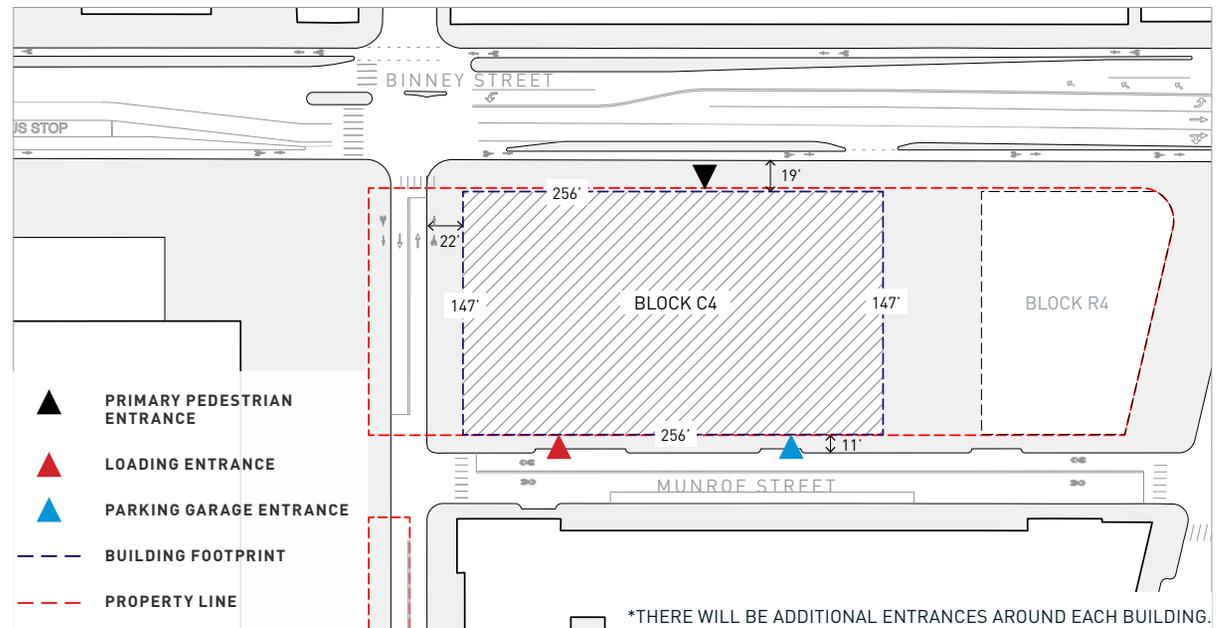
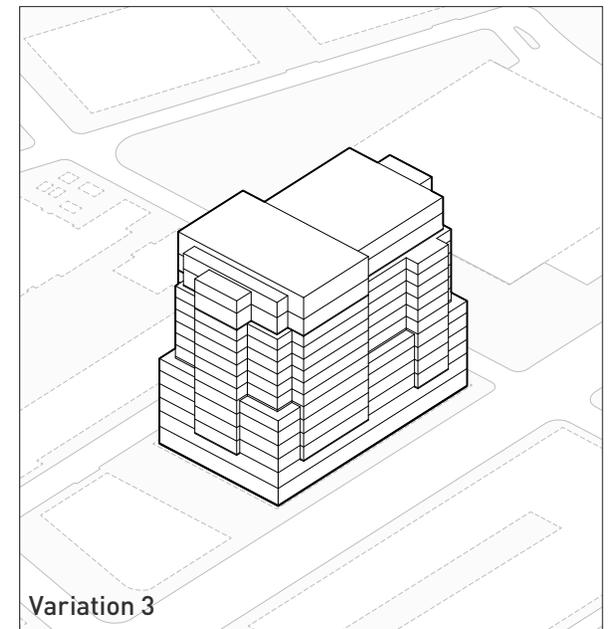
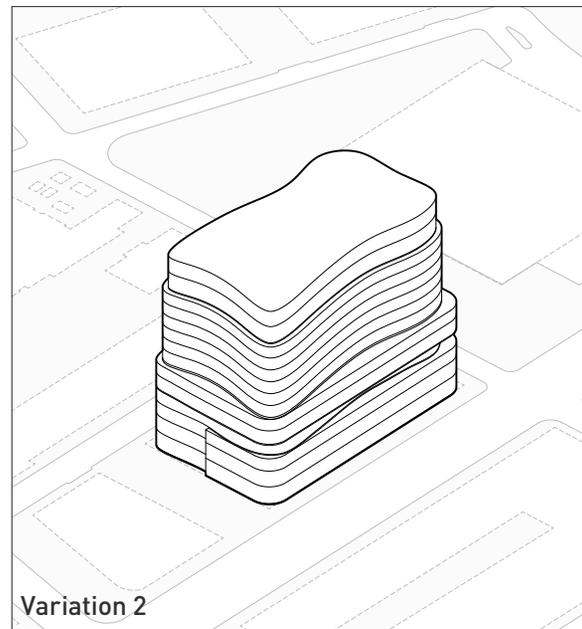
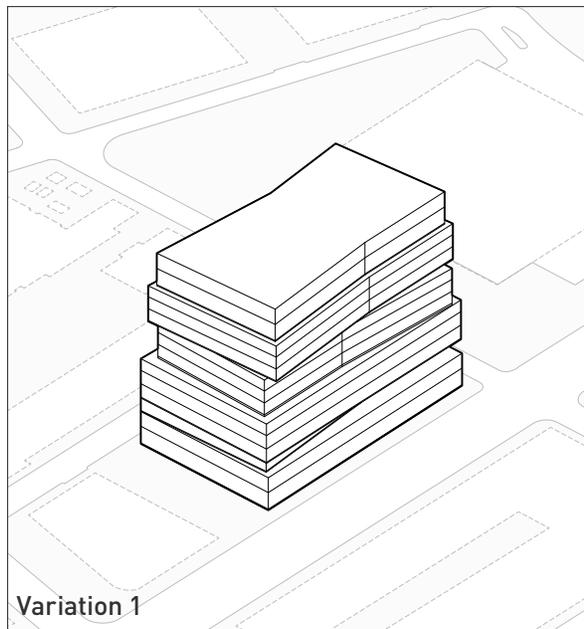
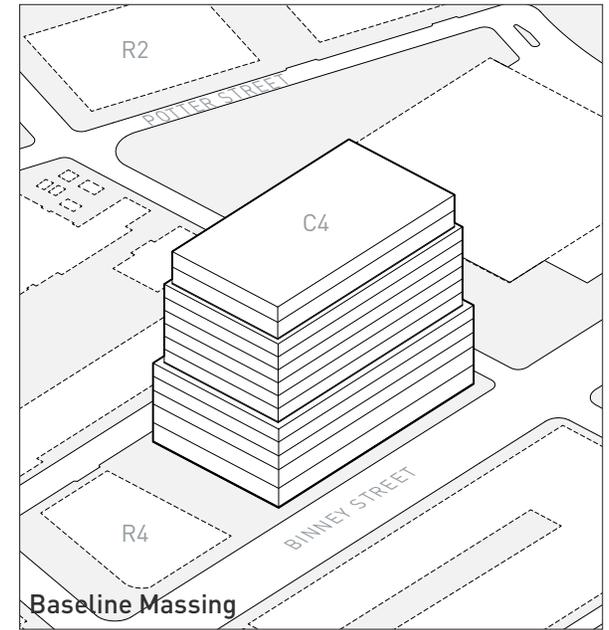
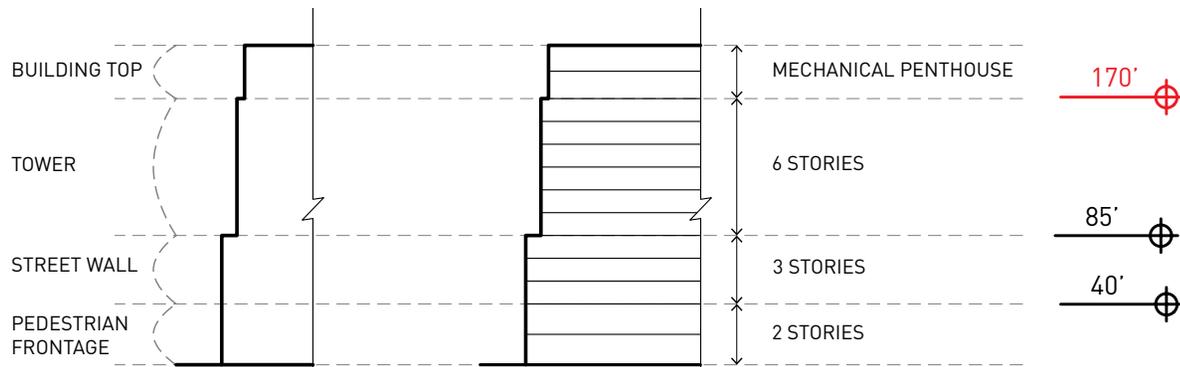


Figure E11: Block Guidelines - C4

- The streetwall along Binney Street is to be consistent in compositional scale with buildings along this urban edge. The massing and articulation of the north facade will be important in defining the character of Binney Street. The location of building entrances and ground floor active use are to consider existing pedestrian crossings along Binney Street.
- Consider the orientation of R4 to take advantage of exposure to view corridors.
- The design should recognize that C4 abuts Binney Street Pocket Park and take into consideration views, shadows, sound and the public character of the open space.
- The pedestrian frontage and streetwall

are to engage Binney Street and are important elements with which to articulate the character of this street and create a comfortable pedestrian experience.





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F: Environmental Guidelines

Overarching project goals include the desire to increase connectivity between the Volpe development site and the surrounding city and to improve the quality, vibrancy, diversity and inclusiveness of the public realm through a network of open spaces. At the same time, the development must maximize sustainable strategies and minimize adverse impacts on environmental comfort. The following describes efforts necessary to understand the existing environmental conditions, predict any potentially adverse impacts of the proposed development, and develop strategies to minimize or mitigate those impacts.

Net Zero Emissions Strategy

The project will achieve leadership in sustainability by minimizing emissions from fossil fuels. The focus throughout the design process for individual buildings should be to drive down projected emissions, both in the manufacture of construction elements and in the long-term operation of the buildings. The Volpe Development Plan has been master planned to maximize energy efficiency and support a path for a net-zero carbon future. Residential buildings (40% of the development) are to be all-electric, generating zero on-site emissions from fossil fuel, and commercial buildings are to be designed with a path to electrification that would integrate with the

long-term vision for a low-carbon New England power grid. Load sharing between complementary building programs should be explored to maximize heat exchange and optimize energy performance across the greater development site. On-site rooftop photovoltaic (PV) arrays, supplemented by procurement of off-site renewable energy, should be explored during individual project design as a means of offsetting the overall development's electricity use.

LEED

As required under the PUD-7 Zoning Regulations of the City of Cambridge, all proposed buildings within the Volpe redevelopment site must achieve a minimum of Leadership in Energy and Environmental Design (LEED) Gold certification. An integrative sustainable design process is to be utilized in each project design to ensure that best practices will be employed in the design of exterior envelopes, building energy- and water-use systems, site planting, and site storm water management systems. Construction practices and materials, interior and exterior lighting design, and daylight maximization should all contribute to the achievement of LEED Gold certification.

The Volpe Development Plan will include one of only three blackwater treatment systems in New England, enabling 100% of all non-lab sanitary wastewater flow to be treated and re-used –

removing up to 250,000 gallons per day from the city's sanitary sewer system. The collection, treatment, and reuse of all available greywater and blackwater in phased district blackwater treatment plants will minimize potable water consumption, improve self-sufficiency of the district, and mitigate the impact of the development on regional sewer systems. Every individual non-laboratory project will be expected to connect to one of the blackwater treatment facilities.

Wind

A quantitative pedestrian-level wind study of the proposed master plan build-out was conducted by RWDI, utilizing wind-tunnel analysis. The assessment focused on critical pedestrian areas, including building entrances and public sidewalks. Wind tunnel analysis of the proposed building massing and landscaping indicated that wind conditions at grade level on and around the project site are generally predicted to be similar or slightly lower than the existing wind conditions and suitable for the intended uses. Mean wind speeds and gust criteria were predicted to occasionally exceed desired conditions at certain building corners in winter or spring. Manipulations of the massing at building corners are to be utilized to mitigate this effect.

Similar quantitative pedestrian-level wind studies of individual proposed projects must

be undertaken by the future design teams, also utilizing wind-tunnel analysis. Wind analysis is to consider the impacts of neighboring existing and proposed buildings and landscape, and to quantitatively evaluate the suitability of predicted wind conditions for the intended uses within the public realm. Future design efforts for individual buildings and development-wide streetscape and landscape design is to mediate any marginal conditions.

Shadow

The Volpe Development Plan design team has performed a shadow study to evaluate the shadow impacts of the proposed building massing on existing neighboring buildings as well as on existing and proposed elements of the public realm - the network of open spaces that will connect the Volpe Development plan to the neighboring context of the City of Cambridge. Refer to Section K, Environmental Comfort Plan, for further narrative and graphic analyses.

Shadow studies must be performed for individual future projects to evaluate the shadow impacts of specific proposed building massing on neighboring buildings and on the streetscape and landscape of the public realm. Shadow studies are to evaluate existing and proposed conditions to determine the area of net new shadows at the specific annual markers of 9:00 am, 12:00 pm, and 3:00 pm on the

Summer and Winter Solstices and on the Spring / Fall Equinox. Shadows are to be measured at the ground plane and on neighboring rooftops. For the purposes of future shadow studies, the new Volpe National Transportation Center, now under construction, will be considered to be existing, as will any new buildings within the Volpe Redevelopment Plan that precede a subject project into design or construction. The massing of other future buildings within the redevelopment plan, as used to generate shadows, are to be consistent with the maximum building envelopes as described by the proposed massing diagrams in the Volpe Development Plan master plan.

Lighting

Urban street, sidewalk, pathway and landscape site lighting is critical to providing a sense of comfort, safety and security. A consistent, cohesive approach to illumination and fixture selection will contribute to the connectivity of the open space network within the public realm. Similarly, the interior illumination of active retail, dining and Entertainment Venue will increase transparency into those public uses, blur the edge between indoor and outdoor space, and heighten the sense of security and neighborhood identity well into the evening. Exterior building lighting will also be important for identity, especially for commercial buildings within the Volpe Development Plan.

Future building and site design must address these positive attributes while also mitigating light spill, avoiding light pollution, and conforming to applicable night-sky ordinances. The use of occupancy or vacancy sensors within the upper floors of commercial buildings and light cut-off housings for exterior pole-type fixtures are two specific methods (among others) that future building and landscape design must address.

Heat Island Effect

Urban heat island effects are to be mitigated with a hybrid approach. All new buildings are to employ high albedo, green roof, blue roof, or solar panels, as applicable, to reflect heat and mitigate urban heat island effects in accordance with the PUD-7 zoning requirement. Site hardscape materials are to be chosen for high SR/SRI values. Outdoor spaces with vegetation such as canopy trees, pergolas, trellises, green walls, and other measures are to be considered as means to reduce urban heat gain.

Shade trees and canopies should be employed to mitigate heat gain on sidewalks and pedestrians while ground vegetation and light colored paving surfaces are to be utilized to reduce overall heat island effects, and to align with key strategies for climate resiliency to withstand and recover from extreme weather events. Individual future

projects should employ combinations of these heat resiliency strategies.

Noise

The specific parcels that comprise the Volpe Development Plan will be designed to meet the requirements of both the MassDEP noise policy (310 CMR 7.10) and the City of Cambridge Noise Control Ordinance (Chapter 8.16 of the Cambridge, Massachusetts Municipal Code).

To confirm compliance with the MassDEP noise policy, projects developed on the site are to undertake, during the Article 19 design review process, a survey of existing ambient noise levels that establish prevailing background sound levels. This survey will define site-specific limits that, together with the fixed limits in the Cambridge Noise Control Ordinance, will apply to each building developed on the parcels.

During design of each building on the site, project design teams are to engage qualified acoustics and noise control consultants to advise them on the noise mitigation measures necessary to comply with MassDEP's noise limits as well as the limits prescribed in the Cambridge Noise Control Ordinance. These measures may include strategic equipment selection and location, equipment noise barriers or screens, sound attenuation devices, or other measures necessary to confirm compliance.

The primary elements that contribute to sound generation within an urban development project include mechanical equipment noise and building service and loading activities. Construction activity temporarily generates noise during the construction of buildings and infrastructure. Construction activity noise is limited separately within the Cambridge Noise Control Ordinance.

Mechanical equipment: The future design of individual buildings is to locate major mechanical equipment within enclosed roof-top mechanical penthouses and lower level mechanical service rooms. When large mechanical equipment is located outside, buildings will comply with the Cambridge Noise Ordinance.

Service and loading activities: Building loading and service areas are to be located off-street, at ground level, internal to the building footprint. Loading bays are not to impinge upon adjacent sidewalk, roadway right-of-ways, and service traffic is to be managed to avoid adverse impact on local traffic circulation.

Construction activities: Construction activities associated with the individual buildings and site infrastructure (underground utilities, roadways, and public realm landscape and hardscape features) will temporarily create an increase in noise levels emanating from within the Volpe site. Those activities that are likely to generate

the highest levels of construction noise include demolition, excavation and foundations. Primary noise-generating construction activities are to be limited to daytime hours. Individual construction projects (both building- and infrastructure-related) are to develop a series of mitigation measures in collaboration with the City of Cambridge.

Climate Resiliency

To respond to the changing climate and prepare for projected increases in precipitation, the Volpe Development Plan will embrace resilient design

strategies including elevating mission-critical equipment, residential units, and all building ground floors at the projected 2070 100-year flood elevation; incorporating stormwater mitigation strategies; and providing standby power for mission critical equipment. To minimize risks associated with projected temperature increases, all proposed development projects should reduce urban heat island effect through the use of high-albedo roofing and paving, and minimize cooling loads by insulating and shading building facades.