MXD

CAMBRIDGE, MA

INFILL DEVELOPMENT CONCEPT PLAN

AMENDMENT 2
RESPONSE TO COMMENTS

NOV 5 2021

SASAKI

SUBMITTED TO

Cambridge Community Development Department
City Hall Annex
344 Broadway
Cambridge, MA 02139

The Cambridge Redevelopment Authority
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APPLICANT

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Nov 5TH 2021

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THE CONSULTANT TEAM

Sasaki	Concept Plan
VHB	Permitting
Pickard Chilton	Commercial Building A (145 Broadway) Commercial Building B (325 Main Street) Commercial Building C (290 Binney Street) Commercial Building D (250 Binney Street)
Stantec	Residential Building South (135 Broadway) Commercial Building A Architect of Record Commercial Building B Architect of Record
NBBJ	Urban Design (Center Plaza)
Sasaki	Urban Design / Project Landscape Architects (Center Plaza) 145 Broadway Interior Architects / Landscape Architects
Lemon Brooke	325 Main Street / Commercial C,D Landscape Architects
VHB	Traffic Engineering / Civil Engineering
The Green Engineer	Sustainability
RWDI	Environmental Science
Haley & Aldrich	Geotech

TABLE OF RESPONSES

EVERSOURCE SUBSTATION

Over the course of a hearing on Concept Plan Amendment #2 with the Planning Board and Cambridge Redevelopment Authority Board held on the 28th of September, 2021 the Applicant received a series of questions about site constraints arising from incorporation of electrical substation infrastructure into the proposed development plan. This section will aim to identify these key constraints as well as intuitively convey their influence on the careful balance between heavy infrastructure requirements, public planning priorities, and commercial development embodied in Concept Plan Amendment #2.

TRANSMISSION & DISTRIBUTION

The proposed electrical substation vault is planned to occupy a footprint of approximately 285' x 100' x 110' in the approximate center of the current Blue Garage parcel. As presented at the Joint Board hearing on 9/28/21 and discussed during the re-zoning process, this central positioning of the electrical substation is driven primarily by transmission and distribution considerations. The transmission and distribution duct banks pivotal for the proposed substation's operational viability are subject to critical engineering requirements including maximum bend radius constraints, limitations on depth, and minimizing proximity to underground heat sources that degrade electrical capacity. When the extremely crowded subsurface conditions beneath Broadway, Binney, and the Blue Garage service drives are overlaid on the foregoing requirements, the enormous scale of the routing challenge becomes clear.

Exhibit Reference: R.ES FIG. 1
Comment Reference: CRA Staff Letter

To date, the interconnected proposed siting for the substation, transmission, and distribution duct banks within Concept Plan Amendment #2 represents the only viable known proposal for effectuating the substation relocation to the MXD. By extension, this configuration of proposed substation infrastructure elements determines the program distribution opportunities available to the Applicant within Concept Plan Amendment #2. Structural elements and subsurface spaces of the proposed commercial and residential buildings must be coordinated with the transmission and distribution duct banks exiting the substation, while the footprint of the substation itself cannot be overbuilt, but can function as public open space.

ELECTRICAL SUBSTATION VAULT

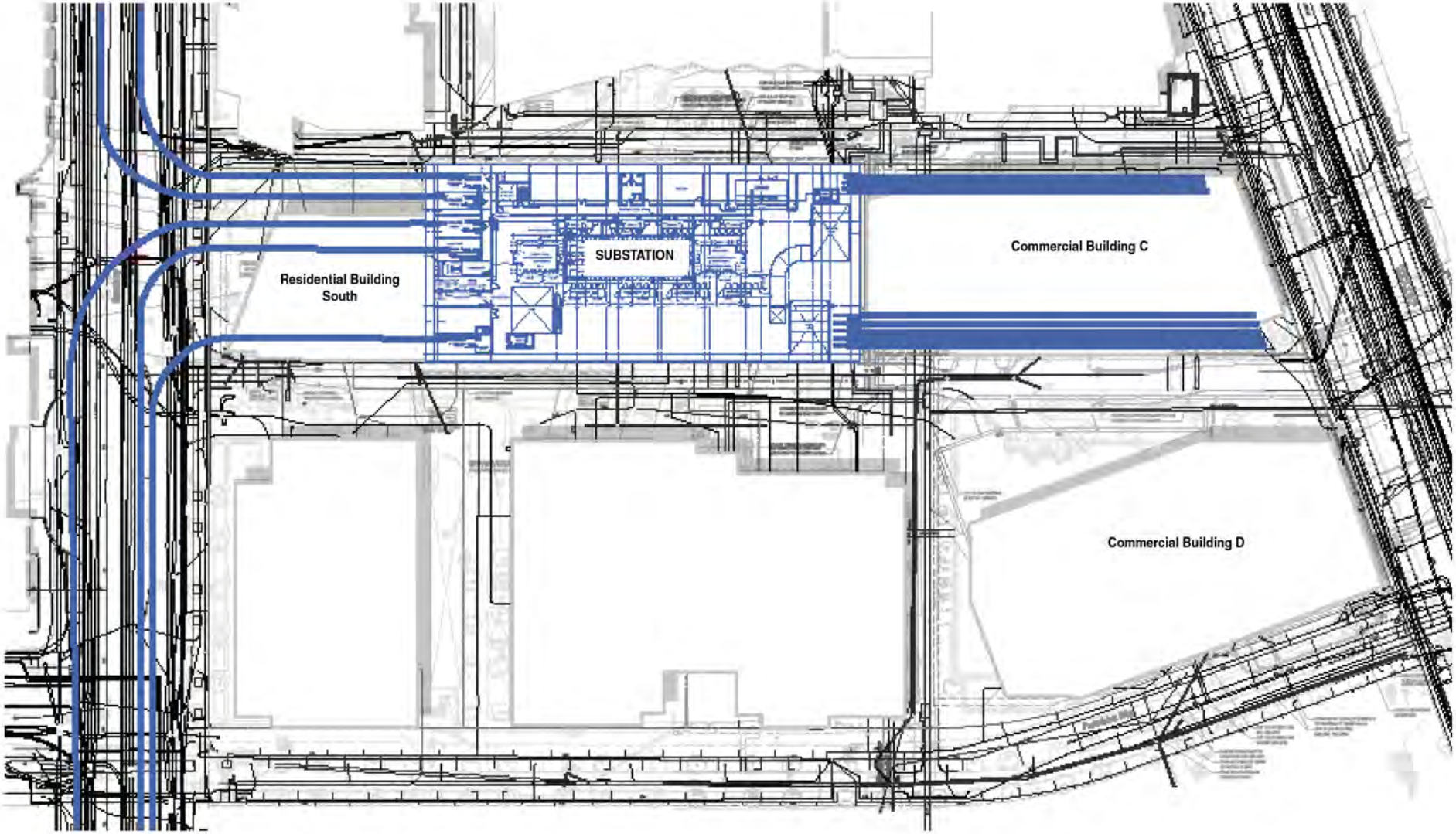
While precise details of the interior of the proposed electrical substation must be withheld on account of security concerns, the same logic of space constraints and interdependent engineering decisions applies within the substation vault. The interior of the proposed below grade electrical substation is anticipated to be filled with carefully selected and sited equipment responsive to both the internal needs of the substation's machinery and the positioning of vertical shafts—including ventilation, equipment hatchways, loading elevators, and stairways—that run through the entirety of the substation and ultimately reach its roof. This relationship illuminates the close connection between the nature of the Center Plaza and internal substation engineering requirements and why decisions about the configuration of the Plaza must ultimately be made relative to electrical substation design considerations.

Exhibit Reference: R.ES FIG. 2
Comment Reference: CRA Staff Letter

EVERSOURCE SUBSTATION

TRANSMISSION & DISTRIBUTION

R.ES FIG. 1

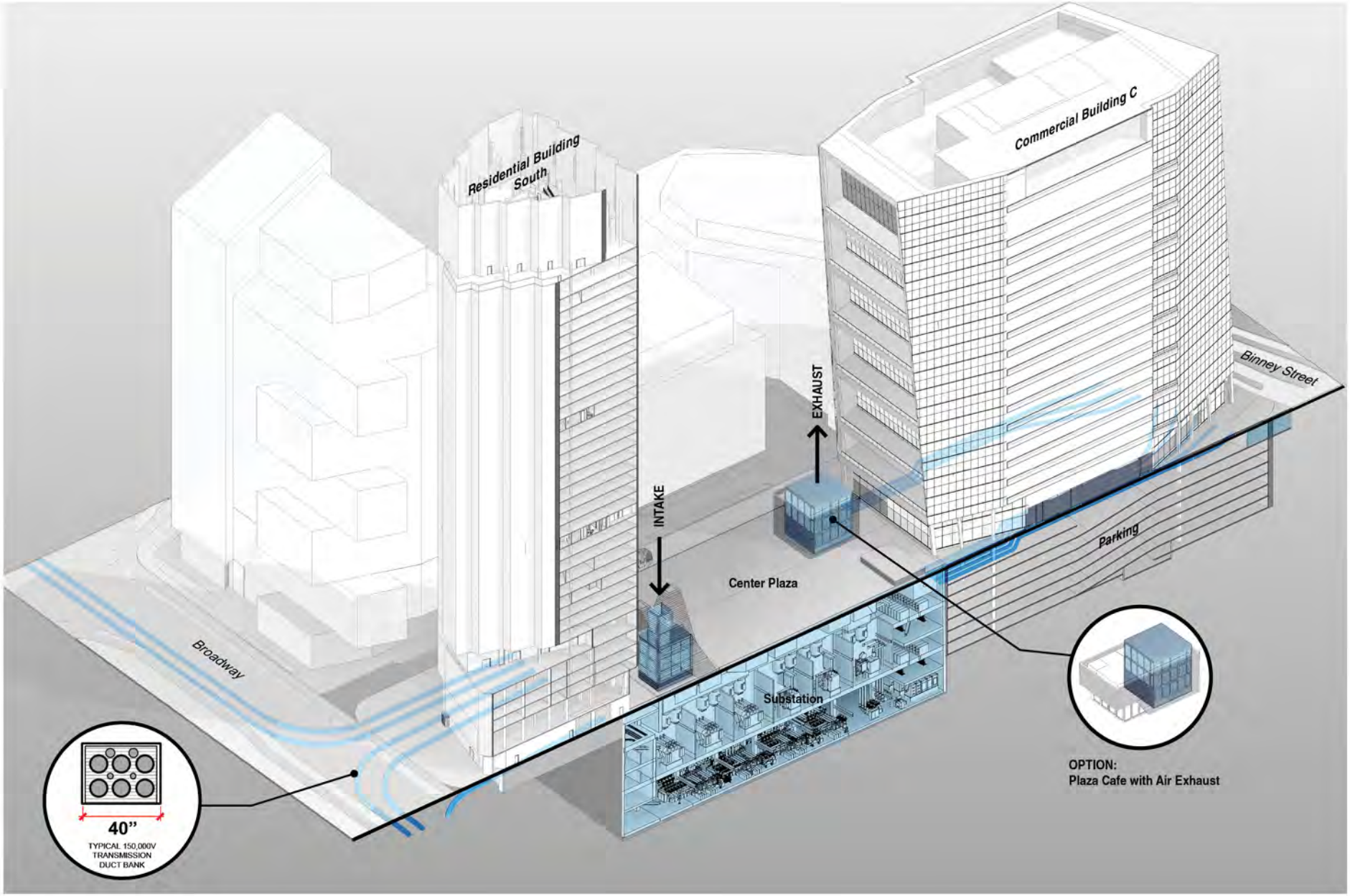


Stantec vhb

EVERSOURCE SUBSTATION

ELECTRICAL SUBSTATION VAULT

R.ES FIG. 2



Stantec vhb

EVERSOURCE SUBSTATION

CENTER PLAZA

The proposed Center Plaza serves dual purposes—a resilient cap for a working substation and a key new public open space.

As described in the foregoing narrative, considerations of substation ventilation, resiliency, operations, and maintenance in this instance improbably become essential inputs into the design possibilities of the public realm. Aside from coordinating the location and character of substation infrastructure visible within the Center Plaza, the incorporation of vegetation into the Plaza's designs represents an acute design challenge that must be met with reference to key resiliency needs.

In general, a goal of maximizing the service life of the substation roof's waterproofing necessitates a strategy of limiting vegetation to planters situated on the surface of the proposed Center Plaza. Both irrigation systems and plant/tree roots pose threats to the integrity of the roof's waterproofing over the long-term. That said, the Applicant has worked diligently to revise Center Plaza plans to include additional greenery via lawn and shrub plantings. This creates additional opportunities for vegetation on the Center Plaza that will be detailed in the Landscape Design section of this submission.

These constraints—balanced against key public planning objectives and the development program essential to financing the substation relocation—represent a central part of the constrained optimization problem embodied by Concept Plan Amendment #2.

Exhibit Reference: R.ES FIG. 3, R.3.2.2 FIG. 1
Comment Reference: Joint Board Comments 9/28/21 Hearing

EVERSOURCE SUBSTATION

CENTER PLAZA

R.ES FIG. 3

GROUND LEVEL

N

0' 40' 80'

SASAKI

CHAPTER 1 DEVELOPMENT COMPONENTS
R.1.1 COMMERCIAL BUILDINGS C & D

The Applicant received several comments and questions about the massing and the relationship between Commercial Building C and D and the Center Plaza.

A discussion of massing concepts for Commercial Buildings C and D must begin with a reckoning of the binding site and programmatic constraints operating at the north end of the proposed redevelopment area. As has been recounted in earlier sections of this response to comments document, the incorporation of extensive substation infrastructure effectively dictates where commercial and residential buildings can be positioned. With transmission and distribution engineering considerations requiring a central positioning of the substation, space for residential and commercial development can consequently only be found to the south and north of the substation itself. This general site constraint is given still further definition when retention of the existing east and west service drives and enhancement of the existing East-West connectors is brought to the fore. This further restricts the footprints for residential and commercial development to the sites depicted consistently in our public meetings and IDCP submissions. Finally, limits on building height mandated by the Cambridge Zoning Ordinance provide the final building envelope constraint that the Applicant intends to work within. Refer to R.1.1 FIG. 1 - FIG. 4 for a visual summary of how these various constraints cumulatively shape the building envelope available for Commercial Building C and Commercial Building D.

Bearing in mind how these constraints shape the building envelope, the next key factor driving the baseline massing concepts for Commercial C and Commercial D is the amount of commercial program that must be distributed between these two available sites. The economic viability of the proposed substation relocation and development plan represented in Concept Plan Amendment #2 depends explicitly on deploying the 800,000 SF of commercial Utility Project GFA contemplated in the recently enacted changes to Article 14 of the Zoning Ordinance (the "MXD Zoning") and Amendment No. 11 to the KSURP approved by the CRA Board on September 16, 2020, and by the Cambridge City Council on February 3, 2021. Without the ability to deliver a net increase of 800,000 SF of Utility Project GFA, the economic cross-subsidies undergirding the needed heavy infrastructure investment become insufficient and render Concept Plan Amendment #2 impossible for the Applicant to complete.

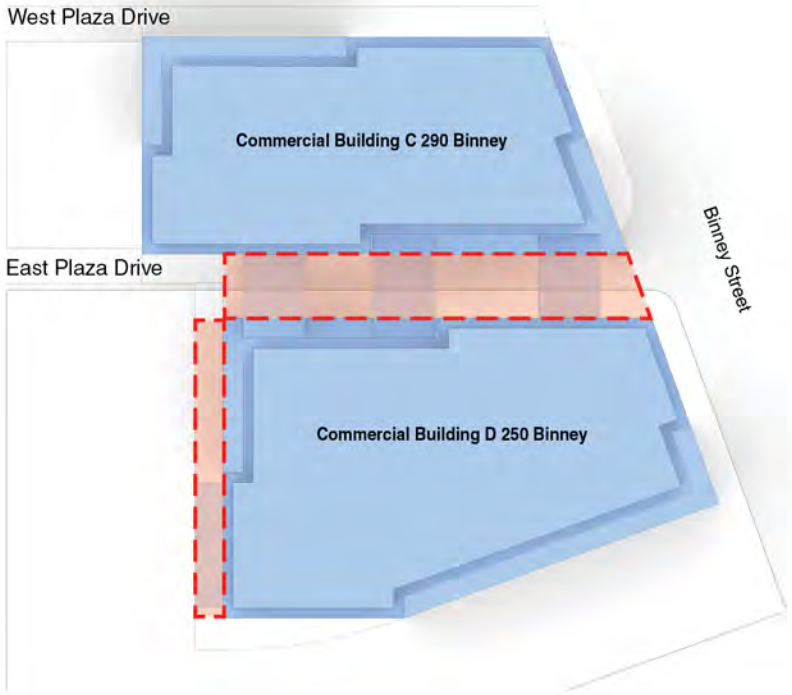
With these major parameters established it is essential to subsequently engage with an important genre of commentary received during the 9/28/2021 Joint Board Hearing. Specifically, assessing the potential value of attempting to consolidate the proposed commercial program within a single building so as to create additional potential for open space within Concept Plan Amendment #2. Relative to market considerations, the notion of a consolidated building incorporating the reconstructed and additional commercial GFA contemplated by Concept Plan Amendment #2 is prohibitive. Delivering the envisioned square footage in one consolidated commercial building represents an unacceptable speculative business risk to the Applicant. Moreover, design considerations suggest a two-building approach to be more advantageous on a number of dimensions including; circulation within the site, access to light and air, creating more human scaled experience. The single building scale would also limit the occupants' access to light and air; a key feature in sustainable building design and human comfort. Based on the design constraints listed above, making a single building on the site would have a negative impact on the community, surrounding site, and building occupants and is therefore not feasible.

Comment Reference: CRA Staff Letter, CDD Staff Letter

R.1.1 COMMERCIAL BUILDINGS C & D

BUILDING MASSING COMPARISON

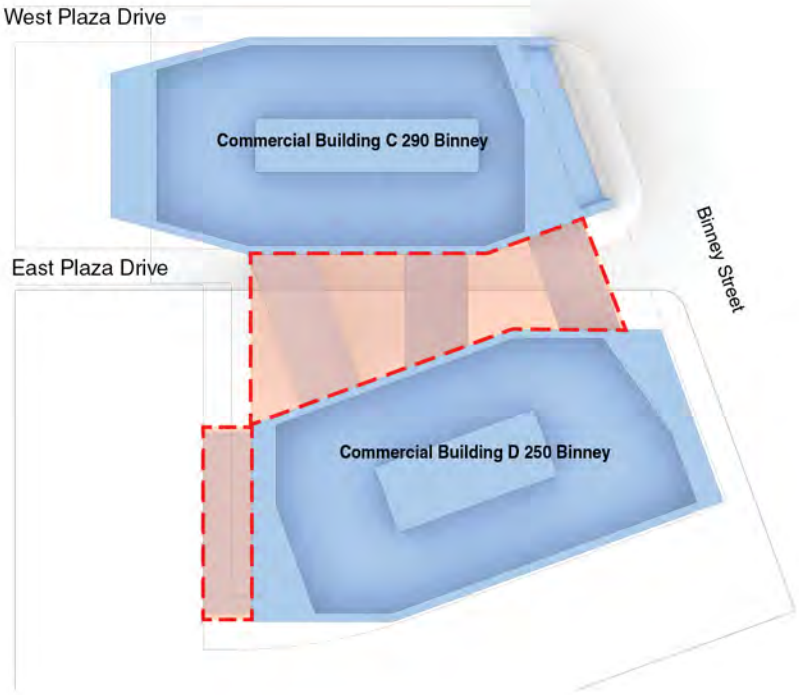
R.1.1 FIG 1



Tower Massing
Potential Bridged Connection Zone

IDCP MASSING

N



Tower Massing
Potential Bridged Connection Zone

VARIATION 3

N

PICKARD CHILTON

R.1.1 COMMERCIAL BUILDINGS C & D

IDCP GROUND FLOOR PLAN

R.1.1 FIG. 2

PICKARD CHILTON

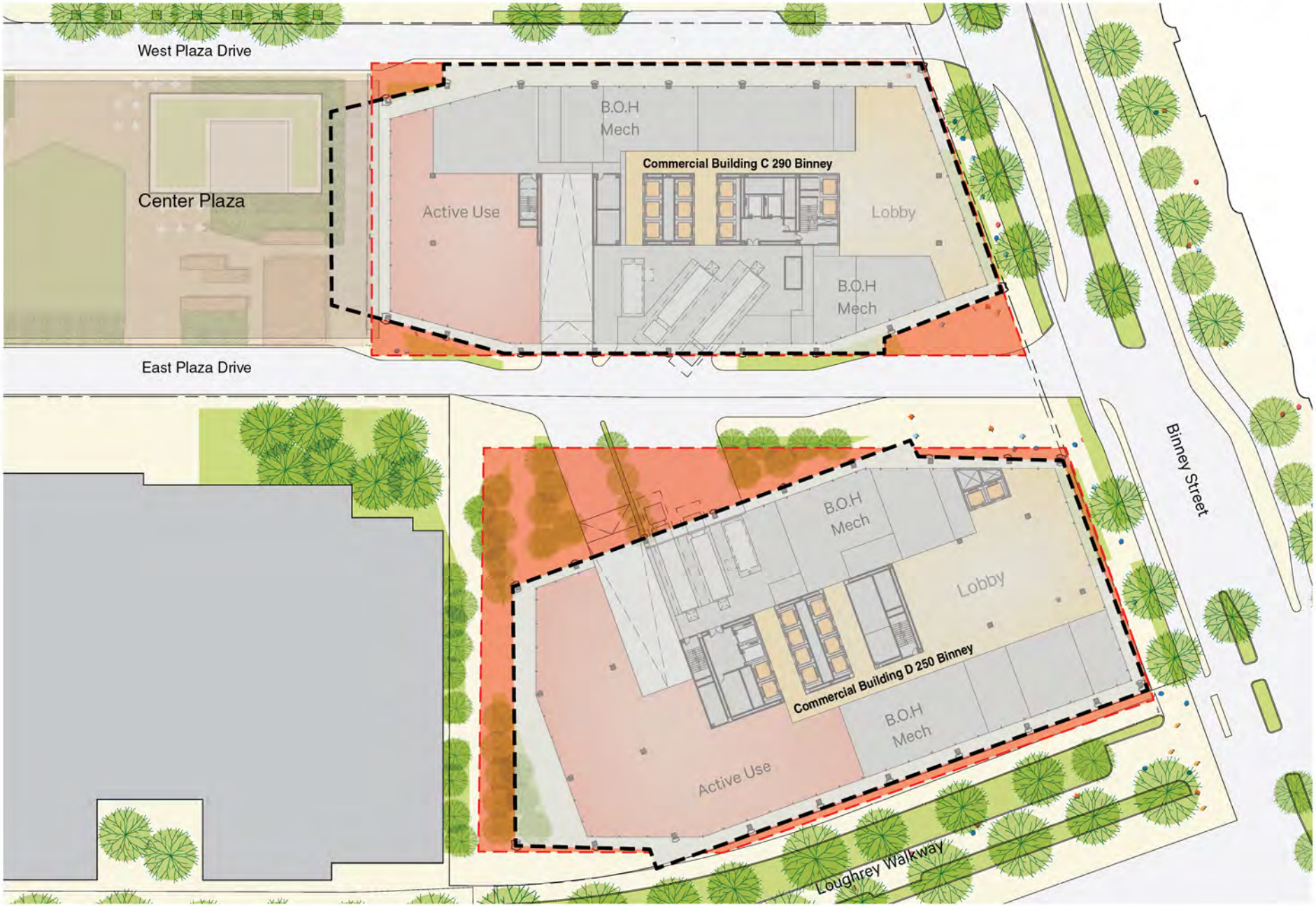
Temporary Bike Parking (Valet)

Long Term Bike Parking (Valet)

R.1.1 COMMERCIAL BUILDINGS C & D

VARIATION GROUND FLOOR PLAN

R.1.1 FIG. 3



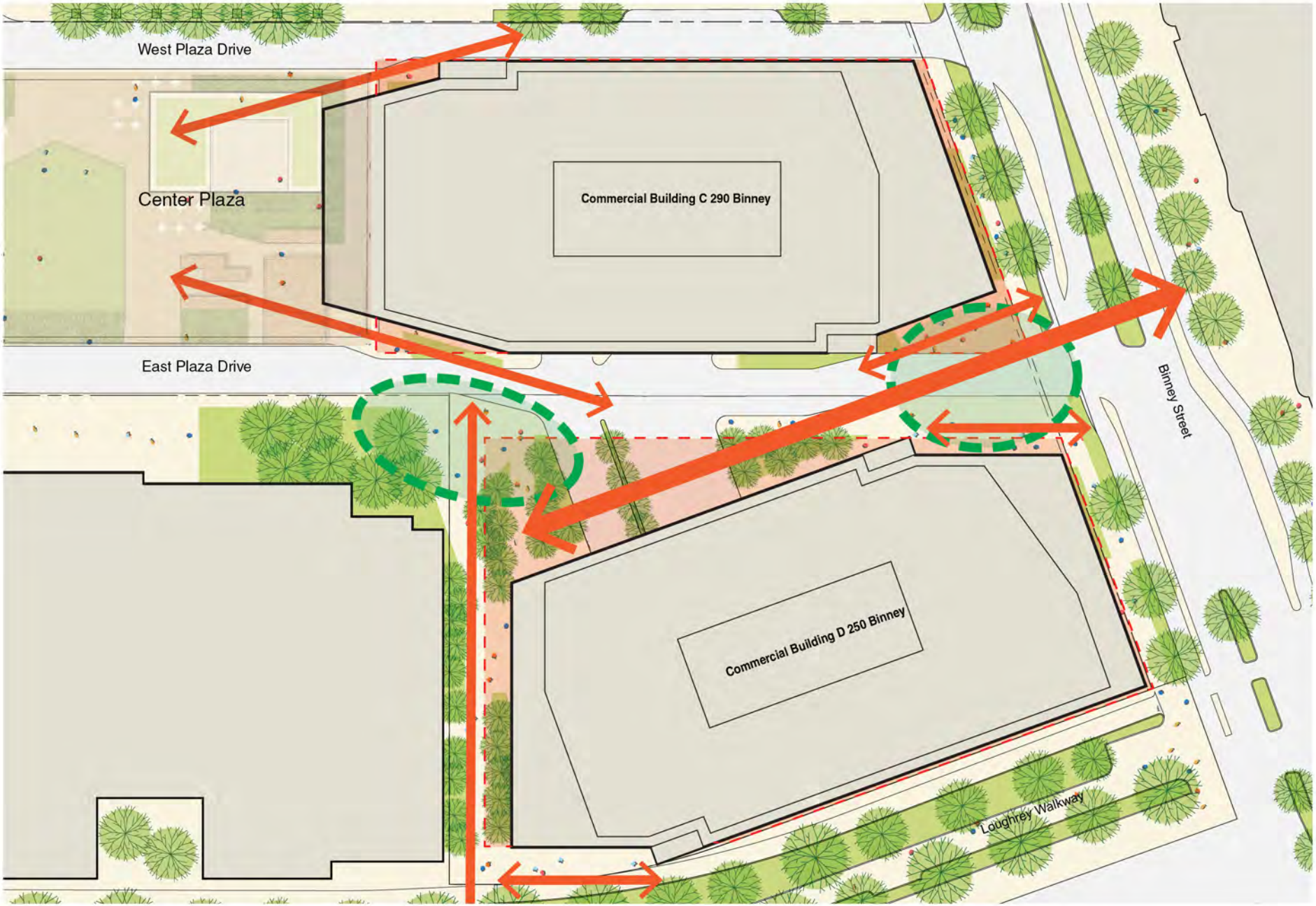
PICKARD CHILTON

VARIATION MASSING
IDCP MASSING

R.1.1 COMMERCIAL BUILDINGS C & D

SCULPTING BUILDING FOR LIGHT AND AIR

R.1.1 FIG. 4



PICKARD CHILTON

CHAPTER 3 OPEN SPACE
R.3.1 OPEN SPACE CALCULATIONS

The Applicant received comments requesting additional information on open space proposed by the Project.

A fulsome explanation of the incremental impact on open space associated with Concept Plan Amendment #2 requires an initial review of relevant historical context. Conceived in response to a request from the City of Cambridge for aid in facilitating the relocation of a proposed Fulkerson Street substation, Concept Plan Amendment #2's animating goal itself creates the opportunity for additional open space. Should Amendment #2 proceed and substation siting approval be secured, the existing 44,000 SF Fulkerson Street parcel—which would have otherwise become an above-grade electric substation—will ultimately be conveyed to the City of Cambridge by Eversource. Once in City hands, the Fulkerson Street parcel could be dedicated to a variety of future uses. During the last 18 months of community engagement work suggested uses for the Fulkerson Street parcel have included affordable housing and/or open space.

Setting aside the opportunity presented by the Fulkerson Street parcel, Concept Plan Amendment #2 contemplates a substantial net increase in open space on a standalone basis. Spurred by requests from community members, City Councilors and the Cambridge Redevelopment Authority (CRA), the Applicant worked diligently with Eversource to prove the feasibility of a below-grade substation within the proposed redevelopment during 2020. This below-grade substation made possible the approximately 30,000 SF Center Plaza public open space currently envisioned at the heart of Concept Plan Amendment #2. Taking this, as well as the East-West connectors and other open spaces created as part of this proposal, Concept Plan Amendment #2 is estimated to deliver a net increase of approximately 17,000 SF of open space within Parcel 2, compared to Concept Plan Amendment #1.

Additionally, as part of Concept Plan Amendment #2 the Applicant is developing a framework for enhancing Danny Lewin Park within Parcel 3, along Broadway Street in concert with the CRA. These enhancements--applied across 9,762 square feet of the park and to be delivered in Phase 3--will be geared toward increasing the permeability of Danny Lewin Park, strengthening its identity as public space and establishing a closer connection between Danny Lewin Park and the future Center Plaza. Ancillary improvements to the existing 105 Broadway building, including removal of existing planters and expansion of the adjacent sidewalk are also contemplated. This addition to Concept Plan Amendment #2 further buttresses an already strong suite of public realm contributions and provides the Applicant--in collaboration with the CRA--a path to delivering new improvements to public open space on an accelerated timeline.

Exhibit Reference: R.3.1 FIG. 1 - FIG. 2
Comment Reference: CRA Staff Letter

R.3.1 OPEN SPACE CALCULATIONS

OPEN SPACE COMPARISONS FOR PARCEL 2 AMENDMENT #1 AND AMENDMENT #2

R.3.1 FIG. 1

IDCP AMENDMENT #1 OPEN SPACE

(OS) COMMERCIAL BUILDING A (PHASE I)

REQUIRED	**35,504 ±SF**
PROVIDED	**54,801 ±SF**
145 BROADWAY (OS)	8,114 ±SF
(SW) EW CONNECTOR (EASEMENT C)	7,328 ±SF
6TH ST CONNECTOR (WITHIN MXD)	19,569 ±SF

(OS) COMMERCIAL BUILDING B (PHASE 2)

REQUIRED	**0 (ASD)**
PROVIDED	**27,501 ±SF**
KENDALL SQUARE ROOFTOP GARDEN*	18,789 ±SF
ENHANCED OS PLAZA AREA	2,562 ±SF
ENHANCED OS TERRACE	4,750 ±SF
ENHANCED OS TERRACE (PENDING MBTA)	1,400 ±SF

RESIDENTIAL BUILDING SOUTH (PHASE 2)

REQUIRED	**28,000 ±SF**
PROVIDED*	**32,070 ±SF**

RESIDENTIAL BUILDING NORTH (PHASE 3)

REQUIRED	**5,600 ±SF**
PROVIDED*	**16,895 ±SF**

PARCEL 2 AMD#1 ENHANCED (OS) 64,593 ±SF

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

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

*** Includes the removal of 700 SF for retail uses on the terrace

IDCP AMENDMENT #2 OPEN SPACE

(OS) COMMERCIAL BUILDING A (PHASE I)

PROVIDED	**54,801 ±SF**
PHASE 1 OPEN SPACE EXCESS	**19,790 ±SF**

(OS) COMMERCIAL BUILDING B (PHASE 2)

****PROVIDED (UPDATE)**	**30,818 ±SF**
KENDALL SQUARE ROOFTOP GARDEN	25,340 ±SF
ROOFTOP CONNECTOR TERRACES***	2,916 ±SF
ENHANCED OS PLAZA AREA	2,562 ±SF
PHASE 2 OPEN SPACE EXCESS	**30,818 ±SF**

DANIEL LEWIN PARK (IVA) WEST	4,955 ±SF
DANIEL LEWIN PARK (IVB) CENTER	5,297 ±SF
PHASE 3 OPEN SPACE EXCESS	**10,252 ±SF**

(OS) COMMERCIAL BUILDING C (PHASE4)
(OS) RESIDENTIAL BUILDING SOUTH (PHASE 4)

PROVIDED	**30,000 ±SF**
CENTER PLAZA	30,000 ±SF

(OS) COMMERCIAL BUILDING D (PHASE 4)

PROVIDED	**17,000 ±SF**
(NE) EW CONNECTOR	7,000 ±SF
(SE) EW CONNECTOR	10,000 ±SF

REQUIRED	**96,180 ±SF**
PROVIDED	**107,860 ±SF**
TOTAL OPEN SPACE EXCESS	**11,680 ±SF**

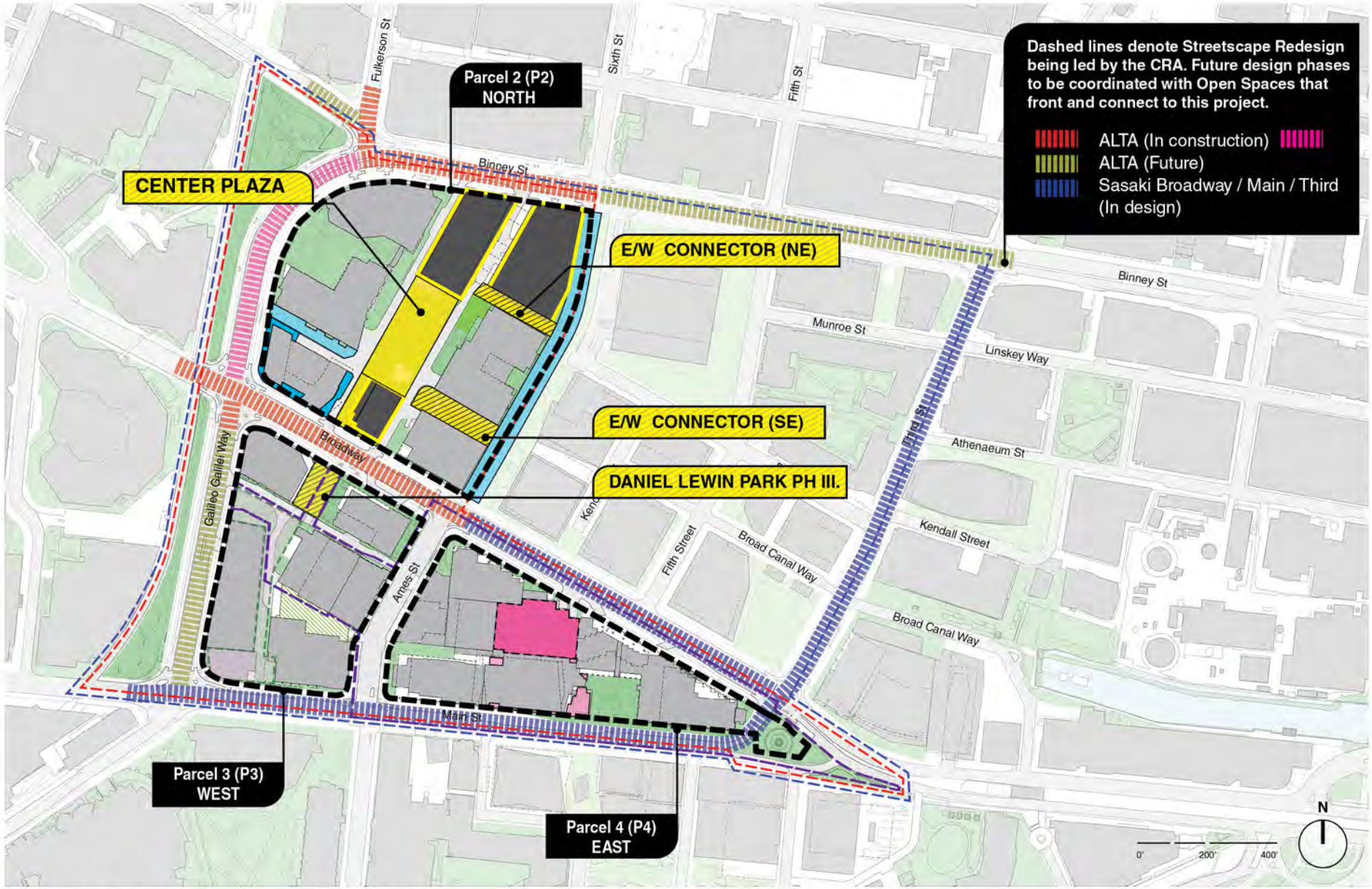
PARCEL 2 AMD #2 ENHANCED (OS) 82,011 ±SF > AMD#1 17,418 ±SF

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

R.3.1 OPEN SPACE CALCULATIONS

PROJECT RELATED OPEN SPACE AND OTHER OPEN SPACE OPPORTUNITIES WITHIN MXD DISTRICT

R.3.1 FIG. 2



Commercial Building A
- Phase I. Open Space
- Phase I. Enhanced OS.

Commercial Building B
- Phase II. Enhanced OS.
- Phase II. Enh. Garden OS.

Commercial Building C / D
Residential Building South
- Phase IV. Open Space
- Phase IV Enhanced OS.

- Other Potential OS Enhancement Opportunities
- Project Boundary AMD #2
- MXD Boundary
- KSURP Boundary
- Ames Street District ASD

R.3.2 CENTER PLAZA
R.3.2.1 VENTILATION STACKS

The Applicant received comments requesting additional information on the required ventilation stacks within Center Plaza for the Eversource substation.

First and foremost, it is vital to note that the need for and dimensions of the proposed exhaust and intake structures are rooted in internal substation engineering considerations. The amount of heat that the substation needs to reject, associated calculations of cubic feet of air per minute (CFM) that must pass through the intake and exhaust ducts, and maximum airflow speeds dictate the amount of free area the exhaust and intake structures must have in order to adequately cool the substation facility. These parameters are subsequently influenced by the selection of louvers designed to prevent the intrusion of rain or debris into the substation's ventilation system, which increases the total surface area that must be dedicated to both exhaust and intake structures. For example, louvers with 50% free area require a surface area dedicated to air exhaust or intake 100% greater than the free area initially calculated. Taken together, these variables determine the size of the exhaust and intake structures. The ventilation structures are essential to the functioning of the substation and cannot be eliminated from the proposal.

Departing from the foregoing dimensional considerations, the positioning of these exhaust and intake stacks on the surface of the proposed Center Plaza is a function of a myriad of external and internal variables. From the earliest stages of Concept Plan Amendment #2, the southern part of the Center Plaza closest to the residential tower has been designated as an "intake" zone and the northern part of the Center Plaza an "exhaust" zone so as to capitalize on Commercial Building C's non-operable windows, and to create better conditions for operable windows and amenity terraces within the Residential South building. To avoid re-entrainment, the exhaust and intake structures have consistently been positioned on opposite ends and sides of the Center Plaza in order to maintain sufficient distance between them. In response to comments critical of the size of the ventilation structures included as part of Concept Plan Amendment #2, the Applicant has coordinated a revised location for the exhaust structure in the northern part of the Center Plaza that facilitates a significant decrease in height for that substation infrastructure element. Critically, it is important to note that the Applicant has determined that integration of the proposed exhaust and intake structures into Commercial Building C and Residential Building South is not possible or desirable. Such a move would increase the required size of the exhaust/ intake structures, decrease ground floor active uses, and entangle critical infrastructure with the Applicant's proposed buildings.

Exhibit Reference: R.3.2.1 FIG. 1 - FIG. 7
Comment Reference: CRA Staff Letter, CDD Staff Letter, East Cambridge Planning Team Letter

R.3.2.1 VENTILATION STACKS
TECHNICAL CONSTRAINTS SUMMARY

R.3.2.1 FIG. 1

Operational Constraints

- Equipment loading and occasional large equipment repair or substitution
- Loading areas for substation
- No water penetration into substation vault (no storm drains or high-volume flow above vault)
- Prevent noise disruption from interfering with park or adjacent buildings experience
- Direct hot or cool air away from pedestrians and users of plaza and adjacent buildings

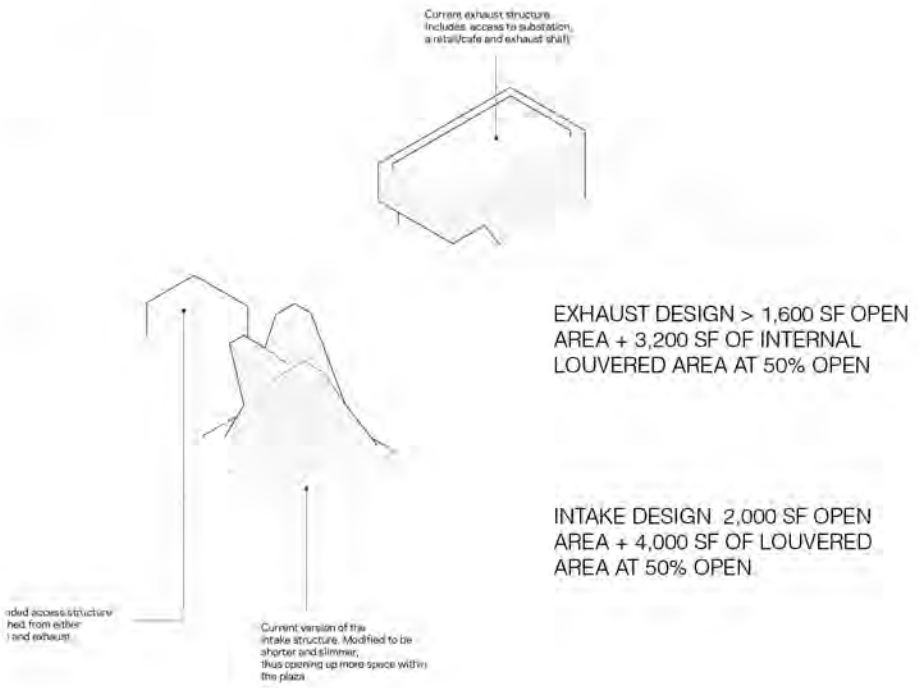
Vertical Penetrations

(Openings into the vault need to be above projected Flood Level of 21FT + 4FT of Storm Surge)

- Intake and Exhaust air shaft
- Large Equipment Hatch
- Human/freight elevator with hall area
- Emergency egress stairs and hatch

Uses integrated in the plaza

- Retail/Cafe
- Bike parking and valet (adjacent)



EXHAUST - AIRFLOW REQUIREMENTS

Air-Cooled System Assumptions

Required Substation airflow [1]	1.4MM cfm
Exhaust Air Velocity	900 fpm
Exhaust Open Area needed	1,555 SF
Exhaust Internal Louvered Area @ 50% open [2]	3,110 SF [3]

[1] Volume of air needed to cool the substation's equipments
[2] Typical waterproof louver systems allow for 50% open area for air flow
[3] Minimum louvered area required for adecuate substation ventilation

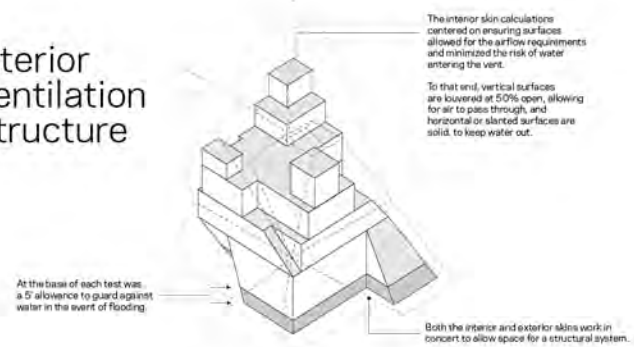
nbbj

R.3.2.1 VENTILATION STACKS

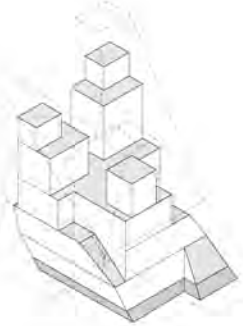
INTAKE DESIGN 2,000 SF OPEN AREA + 4,000 SF OF LOUVERED AREA AT 50% OPEN

R.3.2.1 FIG. 2

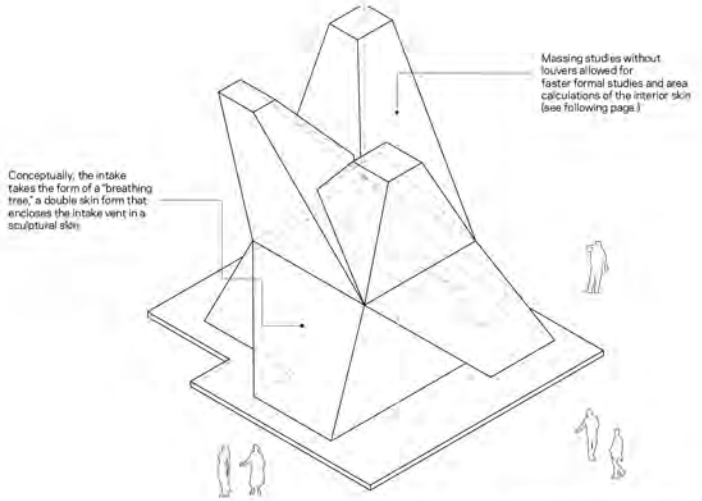
Interior Ventilation Structure



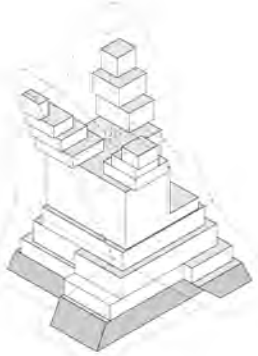
01. 4,230 SF of louvered area



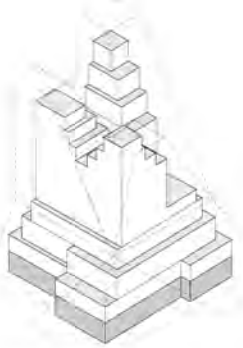
02. 4,065 SF of louvered area



Interior Ventilation Structure

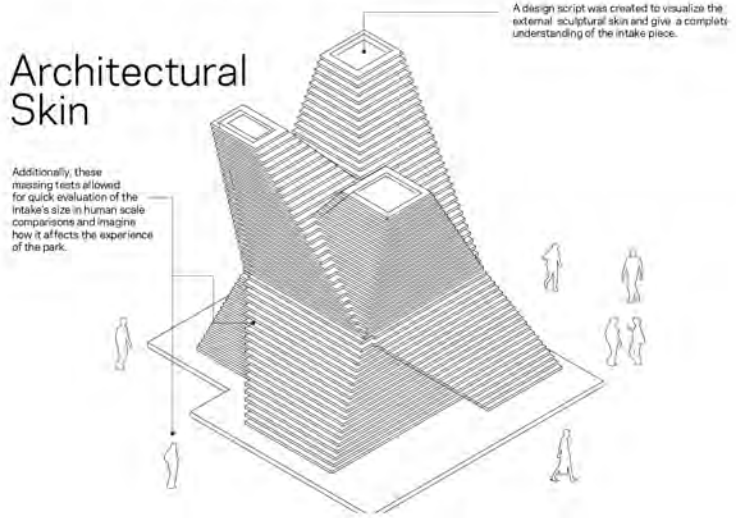


04. 5,150 SF of louvered area



05. 4,730 SF of louvered area

Architectural Skin



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R.3.2.1 VENTILATION STACKS

EXHAUST DESIGN > 1,600 SF OPEN AREA + 3,200 SF OF INTERNAL LOUVERED AREA AT 50% OPEN

R.3.2.1 FIG. 3

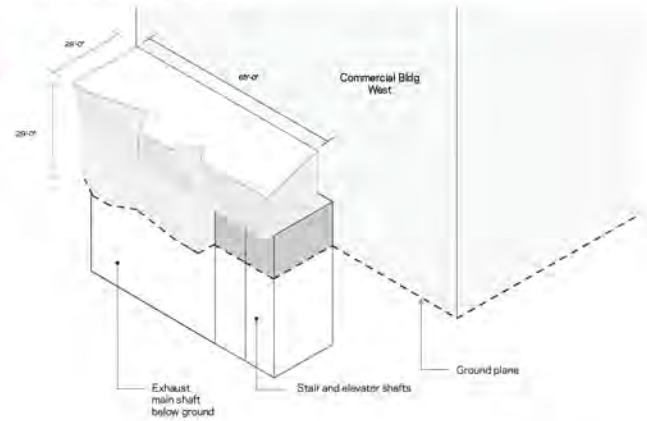
Previous (3-sided ventilation)

Exhaust against Commercial Building

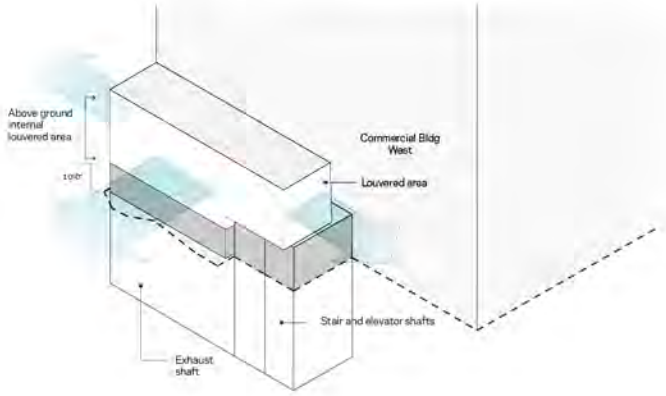
3,300 SF of internal louvered area

Option not longer feasible because exhaust air would be too close to commercial building facade openings and terraces

Architectural Skin



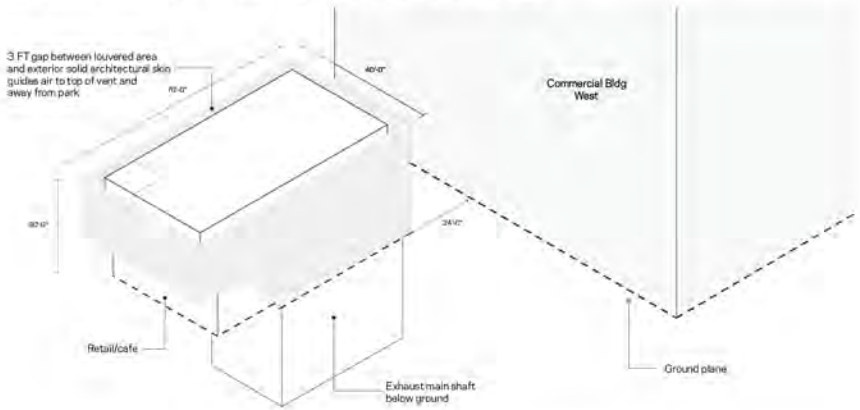
Interior Ventilation Structure

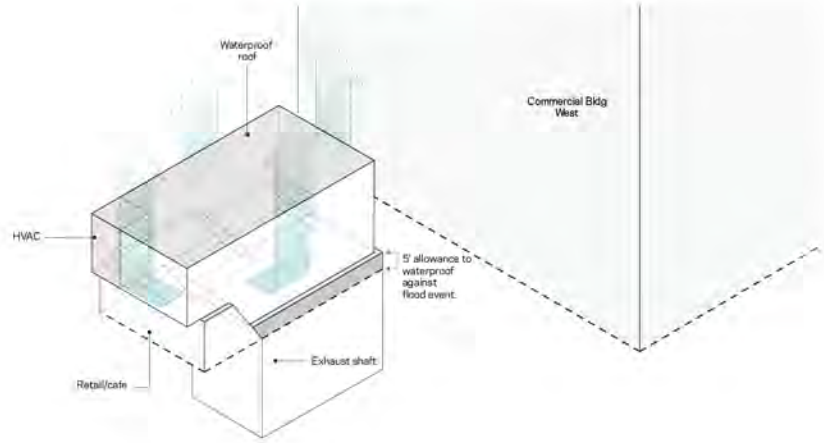


Selected (4-sided ventilation

Exhaust detached from Commercial Building

3,950 SF of internal louvered area





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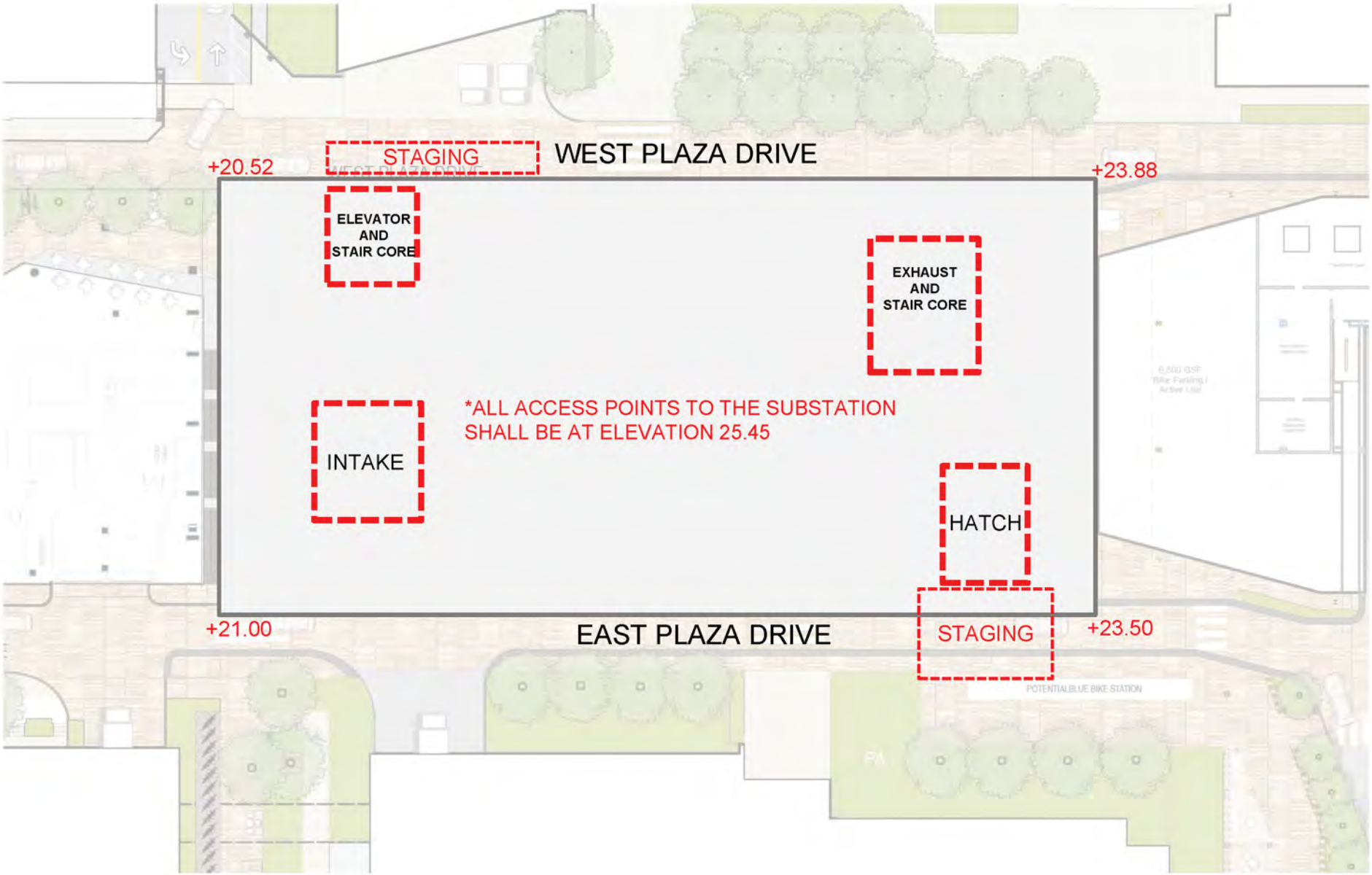
R.3.2.1 VENTILATION STACKS

INTAKE, EXHAUST AND EGRESS LOCATIONS

R.3.2.1 FIG. 4



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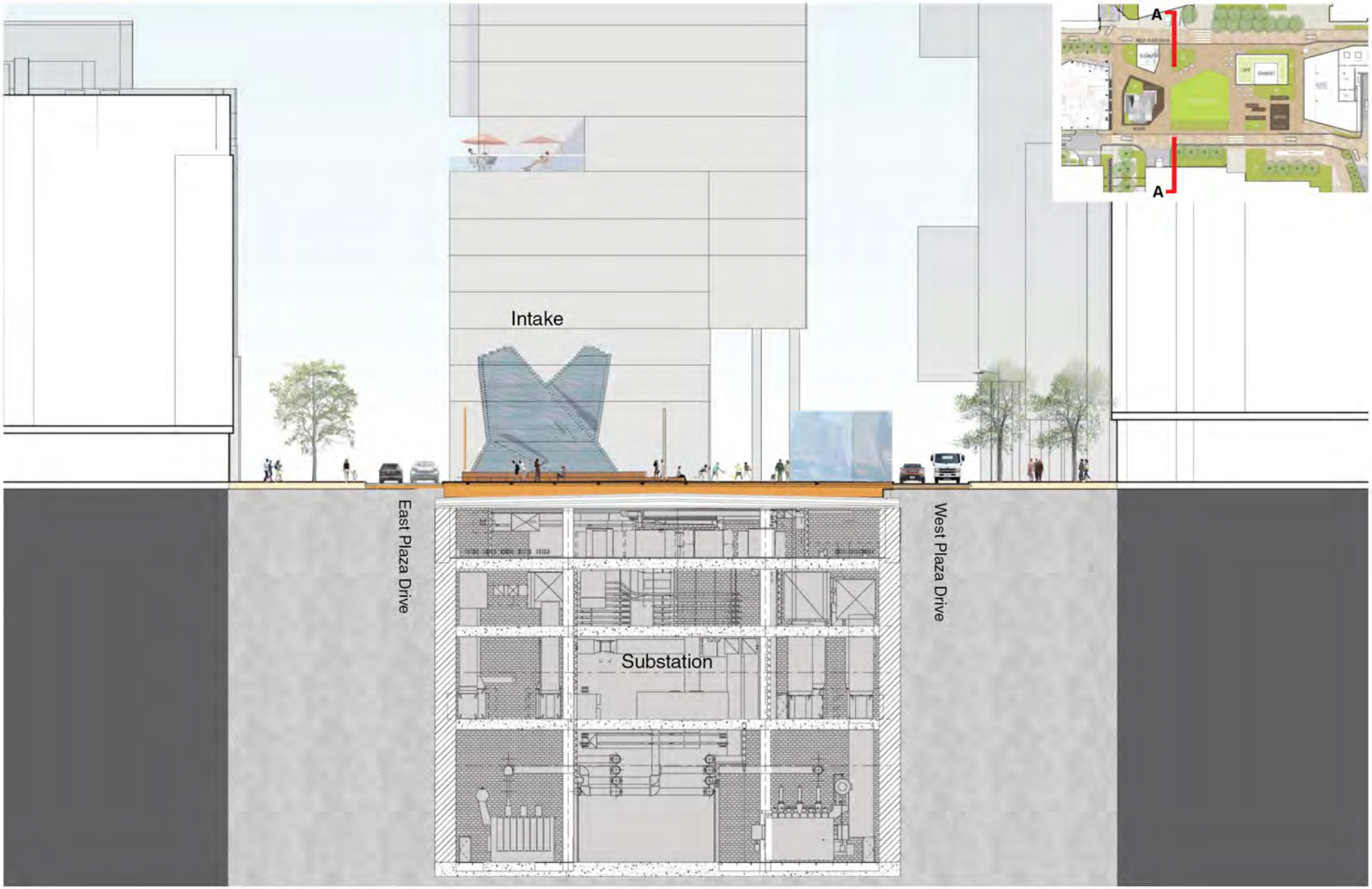
R.3.2.1 VENTILATION STACKS

SITE SECTION A

R.3.2.1 FIG. 5



nbbj SASAKI

R.3.2.1 VENTILATION STACKS

SITE SECTION B - EXHAUST AND SERVICE HATCH

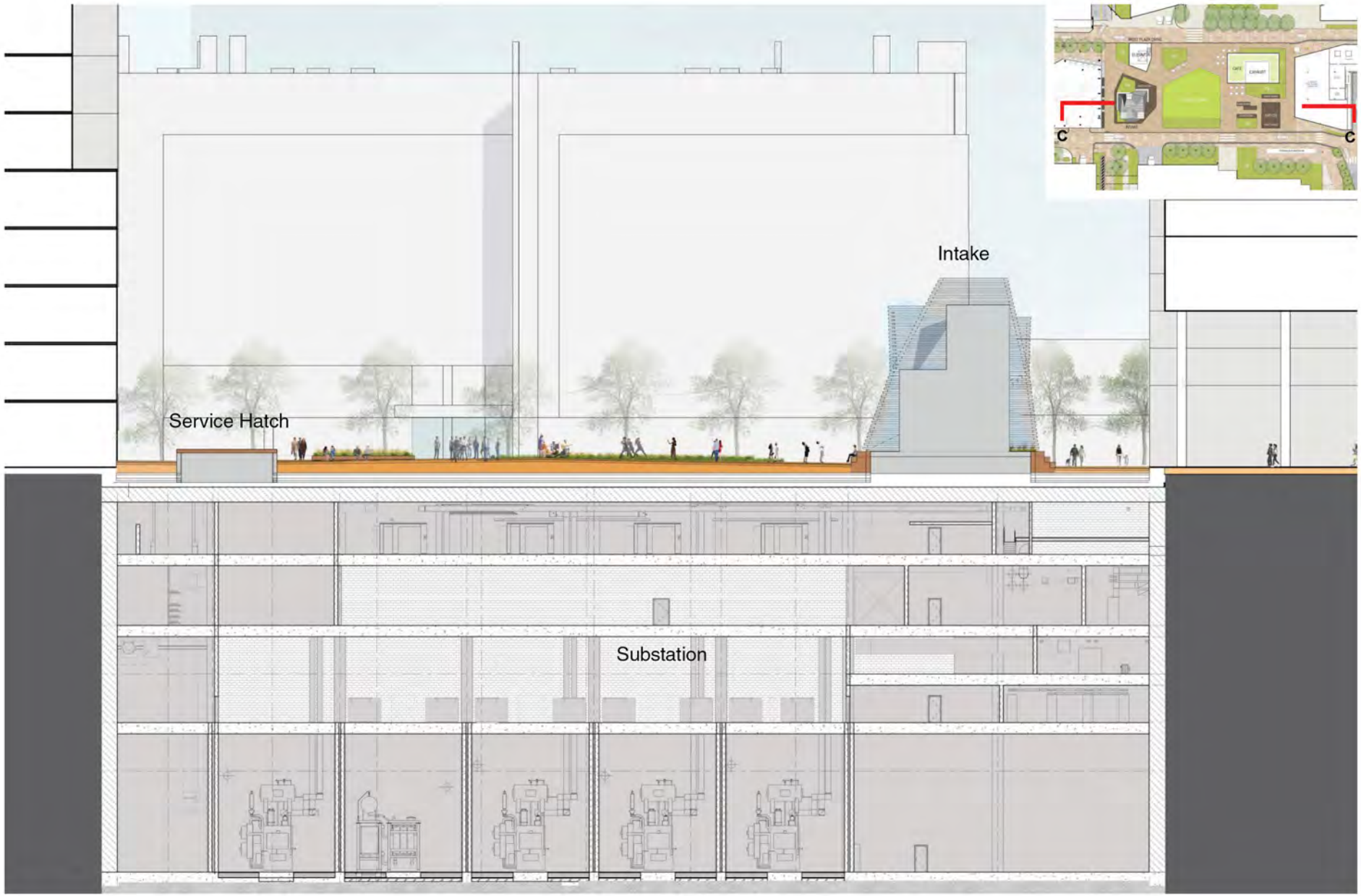
R.3.2.1 FIG. 6

nbbj SASAKI

R.3.2.1 VENTILATION STACKS

SITE SECTION C - INTAKE AND SERVICE HATCH

R.3.2.1 FIG. 7



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R.3.2 CENTER PLAZA
R.3.2.2 LANDSCAPE DESIGN

The Applicant received comments on the proposed planting and landscaping scheme for the Center Plaza. In response to this feedback, the Applicant proposes substantial design changes that endeavor specifically to rethink the extent of green space conceived for the Center Plaza itself. Rather than employing flexible hardscape at the center of the Center Plaza as presented at the September 28th joint hearing, the Applicant now proposes a lawn for that area deployed within a unitized system designed to protect the waterproofing of the substation roof. The new lawn coupled with prior strategies that utilize planters and raised beds to support vegetation, collectively boost "green coverage" of the Center Plaza space from (2,000) SF to (7,000) SF, or (23) % overall. Nonetheless, on account of the need to protect the waterproofing of the substation roof trees continue to be excluded from the Center Plaza (though they are certainly contemplated for perimeter terra firma). Additionally, a water feature is planned adjacent to the proposed Residential Building South along Broadway, and a children's play facility is designated to be constructed within the southern East-West connector.

Please note that the Applicant expects Design Review modifications to continue accounting for Substation operational and design requirements.

Exhibit Reference: R.3.2.2 FIG. 1 - FIG. 5
Comment Reference: CRA Staff Letter, CDD Staff Letter, East Cambridge Planning Team Letter, Public Comment Letter

R.3.2.3 EAST AND WEST PLAZA DRIVES

The Applicant received comments requesting additional improvements to the existing east and west service drives.

The intent of Concept Plan Amendment #2 remains to convert the existing service drives into multi-modal woonerfs that are designed to accommodate existing and proposed service uses while prioritizing pedestrian and bicycle access. In the interest of fostering a more pedestrian-focused experience as part of Concept Plan Amendment #2 the Applicant has endeavored to consolidate loading functions and parking ramps on the East Plaza Drive so as to allow for greater emphasis on pedestrians on the West Plaza Drive. In every instance, terra firma adjacent to the proposed Plaza Drives will be leveraged for tree plantings so as to provide a robust canopy. While the East Plaza Drive will endeavor to host consolidated loading functions, the Applicant's submission does include attention to pedestrian conditions on the East Plaza Drive. Refer to R.3.2.3 FIG 2 which illustrates existing and proposed conditions along the north end of the East Plaza Drive. Additional detail on proposed improvements to the East and West Plaza Drives will be provided at the time of Design Review for Phase 4, consistent with the Concept Plan Amendment #2 Chapter 9, Phasing Plan

Exhibit Reference: R.3.2.3 FIG. 1 - FIG. 2
Comment Reference: CRA Staff Letter, CDD Staff Letter

R.3.2.2 LANDSCAPE DESIGN

CENTER PLAZA SITE PLAN

R.3.2.2 FIG. 1

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R.3.2.2 LANDSCAPE DESIGN

CENTER PLAZA SITE PLAN VIEW LOOKING NORTH

R.3.2.2 FIG. 2

*All Images Display Conceptual Ideas, Not Final Designs

1. Movable Planters and Seating
2. Flexible Programming Area
3. Café Pavilion (Exhaust)
4. Plaza Drive West
5. Plaza Drive East

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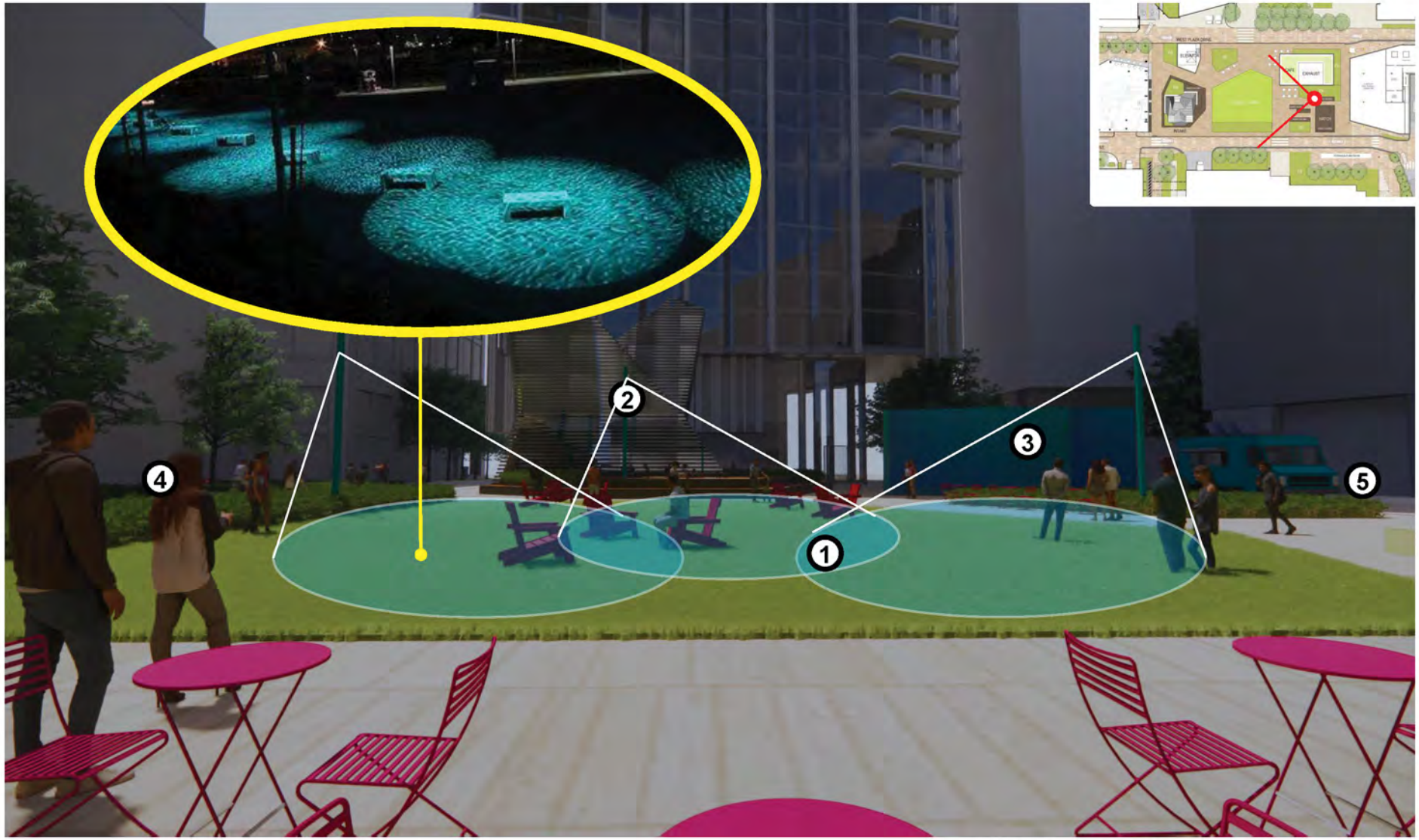
R.3.2.2 LANDSCAPE DESIGN

CENTER PLAZA VIEW LOOKING SOUTH SITE LIGHTING

R.3.2.2 FIG. 3



*All Images Display Conceptual Ideas, Not Final Designs

1. Flexible Programming Area and Lawn Area
2. Sculptural Element and Intake
3. Digital Screen
4. Plaza Drive East
5. Plaza Drive West

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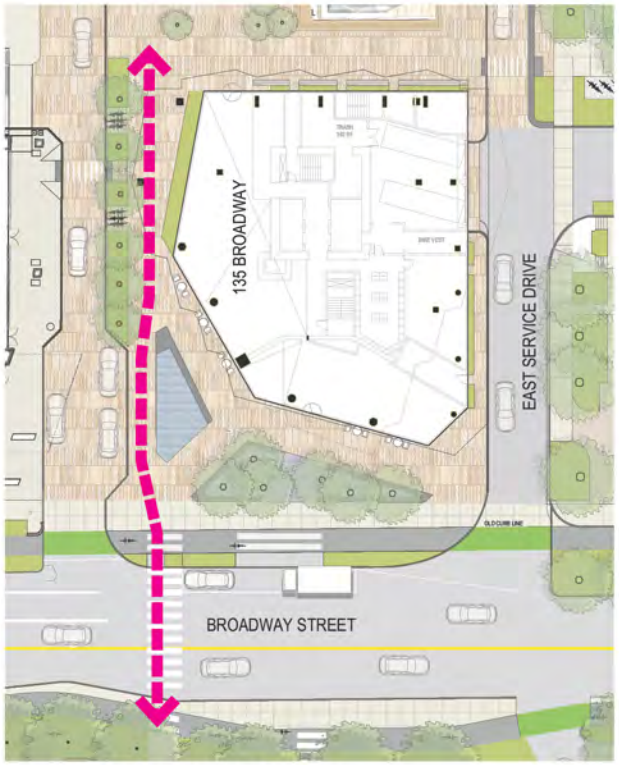
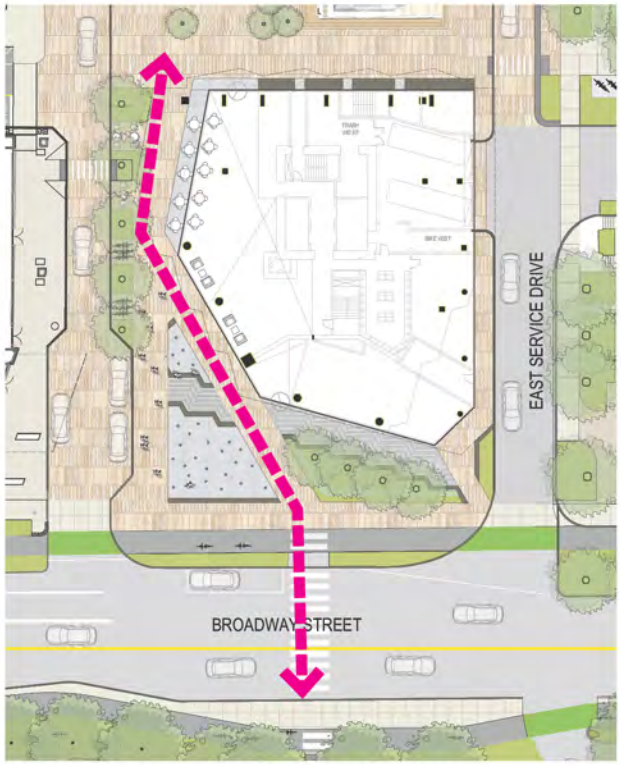
R.3.2.2 LANDSCAPE DESIGN

CROSSWALK LOCATION AND BROADWAY WATER FEATURE

R.3.2.2 FIG. 4

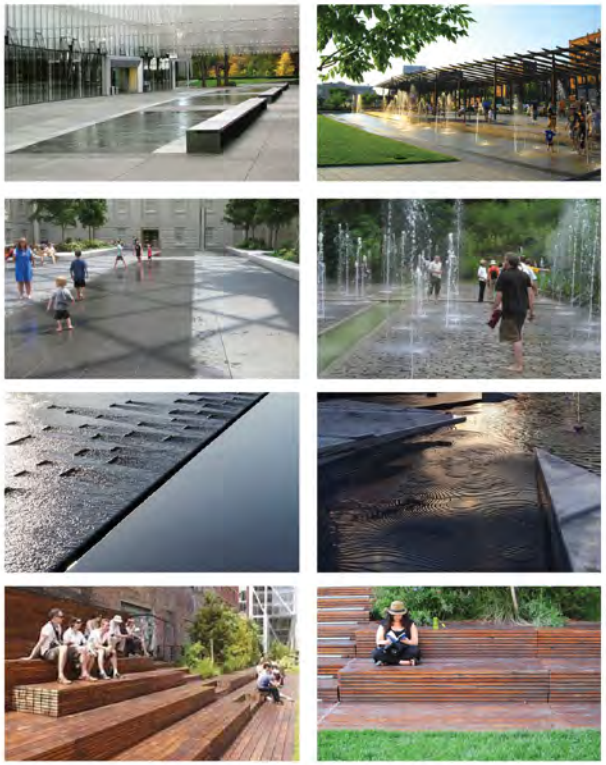


WEST ALIGNED CROSSING



CENTERED MID BLOCK CROSSING

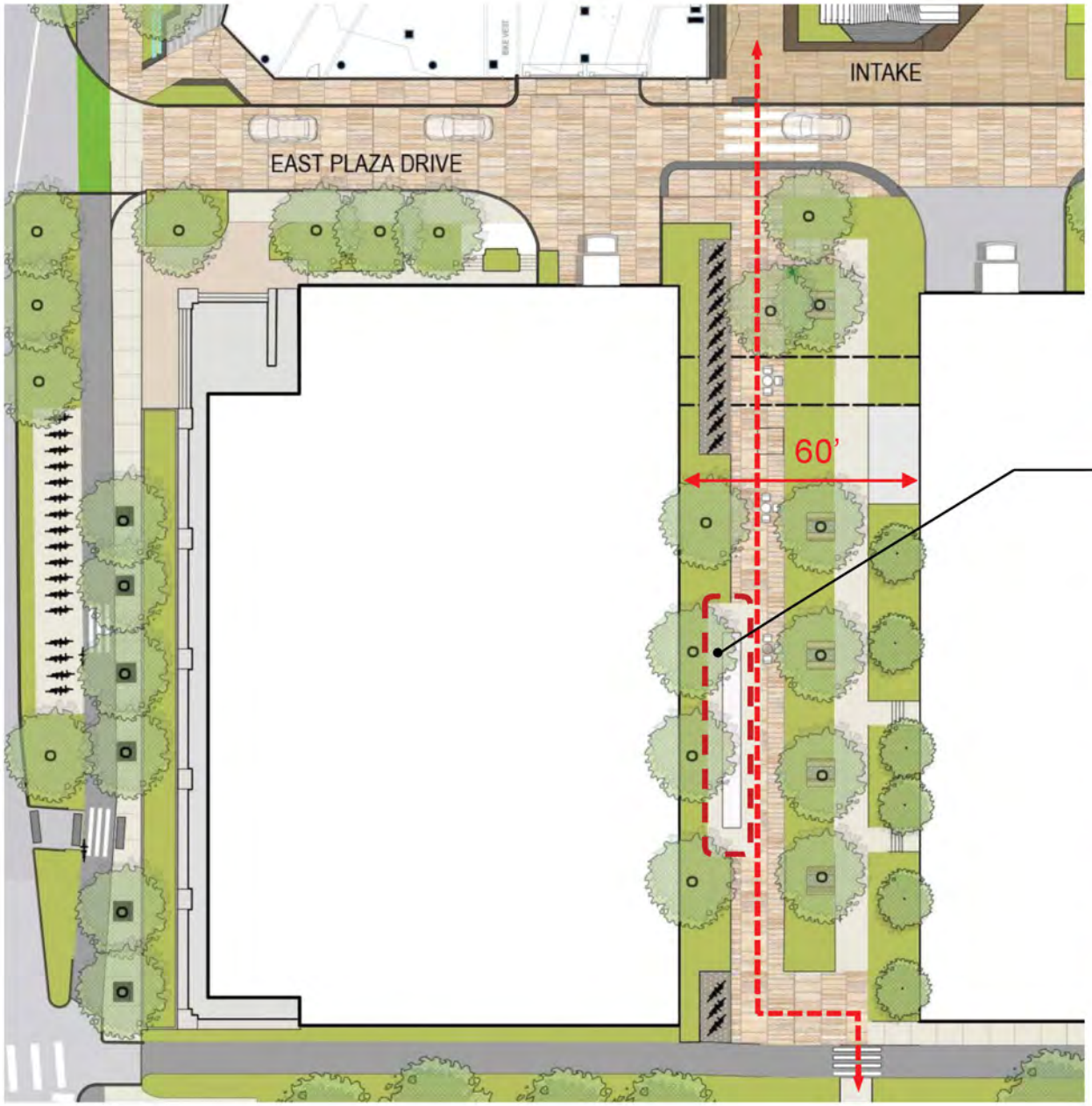
*Requires further study of bus stop location.

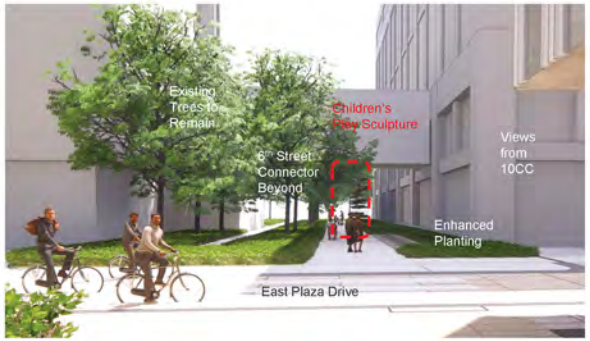


R.3.2.2 LANDSCAPE DESIGN

E/W CONNECTOR (S) CHILDREN'S PLAY

R.3.2.2 FIG. 5





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R.3.2.2 LANDSCAPE DESIGN

SIGNIFICANT TREES (6" DBH+)

R.3.2.2 FIG. 6

ALTA / Inflow & Infiltration Project related Trees
Significant Tree to Remain (Trees with a DBH of 6" or higher)
Removal of Significant Tree (Trees with a DBH of 6" or higher)
Parcel 2 Boundary
Tree to Remain (DBH of Lower than 6")
Removal of Tree(DBH of Lower than 6")

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R.3.2.3 SERVICE DRIVES

EAST & WEST PLAZA DRIVES

R.3.2.3 FIG. 1

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R.3.2.3 SERVICE DRIVES

EAST SERVICE DRIVE LOOKING NORTH

R.3.2.3 FIG. 2

EXISTING CONDITION

PROPOSED CONDITION

*All Images Display Conceptual Ideas, Not Final Designs

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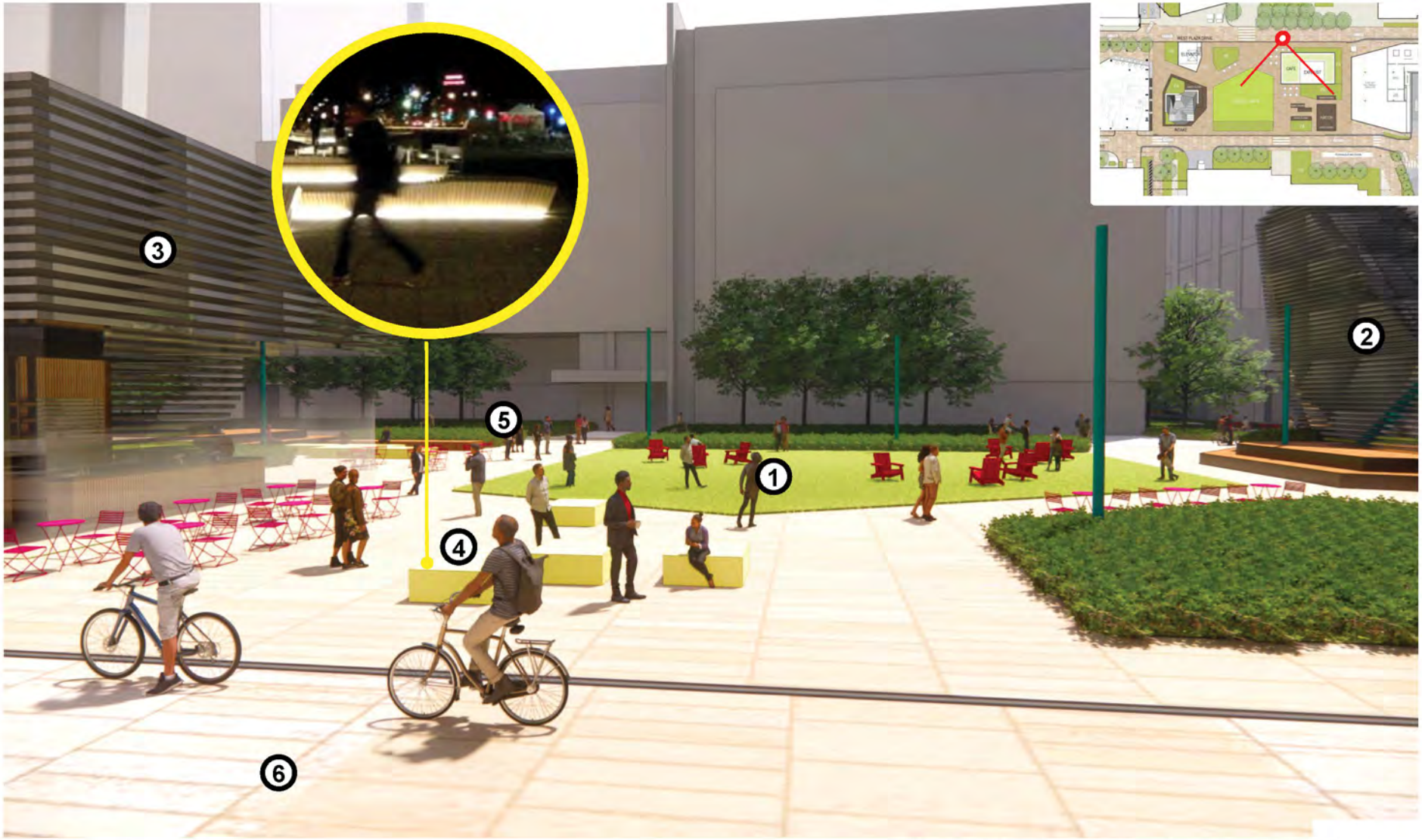
R.3.2.3 SERVICE DRIVES

WEST SERVICE DRIVE

R.3.2.3 FIG. 3



*All Images Display Conceptual Ideas, Not Final Designs

1. Flexible Programming Area and Lawn Area
2. Sculptural Element and Intake
3. Café (Exhaust)
4. Lighting Box Seating
5. Plaza Drive East
6. Plaza Drive West

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CHAPTER 5 TRANSPORTATION
R.5.1 BICYCLE PARKING

The Applicant received comments requesting additional information on the proposed bicycle valet service.

The Applicant is proposing to address bicycle parking needs via a deliberate blend of strategies permitted under the MXD Zoning Amendment adopted on February 23, 2021. The centerpiece of the Applicant's long-term bicycle parking strategy consists of a new bicycle valet facility, but also includes the provision of both long and short-term traditional self-park racks, as well as one new 23 dock BlueBikes bike share rack (the existing 19 dock Station at 250 Binney Street will be relocated). Refer to R.5.1 FIG.1 - FIG.2 for exhibits providing an overview of campus bicycle parking.

The Applicant's proposed bicycle valet will be staffed 24/7, 24 hours per day, even days per week. The Applicant has collaborated with Go By Bike and Bikes Not Bombs on service design, and is seeking to work with Bikes Not Bombs on operations in the future. The bicycle value facility is envisioned to possess the capacity to serve 10% of parked bicycles with electric charging. Valley bicycle parking will be free for commercial tenants and residents.

The quantity of bicycle parking valet spaces provided - and the exact location of those spaces - is anticipated to evolve in relation to the Project's phasing, and will be delivered as soon as the dedicated ground floor space within Commercial Buildings C and D allocated for this purpose becomes available. Currently, Commercial Building C is anticipated to be constructed first, and yield approximately 402 valet bicycle parking spaces on a temporary basis. Once Commercial Building D is completed bicycle valet operations will be transferred to Commercial Building D and expanded to accommodate 610 valet bicycle parking spaces. Commercial Building D is anticipated to be the permanent premises for the proposed campus-wide bicycle valet facility.

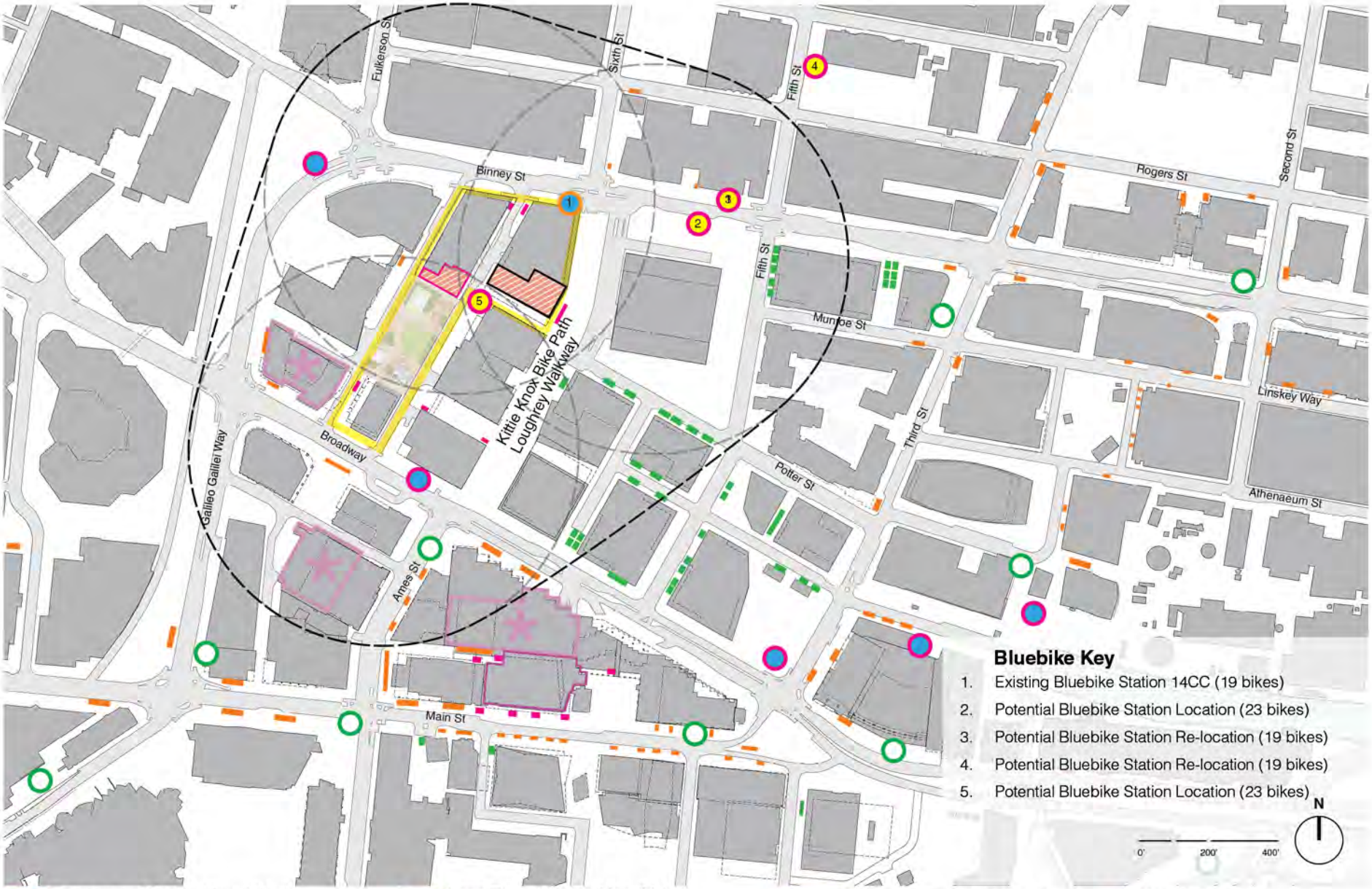
Overall, the quantities of long and short term bicycle parking present within the Applicant's campus bicycle parking plan can be summarized by TABLE 5-1 Leveraging new provisions within the Cambridge Zoning Ordinance (as amended by the recent MXD Zoning Amendment), the plan provides 630 physical long term parking spaces within the proposed valet - exceeding the quantity required by the zoning ordinance. These 630 spaces are made up of 20 traditional long-term spaces within Residential Building South and 610 spaces within the proposed valet facility located in Commercial Building D. For short-term parking, the Applicant aims to provide 36 self-park short-term spaces -12 spaces adjacent to each building entrance - along with a new publicly accessible Bluebike dock equivalent to 46 required spaces within 500 feet of the Project Site. Taken together, these sources imply delivery of 82 required short-term spaces.

Exhibit Reference: R.5.1 FIG. 1 - FIG. 2
Comment Reference: CRA Staff Letter, CDD Staff Letter, East Cambridge Planning Team Letter

R.5.1 BICYCLE PARKING

DISTRICT BLUEBIKE PARKING LOCATION PLAN

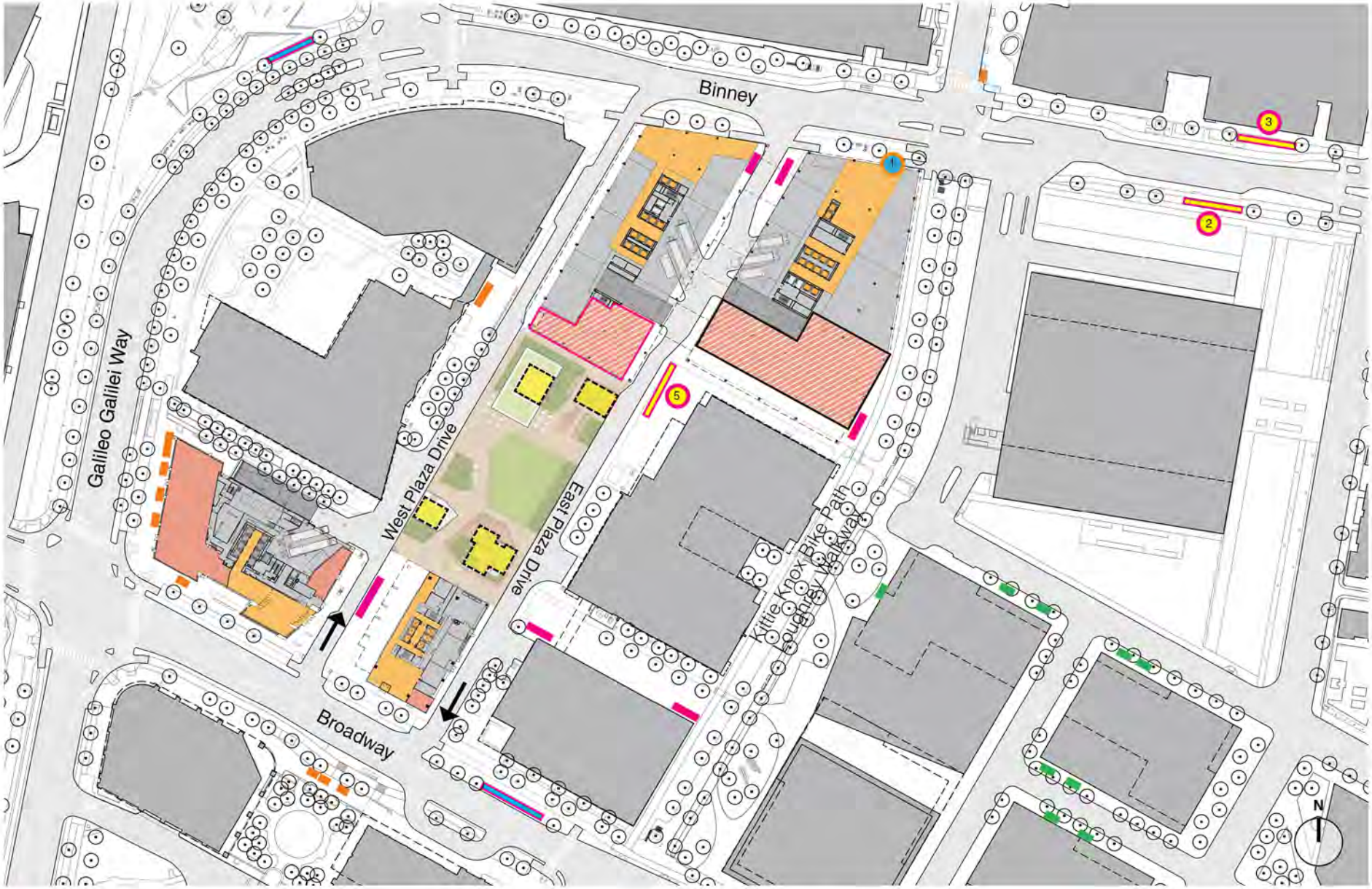
R.5.1 FIG. 1



R.5.1 BICYCLE PARKING

SITE BIKE PARKING LOCATION PLAN

R.5.1 FIG. 2



Bluebikes Existing Locations
Bluebikes Proposed Locations
Bluebikes for Relocation
Bluebikes Potential Locations
Existing Short Term Bike Parking
Potential Short Term Bike Parking
Proposed Short Term Bike Parking by others
Temporary Bike Parking (Valet)
Long Term Bike Parking (Valet)
Sub-Station Mechanical / Service

R.5.1 BICYCLE PARKING

PROPOSED BICYCLE PARKING

TABLE 5-1

PROPOSED BICYCLE PARKING SUMMARY			
PROJECT COMPONENT	**STATUS**	**LONG-TERM SPACES PROPOSED**	**SHORT-TERM SPACES PROPOSED**
COMMERCIAL BUILDING A	COMPLETE	134[1]	34[1]
COMMERCIAL BUILDING B	UNDER CONSTRUCTION	108[1]	47[1]
RESIDENTIAL BUILDING SOUTH	PLANNED	20[2]	12[2]
COMMERCIAL BUILDING C	PLANNED	420-610[2]	12[2]
COMMERCIAL BUILDING D	PLANNED		58[2]
TOTAL		**682-872[2]**	**163[2]**

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

2. The Applicant intends to satisfy bicycle parking demand from the Residential Building South, Commercial Building C and Commercial Building D via a commercial bicycle valet. In accordance with Article 6.108.1 the Applicant therefore intends to seek a modification of bicycle parking requirements via special permit. To complement the services of the envisioned bicycle valet, the Applicant also seeks to deliver approximately 20 traditional long-term bicycle parking spaces within the Residential Building South and 12 short-term bicycle parking spaces for Residential Building South and Commercial Building C. The Applicant proposes 58 short-term bicycle parking spaces for Commercial Building D, inclusive of the new proposed Bluebikes station.

Comment Reference: CRA Staff Letter, CDD Staff Letter, TP&T Staff Letter

CHAPTER 6 INFRASTRUCTURE
R.6.1 RESILIENCY

The Applicant received comments requesting additional information on proposed resilience measures for the substation, and how those measures may influence the design of the Center Plaza.

Beginning with the substation and Center Plaza, the Applicant in this instance is proposing to rely upon several distinct lines of defense congruent with existing infrastructure and key features of the public realm. The Applicant proposes that all vertical penetrations in the Center Plaza/substation roof should be raised to an elevation of 25.45 feet so as to prevent water infiltration into the substation in the event of a 2070 100-year flood. Vertical elements impacted by this strategy include the exhaust and intake structures that provide ventilation for the substation facility, among others. The substation itself will also utilize a pitched "shed" roof structure to direct water around the substation vault slurry wall, reducing the likelihood of water infiltration from precipitation. Wrapped on top of this roof structure will be a layer of high-performance waterproofing to further buttress the substation vault's ability to resist water infiltration. These measures, coupled with the substation vault's structure and slurry wall design—are anticipated to ensure the long-term viability of the electrical substation.

At the Commercial and Residential buildings, the lobbies and public entry spaces will be raised to the extent possible, while still providing accessible entrance to the buildings and maintaining accessible circulation throughout the overall site. Interior spaces and entrances that are not able to be raised above the 2070 100-year flood elevation will be protected by means of deployable flood barrier systems. Spaces containing critical infrastructure within of the Commercial Buildings C and D, and Residential South will be raised to an elevation above the 2070 100-year flood elevation to minimize impact to the operation. All entrances to the below-grade garage beneath Commercial Buildings C and D will be protected through a combination of raising the grade at the garage entrance points, and deployable flood barrier systems.

Exhibit Reference: R.6.1 FIG. 1 - FIG. 2
Comment Reference: CRA Staff Letter, DPW Staff Letter, East Cambridge Planning Team Letter

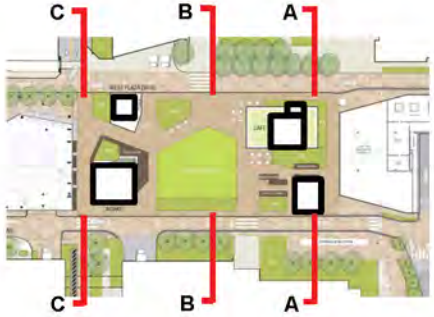
R.6.1 RESILIENCY

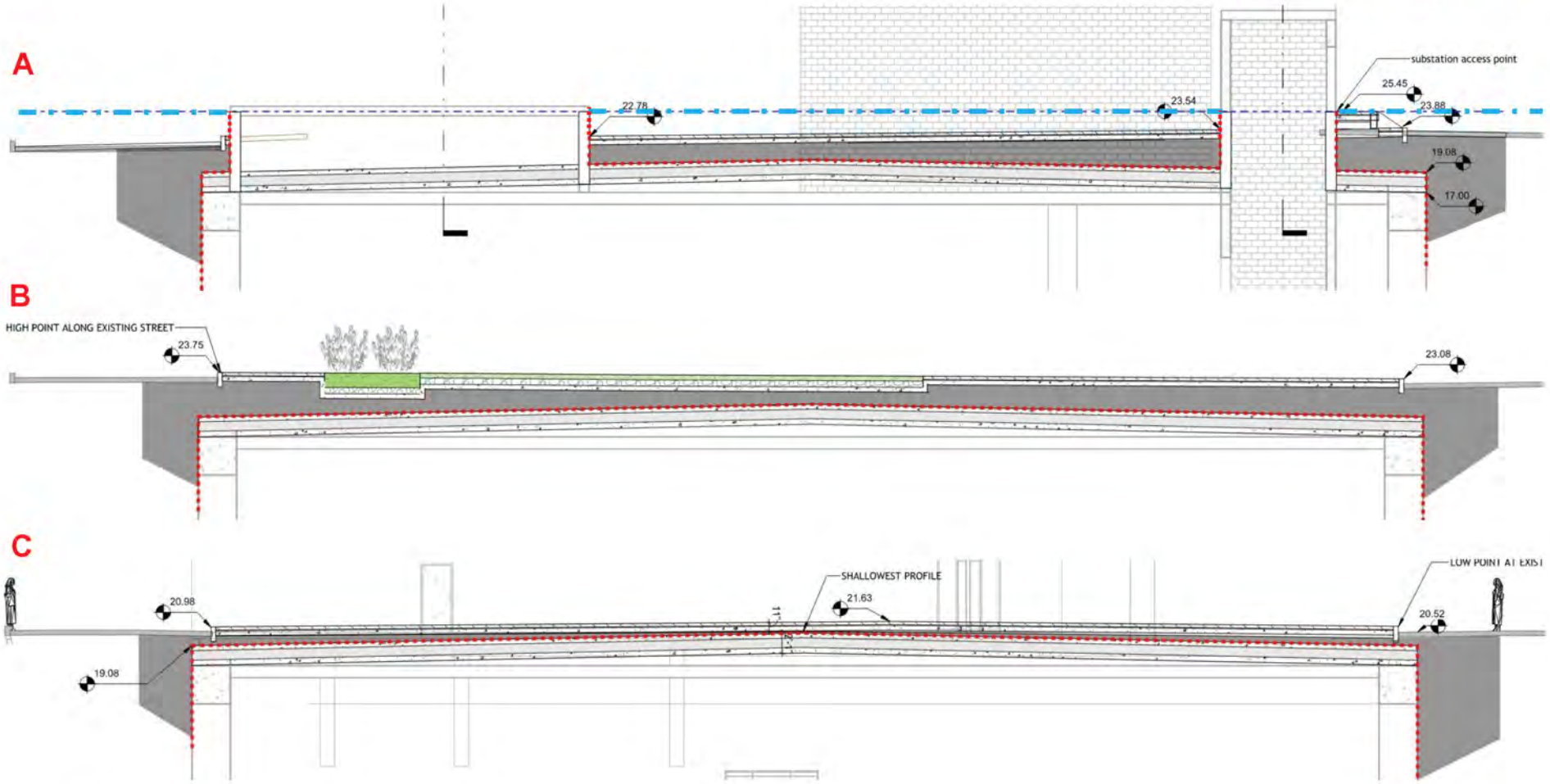
SITE INFRASTRUCTURE FLOOD PROTECTION

R.6.1 FIG. 1

WATERPROOFING

FLOOD ELEVATION 25.45





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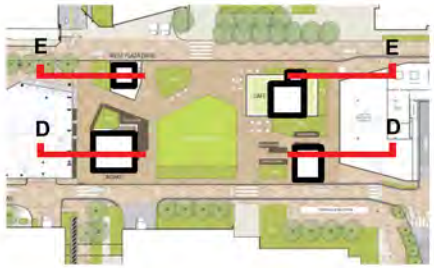
R.6.1 RESILIENCY

SITE INFRASTRUCTURE FLOOD PROTECTION

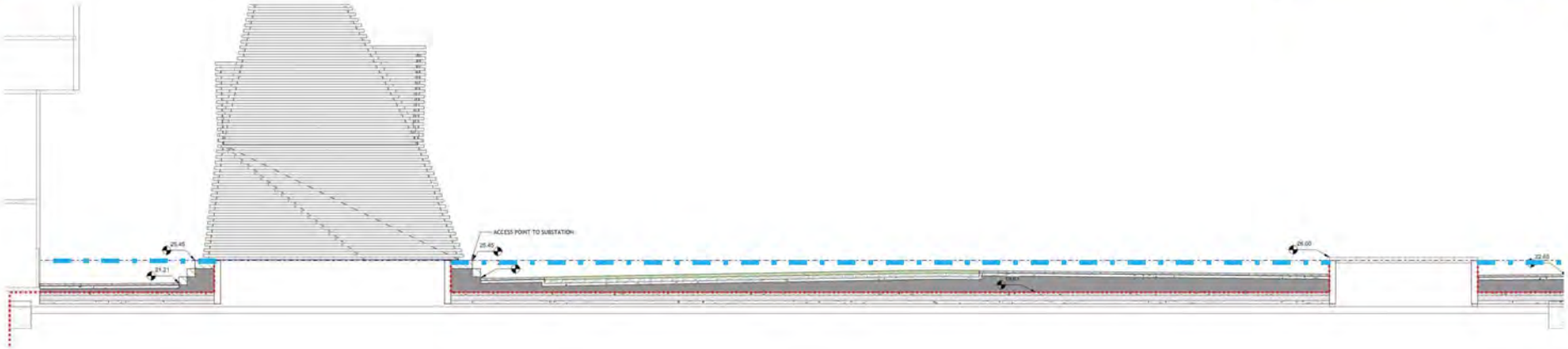
R.6.1 FIG. 2

WATERPROOFING

FLOOD ELEVATION 25.45



D



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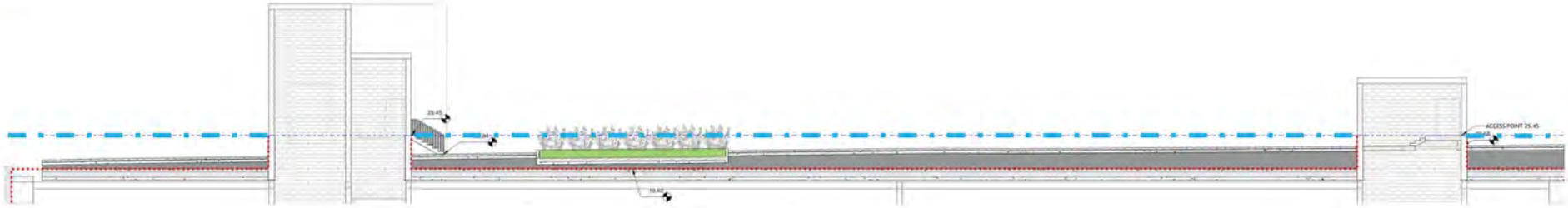

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CHAPTER 7 ENVIRONMENTAL IMPACTS
R.7.1 NOISE

The Applicant received comments requesting additional information on the proposed noise impacts from the substation vault's ventilation structures. Ensuring that the acoustic characteristics of the electrical substation's ventilation system are conducive to public enjoyment of the proposed Center Plaza open space, to a productive work environment for tenants, and to restful relaxation for residents is of critical importance to the Applicant. For that reason, the Applicant is committing that the electrical substation's exhaust and intake stacks will emit sound levels (measured in dBA) no higher than the existing noise levels.

The cooling of the substation is provided by an all air system of 1,400,000 CFM. The air exhausted from the substation would be approximately 15-20 degrees above the ambient air temperature on a design day. The system is being designed to maintain levels at or below 50 DBA at the residential tower and 55 DBA at the park through the selection of low sound fans and additional attenuation within the substation.

Comment Reference: CDD Staff Letter

R.7.2 GREEN ROOF

The Applicant received comments requesting additional information on the requested extent of the reduction in the Green Roof Requirement. On review of preliminary plans and specifications for Residential Building South, Commercial Building C and Commercial Building D, the Applicant is no longer seeking relief from the Green Roof Ordinance.

Comment Reference: CDD Staff Letter


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