BICYCLE PARKING PLAN

1. INTRODUCTION

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

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

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

Congruent with Concept Plan Amendment #2 and the principal goals of the City's Bicycle Plan of 2015, the Applicant is now seeking an attendant modification of bicycle parking requirements via special permit in accordance with Article 6.108.1 to pursue an innovative method of delivering bicycle parking to future tenants, residents, and visitors of the MXD North Parcel—a commercial bicycle valet.

[1] Formerly known as the Kendall Square Urban Renewal Plan

2. VALET OPERATIONS NARRATIVE

2.1 Concept Summary

The Applicant proposes to serve the majority of bicycle parking demand from Residential Building South, Commercial Building C, and Commercial Building D via a commercial bicycle valet. Anticipated to be the largest facility of its kind in North America upon the completion of its permanent premises, the proposed bicycle valet represents a path-breaking approach to cycling infrastructure in the domestic context.[2] Day-to-day use of the valet is intended to be convenient and accessible:

[1] Users will ride up to the valet facilities and entrust their bicycle to a valet attendant

[2] Users will subsequently either scan a card or take a paper ticket before departing

[3] On return, the user may scan their badge or provide their ticket to receive their bike

For every phase of construction proposed within Concept Plan Amendment #2, the Applicant intends to devote ground floor space within Commercial Buildings C and D to bicycle valet storage facilities. These locations have been strategically selected, situated at the center of the North Parcel within easy reach of the future ALTA cycle track and the existing Loughrey Walkway and Bike Path. These conduits in turn promise strong connections to arteries such as Broadway, which connect the area to destinations further afield such as Harvard Square and the City of Boston. In addition to capitalizing on adjacency to the Sixth Street Connector, this positioning within the proposed commercial buildings ensures that valeted bicycles will always be stored within a weather-protected and highly secure location. The latter point of security is particularly impactful, as research suggests that nearly half of all cyclists have their bikes stolen and 7% of riders never replace their stolen bicycles.[3]

2.2 Premises, Phasing, and Capacity

To ensure that bicycle parking availability is maximized during the phased construction schedule anticipated for the Project, the Applicant anticipates initially opening the bicycle valet facilities within the ground floor of Commercial Building C. While quantity estimates remain subject to change, it is projected that the temporary bicycle valet at Commercial Building C will be capable of parking up to approximately 400 bicycles from Residential Building South and Commercial Building C prior to the completion of Commercial Building D. Upon completion of Commercial Building D, these facilities would be relocated to expanded premises within the ground floor of Commercial Building D. While quantity estimates remain subject to change, it is projected that these permanent facilities will be able to accommodate up to approximately 600 bicycles. These premises are demarcated in the masterplan-level

[2] Nonetheless, it should be noted that bicycle valet facilities are commonplace in Europe. The largest valet facility in Europe—located in the City of Utrecht—sports a combined self-park and valet service capable of servicing 12,500 bicycles.

[3] Van Lierop, D., Grimsrud, M., & El-Geneidy, A. (2015). Breaking into bicycle theft: Insights from Montreal, Canada. *International Journal of Sustainable Transportation*, 9(7), 490-501.

ground floor plan provided in Figure 5.6 (attached), and shall be phased according to the following schedule:

- **Phase 3:** Up to 400 bicycles [Commercial Building C]
- **Phase 4:** Up to 600 bicycles [Commercial Building D], [Commercial Building C active use]

Subject to capacity utilization trends, it is expected that these valet facilities will be open to visitors as well as residents and commercial tenants.

2.3 Operations Concept

While an uncommon solution within the United States, incorporating a bicycle valet within Concept Plan Amendment #2 allowed the Applicant to turn site constraints into a valuable opportunity. Specifically, the proposed valet enables dedicated staff to leverage higher-density bicycle storage options while delivering a superior level of service to cyclists. To develop operating concepts within the context of the masterplan-level of design illustrated in Concept Plan Amendment #2, Boston Properties has engaged with Go By Bike (current operator of the largest domestic bicycle valet) and Bikes Not Bombs, a local bike shop operator and non-profit dedicated to utilizing bicycles as a means to achieve economic mobility and racial equity for Black and other marginalized people in Boston and the Global South.

The Applicant is proposing valet operating hours of 0600 to 2200, seven days per week. As with nearly any transportation mode, consistent reliability is critical to catalyzing enduring mode shifts and the Applicant sees bicycle facilities as no exception. Further, these hours of operation appear to be well-grounded in bicycle traffic data specific to Kendall Square. Roadway cordon counts of bicycles throughout the MXD conducted as part of the Cambridge Redevelopment Authority's Kendall Square Mobility Data Report indicate that only approximately 5% of total bicycle traffic measured took place outside of these proposed operating hours.[4]

A number of bicycle storage systems have been evaluated and could ultimately be implemented for this proposed valet facility. To date, a proprietary system developed and utilized by Go By Bike at its Portland, Oregon location has anchored the Applicant's modal assumptions for estimated parking capacity within the premises of Commercial Building C and Commercial Building D. However, employment of double-stack racks such as the Dero Duplex or Dero Decker system is also being actively considered for use. It is expected that both sort and long-term parkers could be served by the valet, subject to capacity utilization trends (specifications attached).

To supplement bicycle valet services offered at the final premises within Commercial Building D, the Applicant is also contemplating designing this space so as to flexibly accommodate a bicycle shop retail use should circumstances and capacity utilization allow for it. The complementary repair services delivered at this bicycle shop would permit bikes to be fixed while employees or residents are storing them, and could also add a dynamic new use to the existing Kendall Square retail mix. The "Active Flexible Use Space" designation visible in Figure 5.6 is therefore intended both to support the phasing plan articulated in Section 2.2 and to allow for the addition of this proposed bicycle shop in the future.

[4] Cambridge Redevelopment Authority, "KSURP/Kendall Square Mobility Data Report," *Section 5: Bicycling*, https://storymaps.arcgis.com/collections/f3c2bbac30fe4e1a84a463369164ada4, accessed 2021 06 22.

Finally, to complement the proposed bicycle valet facilities serving Residential Building South, Commercial Building C, and Commercial Building D, the Applicant is also proposing the addition of "conforming" long and short-term bicycle parking spaces that meet City dimensional requirements. The Applicant envisions approximately 20 long-term bicycle parking spaces to be delivered within the proposed Residential Building South to serve residents specifically. Moreover, the Applicant is also proposing the provision of a total of 36 short-term bicycle parking racks to support Residential Building South, Commercial Building C, and Commercial Building D (12 parking spaces to be located outside each building).

2.4 Bicycle Valet Benefits

Within the context of Concept Plan Amendment #2, the proposed bicycle valet is expected to provide the following key benefits:

[I] Efficient use of limited space: accommodating heavy infrastructure, commercial, and residential programs within development proposed in Concept Plan Amendment #2 engenders non-trivial site constraints that in aggregate limit available space for bicycle parking facilities. Linear application of City long-term bicycle parking dimensional requirements would be expected to lead to capacity of approximately 250 and 400 bicycle parking spaces in Commercial C and D, respectively. By contrast, the proposed valet densities are anticipated to deliver up to approximately 400 and 600 parking spaces in these same locations.

[II] Superior service and security for cyclists: by simplifying the process of parking and retrieving bicycles, valet attendants are expected to provide superior service relative to self-parking while leveraging more secure storage facilities, thereby improving the experience of cycling for tenants, residents, and visitors to the proposed buildings.

[III] Centralized facilities and pooled capacity: by adopting a campus plan and centralizing bicycle parking spaces for multiple buildings within a single facility, the Applicant decreases the probability of exceeding parking capacity constraints relative to employing multiple decentralized facilities designed to individually serve Residential Building South, Commercial Building C and Commercial Building D (given any baseline level of demand). This campus approach will be supported via signage and wayfinding to direct users to the envisioned valet facilities.

2.5 Requested Modifications

Per Article 6.108.1, the Applicant proposes the following modifications to the bicycle parking requirements to enable the foregoing bicycle parking plan:

<u>6.105: Design and Layout of Bicycle Parking</u>

The Applicant proposes modifying the requirement to adhere to the standards set forth in section 6.105 to allow for the utilization of flexible, high-density bicycle storage racks by bicycle valet attendants

within bicycle valet facilities. This will allow the applicant to increase total bicycle parking spaces provided from approximately 250 and 400 spaces in Phase 3 and Phase 4 respectively, to 400 and 600 parking spaces in these same timeframes. All other racks provided as part of the proposed bicycle parking plan will adhere to City standards.

6.106: Access Standards for Bicycle Parking

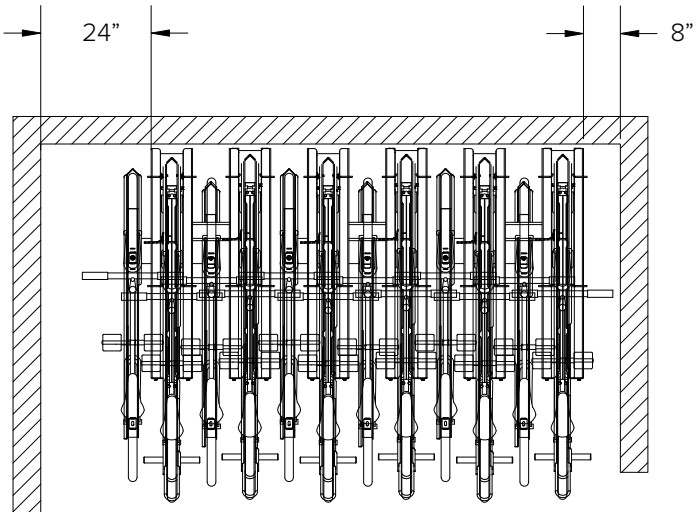
The Applicant proposes modifying the requirement to adhere to the standards set forth in section 6.106 for primary and secondary access to the bicycle parking spaces delivered within the proposed bicycle valet to support delivery of additional bicycle parking spaces relative to self-park facilities (see above).

6.107: Required Quantities of Bicycle Parking

The Applicant proposes modifying the requirement to adhere to the required quantities of bicycle parking set out in section 6.107 to support utilization of the proposed valet operations enumerated in the bicycle parking plan above. Space available for bicycle parking is limited within this project on account of acute site constraints occasioned by investments in heavy infrastructure required to house a below-grade electrical substation in the North Parcel. Consequently, delivery of self-park bicycle parking spaces without modification of existing City requirements would yield much smaller quantities of spaces, estimated at 250 and 400 between Commercial Building C and Commercial Building D, respectively. Adoption of the proposed bicycle valet would boost these figures by approximately 60% and 50% respectively. Further, the Applicant anticipates that the delivery of bicycle parking within a centralized facility will reduce the probability of exceeding total parking capacity relative to decentralized facilities serving individual buildings.

Note that the Applicant anticipates that all self-park facilities contemplated as part of this plan will conform fully with City standards, and that only racks utilized within valet facilities require modification of existing requirements. These include 20 long-term bicycle parking spaces incorporated into the proposed Residential Building South and 36 short-term bicycle parking spaces distributed equally between all three buildings.


Binney
Galileo Galilei Way
Broadway
N
Active Flexible use space for:
Bike Valet / Bike Parking and Future Potential Retail
Existing Short Term Bike Parking
Proposed Short Term Bike Parking
Proposed Short Term Bike Parking by others
Bluebikes Existing Locations
Bluebikes Proposed Relocation
Bluebikes Proposed Potential Locations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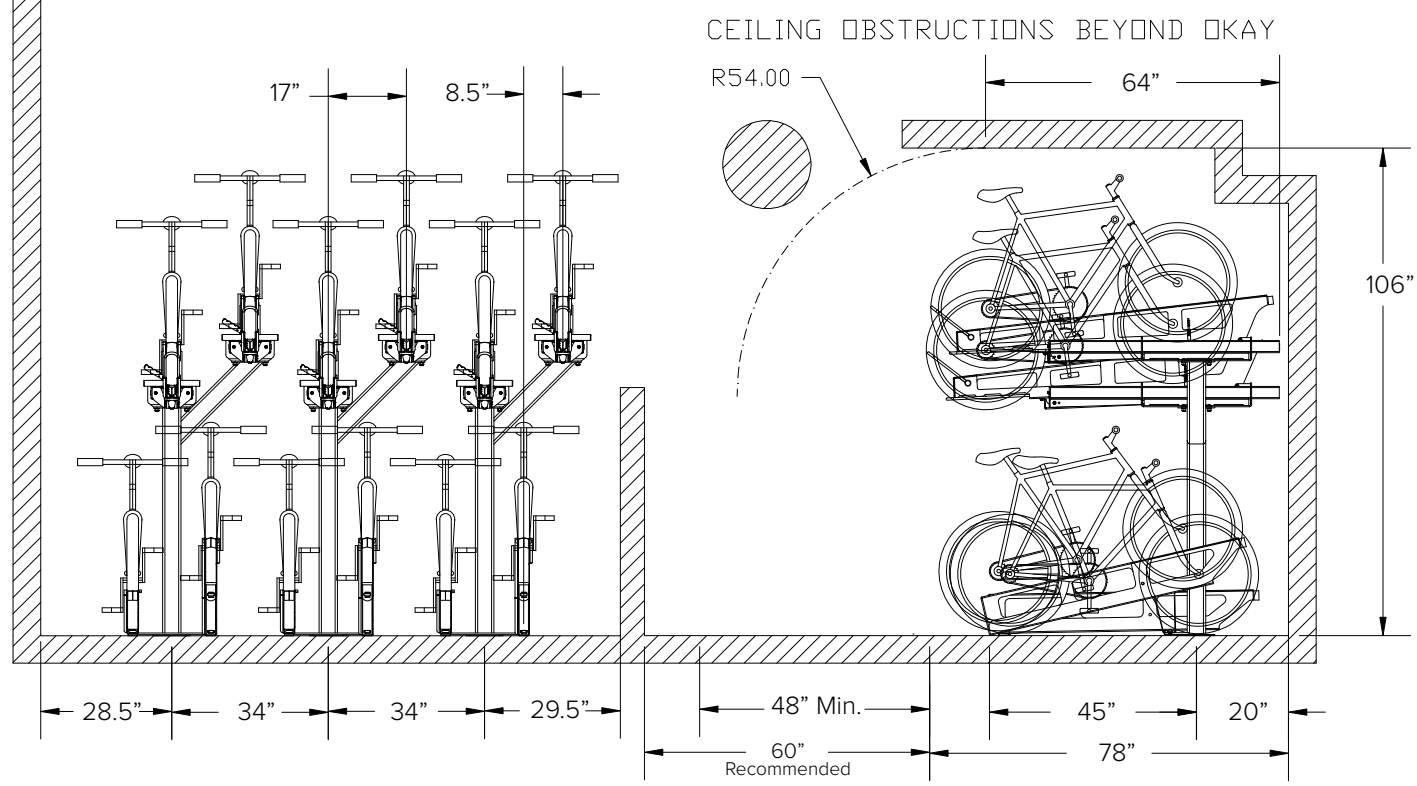
CEILING OBSTRUCTIONS BEYOND OKAY
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64”
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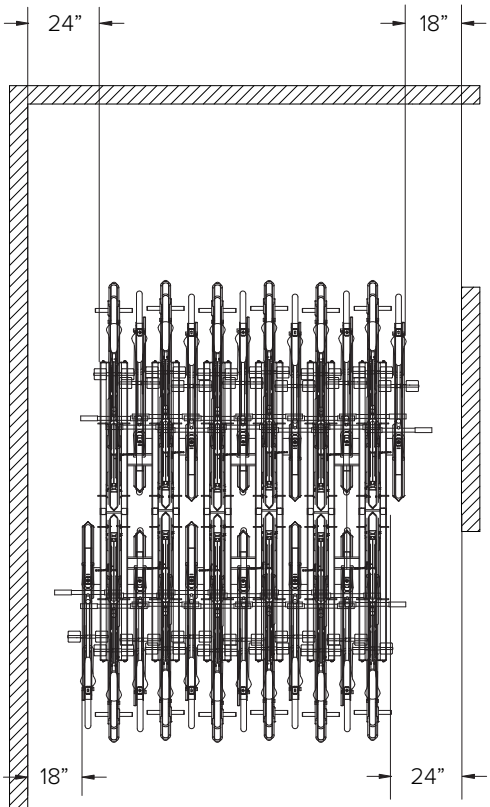
29.5”
48” Min.
45”
20”
60”
Recommended
78”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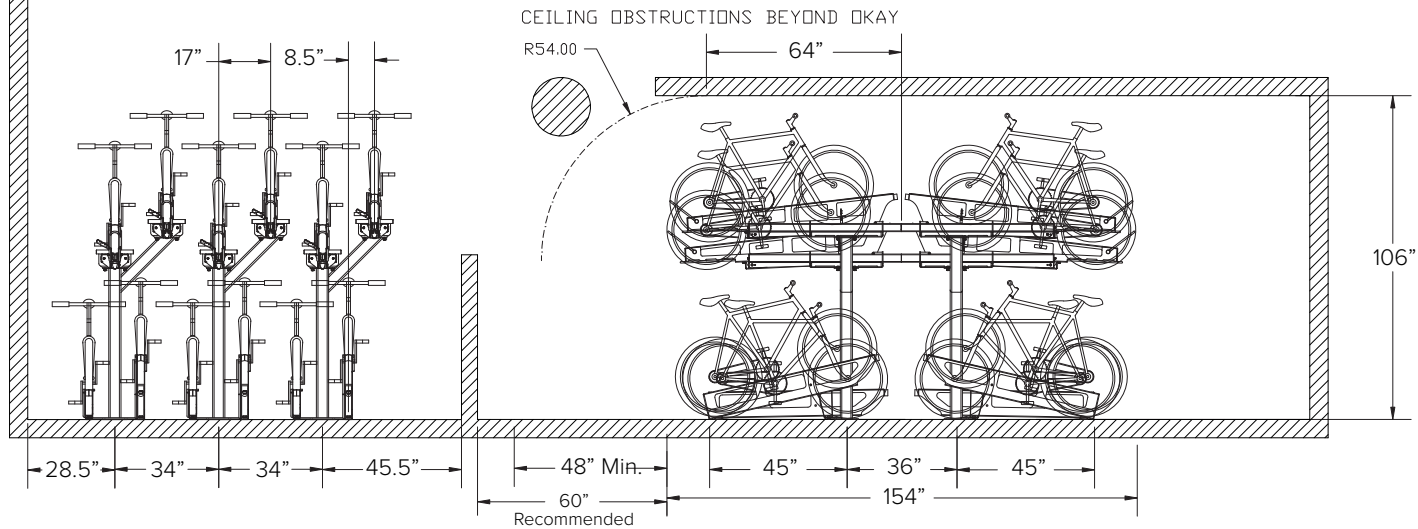
CEILING OBSTRUCTIONS BEYOND OKAY
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17”
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64”
106”
28.5”
34”
34”
45.5”
48” Min.
45”
36”
45”
60”
Recommended
154”

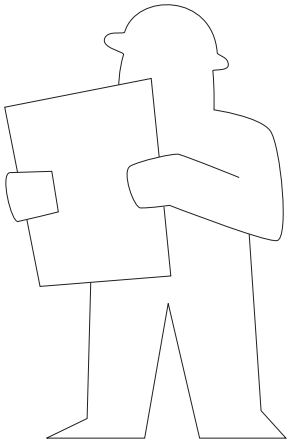
TOOLS NEEDED

Hammer drill
Masonry bit, 3/8”, 1/2”
Hammer
Socket wrench
Sockets, 9/16”, 3/4”
Socket extension, 4-6”
Hex wrench, 3/16”
Tape measure
Chalk line
Marker
Level

RECOMMENDED BASE MATERIAL

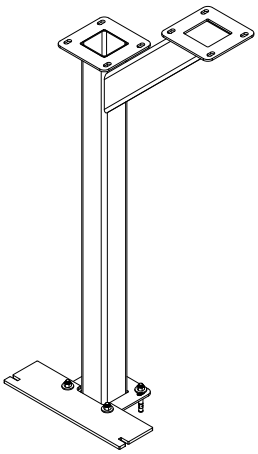
Solid concrete is the best base material for installation. To ensure the proper anchors are shipped with your racks, ask your Dero representative which anchor is appropriate for your application. Be sure nothing is underneath the base material that could be damaged by drilling.

1



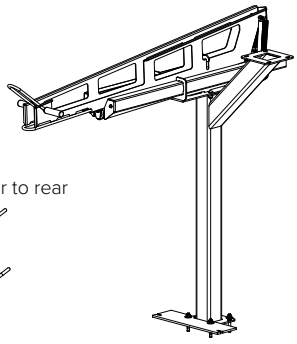
Refer to setback diagrams before installation to ensure sufficient space. Installation surface must be concrete of suitable strength. If surface is not level, contact Dero representative for workable solution.

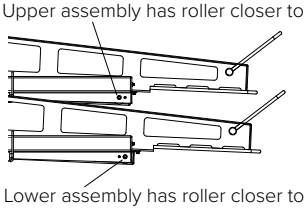
2



Place the Uprights in position and secure with (4) ½” x 3.75” wedge anchors. At least 1.25” of wedge anchor threads should remain above the concrete. The Lower Tray Mount should be placed on the front side of the Upright and secured with the existing wedge anchors.

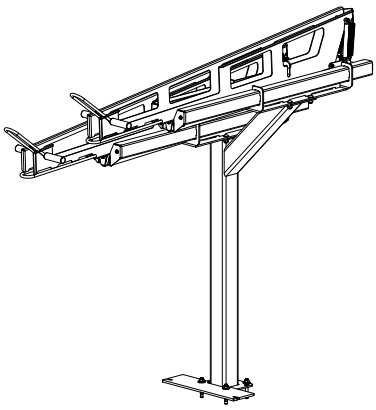
3





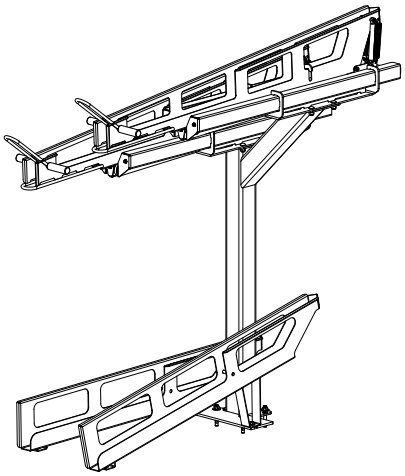
Place the lower Cantilever Assembly on the lower Upright position and secure with (4) ½” x 1.25” carriage bolts, ½” washers, and ½” nylock nuts.

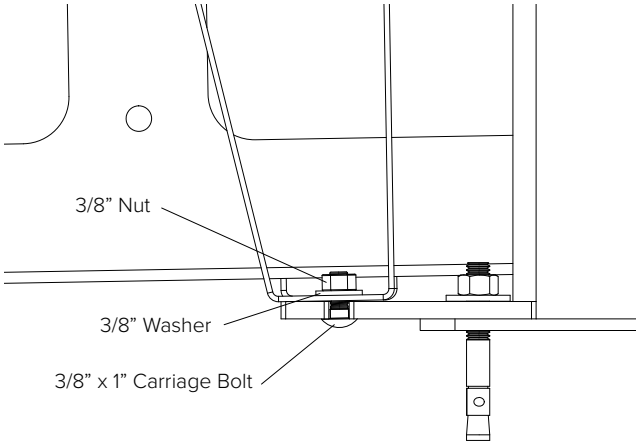
4



Do the same for the upper Cantilever Assembly.

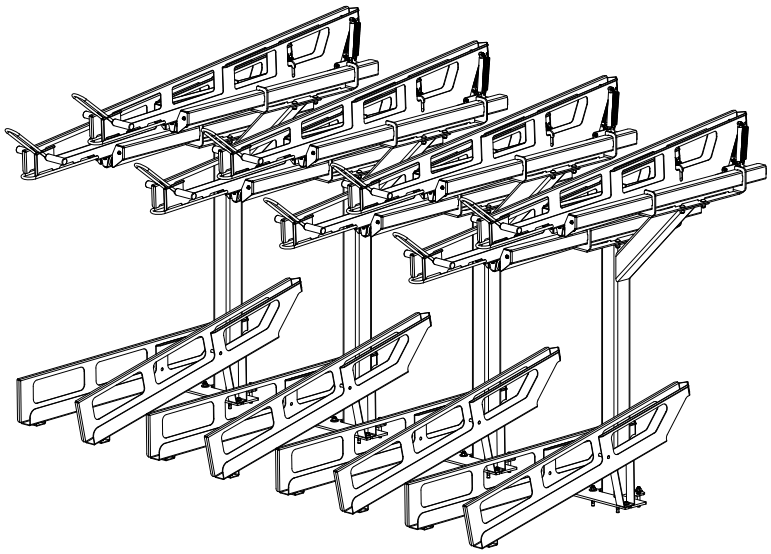
5

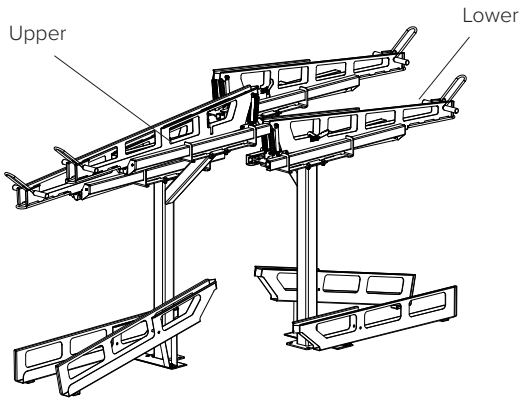




Place the bottom Lower and Upper Trays in position and secure at the rear with (1) 3/8” x 1” carriage bolt, 3/8” washer, and 3/8” nut each. Secure at the front with (1) 3/8” x 3” wedge anchor each.

6





For double sided installations be sure to stagger the position of the units so that upper trays in one row face sit opposite lower trays in the other row.

Continue to the next section and repeat the previous steps.