

Memorandum

Date: June 1, 2021
To: Bridget Metz, SteelWave
From: Jordan Brooks and Sam Tabibnia, Fehr & Peers
Subject: **TheLabs Life Sciences Development – Preliminary Transportation Assessment**

OK21-0401

This memorandum presents the preliminary transportation assessment conducted by Fehr & Peers for the proposed TheLabs development in West Berkeley, based on the project site plans included as Attachment A. The proposed project includes the renovation and repurposing of existing buildings between Bancroft Way, Fifth Street, Allston Way, and the railroad, the development of a new parking garage, and the development of new life sciences space at 787 Bancroft Way. Sections in this memorandum include:

1. Project Description (page 1)
2. VMT Assessment (page 3)
3. Trip Generation (page 3)
4. Trip Distribution, Assignment, and Study Intersection Selection (page 8)
5. Site Access and Circulation Analysis (page 13)
6. Next Steps (page 24)

1. Project Description

The proposed project is located in West Berkeley and includes the renovation of about 104,900 square feet of existing commercial uses, development of a 415-space parking garage, and development of about 162,400 square feet of new life sciences office/R&D and light manufacturing uses. **Table 1** summarizes the uses and sizes of the existing and proposed buildings by the three phases described below. The site plans for the project are provided as **Attachment A**.



Table 1: Project Land Use Summary

Address	Existing		Proposed	
	Land Use ¹	Size ²	Land Use	Size ²
Phase 1				
2246 Fifth Street – Tenant B	Light Manufacturing (vacant)	12.5 KSF	Light Manufacturing	12.5 KSF
2246 Fifth Street – Tenant A	Light Manufacturing (vacant)	17.2 KSF	Light Manufacturing	17.4 KSF
2229 Fourth Street	Light Manufacturing (vacant)	14.2 KSF	Light Manufacturing	19.9 KSF
2222 Fifth Street	Light Manufacturing (vacant)	11.7 KSF	Light Manufacturing	17.9 KSF
2233 Fourth Street	Warehouse (vacant)	7.1 KSF	Light Manufacturing	7.1 KSF
Phase 2				
2221 Fourth Street	Light Manufacturing (vacant)	4.1 KSF	Parking Garage	-
2216 Fifth Street	Light Manufacturing	4.0 KSF	Parking Garage	-
2213 Fourth Street	Storage (vacant)	0.7 KSF	Parking Garage	-
2212 Fifth Street	Residential (vacant)	2 DU	Parking Garage	-
Phase 3				
701 Bancroft Way	Light Manufacturing	2.4 KSF	Parking Lot	-
705 Bancroft Way	Warehouse	4.1 KSF	Parking Lot	-
703 Bancroft Way	Warehouse	13.3 KSF	Parking Lot	-
705A Bancroft Way	Warehouse	1.5 KSF	Parking Lot	-
747 Bancroft Way	Warehouse	43.7 KSF	Parking Lot	-
2220 Fourth Street	Warehouse	15.1 KSF	Parking Lot	-
787 Bancroft Way	-	-	Office/R&D Light Manufacturing	133.0 KSF 29.3 KSF
716 Allston Way	Warehouse	26.1 KSF	Office/R&D	30.1 KSF

Notes:

1. Vacancies indicated as of the submission of permit applications to the City of Berkeley in August 2020.

2. KSF = 1,000 square feet, DU = dwelling units

Source: SteelWave, 2021.



The project would consist of three phases:

- **Phase 1** – The project would renovate existing buildings that were vacant as of August 2020 and previously used for warehousing or light manufacturing. These buildings form a contiguous area fronting Fifth Street to the east, Bancroft Way to the south, and Fourth Street to the west. The renovations would result in about 12,100 square feet of additional building area. An existing surface parking lot with a driveway on Fifth Street would be retained, with the number of parking spaces reduced from 30 to 13 spaces.
- **Phase 2** – The project would develop a 415-space parking garage directly to the north of the buildings renovated as part of Phase 1, replacing several small existing buildings. The garage would serve the Phases 1 and 3 project uses and would be accessed through two-way driveways on Fourth and Fifth Streets. The garage would also provide a loading dock in the southwest corner of the project with access on Fourth Street.
- **Phase 3** – The project would demolish existing light manufacturing and warehouse space to develop about 133,000 square feet of office/R&D space and about 29,300 square feet of light manufacturing space at 787 Bancroft Way, bounded by Fourth Street to the east, Bancroft Way to the south, railroad tracks to the west, and existing buildings to the north. The site would also provide a 106-space surface parking lot, accessed through a two-way driveway on Bancroft Way. This phase would also renovate existing warehouse space at 716 Allston way into office/R&D space, which would result in about 4,000 square feet of additional building area.

At buildout, the renovated and new buildings combined would provide about 163,100 square feet of office/R&D space and about 104,200 square feet of light manufacturing space.

2. VMT Assessment

In November 2020, the City of Berkeley adopted guidelines, thresholds of significance, and screening criteria for evaluating vehicle miles traveled (VMT) in CEQA documents, as required by the State for all CEQA documents published after July 1, 2020. This section assesses impacts of the 787 Bancroft Way development on VMT, in accordance with the adopted City guidelines.

California Senate Bill 743

California Senate Bill (SB) 743, passed in 2013, required the California Governor’s Office of Planning and Research (OPR) to develop new CEQA guidelines for transportation impacts that eliminate driver-based estimates of delay, vehicular capacity, or traffic congestion and instead focuses on the environmental effects of vehicle travel. According to SB 743, these changes are intended to “more appropriately balance the needs of congestion management with statewide goals related to infill



development, promotion of public health through active transportation, and reduction of greenhouse gas emissions.”

OPR published updated guidelines to implement the requirements of SB 743 in December 2018. The updated guidelines state that VMT must be used to determine transportation impacts and that all lead agencies in California must use VMT-based thresholds of significance in CEQA documents published in July 2020 or later. The OPR guidance recommends evaluating VMT impacts using efficiency-based metrics, such as VMT per capita or VMT per worker.

VMT Screening

Some land use development projects have characteristics that are highly likely to meet thresholds for a less-than-significant impact on VMT, and the OPR guidance suggests the use of screening criteria to assess whether a project impacts on VMT can be presumed to be less-than-significant.

The City’s adopted VMT Criteria and Thresholds includes the following screening criterion applicable to the proposed project. VMT impacts could be presumed to be less than significant if the screening criterion outlined below is met:

- Transit Priority Areas (TPAs): The project is located within a 0.5-mile walkshed of a major transit stop¹ or within a 0.25-mile walkshed of a stop along a high-quality transit corridor² and satisfies the following:
 - Has a Floor Area Ratio (FAR) of 0.75 or greater for office uses
 - Includes 200,000 square feet or less of office or commercial space
 - Does not include more parking supply than the project’s estimated demand
 - Is consistent with the City’s General Plan, an applicable Specific Plan, or an applicable Sustainable Communities Strategy (as determined by the City, with input from MTC)
 - Does not have project-specific or location-specific information that indicates that the project will generate significant levels of VMT

The project is located about 0.3 miles from the Berkeley Amtrak station, which is considered a major transit stop. The project would satisfy the Transit Priority Areas criterion because it would also meet the following five conditions:

- The project would have a Floor Area Ratio of 0.9, which is greater than 0.75.

¹ Major transit stop is defined as an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods (Pub. Resources Code, § 21064.3).

² High-quality transit corridor is defined as a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours (Pub. Resources Code, § R21155).



- The project would develop about 162,400 square feet of new office or commercial space at 787 Bancroft Way, and renovations to existing space would result in about 16,100 square feet of new office or commercial space in existing buildings. In total, the project would result in about 178,500 square feet of new office or commercial space, which is less than 200,000 square feet.
- The project includes 534 total parking spaces, consisting of the 415-space parking garage, the 106-space surface parking lot at 787 Bancroft Way, and the 13-space surface parking lot on Fifth Street. In total, the project would develop or renovate about 163,100 square feet of office/R&D space and 104,200 square feet of light manufacturing space, which is estimated to accommodate about 690 to 840 employees.³ Based on the driving mode split for workers in West Berkeley from US Census data, parking demand is estimated to be 0.69 parking spaces per employee, corresponding to parking demand of about 470 to 580 spaces. Therefore, the parking supply serving the project is not greater than the estimated parking demand.
- The project is consistent with the City of Berkeley General Plan.
- The project does not have other project-specific or location-specific attributes that would indicate that the project would generate significant levels of VMT.

Thus, the proposed project would satisfy the Transit Priority Area criterion and is therefore presumed to have a less-than-significant impact on VMT.

3. Trip Generation

Trip generation is the process of estimating the number of vehicles that would likely access the project on any given day. For the proposed and existing light manufacturing and warehouse uses, Fehr & Peers estimated trip generation using data published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual (10th Edition)*, which includes land use codes that match the uses proposed by the project and existing uses at the site.

However, the ITE data does not include a land use code that is well-matched to the proposed life sciences office/R&D use. This use would have more dispersed arrivals and departures than typical office buildings but would be more concentrated than land uses exclusively used for research and development. Trip generation data collected at several life sciences office/R&D sites in South San Francisco are used instead of ITE data because the uses are similar to the proposed project, and workers in the project area are expected to have similar automobile usage.⁴

³ Life sciences uses typically have about 3.0 to 3.5 employees per thousand square feet, and light manufacturing uses typically have about 2.0 to 2.5 employees per thousand square feet.

⁴ Transportation surveys collected at these sites indicated an automobile mode share of 78 percent. Based on 2012-2016 American Community Survey 5-Year Estimates, workers in West Berkeley have a 75 percent automobile mode share.



Table 2 compares the ITE trip generation rates for office and R&D uses to the observed trip generation rates at the office/R&D sites in South San Francisco.

Table 2: Trip Generation Rate Comparison

Source	AM Peak Hour	PM Peak Hour
ITE – General Office Building (Land Use Code 710) ¹	1.16	1.15
ITE – Research and Development Center (Land Use Code 760) ¹	0.42	0.49
Life Sciences Office/R&D Mix ²	0.83	0.92

Notes:

1. ITE Trip Generation (10th Edition)

2. Data collected by Fehr & Peers at Life Sciences Office/R&D in South San Francisco in November 2019.

Sources: ITE, Fehr & Peers, 2021.

Table 3 summarizes the trip generation for the project, accounting for trips generated by existing site uses.

Trip generation estimates for light manufacturing and warehouse spaces use ITE trip generation data, which is based on national surveys. Nationwide, 86 percent of workers commute via automobile, compared to 75 percent of workers in West Berkeley, but Table 3 does not adjust ITE trip generation rates to account for the potentially higher share of non-automobile use at the project site. This represents a conservative assumption to ensure that the analysis does not underestimate the net new automobile trips added to the local roadways.

As shown in Table 3, the project is estimated to generate about 185 AM peak hour and 190 PM peak hour net new automobile trips.



Table 3: Project Automobile Trip Generation

Land Use	ITE Code	Size ¹	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
Phase 1 – Renovation of Existing Buildings Between Fourth and Fifth Streets								
Light Manufacturing ²	110	74.8 KSF	46	6	52	6	41	47
Phase 1 Total Automobile Trips			46	6	52	6	41	47
Phase 2 – Parking Garage								
<i>Existing Light Manufacturing²</i>	<i>110</i>	<i>4.0 KSF</i>	<i>-3</i>	<i>-0</i>	<i>-3</i>	<i>-0</i>	<i>-3</i>	<i>-3</i>
Phase 2 Removed Existing Automobile Trips			-3	0	-3	-0	-3	-3
Phase 3 – 787 Bancroft Way and Renovation of 716 Allston Way								
Office/R&D ³	-	163.1 KSF	115	20	135	28	122	150
Light Manufacturing ²	110	29.3 KSF	18	3	21	2	16	18
Phase 3 Total Automobile Trips			133	23	156	30	138	168
<i>Existing Light Manufacturing³</i>	<i>110</i>	<i>2.4 KSF</i>	<i>-2</i>	<i>-0</i>	<i>-2</i>	<i>-0</i>	<i>-2</i>	<i>-2</i>
<i>Existing Warehouse⁴</i>	<i>150</i>	<i>103.9 KSF</i>	<i>-14</i>	<i>-4</i>	<i>-18</i>	<i>-5</i>	<i>-15</i>	<i>-20</i>
Phase 3 Removed Existing Automobile Trips			-16	-4	-20	-5	-17	-22
Phase 3 Net New Automobile Trips			117	19	136	25	121	146
Project Net New Automobile Trips			160	25	185	31	159	190

Notes:

1. KSF = 1,000 square feet.
2. ITE Trip Generation (10th Edition) land use category 110 (General Light Industrial):
 AM Peak Hour: $T = 0.70 * X$ (88% in, 12% out)
 PM Peak Hour: $T = 0.63 * X$ (13% in, 87% out)
3. Trip generation data collected by Fehr & Peers at life sciences office/R&D uses in South San Francisco:
 AM Peak Hour: 0.83 trips per KSF (85% in, 15% out)
 PM Peak Hour: 0.92 trips per KSF (19% in, 81% out)
4. ITE Trip Generation (10th Edition) land use category 150 (Warehousing):
 AM Peak Hour: $T = 0.17 * X$ (77% in, 23% out)
 PM Peak Hour: $T = 0.19 * X$ (27% in, 73% out)

Source: Fehr & Peers, 2021.



Non-Automobile Trip Generation

Table 4 presents the project trip generation estimates for all travel modes for the project based on existing mode splits in West Berkeley.

Table 4: Project Trip Generation by Travel Mode

Mode	Mode Share Adjustment Factor ¹	AM Peak Hour	PM Peak Hour
Automobile	1.00	185	190
Transit	0.10	19	19
Bike	0.08	15	15
Walk	0.07	13	13
Total Net Trips		232	237

Notes:

1. Based on the mode share estimates for workers in West Berkeley from the 2012-2016 American Community Survey 5-Year Estimates.

Source: Fehr & Peers, 2021.

4. Trip Distribution, Assignment, and Study Intersection Selection

The trip distribution and assignment process is used to estimate how the vehicle trips generated by the project would be distributed across the roadway network. Trip distribution for the project is based on the trip distribution for office presented in the West Berkeley Circulation Master Plan (WBCMP), with modifications to reflect the project location and current traffic patterns in the area, and is consistent with Census data for home location of workers in West Berkeley. **Figure 1** shows the resulting peak hour trip distribution.

Trips generated by the project were assigned to the roadway network according to the trip distribution shown on Figure 1, which accounts for the turn restriction in the area, such as the prohibition on through movements and left-turns on eastbound and westbound Addison Street at Sixth Street. The trip assignment also accounts for the conversion of Bolivar Drive from two-way operations to one-way southbound operations as part of the proposed Berkeley Commons project.

Based on the trip distribution and assignment, recommended study intersections were identified as those adjacent to the project site, those where the project would be expected to add at least 50 trips in either the AM or PM peak hours to an all-way stop-controlled or signalized intersection and may operate at level of service (LOS) D or worse with the project, and those where the project would



be expected to add 25 or more trips to the controlled approach of a side-street stop-controlled intersection. Based on these criteria, the recommended study intersections are as follows:

1. University Avenue/Sixth Street
2. Allston Way/Fifth Street
3. Allston Way/Sixth Street
4. Bancroft Way/Fourth Street
5. Bancroft Way/Fifth Street
6. Bancroft Way/Sixth Street

Although the project would add 50 or more peak hour trips to the University Avenue/Fourth Street, Allston Way/Fourth Street, Addison Street/Fourth Street, and Addison Street/Fifth Street intersections, these intersections were not selected as study intersections because based on the Berkeley Common Project Transportation Impact Analysis (January 2021) and the 1900 Fourth Street Draft EIR (November 2016), these intersections currently operate at LOS C or better during both the AM and PM peak hours.

Figure 2a and **2b** present the locations of and peak hour project trip assignment at the study intersections during the AM and PM peak hours, respectively.





 Project Site
  **XX%** Project Trip Distribution

Figure 1

Project Trip Distribution



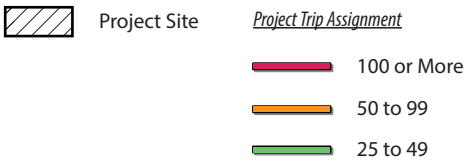


Figure 2b

PM Peak Hour Project Trip Assignment



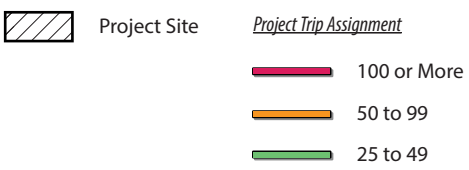


Figure 2a

AM Peak Hour Project Trip Assignment





5. Site Access and Circulation Analysis

Fehr & Peers reviewed project site plans (provided in Attachment A) and the existing street network near the project site to evaluate safety, access, and circulation for all travel modes accessing the project. This analysis provides recommendations to improve access and circulation.

Automobile Access and Circulation

Automobile access for the project would utilize the parking garage, surface parking lot at 787 Bancroft Way, or the surface parking lot on Fifth Street. This section assesses access and circulation for each of these facilities.

Parking Garage

The project would provide a five-level parking garage accommodating 415 parking spaces. Automobiles would access the garage via full-access driveways on Fourth Street about 180 feet south of Allston Way and on Fifth Street about 240 feet south of Allston Way. Each driveway would provide one entering lane and one exiting lane, with 11-foot wide lanes.

Garage access would be controlled by gates located approximately 20 feet inside the garage. This would provide adequate space for one vehicle to queue fully inside the garage. Based on the expected number of vehicle arrivals during the AM peak hour and the expected distribution of vehicles between the two driveways, 95th percentile queues⁵ are expected to be two cars long at the Fourth Street driveway and one car long at the Fifth Street driveway.⁶ The one-car queues on Fifth Street can be accommodated within the garage entry. However, the two-car queues on Fourth Street would result in one vehicle spilling back on the adjacent sidewalk or street.

Considering the low traffic volumes on Fourth Street and that the queues are expected to dissipate quickly, the queue spillover is not expected to interrupt traffic flow or block upstream driveways or intersections. The project would also provide "Do Not Block Sidewalk" signage at both driveways that activates when vehicle queues is detected to maintain a clear path of travel for pedestrians on the sidewalk.

The parking garage driveways would provide adequate sight distance between exiting motorists and pedestrians on the adjacent sidewalk. Adequate sight distance is defined as a clear line-of-

⁵ 95th percentile queue is defined as the queue length that has only a five percent probability of being exceeded during the analyzed peak hour.

⁶ Based on the project trip generation, distribution, and assignment, the parking garage is expected to serve about 180 total inbound trips during the AM peak hour, with about 105 entering on Fourth Street and 75 entering on Fifth Street. Assuming that the garage gates would be controlled by automatic ticket dispensers, each gate can serve about 450 vehicles per hour. Assuming a normal distribution for vehicle arrivals, the 95th percentile queues during the AM peak hour on a typical weekday are estimated to be about two vehicles for the Fourth Street driveway and one vehicle for the Fifth Street driveway.



sight between a motorist ten feet back from the sidewalk and a pedestrian 10 feet away on each side of the driveway. The project would designate at least 20 feet of red curb on the north and south sides of the garage driveways on Fourth and Fifth Streets to ensure adequate sight distance between exiting motorists and cyclists or motorists on Fourth and Fifth Streets.

Internal circulation in the garage would be provided by a single two-way drive aisle with parking spaces on both sides. The drive aisle would be about 24 feet wide, providing adequate space for vehicles to circulate through the garage and maneuver into and out of parking spaces.

787 Bancroft Way Surface Parking Lot

The project would provide a surface parking lot at 787 Bancroft Way accommodating 106 parking spaces. Automobiles would access the parking lot via a 24-foot wide full-access driveway on Bancroft Way about 210 feet west of Fourth Street and 40 feet east of the railroad control gate. The 787 Bancroft Way development also provides truck loading spaces, accessed on Bancroft Way about 80 feet east of the parking lot driveway. The Truck Access and Loading section of the memorandum describes truck access for the project.

The parking lot and loading space driveways would provide adequate sight distance between exiting motorists and pedestrians on the adjacent sidewalk. The project would designate red curb on the north side of Bancroft Way between the railroad gate and the parking lot driveway, as well as 23 feet on the east side of the parking lot driveway, to ensure adequate sight distance between exiting motorists and cyclists or motorists on Bancroft Way.

This driveway location would provide queueing space for one eastbound vehicle on Bancroft Way turning left into the parking lot. The project proposes to designate red curb on the south side of Bancroft Way between the railroad gate and 25 feet east of the parking lot driveway to allow vehicles traveling east on Bancroft Way to travel around a vehicle waiting to turn left into the parking lot and eliminate potential vehicle queue spillover on the railroad tracks. No gates would be provided at the parking lot driveway entrance, which would further minimize queueing. Additional analysis described in the Next Steps section of this memorandum will assess the potential for queueing on Bancroft Way and operation and safety at the railroad tracks and may result in additional recommendations.

Internal circulation for the 787 Bancroft Way parking lot would be provided by a two-way drive aisle that connects the driveway with a one-way counterclockwise drive aisle. The two-way drive aisle would have perpendicular parking spaces on the west side and parallel truck loading spaces on the east side. When the truck loading spaces are occupied, the drive aisle would be about 16 feet wide, which would provide adequate space for most vehicles to pass and maneuver into and out of the parking spaces. Larger vehicles may need to wait for vehicles in the opposite direction to go through before proceeding when one or more of the parallel loading spaces are occupied. The one-way counterclockwise drive aisle would be generally 24 feet wide with perpendicular parking spaces on



both sides, and it would narrow to 18.5 feet at pinch points. The parking lot would provide adequate space for vehicles to circulate through the parking lot and maneuver into and out of parking spaces.

Fifth Street Surface Parking Lot

The project would also provide a 13-space surface parking on Fifth Street, which would replace an existing 30-space parking lot. This parking lot would be accessed through a 24-foot curb cut and would provide perpendicular parking spaces on both sides of a 28-foot two-way drive aisle. The drive aisle would provide adequate space for vehicles to maneuver into and out of parking spaces.

The parking lot driveway would provide adequate sight distance between exiting motorists and pedestrians on the adjacent sidewalk. The project would designate at least 20 feet of red curb on the north and south sides of the surface parking lot driveway on Fifth Street to ensure adequate sight distance between exiting motorists and cyclists or motorists on Fifth Street.

Automobile Parking

Automobile parking for the project would be provided by the 415-space project parking garage, the 106-space surface parking lot at 787 Bancroft Way, and the 13-space surface parking lot on Fifth Street. In total, the project would be served by 534 parking spaces, which would be shared by employees and visitors of all components of the project.

City of Berkeley Municipal Code requirements for the Multi-Use Light-Industrial (MU-LI) and Mixed-Use Residential zoning districts apply to the project site. MU-LI zoning (Section 23E.80.080) requires one automobile parking space per 1,500 square feet of floor area for manufacturing uses with 10,000 square feet or greater, one automobile parking space per 1,000 square feet for manufacturing uses less than 10,000 square feet, and two automobile parking spaces per 1,000 square feet of floor area for non-residential uses not identified in the Code. MU-R zoning (Section 23E.84.080) requires one automobile parking space per 1,000 square feet of manufacturing uses.

Table 5 presents the off-street automobile parking requirements for the proposed project. The project is required to provide a minimum of 409 automobile parking spaces. The project would provide 534 off-street parking spaces, meeting code requirements.



Table 5: Project Automobile Parking Requirements

Address	Land Use	Size ¹	Required Spaces per KSF ¹	Required Parking Spaces
Parking Requirements				
2246 Fifth Street – Tenant B	Light Manufacturing (MU-R)	12.5 KSF	1:1 KSF	13
2246 Fifth Street – Tenant A	Light Manufacturing (MU-LI)	17.4 KSF	1:1.5 KSF	12
2229 Fourth Street	Light Manufacturing (MU-LI)	19.9 KSF	1:1.5 KSF	13
2222 Fifth Street	Light Manufacturing (MU-R)	17.9 KSF	1:1 KSF	18
2233 Fourth Street	Light Manufacturing (MU-LI)	7.0 KSF	1:1 KSF	7
787 Bancroft Way	Light Manufacturing (MU-LI)	29.3 KSF	1:1.5 KSF	20
787 Bancroft Way	Office/R&D (MU-LI)	133.0 KSF	2:1 KSF	266
716 Allston Way	Office/R&D (MU-LI)	30.1 KSF	2:1 KSF	60
Total Automobile Spaces Required				409
Parking Supply				
Fifth Street Surface Parking Lot				13
Parking Garage				415
787 Bancroft Way Surface Parking Lot				106
Total Automobile Spaces Provided				534
Automobile Parking Requirements Met?				Yes

Notes:

1. KSF = 1,000 square feet.
- Source: Fehr & Peers, 2021.

Accessible Parking

The California Building Code requires accessible parking spaces to be provided when parking is provided for new buildings. The project would provide the following accessible parking spaces:

- The parking garage would provide 10 accessible parking spaces, including three van accessible spaces, which is consistent with requirements for parking facilities with between 400 and 500 parking spaces.
- The surface parking lot at 787 Bancroft Way would provide five accessible parking spaces, including at least two van accessible spaces, which is consistent with requirements for parking facilities with between 100 and 150 parking spaces.
- The surface parking lot on 5th Street would provide one van accessible parking space, which is consistent with requirements for parking facilities with between one and 25 parking spaces.



All accessible parking spaces would be located on the shortest accessible route to an accessible entrance and are arranged so that people with disabilities are not forced to wheel or walk behind parked vehicles other than their own.

Electric Vehicle Parking

The City of Berkeley Municipal Code (Section 19.37.040) requires parking facilities where ten or more parking spaces are constructed to provide 10 percent of the spaces with Level 2 electric vehicle (EV) charging stations and 40 percent of the spaces supplied with raceways. The parking garage would provide 42 EV charging stations, and the surface parking lot at 787 Bancroft Way would provide 11 EV charging stations, each of which represents 10 percent of the total parking spaces provided in those facilities. At least 166 parking spaces at the parking garage and 43 spaces at the surface parking lot at 787 Bancroft Way would provide raceways upon completion, which corresponds to at least 40 percent of the parking supply at each parking facility. The surface parking lot on Fifth Street does not require EV charging stations or raceways because it is an existing facility.

On-Street Parking and Passenger Loading

Along the project frontages, Fourth Street, Fifth Street, Bancroft Way, and Allston Way currently provide unrestricted on-street parking. Existing curb cuts that would be eliminated by the project include:

- Two curb cuts on the north side of Bancroft Way along the 787 Bancroft Way frontage
- Four curb cuts on the west side of Fourth Street along the 787 Bancroft Way frontage
- Six curb cuts on the east side of Fourth Street along the parking garage frontage and proposed curb extensions
- Five curb cuts on the west side of Fifth Street along the frontage of the renovated buildings and proposed parking garage

The project would include two curb cuts on Bancroft Way along the 787 Bancroft Way frontage, and the parking garage would include two curb cuts on Fourth Street and one curb cut on Fifth Street. Two existing curb cuts along the Fourth Street frontage would be retained, and one existing curb cut on Fifth Street would be retained to provide access to the 13-space surface parking lot.

On Fourth Street, curb extensions would be provided for approximately 170 feet on the east side and approximately 185 feet on the west side. The project proposes to modify curb use designations in the following ways:

- On the north side of Bancroft Way, the project proposes about 85 feet of new red curb and 44 feet of yellow curb for commercial loading between the parking lot and loading driveways on Bancroft Way.



- On the south side of Bancroft Way, the project proposes about 15 feet of new red curb opposite the surface parking lot driveway.
- On the west side of Fourth Street, the project proposes about 70 feet of white curb for passenger loading and unloading adjacent to the 787 Bancroft Way building lobby.
- On the east side of Fourth Street, the project proposes about 70 feet of new red curb and to remove about 20 feet of yellow curb.
- On the west side of Fifth Street, the project proposes about 40 feet of new red curb and to remove about 90 feet of yellow curb.

Overall, the project would result in the net reduction of about 20 on-street parking spaces.

Truck Access and Loading

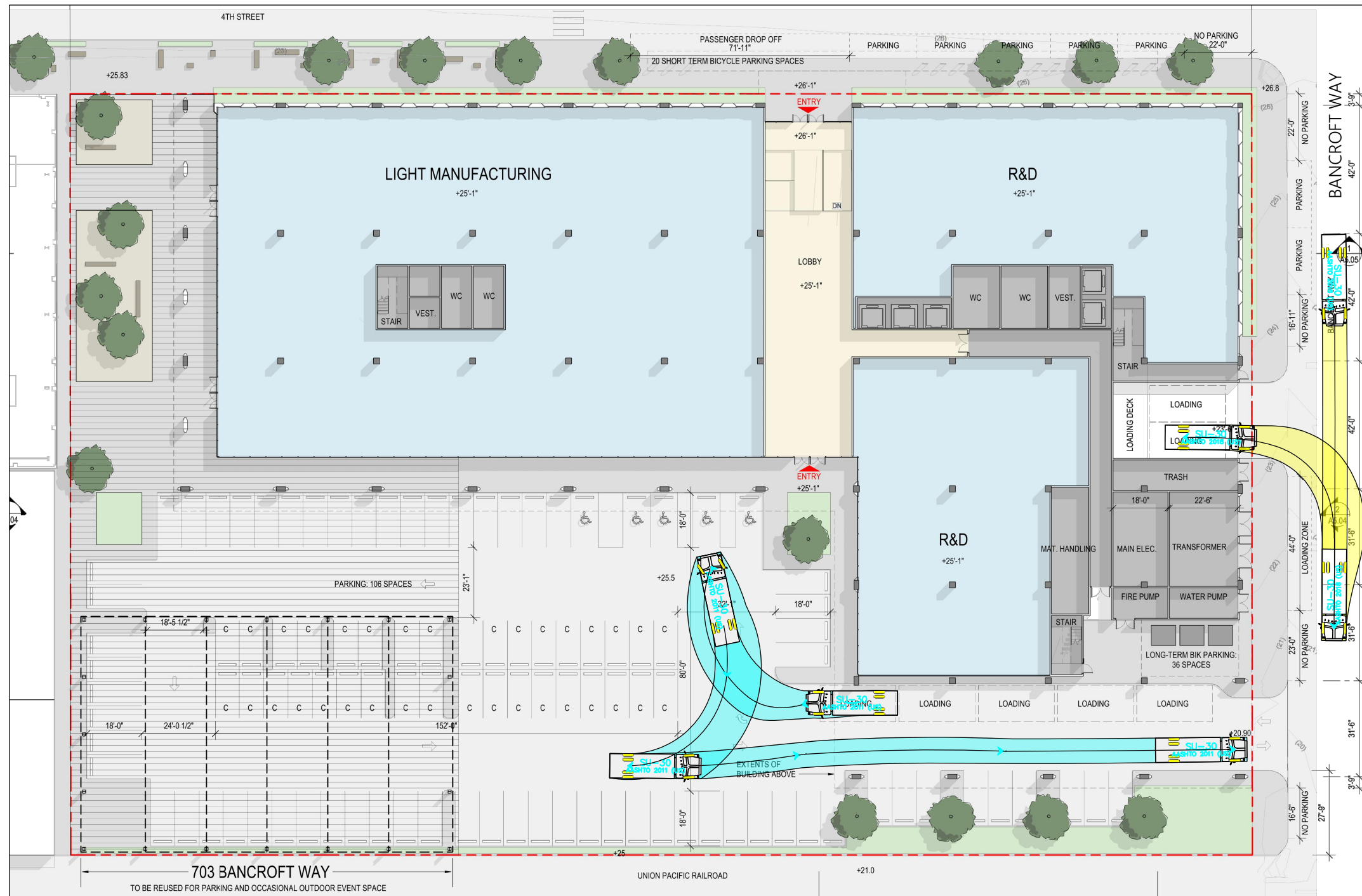
City of Berkeley Municipal Code (Section 23E.32.030) requires one off-street loading space for the first 10,000 square feet of new commercial or manufacturing floor area, and one space for each additional 25,000 square feet of floor area. Off-street loading spaces are required to have minimum dimensions of 12 feet wide and 25 feet long, with a minimum vertical clearance of 14 feet.

787 Bancroft Way

The proposed 787 Bancroft Way building would add about 162,400 square feet of new commercial space; therefore, seven off-street loading spaces would be required. The surface parking lot at 787 Bancroft Way would provide five parallel loading spaces on the east side of the drive aisle of the parking lot and two enclosed loading spaces with access on Bancroft Way east of the parking lot driveway. All loading spaces would be at least 12 feet wide and 25 feet long, with at least 14 feet of vertical clearance, meeting code requirements for loading space quantity and dimensions. The project would also provide 44 feet of yellow curb for commercial loading on the Bancroft Way frontage of 787 Bancroft Way just west of the enclosed loading spaces.

Trucks accessing the parallel loading spaces in the surface parking lot at 787 Bancroft Way would enter the parking lot through the driveway head-first and would maneuver into the spaces either head-first or by passing the space and then backing into it. To leave the loading spaces, trucks would perform a three-point turn in the surface parking lot, as shown on **Figure 3**. The parking lot would restrict truck access to SU-30 or smaller trucks, which would have adequate space to maneuver.

The enclosed loading spaces at 787 Bancroft Way would be accessed via a driveway about 80 feet east of the surface parking lot driveway. Considering the roadway network serving the project site, trucks are expected to access the loading spaces at 787 Bancroft Way from the east. Trucks accessing the enclosed spaces would approach on westbound Bancroft Way and back into the loading spaces, and they would leave head-first on eastbound Bancroft Way. Trucks would have adequate space to maneuver into and out of the loading spaces, as shown on Figure 3.



SU-30 TRUCK CIRCULATION



N.T.S.

Figure 3

**787 BANCROFT WAY
FLOOR 01 PLAN**



CONCEPTUAL - NOT FOR CONSTRUCTION



Renovated Buildings

The building renovations between Fourth and Fifth Streets would result in about 16,100 square feet of new commercial floor area; therefore, one off-street loading space would be required. The parking garage would provide one enclosed loading space, with access to 2229 Fourth Street via a lift. The loading space would be about 50 feet long and 12 feet wide with at least 14 feet of vertical clearance, meeting code requirements for quantity and dimensions.

Truck access to the loading space would be provided via a driveway on Fourth Street south of the main garage driveway. Trucks would approach on northbound or southbound Fourth Street, back into the loading space, and leave head-first on Fourth Street. Trucks would have adequate space to maneuver into and out of the loading space.

Bicycle Access and Circulation

Bicycle access for the project would be provided via Class III bike routes on Bancroft Way and Fourth Street, which connect with Class II bicycle lanes on Sixth Street and bicycle boulevards on Ninth Street and Channing Way. The Class I Aquatic Park Path is located about one block west of the project, and access to the Bay Trail is provided through the Eastshore Pedestrian Overcrossing about 0.3 miles northwest of the project. Additionally, the City of Berkeley 2017 Bicycle Plan identifies Addison Street as a future bicycle boulevard.

Automobile traffic generated by the project would increase traffic on designated bicycle facilities serving the project, especially on Bancroft Way and Fourth Street. Both streets include pavement markings that notify drivers that they are on a shared-mode facility, and these streets would remain low-volume streets with the addition of project traffic.

The nearest Bay Wheels bikeshare station is located on Addison Street just east of Fourth Street, about 0.1 miles north of the project.

Bicycle Parking

The City of Berkeley Municipal Code Section 23E.28.070 requires one bicycle parking space per 2,000 square feet of new floor area or expansion of existing non-residential buildings. The project would provide about 12,100 square feet of new non-residential floor area as part of the renovation of existing buildings in Phase 1, about 4,000 square feet of new non-residential floor area as part of the renovation of 716 Allston Way in Phase 3, and about 162,400 square feet of new non-residential floor area as part of the development of 787 Bancroft Way in Phase 3.

Table 6 presents the bicycle parking requirements for the proposed project. The project is required to provide six bicycle parking spaces in Phase 1, and 83 bicycle parking spaces in Phase 3. The project would provide six bicycle parking spaces in Phase 1 and 84 bicycle parking spaces in Phase 3, meeting code requirements.



Table 6: Project Bicycle Parking Requirements

Address	New Floor Area ¹	Required Spaces per KSF ¹	Required Parking Spaces
Phase 1			
2246 Fifth Street	0.2 KSF	1:2 KSF	0
2229 Fourth Street	5.7 KSF	1:2 KSF	3
2222 Fifth Street	6.2 KSF	1:2 KSF	3
Total Bicycle Parking Spaces Required			6
Total Bicycle Parking Spaces Provided			6
Phase 1 Bicycle Parking Requirement Met?			Yes
Phase 3			
716 Allston Way	4.0 KSF	1:2 KSF	2
787 Bancroft Way	162.4 KSF	1:2 KSF	81
Total Bicycle Parking Spaces Required			83
Total Bicycle Parking Spaces Provided			84
Phase 3 Bicycle Parking Requirement Met?			Yes

Notes:

1. KSF = 1,000 square feet.

Source: Fehr & Peers, 2021.

The *City of Berkeley Bicycle Plan* provides guidelines on amount of long-term and short-term bicycle parking for development projects. Long-term bicycle parking includes lockers or locked enclosures, and short-term bicycle parking includes bicycle racks. The Bicycle Plan does not specify bicycle parking requirements for office/R&D uses, so the guidelines for office uses were applied instead. For office uses, the Bicycle Plan recommends one long-term bicycle parking space per 2,500 square feet of space and one short-term bicycle space per 10,000 square feet of space. For manufacturing uses, the Bicycle Plan recommends one long-term bicycle parking space per 30,000 square feet of space and no short-term spaces.

Table 7 summarizes the bicycle parking guidelines for the project based on the Bicycle Plan. The bicycle parking guidelines are to provide a minimum of 68 long-term bicycle parking spaces and a minimum of 16 short-term bicycle parking spaces.



Table 7: Bicycle Plan Bicycle Parking Guidelines

Land Use	Size ¹	Long-Term		Short-Term	
		Spaces per Unit ²	Spaces	Spaces per Unit ²	Spaces
Light Manufacturing	104.2 KSF	1:30 KSF	3	-	-
Office/R&D	163.1 KSF	1:2.5 KSF	65	1:10 KSF	16
Total Bicycle Spaces Guidelines			68		16
<i>Total Bicycle Spaces Provided</i>			68		22
Bicycle Parking Guidelines Met?			Yes		Yes

Notes:

1. KSF = 1,000 square feet
 2. Based on City of Berkeley Bicycle Plan, Appendix F.
- Source: Fehr & Peers, 2021.

The project would provide 68 long-term bicycle parking spaces in a secure bicycle storage area in the 787 Bancroft Way development on Bancroft Way adjacent to the parking lot driveway. The project would provide showers and lockers in 787 Bancroft Way available for use by project employees.

The City of Berkeley Bicycle Plan specifies that short-term bicycle parking should be located within 50 feet of a main building entrance and be visible from the public right-of-way. The project would provide six short-term bicycle parking spaces next to main building entrances of the buildings renovated in Phase 1, 12 short-term bicycle parking spaces in front of the building lobby of 787 Bancroft Way on Fourth Street, and 4 short-term bicycle parking spaces on Fourth Street near the main building entrance for 716 Allston Way.

Pedestrian Access and Circulation

Primary pedestrian access for 787 Bancroft Way would be provided via the building lobby, with entrances on Fourth Street and on the west side of the building adjacent to the surface parking lot. Pedestrian access for the parking garage would be provided via a pedestrian entrance on Fourth Street between the main garage driveway and the loading space driveway. Primary pedestrian access for the renovated buildings between Fourth Street and Fifth Street would be provided via a walkway between 2233 Fourth Street and 2246 Fifth Street.

Fourth Street currently provides 12-foot sidewalk on the west side of the street along the frontage of 787 Bancroft Way and 716 Allston Way and on the east side of the street along the frontage of the parking garage and the renovated existing buildings. The project would maintain the existing sidewalk widths, providing a six-foot pedestrian through zone, a four-foot tree well, and a two-foot furniture/planter zone on both sides of the street.



Bancroft Way, Fifth Street, and Allston Way currently provide 12-foot sidewalks along the project frontages. The project would maintain the existing sidewalk widths along these segments.

The following intersections are located adjacent to the project:

- The Bancroft Way/Fourth Street intersection is an all-way stop-controlled intersection and provides standard crosswalk markings on the east and south approaches. Diagonal curb ramps with truncated domes are provided at all four corners of the intersection.
- The Bancroft Way/Fifth Street intersection is a side-street stop-controlled intersection with stop signs on the Fifth Street approaches. Standard crosswalk markings are provided on all approaches. Diagonal curb ramps with truncated domes are provided at all four corners of the intersection.
- The Allston Way/Fourth Street intersection is a side-street stop-controlled intersection with stop signs on the Allston Way approaches. Standard crosswalk markings are provided on the west and south approaches. Diagonal curb ramps are provided at all four corners of the intersection. The northeast and southeast curb ramps provide truncated domes.

The project proposes to provide marked crosswalks on all four approaches of the Bancroft Way/Fourth Street and Allston Way/Fourth Street intersections and provide curb ramps with truncated domes at all four corners of the Allston Way/Fourth Street intersection.

The project proposes to provide an uncontrolled midblock marked crosswalk on Fourth Street, connecting the parking garage and buildings on the east side of the street and the main lobby entrance for the 787 Bancroft Way development on the west side of the street, approximately 225 feet north of Bancroft Way. Based on the traffic volumes and speeds on Fourth Street, the expected pedestrian crossing demand between the project parking garage and the 787 Bancroft Way lobby entrance would meet FHWA's recommendations for an uncontrolled marked midblock crosswalk.⁷

The project would provide nighttime pedestrian-scale lighting and advanced "Yield Here to Pedestrians" signs and yield lines at the crosswalk, as well as high-visibility crosswalk markings and curb extensions on both sides of the street. These improvements are consistent with the FHWA's *Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations (2018)* for two-lane streets with average daily traffic (ADT) of less than 9,000 and vehicle speeds of 30 miles per hour or less.

Transit Access

Transit service providers in the vicinity of the project include Alameda Contra Costa Transit District (AC Transit), Amtrak, and Bay Area Rapid Transit (BART). AC Transit operates the following routes in the vicinity of the project:

⁷ Based on FHWA guidelines documented by *Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations: Final Report and Recommended Guidelines (2005)*.



- Line 51B has stops along University Avenue east of Sixth Street utilized by all 51B buses, approximately 0.3 miles northeast of the project. Every other 51B bus also has stops along University Avenue east of Fourth Street, approximately 0.2 miles north of the project.
- Lines 72 and 72M have stops along San Pablo Avenue north of Bancroft Way, approximately 0.4 miles east of the project.
- Line 36 has stops south and east of the Dwight Way/Seventh Street/Dwight Crescent intersection, approximately 0.3 miles southeast of the project.
- Prior to the COVID-19 pandemic, Lines 80 and Z had stops along Sixth Street north and south of Allston Way, approximately 0.1 miles east of the project.

The Berkeley Amtrak Station is about 0.3 miles northwest of the project, and the North Berkeley BART Station is about 1.3 miles northeast of the project.

The West Berkeley Shuttle provides service between various destinations in West Berkeley and the Ashby BART Station. The nearest shuttle stop is on Dwight Way at Sixth Street, about 0.3 miles southeast of the project site.

As shown in Table 4, the project is estimated to generate about 16 AM peak hour and 17 PM peak hour transit trips. It is expected that most of these trips would use AC Transit buses, with some trips using BART or Amtrak. Considering the transit service in the project vicinity, the expected increase in transit ridership is not expected to have a noticeable effect on ridership.

Conclusion

Based on our review of the project site plan and conditions on the surrounding streets, the project would have adequate automobile, bicycle, pedestrian, and transit access and circulation.

6. Next Steps

On City approval of the methodology and results of this memorandum, we will proceed with the following tasks:

Task 1 – Intersection Counts and Volumes

Fehr & Peers will coordinate with City of Berkeley staff to confirm the study intersections listed in Section 4 of this memorandum. Due to the ongoing shelter-in-place orders resulting from the Covid-19 pandemic, current traffic volumes do not represent typical conditions, and it is uncertain when traffic volumes will return to normal levels. We will obtain vehicle turning movement, pedestrian, and bicycle movements during the weekday AM (7:00 to 9:00 AM) and PM (4:00 to 6:00 PM) periods from counts collected in the past five years for the study intersections. Recent count data may not be available for the Allston Way/Fifth Street and Bancroft Way/Fifth Street intersections, and we will discuss options for estimating counts at these intersections with City staff.



Fehr & Peers will develop AM and PM peak hour intersection turning movement volumes under the following scenarios for the study intersections:

- Existing Conditions – Based on traffic data collected over the past five years
- Near-Term Conditions – Existing Conditions plus traffic generated by other pending developments in the vicinity, including the proposed 600 Addison Street project and other proposed developments as identified by the City of Berkeley staff
- Near-Term Plus Project Conditions – Near-Term Conditions plus traffic generated by the proposed project

Task 2 – Traffic Operations Analysis

Although traffic operations is no longer evaluated in CEQA documents, the City of Berkeley continues to request analysis of project impacts on traffic operations at nearby intersections. Project impacts will be evaluated at the study intersections during the AM and PM peak hours. The traffic operations analysis will be completed under as the scenarios described in Task 1.

Fehr & Peers will analyze the level of service (LOS) for the study intersections using the 2010 Highway Capacity Manual methodologies. Based on the traffic operations goals identified by the City of Berkeley, we will determine if the project would cause an impact at the study intersections. If necessary, we will recommend measures to eliminate or reduce the identified impacts.

Fehr & Peers will also conduct a signal warrant analysis for currently unsignalized study intersections using the California MUTCD peak hour vehicular volume warrant (Warrant 3) for urban conditions to determine if the traffic added by the project would result in the need for signalization at these intersections. The signal warrants analysis will be conducted for the AM and PM peak hours under the study scenarios.

Task 3 – Rail Crossing Assessment

Fehr & Peers will assess potential safety and operational concerns at the at-grade railroad crossing on Bancroft Way near the 787 Bancroft Way site. Fehr & Peers will estimate vehicle queues at the following intersections to assess whether vehicle queues would be expected to spill back and block the at-grade crossing:

- Eastbound Bancroft Way at the Project Driveway and Fourth Street
- Westbound Bancroft Way at the proposed 600 Addison Street Driveway

Intersection queues will be estimated using the SimTraffic microsimulation software for the AM and PM peak hours under Near-Term Plus Project conditions. Based on the results of the safety assessment and operational analysis and in coordination with the improvements identified by the



600 Addison Street project for the at-grade crossing, Fehr & Peers will recommend potential improvements to reduce conflicts at the railroad crossings.

Task 4 – Transportation and Parking Demand Management (TDM) Plan

Fehr & Peers will prepare a TDM Plan for the project, consisting of infrastructure improvements and on-going operational strategies that would increase non-automobile mode share by the project. If feasible, we will quantify the effectiveness of each strategy in reducing vehicle trips.

Task 5 – Documentation

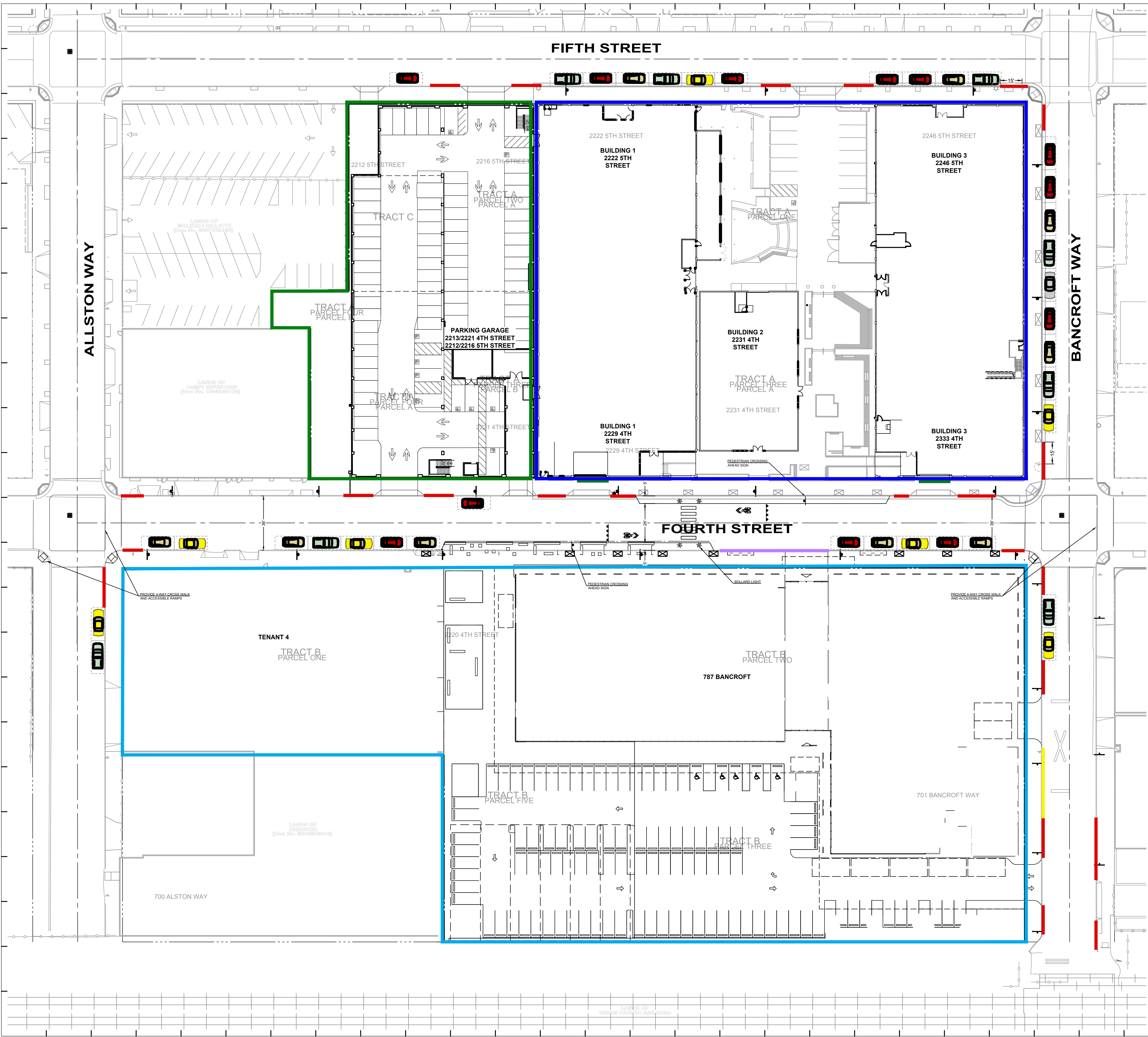
Fehr & Peers will summarize the findings and assumptions from Tasks 1 through 4 in an administrative draft TIA report for review by the project team and City staff. The administrative draft TIA will also incorporate the assessment presented in this memorandum, updated to address City of Berkeley comments. We will respond to two rounds of qualitative comments on the TIA before finalizing. If the comments raise issues that are not included in this scope of work or require additional quantitative analysis, Fehr & Peers will consult the project team to determine necessary adjustments to the scope of work.

Fehr & Peers will prepare for and attend three meetings with the project team and/or City to discuss our findings and assumptions.

Please contact Jordan Brooks (j.brooks@fehrandpeers.com or 510-587-9429) with questions or comments.

ATTACHMENT

Attachment A – TheLabs Project Site Plans



- LEGEND**
- NO PARKING - RED CURB
 - LOADING ZONE - YELLOW CURB
 - PASSENGER LOADING ZONE - WHITE CURB
 - PARKING STALL
 - PHASE 1
 - PHASE 2
 - PHASE 3
 - EXISTING FH WITH 3' RADIUS CLEARANCE
 - PROPOSED 'NO OVERNIGHT PARKING' SIGN - SEE DETAIL ON THIS SHEET



NO OVERNIGHT PARKING SIGN

787 BANCROFT

787 BANCROFT, BERKELEY, CALIFORNIA

OWNER
STEELWAVE
 101 CALIFORNIA STREET, SUITE 800
 SAN FRANCISCO, CA 94111

PROJECT TEAM
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CIVIL ENGINEER
 WARE MALCOMB
 4683 CHABOT DRIVE #300
 PLEASANTON, CA 94588

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 MEYERS+ ENGINEERS
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GEOTECHNICAL ENGINEER
 ROCKRIDGE GEOTECHNICAL
 270 GRAND AVE
 OAKLAND, CA 94610

SUSTAINABILITY
 ATELIER TEN
 443 TEHAMA ST, 1ST FLOOR
 SAN FRANCISCO, CA 94103

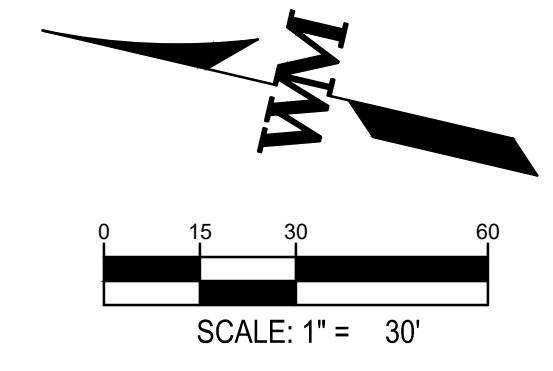
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 No.: Description: Date:

Key Plan:

Seal & Signature:

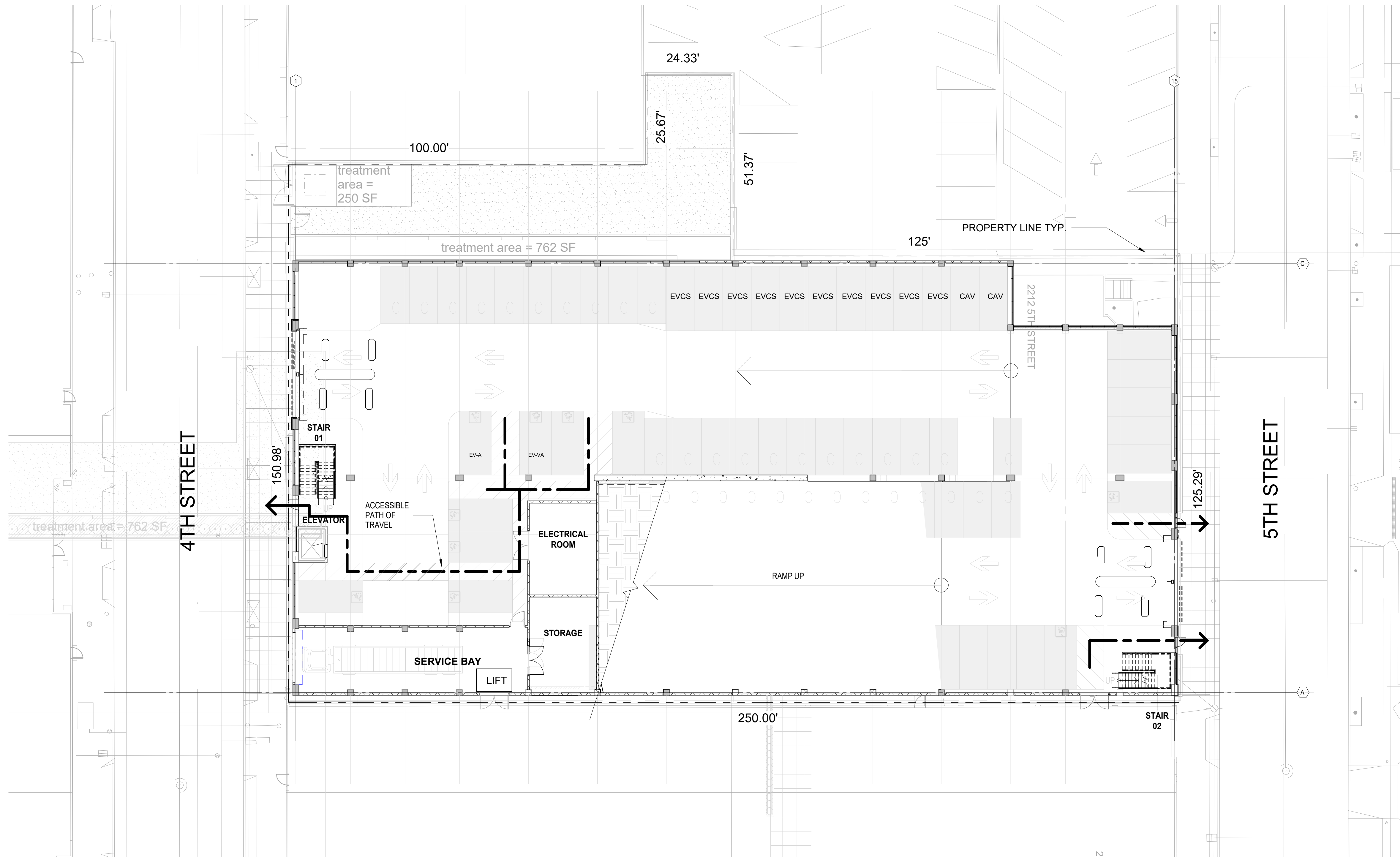
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OVERALL SITE PLAN

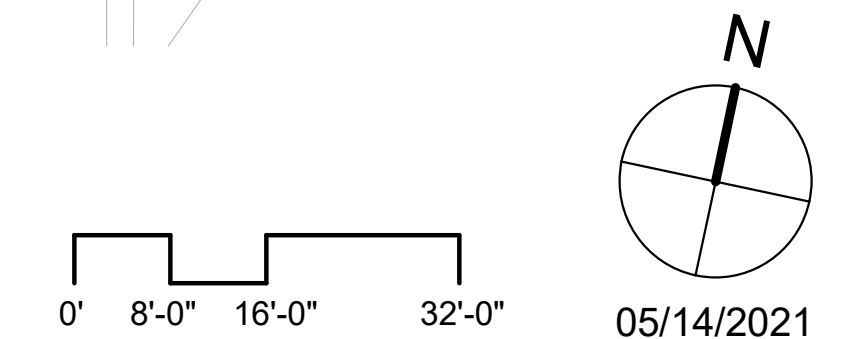


Project No.: 220175
 Sheet No.:
 Drawn By: HSC
 Checked By: MM
 Scale:

C5.00



1 ARCHITECTURAL SITE PLAN
SCALE: 1/16" = 1'-0"



TheLAB Parking Structure 2212/2216 5TH ST &
2213/2221 4TH ST.
BERKELEY, CA 94510



INTERNATIONAL PARKING DESIGN, INC.
560 14TH STREET,
SUITE 300
OAKLAND CA 94612
T. 510.473.0300

787 BANCROFT

787 BANCROFT, BERKELEY, CALIFORNIA

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 270 GRAND AVE
 OAKLAND, CA 94610

SUSTAINABILITY
 ATELIER TEN
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 SAN FRANCISCO, CA 94103

Issued For:

No.	Description	Date
1	USE PERMIT APPLICATION	2021.03.25
2	50% SCHEMATIC DESIGN	2021.04.30

Key Plan:

Seal & Signature:

NOT FOR CONSTRUCTION

Sheet Name:

OVERALL FLOOR PLAN - LEVEL 01

Project No.:

220175

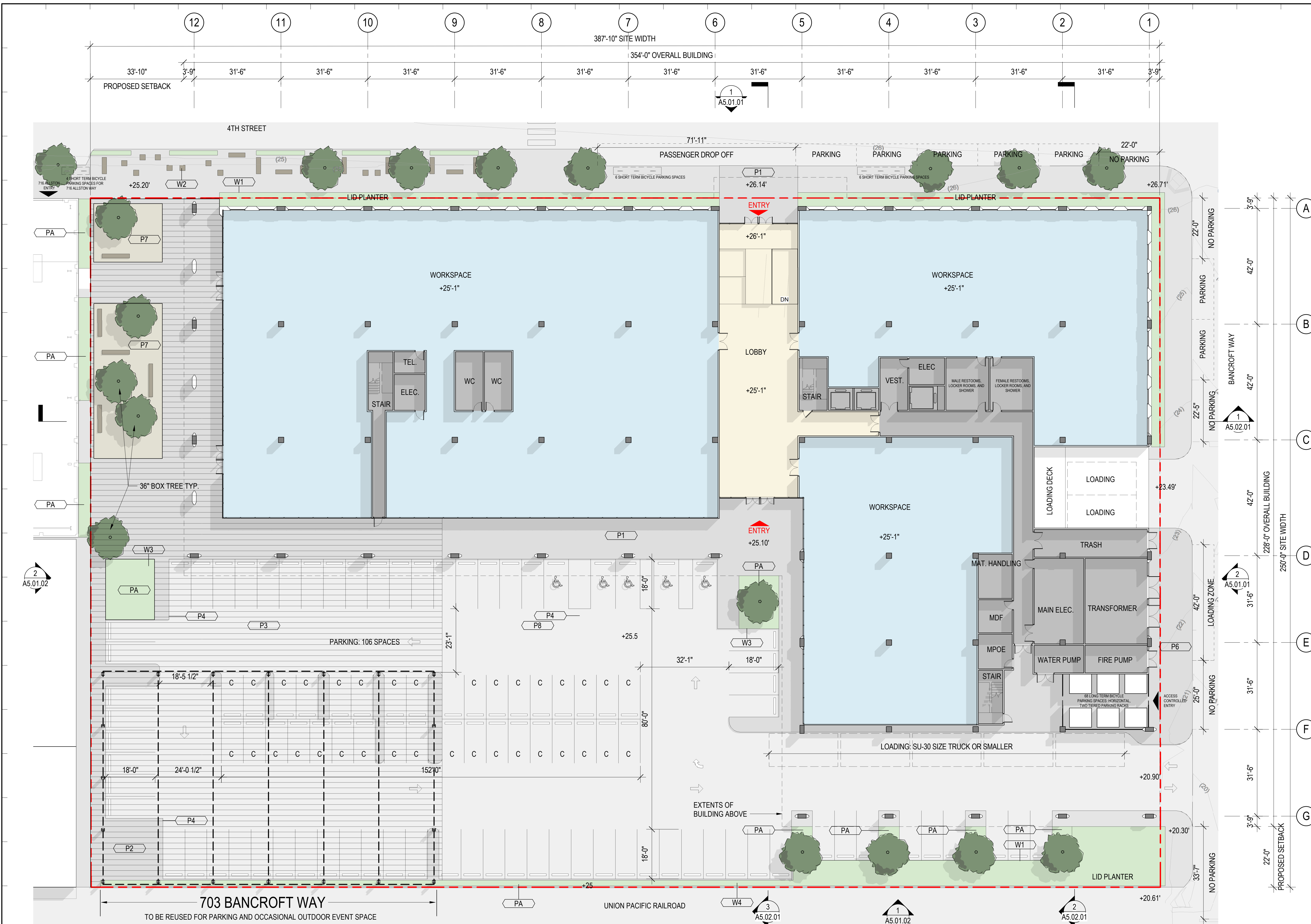
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Checked By: Checker

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1/16" = 1'-0"

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- GENERAL NOTES:
- ALL SITE ELEVATIONS ARE BASED ON CIVIL ENGINEER'S SURVEY
 - SEE NOTES ON C.01 FOR SURVEY POINT'S RELATIONSHIP TO BERKELEY CITY DATUM
 - ALL PARKING SPACES ARE 8'-0"X18'-0" EXCEPT FOR SPACES MARKED "C" WHICH ARE 8'-0"X16'-0"
 - "NO PARKING" DESIGNATED BY RED CURB
 - PARKING LOT DRIVEWAY ALONG BANCROFT WILL NOT HAVE GATE
 - TRUCK ACCESS TO PARKING LOT RESTRICTED TO SU-30 OR SMALLER SIZE TRUCKS
 - AT LEAST 40% OF TOTAL PARKING SPACES WILL BE EQUIPPED WITH EV RACEWAYS UPON COMPLETION

P1	CONCRETE PAVING / INTEGRAL COLOR
P2	2-3/8" INTERLOCKING CONCRETE PAVER
P3	4" PRECAST CONCRETE PAVER
P4	CONCRETE FLUSH CURB
P6	6" SIDEWALK CONCRETE PAVING / NATURAL GREY
P7	PERMEABLE INTERLOCKING CONCRETE PAVER
P8	ASPHALT

PA	PLANTING AREA
W1	CUSTOM FLOW THROUGH PLANTER WALL
W2	CIP CUSTOM BENCH
W3	CIP CUSTOM CONCRETE PLANTER WALL
W4	RETAINING WALL

LEVEL 01 FLOORPLAN 1

SCALE: 1/16" = 1'-0"

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