APPENDIX A

Notice of Preparation and Comments Received

San Francisco Planning

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PUBLIC NOTICE

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT

Date:	November 6, 2024
Case No.:	**2024-007066ENV**
Project Title:	**447 Battery and 530 Sansome Street Project**
Project Address:	447 Battery Street, 530 Sansome Street, 425 Washington Street, and 439–445 Washington Street
Zoning:	C-3-O (Downtown Office) Use District 200-S Special Height and Bulk District
Block/Lot:	Block 0206/Lots 002, 013, 014, 017
Site Area:	24,830 (0.57 acres)
Project Sponsors:	James Abrams, J. Abrams Law, P.C. on behalf of EQX JACKSON SQ HOLDCO LLC 415.999.4402, jabrams@jabramslaw.com Andrico Penick, San Francisco Bureau of Real Estate 415.554.9850, andrew.penick@sfgov.org Michael Mullin, San Francisco Fire Department 415.674.5066, michael.mullin@sfgov.org
Lead Agency:	San Francisco Planning Department
Staff Contact:	Sherie George, CPC.447Battery530SansomeEIR@sfgov.org, 628.652.7558

Introduction

The San Francisco Planning Department (planning department) prepared this Notice of Preparation (NOP) of an Environmental Impact Report (EIR) in connection with the 447 Battery and 530 Sansome Street Project (proposed project or project). The purpose of the EIR is to provide information about the potential significant physical environmental effects of the proposed project, to identify possible ways to minimize the project's significant physical adverse effects, and to describe and analyze possible alternatives to the proposed project that would reduce or avoid those effects. The planning department is issuing this NOP to inform the public and responsible and interested agencies about the intent to prepare an EIR for the proposed project and to solicit comments on the scope of the EIR. This notice also identifies environmental issues anticipated to be analyzed in the EIR. Comments received during the public scoping process will be considered during preparation of the EIR for this project.

This notice is available for public review on the department's website at https://sfplanning.org/sfceqadocs and at the San Francisco Permit Center's document viewing room on the second floor of 49 South Van Ness Avenue, San Francisco, CA 94103.

Written comments should be sent to Sherie George, San Francisco Planning Department, 49 South Van Ness Avenue, Suite 1400, San Francisco, California 94103; or emailed to CPC.447Battery530SansomeEIR@sfgov.org.

Project Summary

The San Francisco Fire Department, the San Francisco Bureau of Real Estate, and EQX JACKSON SQ HOLDCO LLC (project sponsors) propose to redevelop the approximately 24,830-square foot project site located on the block bound by Sansome Street to the west, Washington Street to the north, Battery Street to the east, and Merchant Street to the south. The proposed project would involve demolition of the existing 17,800-square foot, 3-story commercial building at 425 Washington Street (Block/Lot 0206/014), and the 12,862-square foot, 2-story commercial building at 439-445 Washington Street (Block/Lot 0206/013) owned by EQX JACKSON SQ HOLDCO LLC; the 20,154-square foot, 3-story commercial building at 447 Battery Street (Block/Lot 0206/002) owned by Battery Street Holdings LLC; and the 18,626-square-foot fire station at 530 Sansome Street (Block/Lot 0206/017) owned by the City and County of San Francisco. During construction, Fire Station 13 operations (including personnel and firetrucks) would temporarily relocate to nearby offsite existing San Francisco Fire Department facilities prior to demolition of 530 Sansome Street and until construction of a replacement fire station is completed. No construction or tenant improvements would be required for temporary relocation. No interruption of fire department service would occur and relocated fire department operations would continue to serve the Financial District neighborhood and the city in general.

The project sponsors propose to construct a 4-story replacement fire station and a separate high-rise building up to 41 stories tall. The replacement fire station would be located on the 447 Battery Street parcel and would include approximately 31,200 square feet (including basement) in a 4-story, approximately 55-foot-tall building (60 feet total, including rooftop mechanical equipment) on the eastern portion of the project site. The high-rise building, approximately 544 feet tall (574 feet total, including rooftop mechanical equipment), would be located on the remaining three parcels and would include approximately 7,405 square feet of retail/restaurant space; between approximately 344,840 and 390,035 square feet of office space; approximately 27,195 square feet of office amenity space; between approximately 127,710 and 188,820 square feet of hotel space for approximately 100 to 200 hotel rooms; and approximately 10,135 square feet of ballroom/pre-function/meeting space. There would be three below-grade levels under the high-rise building, which would provide approximately 74 vehicle parking spaces, 77 Class 1 and 27 Class 2 bicycle parking spaces, and utility rooms.

The proposed project would convert all of Merchant Street between Battery and Sansome streets into a shared street/living alley with approximately 12,695 square feet of privately owned public open space (POPOS).

Project Location and Site Characteristics

Project Site

The approximately 24,830-square-foot project site consists of four lots (Assessor's Block 0206, Lots 002, 013, 014, and 017) located on the block bound by Sansome Street to the west, Washington Street to the north, Battery Street to the east, and Merchant Street to the south (see **Figure 1**). The project site is located in the Financial District neighborhood of San Francisco. The project site is in the C-3-O Downtown-Office district and a 200-S Height and Bulk district.

Existing Site Characteristics

The project site is fully developed with no permeable surfaces. The project site is generally flat with a ground surface elevation of approximately 23 feet above mean sea level. The site is generally rectangular in shape, with approximately 99 feet of frontage on Sansome Street, 74 feet of frontage on Battery Street, 179 feet of frontage on Washington Street, and 276 feet of frontage on Merchant Street. The project site covers most of the Block 0206, except for lot 018-124 at 423 Washington Street which has approximately 97 feet of frontage on Washington Street and 25 feet on Battery Street (see **Figure 2**, p. 5). The two buildings at 425 and 439-445 Washington Street were built in 1906 and 1907, respectively, and a third story was added to the building at 425 Washington Street in 1928. Neither building is eligible for listing on the California Register of Historical Resources (California Register), nor are they eligible for inclusion in the nearby Jackson Square Historic District.[1] The Fire Station 13 was constructed in 1974. The sculpture mounted on the fire station building's north façade (referred to as *Untitled)* is considered individually eligible for listing in the California Register, and both the building and *Untitled* are contributors to the California Register-eligible Embarcadero Center Historic District.[2,3]

The fire station currently operates 24 hours per day and seven days per week and includes 34 full-time personnel, ten of which are on site at any given time. An approximately 74-foot-wide curb cut provides access to the fire trucks from Sansome Street, and an approximately 10-foot-wide curb cut on Merchant Street provides access to the existing ground-level garage with 21 parking spaces for Fire Station 13 employees and fire department vehicles and equipment.

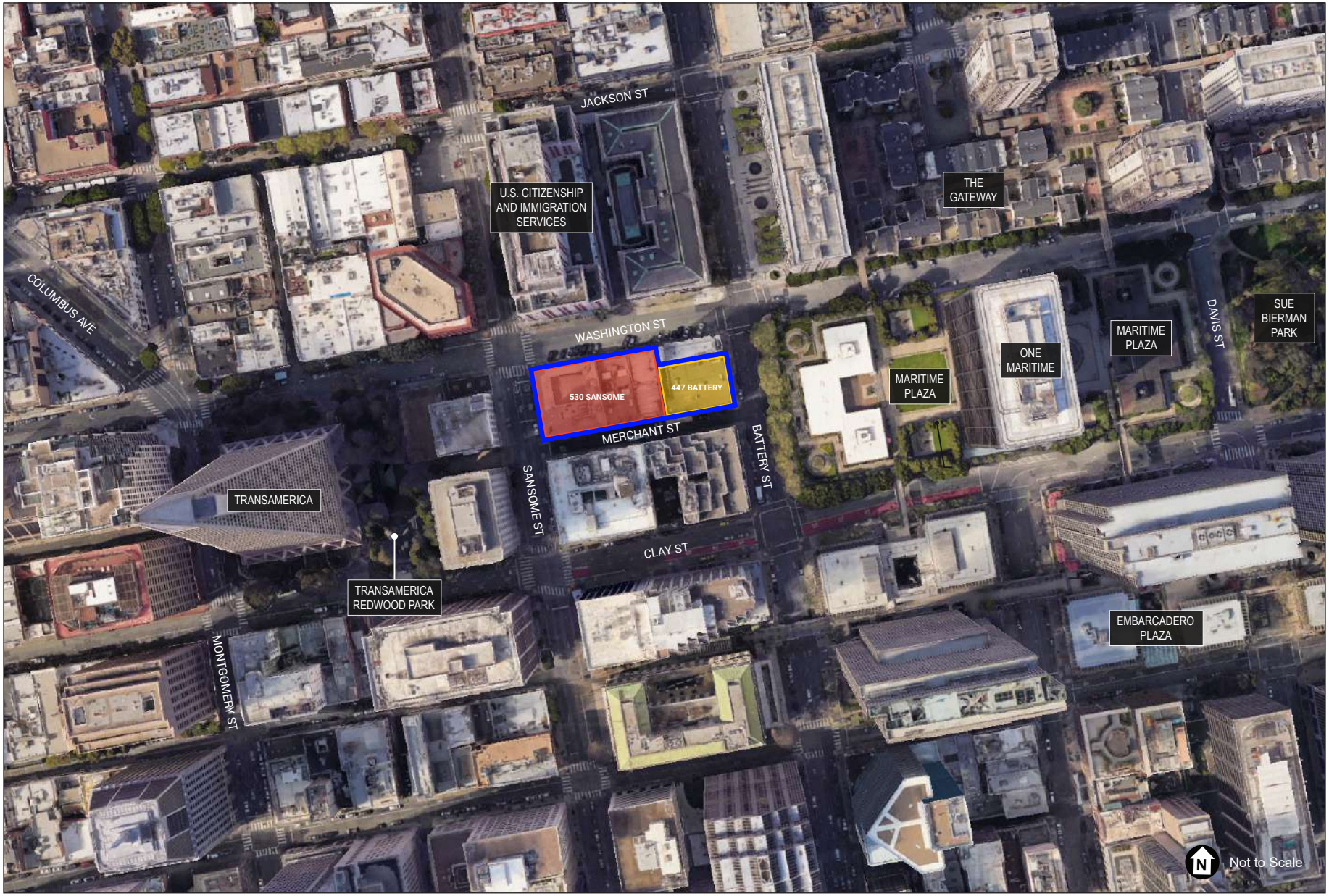
The three-story building at 447 Battery Street is currently designated as a historical landmark under article 10 of the planning code and is considered a historic resource.[4] The building is occupied by a wine bar on the ground floor and an enterprise software firm on the second floor. The remainder of the building is vacant.

[1] San Francisco Planning Department, *Preservation Team Review Form, 425 and 439-445 Washington Street,* February 11, 2018.
[2] San Francisco Planning Department, *Historic Resources Evaluation Response Part I, San Francisco*, December 3, 2020.
[3] Environmental Science Associates, *Historic Resources Evaluation Report, Part 1, 530 Sansome Street*, September 2020.
[4] See EIR Section 3.A, Historic Resources.

SOURCE: San Francisco Planning Department, 2024; ESA, 2024

447 Battery and 530 Sansome Street

FIGURE 1
PROJECT LOCATION



SOURCE: Skidmore, Owings & Merrill, LLP, 2024

447 Battery and 530 Sansome Street

FIGURE 2

AERIAL VIEW OF PROJECT SITE AND SURROUNDING USES

Surrounding Land Uses

The project site is primarily surrounded by office uses with ground-floor retail uses (see Figure 2, p. 5). U.S. Citizenship and Immigration Services offices are located to the north at 444 Washington Street. The Transamerica Pyramid and associated Transamerica Redwood Park are located to the west at 600 Montgomery Street. A nine-story office building with ground-floor retail uses is also located to the west at 545 Sansome Street. A seven-story office building with ground-floor retail uses and a basement is located to the east at 423 Washington Street. An eight-story office building is located to the south at 500 Sansome Street.

The nearest residential buildings include the 21-story mixed-use building at 550 Battery Street (the Gateway apartments and townhomes) and a 23-story mixed-use residential building northeast of the project site. The nearest hotels are the Club Quarters Hotel at 424 Clay Street and The Jay Hotel at 333 Battery Street, immediately south of the project site, and the Hilton at 750 Kearny Street, two blocks west of the project site. Although the project site is adjacent to three- and seven-story buildings, the area includes high-rise buildings as well, such as the Transamerica Pyramid, the second-tallest building in San Francisco, One Maritime Plaza and the 21-story mixed-use building at 550 Battery Street.

Vegetation in the immediate vicinity of the project site is generally limited to street trees. Nearby public parks and open spaces include Maritime Plaza, Transamerica Redwood Park, Sydney G. Walton Square, Ferry Park, Sue Bierman Park, Empire Park, Portsmouth Square Plaza, St. Mary's Square, Market/Battery Plaza, and One Bush Plaza.

Project Description

Table 1 summarizes the proposed project's characteristics.

Table 1 Proposed Project Characteristics

Project Component	Existing (sf)	Proposed (sf)	Net New (sf)
FIRE STATION 13			
Height of Building	Approx. 40'	60' (to top of rooftop appurtenances)	20'
Number of Stories	3	4 (above grade)	1
Office	20,155	0	-20,155
Public Facility (Fire Station)	0	24,440	24,440
Below Grade	0	6,760	6,760
Parking Spaces[a]	0	18	18
Class 1 Bicycle Parking Spaces[b]	0	4	4
Class 2 Bicycle Parking Spaces[b]	0	2	2
Car Share Parking Spaces[c]	0	0	0
SUBTOTAL	*20,155*	*31,200*	*11,045*

Project Component	Existing (sf)	Proposed (sf)	Net New (sf)
MIXED USE HOTEL HIGH-RISE BUILDING			
Height of Building	44'	574' (to top of rooftop appurtenances)	530'
Number of Stories	2–3	41 (above grade)	38-39
Public Facility (Fire Station)	18,625	0	-18,625
Hotel	0	Between 127,710 (approx. 100 hotel rooms, 3,660 SF Hotel Lobby) and 188,820 (approx. 200 hotel rooms, 3,660 SF Hotel Lobby on Level 3)[d]	Between 127,710 and 188,820
Hotel Ballroom/Pre-Function/Meeting	0	10,135	10,135
Back of House (BOH) for Hotel and Office Uses	0	16,170	16,170
Office	20,720	Between 344,840 and 390,035 [d]	Between 324,120 and 369,315
Office Amenities	0	27,195	27,195
Retail/Restaurant	0	7,405	7,405
Passenger Loading/Parking Area	0	705	705
Below Grade	8,850	52,410	43,560
Parking Spaces	21	74	53
Loading Spaces[e]	0	1,840	1,840
Class 1 Bicycle Parking Spaces[b]	0	77	77
Class 2 Bicycle Parking Spaces[b]	0	27	27
Car Share Parking Spaces[c]	0	0	0
SUBTOTAL	*48,195*	*649,510*	*601,315*
PROJECT TOTAL		***680,710***	***612,360***

SOURCES: Skidmore, Owings & Merrill LLP, ALTA, San Francisco Fire Department, 2024

ABBREVIATION: sf = square feet

NOTES:

a. Parking provided exceeds limits on accessory parking in San Francisco Planning Code due to fire department parking requirements. The fire department parking spaces would be entitled as a non-accessory parking garage.
b. Bike parking is calculated per San Francisco Planning Code section 155.2. The proposed project provides 20 of the 27 class 2 bicycle parking spaces. The remaining seven spaces are proposed through a Development Agreement modification and in-lie payment pursuant to Planning Code section 430.
c. A Planning Code section 166 modification is proposed for car share parking.
d The square footage calculations for each use vary from those shown in the plan set submitted for the project because they do not include basement square footage.
e Loading spaces are calculated per San Francisco Planning Code article 1.5, section 152.1.

447 Battery Street Replacement Fire Station

The proposed project includes demolition of the existing Fire Station 13 at 530 Sansome Street and construction of a replacement fire station on the eastern portion of the project site on the 447 Battery Street parcel. The site plan is shown in **Figure 3,** site elevation is shown in **Figure 4**, p. 10, and building sections are shown in **Figure 5**, p. 11. The replacement fire station would not result in an increase in staff or operations but would result in an adequately sized state-of-the-art station with built-in training features based on current operations. The proposed 55-foot-tall, 4-story fire station would provide approximately 24,440 square feet on Levels 1 through 4. In addition to the four floors above grade, the replacement fire station would have one 6,760-square-foot basement level reserved for equipment storage, utility rooms parking spaces, and class I bicycle parking spaces (see **Figure 6**, p. 12). The basement would be accessed internally via one egress stair and one elevator and externally via a vehicular ramp from Merchant Street. Fire apparatuses would access the station on Battery Street. The ground floor (Level 1) would contain the apparatus bays, a public lobby and restroom, gear and equipment rooms, a communications room, an office, and additional support spaces (see Figure 6, p. 12). Level 2 would contain the living areas including dining and kitchen spaces and a day room, with a small exterior terrace (**Figure 7**, p. 13). Level 3 would be dedicated to sleeping quarters, restrooms, and locker space, while Level 4 would contain a fitness room, library, rooftop mechanical equipment, and an exterior training roof (see Figure 7, p. 13 and **Figure 8**, p. 14).

Fire station apparatuses responding to calls would either turn right on Battery Street and follow the southbound, one-way flow of traffic or turn left on Battery after employing a signal control stopping traffic at the intersection of Washington and Battery streets. Fire apparatuses returning to the station would approach the bays from the north and with the flow of one-way southbound traffic on Battery Street.

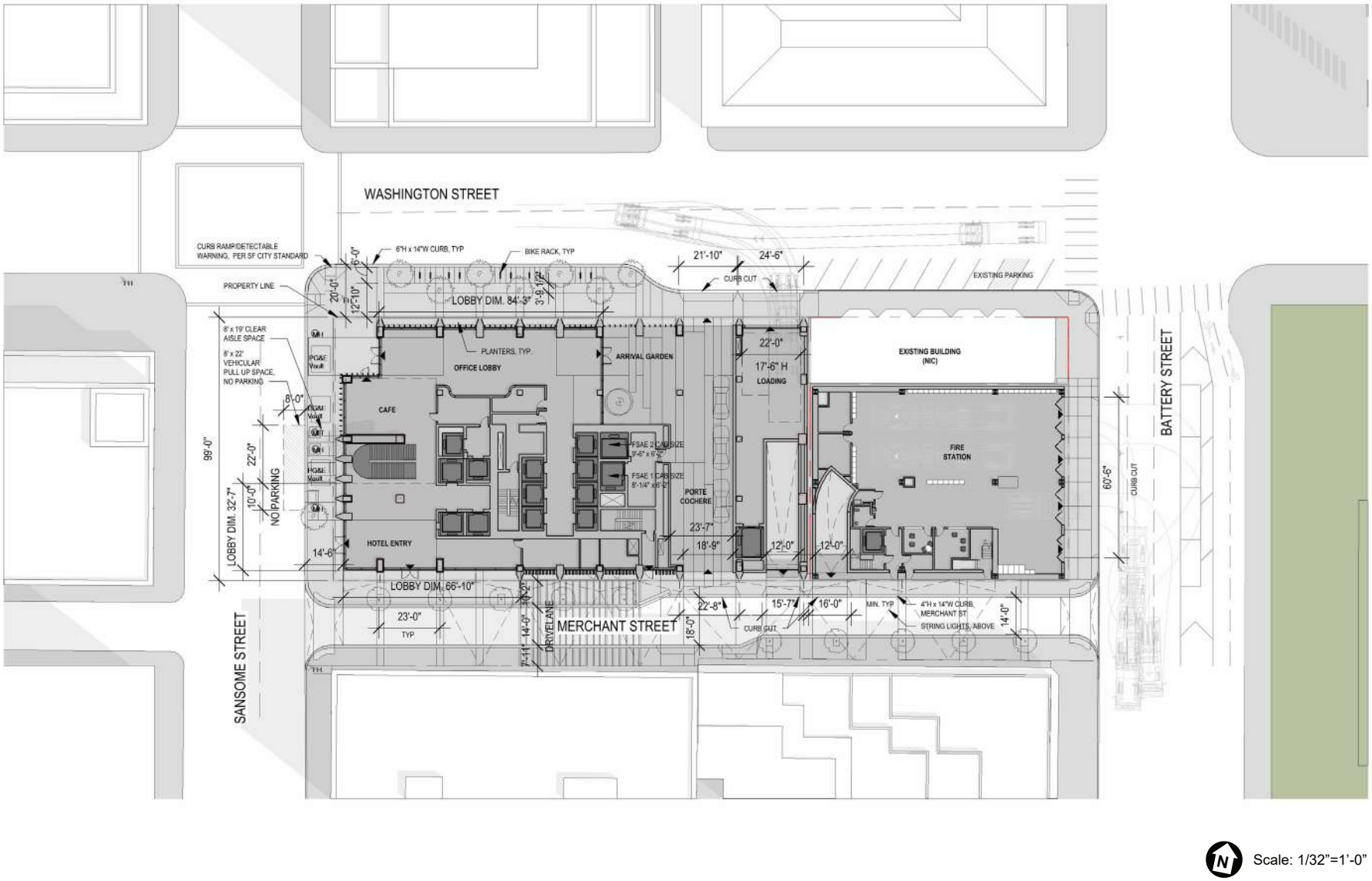
On the north façade of the existing Fire Station 13 building at 530 Sansome Street is a wall-mounted sculpture by artist Henri Marie-Rose named *Untitled*. The three-dimensional copper sculpture depicts firefighters with a hose battling a blaze next to the letters “SFFD.” The sculpture *Untitled* would be integrated into the project and relocated to either the replacement fire station’s east façade on Battery Street or south façade on Merchant Street (see Figure 3, p. 9).

VEHICLE PARKING

The proposed project would include 18 vehicle parking spaces for the fire department in the basement level of the replacement fire station (see Figure 6, p. 12).

BICYCLE PARKING

The proposed project would include four class 1 bicycle parking spaces on the basement level of the replacement fire station and two class 2 bicycle parking spaces on streets adjacent to the project site, subject to SFMTA and San Francisco Public Works approval.



SOURCE: Skidmore, Owings & Merrill, LLP, 2024

447 Battery and 530 Sansome Street

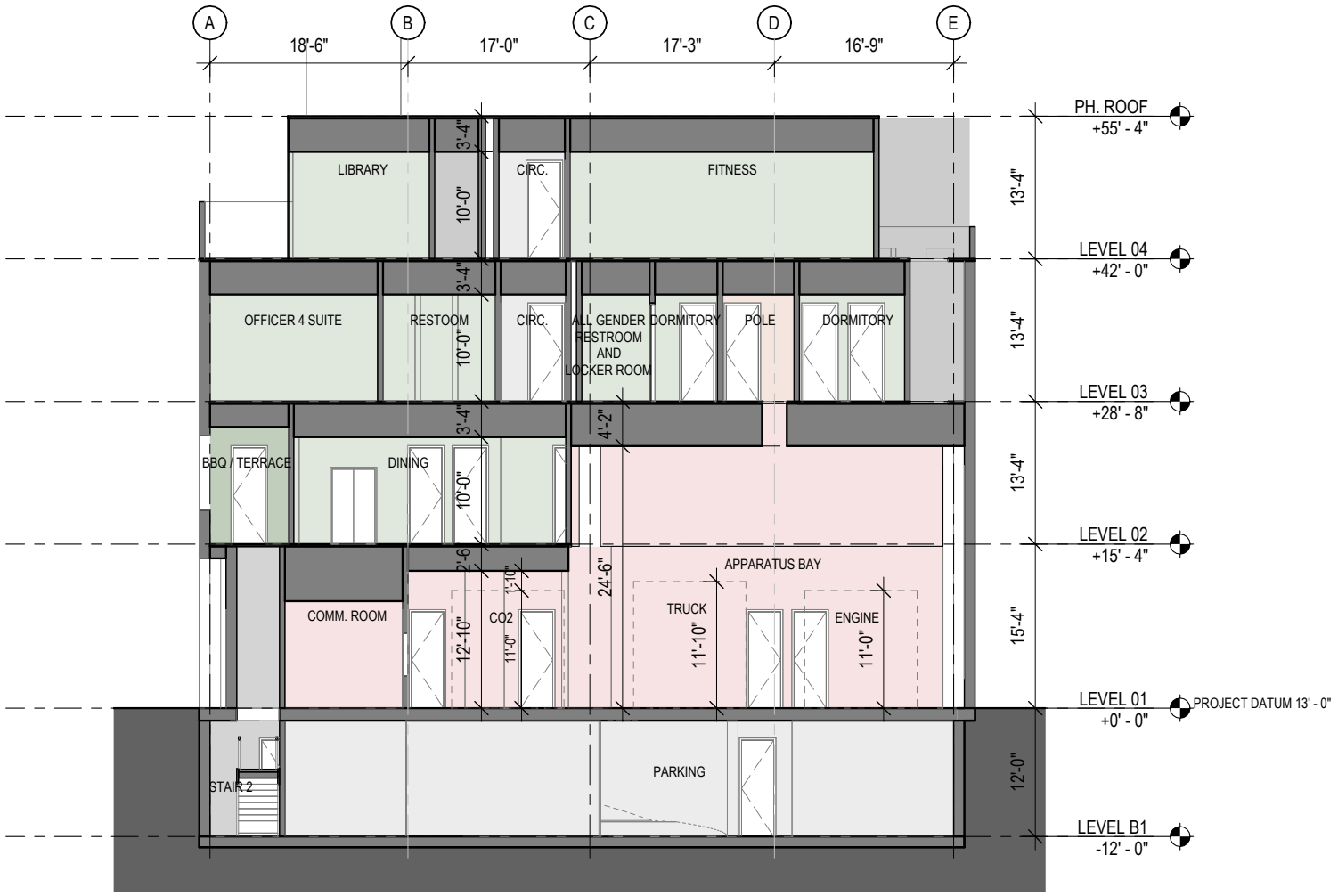
FIGURE 3
SITE PLAN

SOURCE: Skidmore, Owings & Merrill, LLP, 2024

447 Battery and 530 Sansome Street

FIGURE 4

447 BATTERY STREET REPLACEMENT FIRE STATION BASE ELEVATION

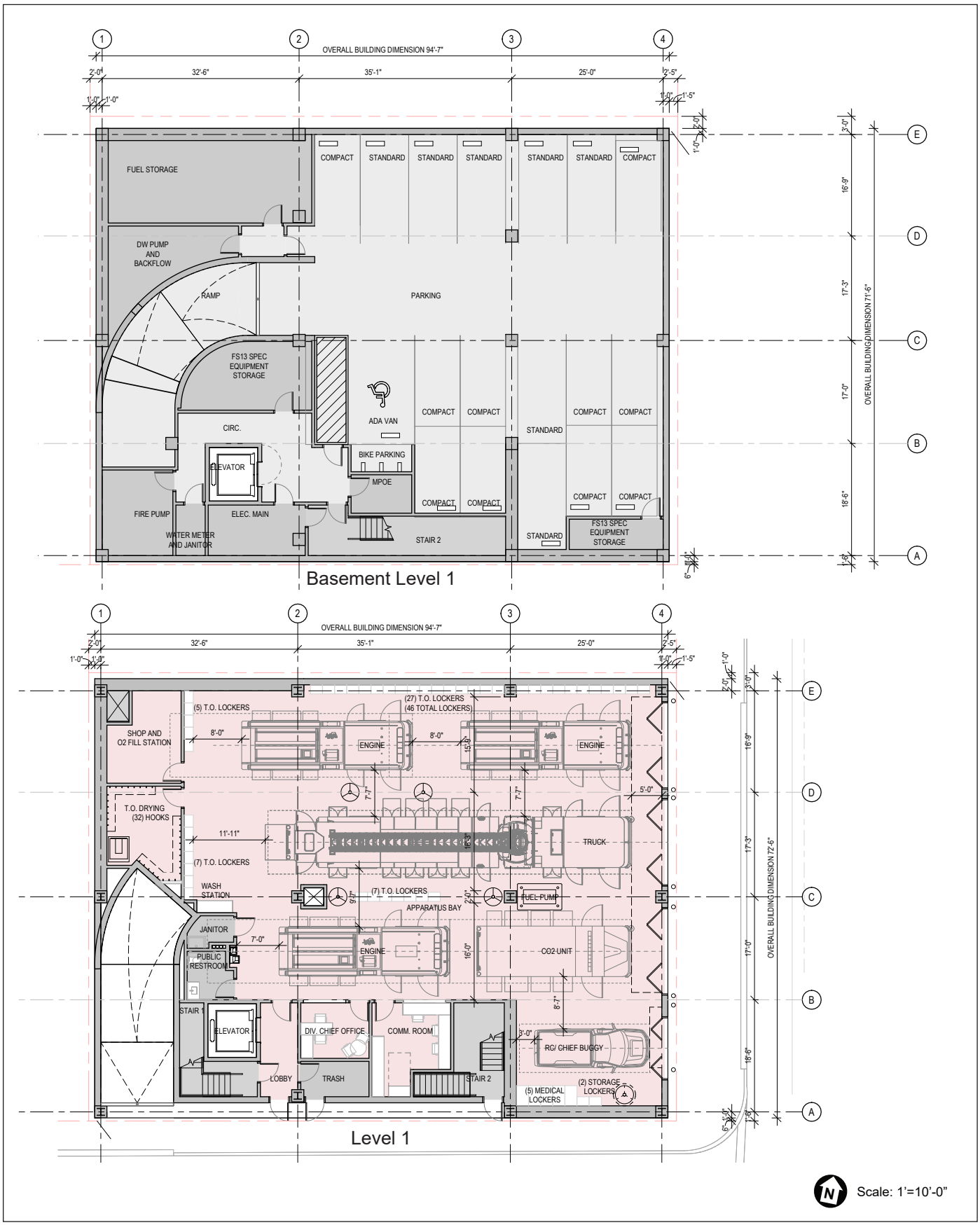


SOURCE: Skidmore, Owings & Merrill, LLP, 2024

447 Battery and 530 Sansome Street

FIGURE 5

REPLACEMENT FIRE STATION EAST/WEST BUILDING SECTION

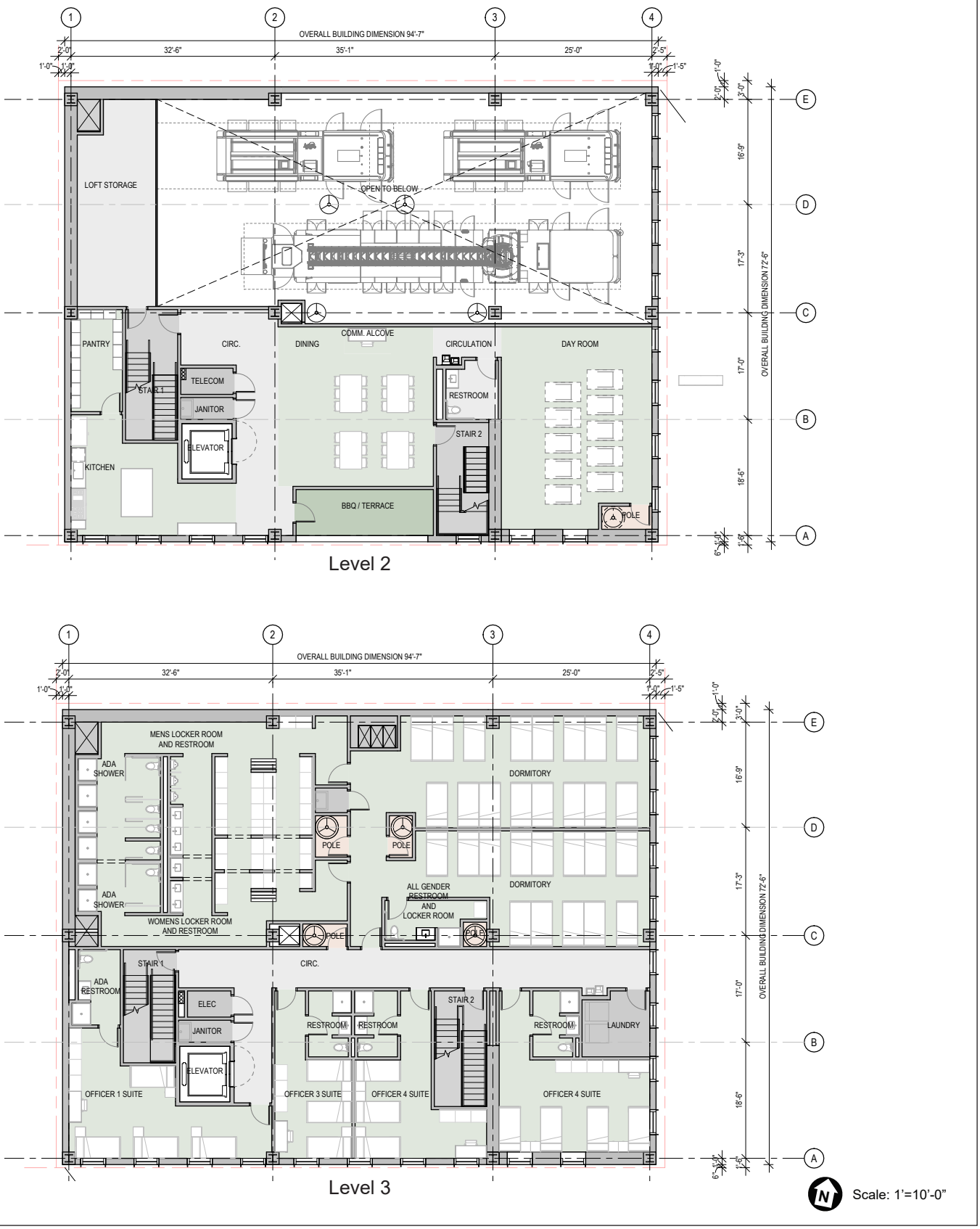


SOURCE: Skidmore, Owings & Merrill, LLP, 2024

447 Battery and 530 Sansome Street

FIGURE 6

REPLACEMENT FIRE STATION BASEMENT LEVEL 1 AND LEVEL 1 FLOOR PLAN

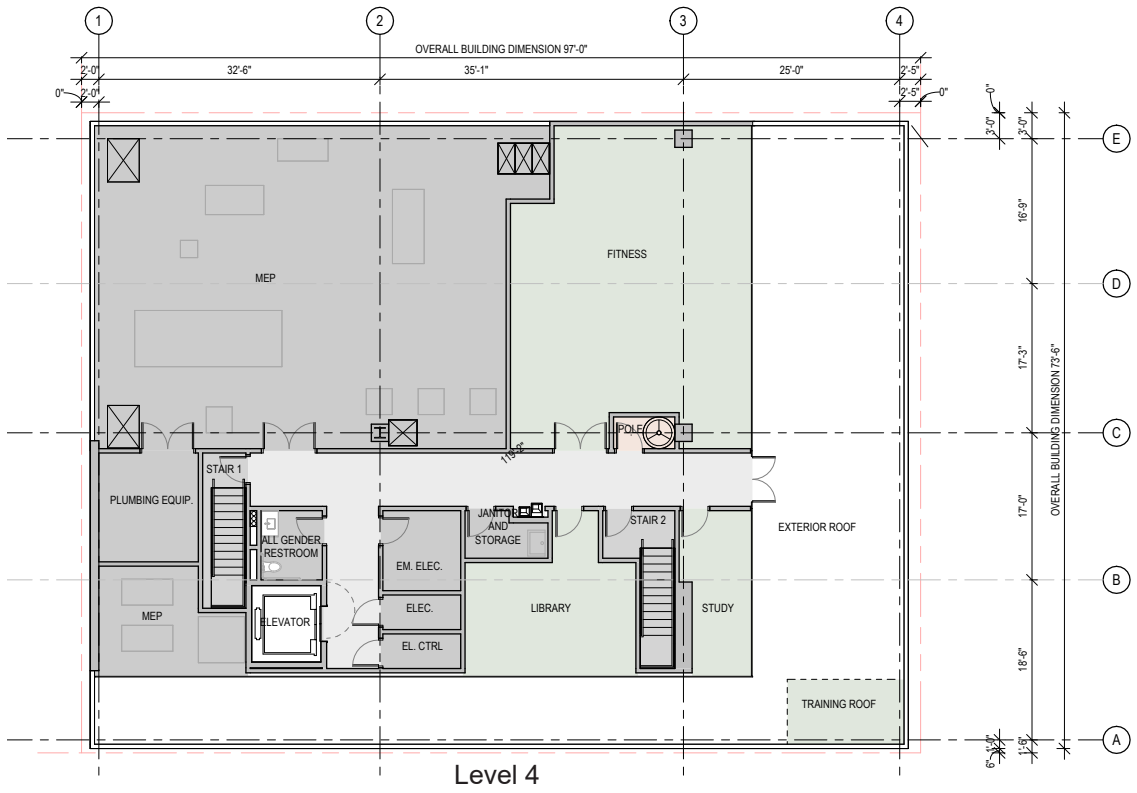


SOURCE: Skidmore, Owings & Merrill, LLP, 2024

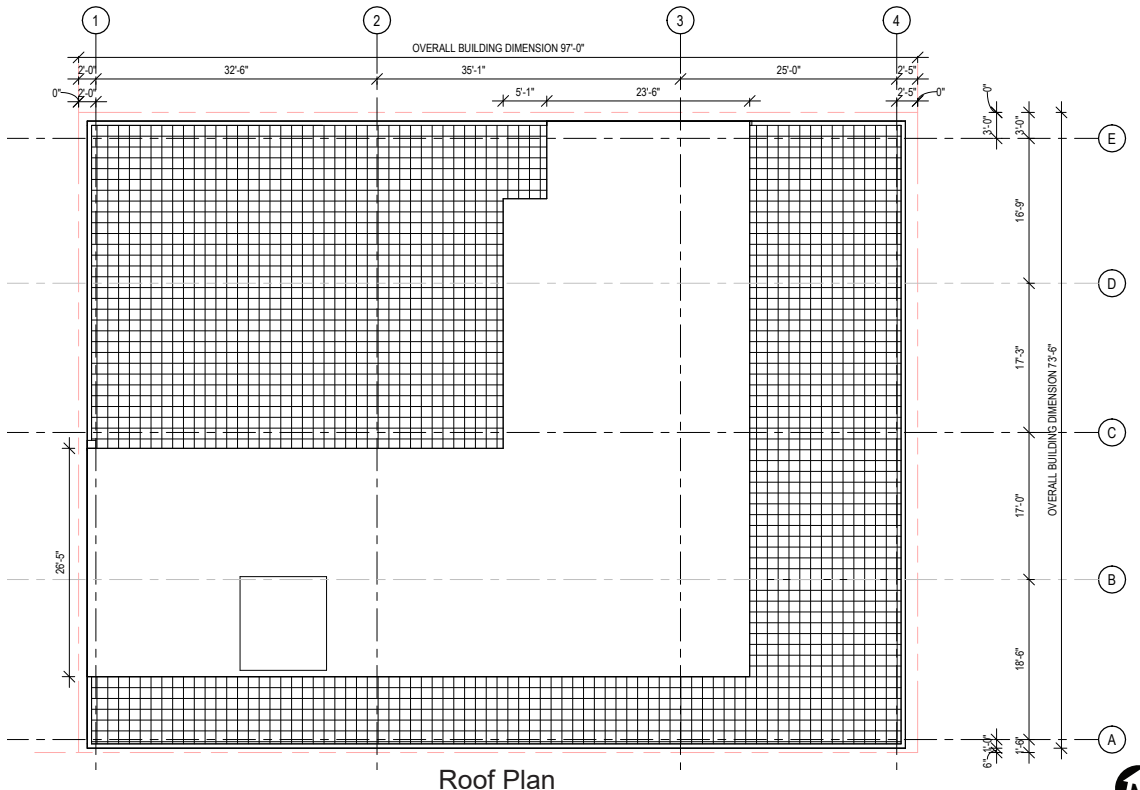
447 Battery and 530 Sansome Street

FIGURE 7

REPLACEMENT FIRE STATION LEVELS 2-3 FLOOR PLAN



Level 4



Roof Plan

Scale: 1'=10'-0"

SOURCE: Skidmore, Owings & Merrill, LLP, 2024

447 Battery and 530 Sansome Street

FIGURE 8

REPLACEMENT FIRE STATION LEVEL 4 FLOOR PLAN AND ROOF PLAN

530 Sansome Street Mixed-Use High-Rise Building

Figure 9 shows the site elevation of the proposed 41-story high-rise building, and **Figure 10**, p. 17 shows the high-rise building sections. **Figure 11** through **Figure 17**, pp. 18 through 24, show representative floor plans for the proposed project's mixed-use high-rise building.

RETAIL/RESTAURANT USE

The high-rise building would include approximately 7,405 square feet of retail/restaurant use on Levels 1 through 3. The café and food and beverage space on the ground floor would be accessed from a pedestrian entrance on Sansome Street.

OFFICE USE

The high-rise building would include office use ranging between approximately 344,840 and 390,035 square feet. The representative floor plans show office use on Levels 18 through 41. Approximately 27,195 square feet of office amenities (e.g., food and beverage, fitness, and coworking spaces) would be located on two levels of the building (shown on Levels 16 and 17 in the representative floor plans). Outdoor terrace spaces would be located on the north or south end of the building on intermittent levels. The main office lobby would be located on Level 1 and would be accessible from Sansome Street. The office drop-off for passengers would be at the internal drive-through area on the east side of the main office lobby.

HOTEL USE

The high-rise building would include a hotel ranging between approximately 127,710 square feet (approximately 100 rooms) and 188,820 square feet (approximately 200 guest rooms). The representative floor plans show hotel use with 200 rooms located on Levels 4 through 14. The hotel arrival space, accessible from both Sansome Street and Merchant Street, would be located at the southwest corner of Level 1. The main hotel lobby would be located on Level 3.

BALLROOM/PRE-FUNCTION/MEETING SPACE

The high-rise building would include a ballroom, pre-function space, and meeting space, totaling approximately 10,135 square feet, on Level 3. The ballroom, pre-function space, and meeting space would be accessible from the hotel and office levels.

VEHICLE PARKING

The proposed project would include 74 vehicle parking spaces for office and hotel uses on basement Levels 2 and 3 under the high-rise building.

BICYCLE PARKING

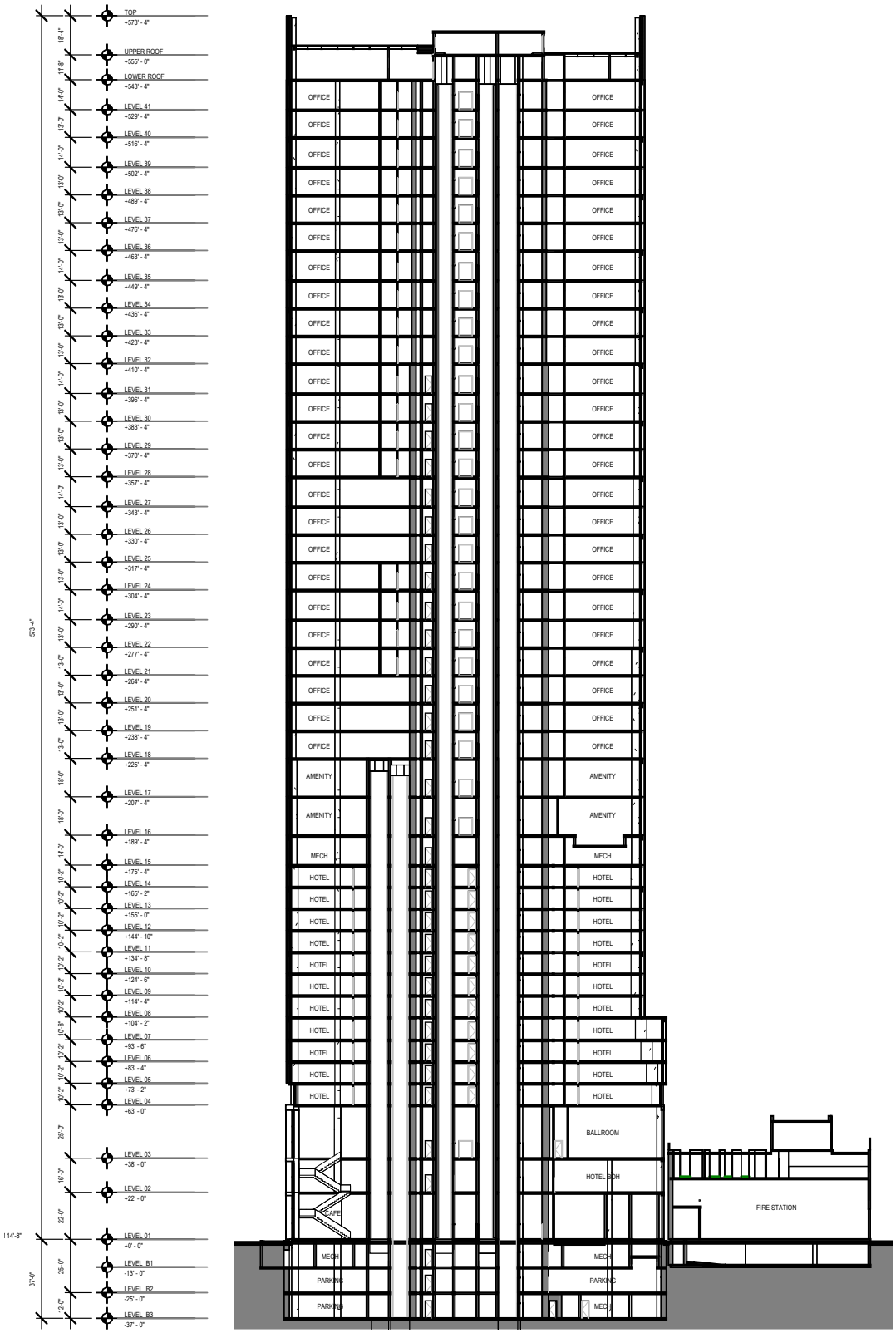
The proposed project would include 77 class 1 bicycle parking spaces on basement Level 1 and 27 class 2 bicycle parking spaces on streets adjacent to the project site, subject to SFMTA and San Francisco Public Works approval.

SOURCE: Skidmore, Owings & Merrill, LLP, 2024

447 Battery and 530 Sansome Street

FIGURE 9

PROPOSED PROJECT OVERALL SOUTH ELEVATION

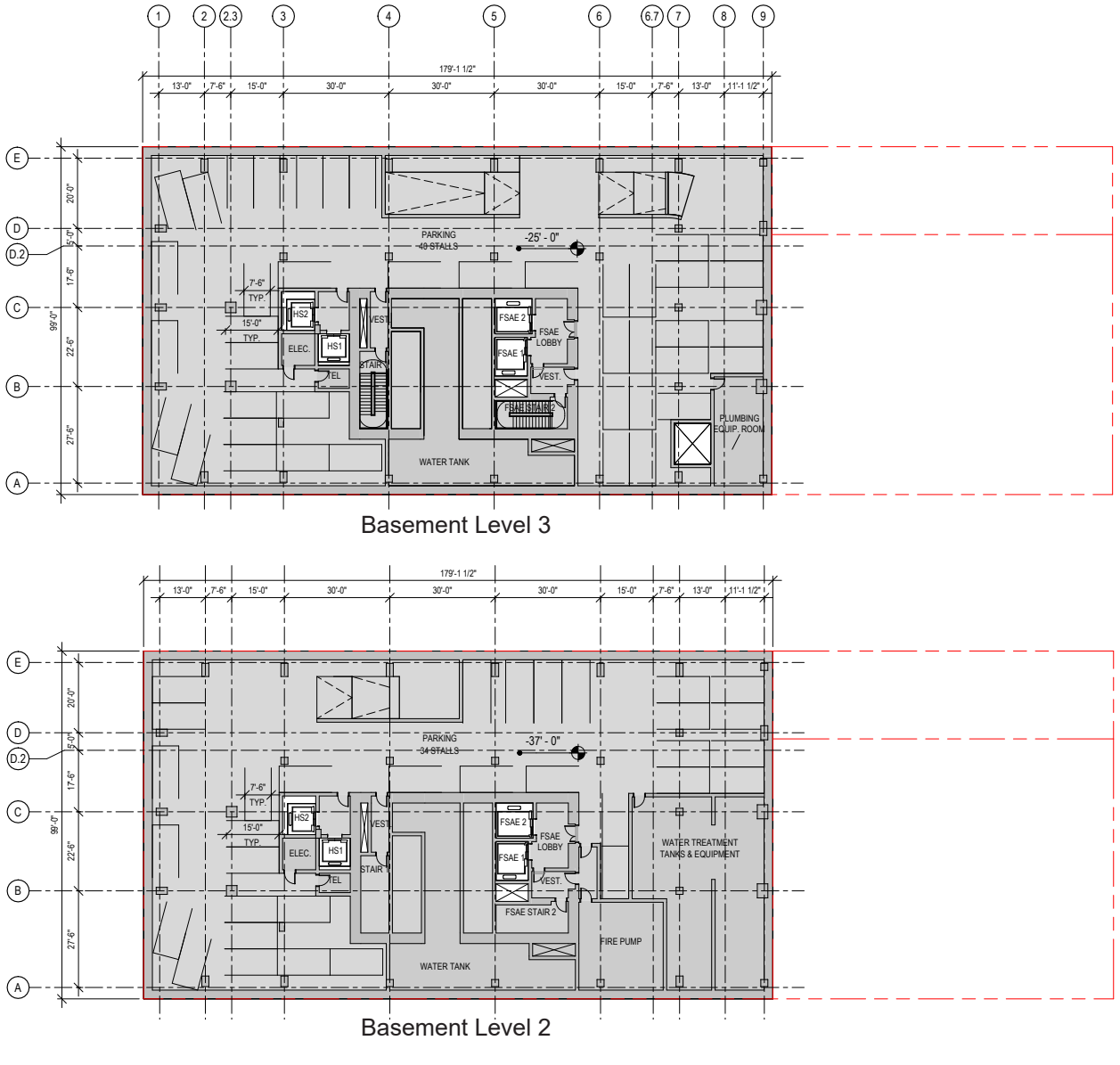


SOURCE: Skidmore, Owings & Merrill, LLP, 2024

447 Battery and 530 Sansome Street

FIGURE 10

HIGH-RISE BUILDING EAST-WEST SECTION

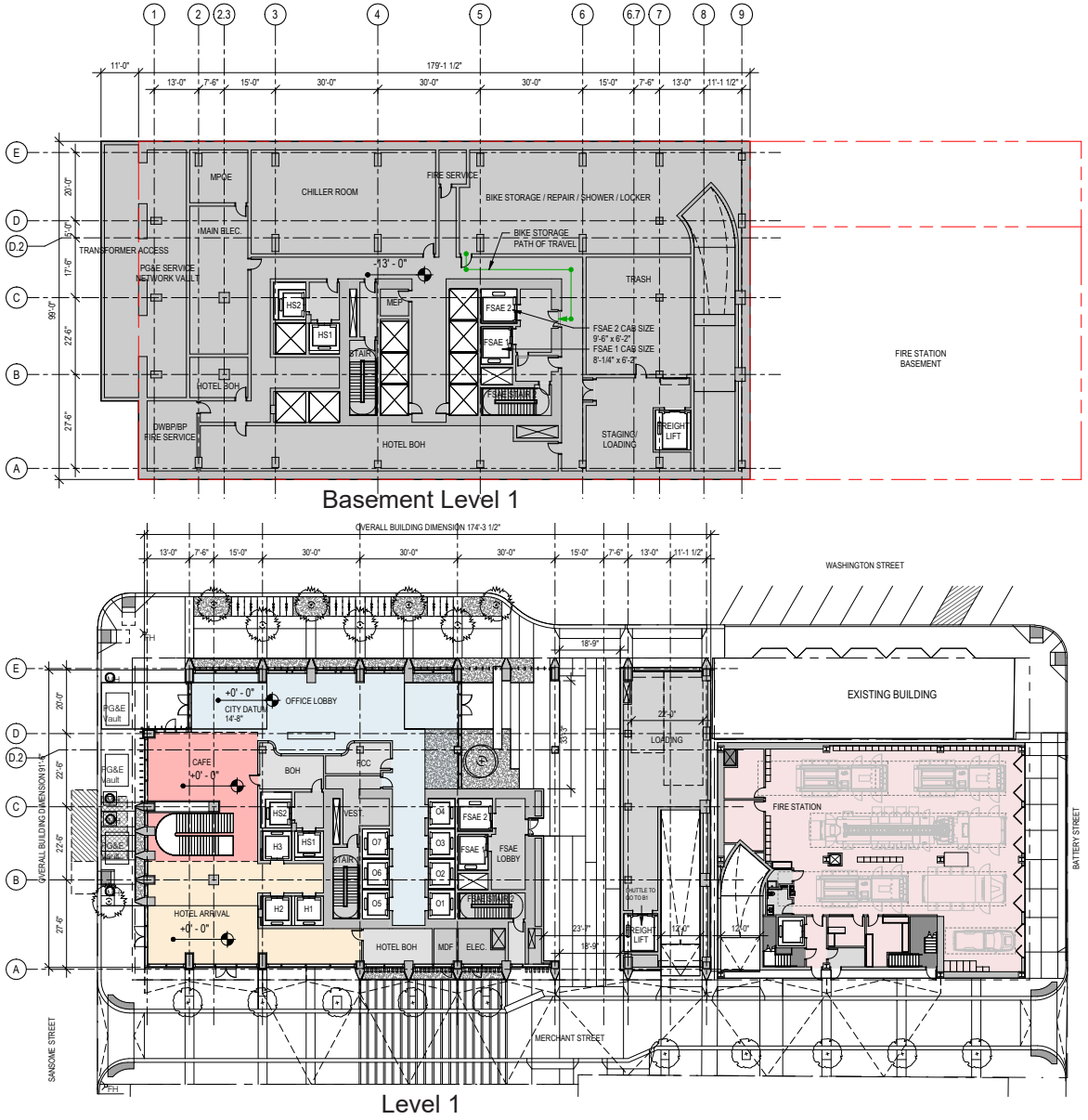


SOURCE: Skidmore, Owings & Merrill, LLP, 2024

447 Battery and 530 Sansome Street

FIGURE 11

HIGH-RISE BUILDING BASEMENT LEVELS 3 AND 2 FLOOR PLAN



SOURCE: Skidmore, Owings & Merrill, LLP, 2024

447 Battery and 530 Sansome Street

FIGURE 12

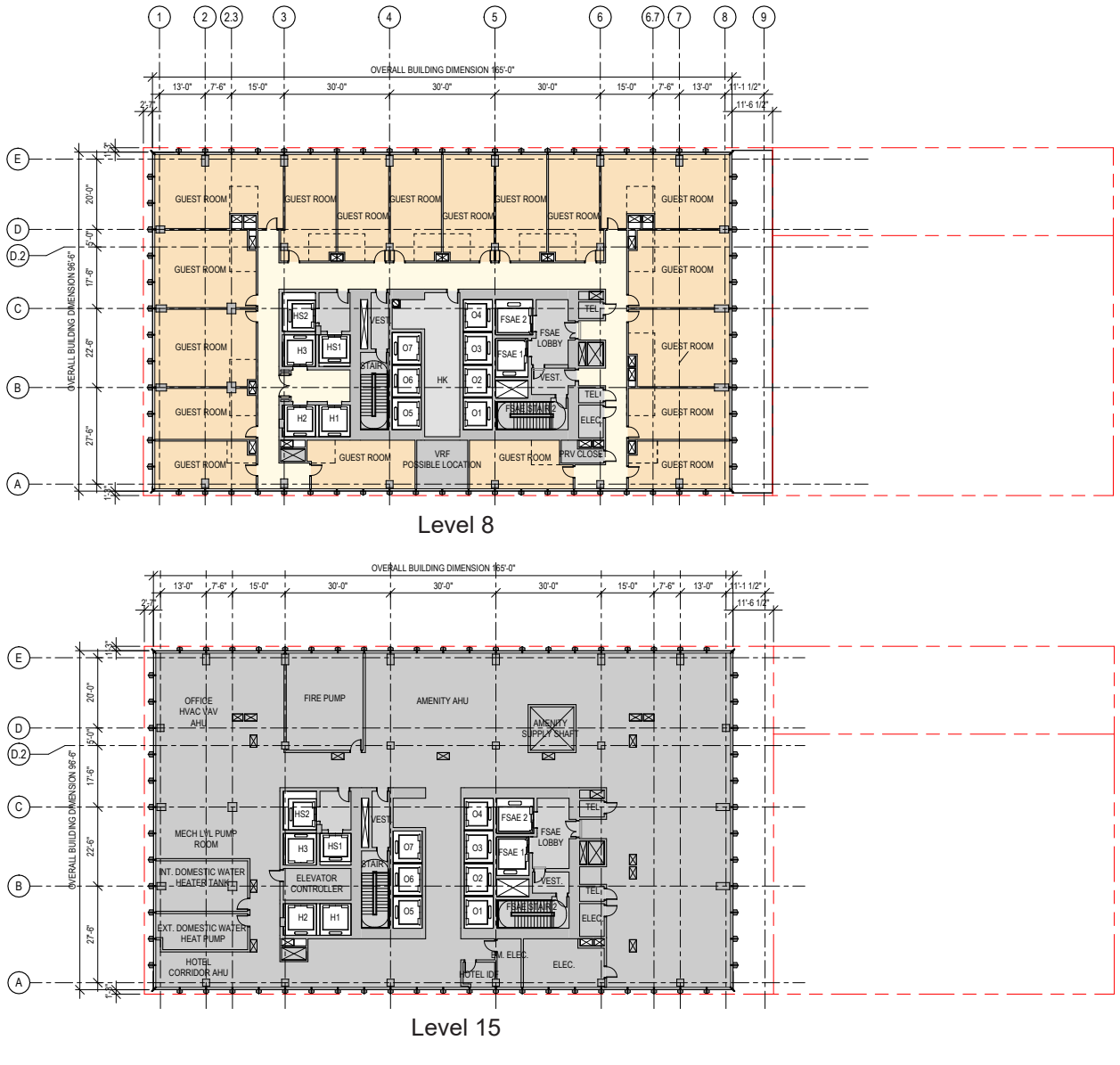
HIGH-RISE BUILDING BASEMENT LEVEL 1 AND LEVEL 1 FLOOR PLAN

SOURCE: Skidmore, Owings & Merrill, LLP, 2024

447 Battery and 530 Sansome Street

FIGURE 13

HIGH-RISE BUILDING LEVELS 2-3 FLOOR PLAN

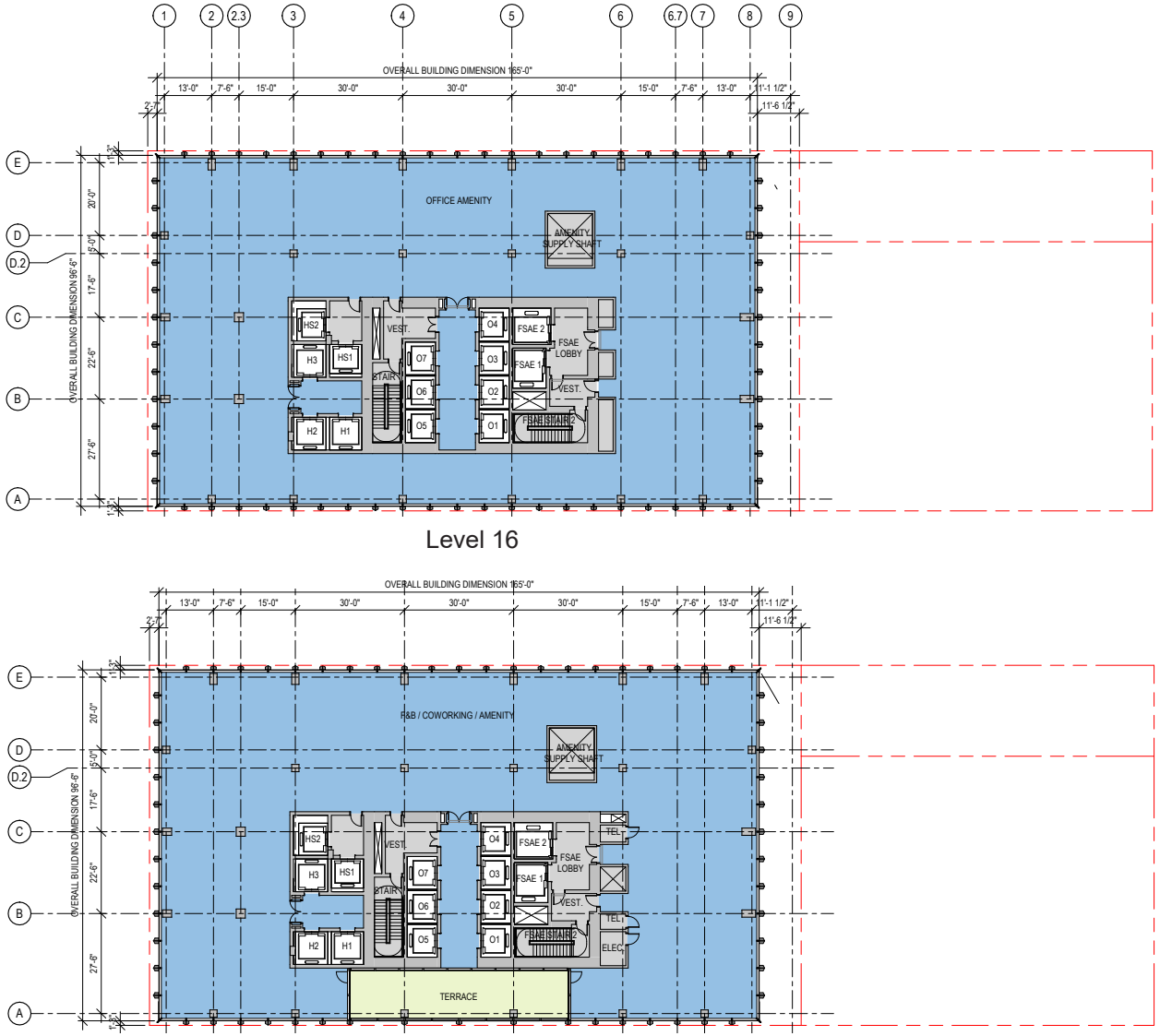


SOURCE: Skidmore, Owings & Merrill, LLP, 2024

447 Battery and 530 Sansome Street

FIGURE 14

HIGH-RISE BUILDING LEVEL 8 (TYPICAL HOTEL LEVEL) AND LEVEL 15 FLOOR PLAN

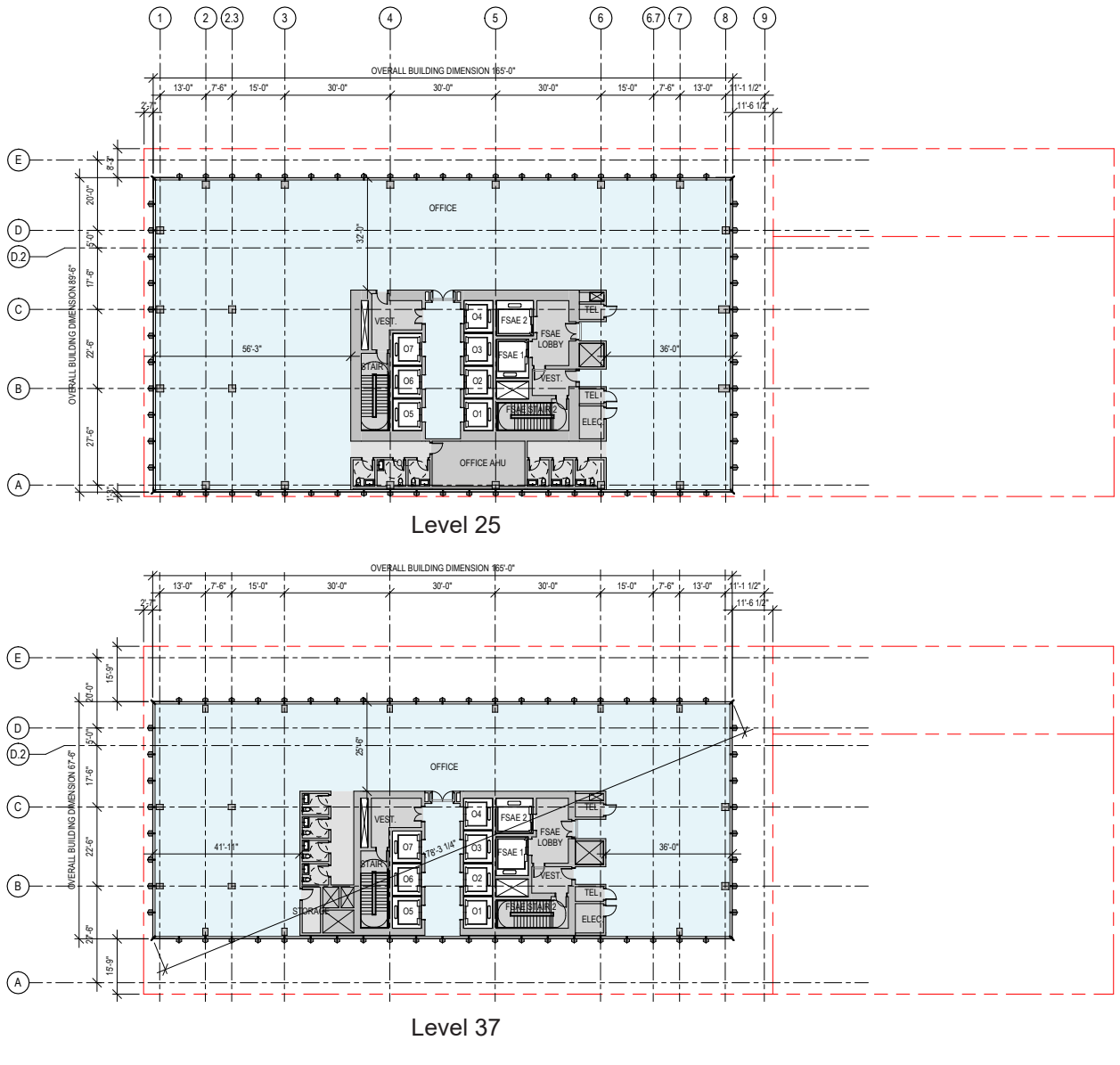


SOURCE: Skidmore, Owings & Merrill, LLP, 2024

447 Battery and 530 Sansome Street

FIGURE 15

HIGH-RISE BUILDING LEVELS 16-17 FLOOR PLAN

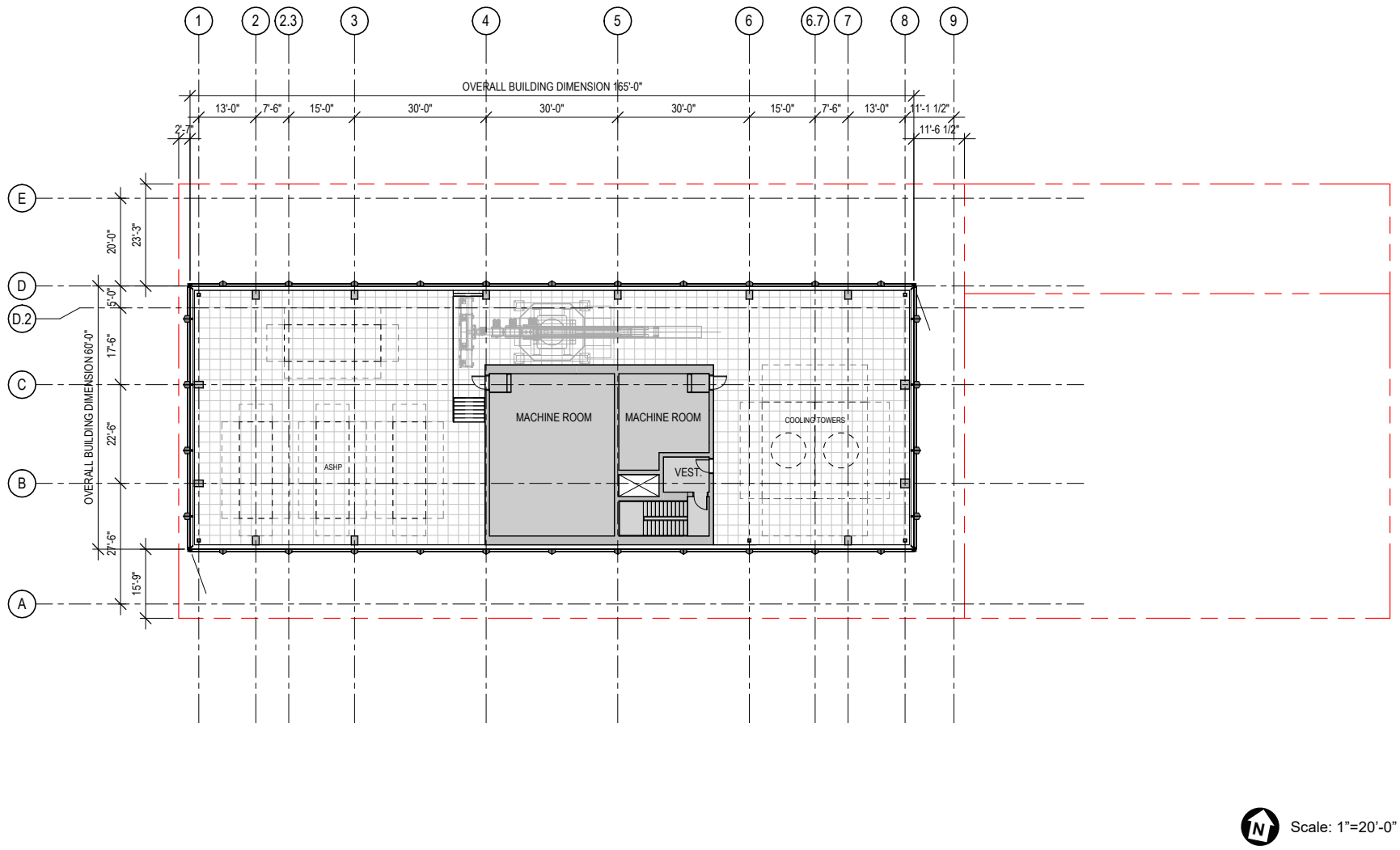


SOURCE: Skidmore, Owings & Merrill, LLP, 2024

447 Battery and 530 Sansome Street

FIGURE 16

HIGH-RISE BUILDING LEVEL 25 AND LEVEL 37 FLOOR PLAN (TYPICAL OFFICE LEVELS)



SOURCE: Skidmore, Owings & Merrill, LLP, 2024

447 Battery and 530 Sansome Street

FIGURE 17

HIGH-RISE BUILDING ROOF PLAN

Vehicle and Loading Access

Firetruck access to the replacement fire station would occur via an approximately 70-foot-wide curb cut on Battery Street. Access to the fire department parking spaces located on the basement level of the replacement fire station would be from a ramp on Merchant Street.

The high-rise building would provide two loading dock spaces accessible from Washington Street via an approximately 25-foot-wide curb cut at the northeast corner of the first floor. The parking spaces located on the basement levels would be from a ramp on Merchant Street.

Office drop-off for passengers and hotel valet parking drop off would be located at the internal drive-through area on the east side of the main office lobby on Level 1. In addition, and subject to review and approval by the SFMTA, the proposed project would include a passenger loading zone that would extend along the east side of Sansome Street. The vehicle circulation plan is shown in **Figure 18**.

Streetscape Improvements and Open Space

Implementation of the proposed project would remove the three existing street trees along the north side of Merchant Street. The proposed project would comply with San Francisco Public Works Code requirements for street trees associated with new developments by including four new street trees along Sansome Street and five new street trees along Merchant Street. An in-lieu fee would be paid for street tree plantings otherwise required by the public works code that cannot reasonably be accommodated on the site.

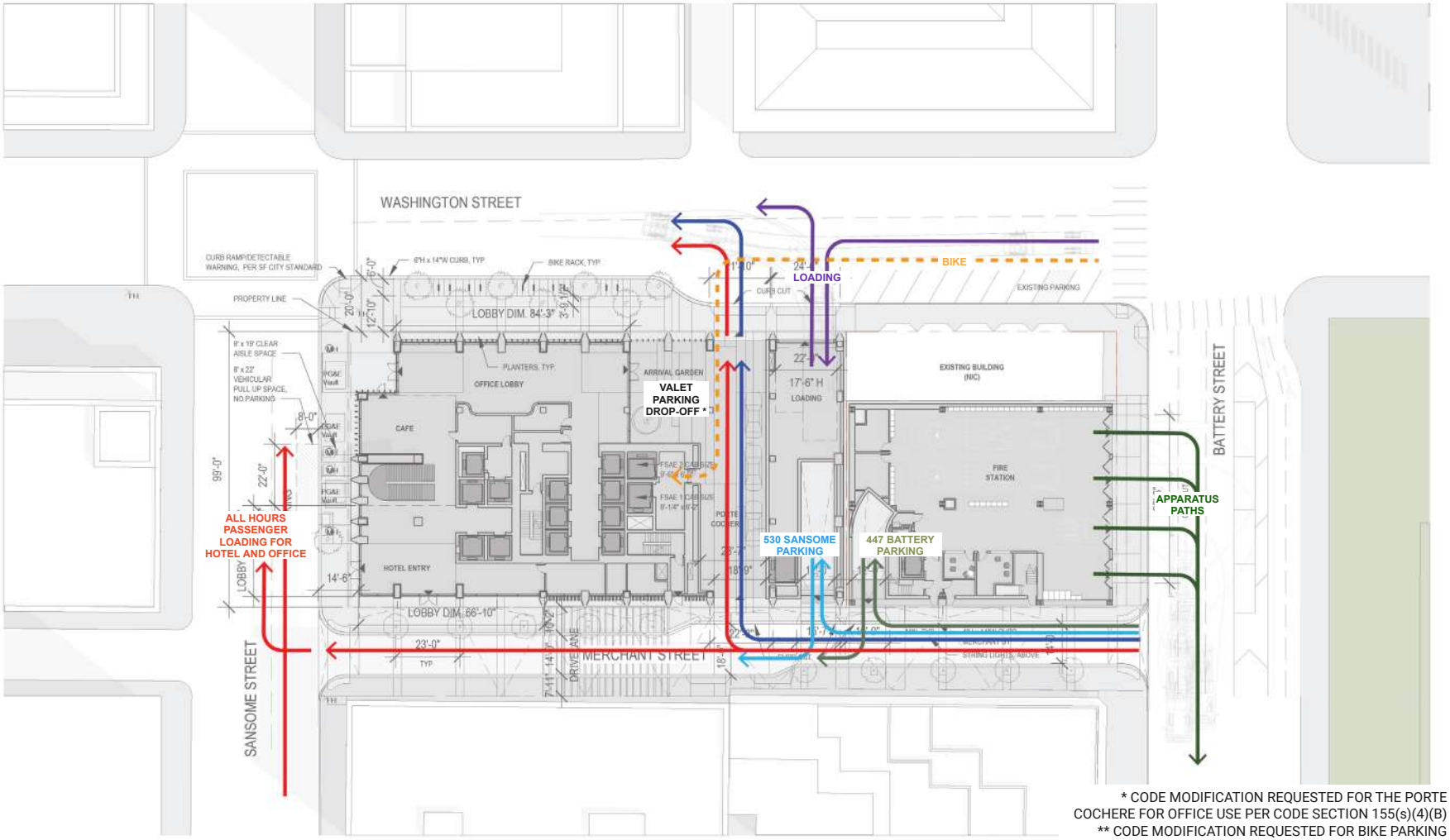
The proposed project would include conversion all of Merchant Street into a shared street/living alley[5] with approximately 12,695 square feet of POPOS that would extend from Sansome Street to the eastern edge of the project site (see **Figure 19**, p. 27). Streetscape improvements include installation of a raised crosswalk and roadway ramp at Merchant Street's intersections with Battery and Sansome streets, new street lighting and installation of street furnishings.

The proposed project would include a plan for driveway loading and operations and the project's POPOS programming and activation plan on Merchant Street. The plans and programming would be subject to approval from the planning department, SFMTA, and San Francisco Public Works.

The proposed project would include removal of up to 17 existing on-street parking spaces along the southern side of Washington Street between Sansome and Battery streets and provide a freight loading zone in front of the loading dock on Washington Street for the high-rise building. The proposed project would include removal of four existing on-street parking spaces along the western edge of Battery Street to provide firetruck and apparatus access to the fire station.

Implementation of any proposed improvements within the public right-of-way would require coordination with city agencies, including SFMTA and San Francisco Public Works, for approvals regarding sidewalk widening and modifications to related infrastructure.

[5] A shared street/living alley is a narrow, low-volume traffic street designed to prioritize pedestrians, bicyclists, and provides space for social uses. Vehicles may access but with reduced speeds.

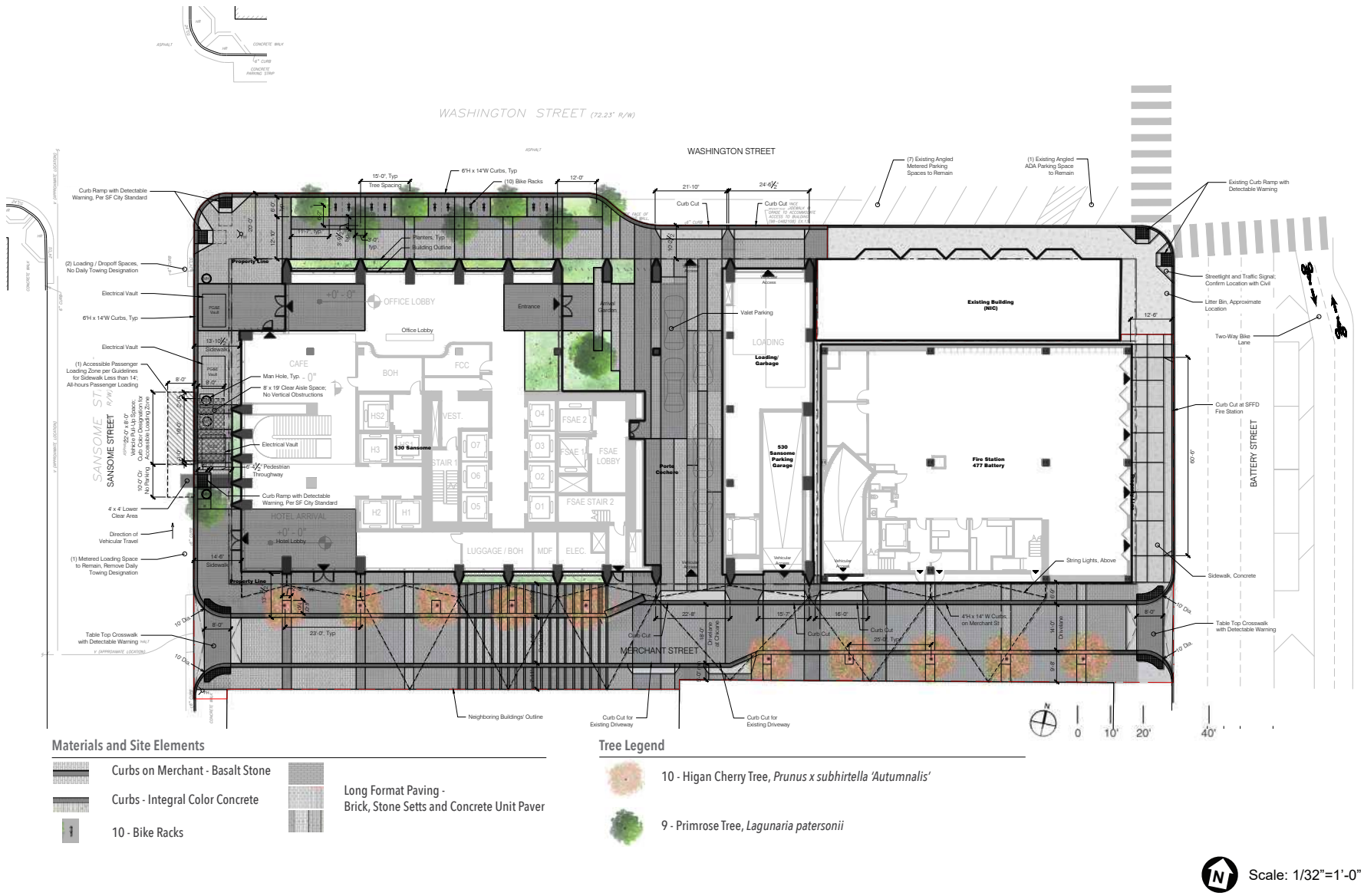


SOURCE: Skidmore, Owings & Merrill, LLP, 2024

447 Battery and 530 Sansome Street

FIGURE 18

VEHICLE CIRCULATION PLAN



Materials and Site Elements

- Curbs on Merchant - Basalt Stone
- Curbs - Integral Color Concrete
- 10 - Bike Racks
- Long Format Paving - Brick, Stone Setts and Concrete Unit Paver

Tree Legend

- 10 - Higan Cherry Tree, *Prunus x subhirtella 'Autumnalis'*
- 9 - Primrose Tree, *Lagunaria patersonii*

Scale: 1/32"=1'-0"

SOURCE: Skidmore, Owings & Merrill, LLP, 2024

447 Battery and 530 Sansome Street

FIGURE 19
LANDSCAPE PLAN

Utilities and Stormwater Retention

The proposed project would include connections to existing sewer, water, and electricity lines along Sansome, Battery, and Washington Streets. The proposed project also would include implementation of stormwater management in compliance with the City's 2016 Stormwater Management Requirements and Design Guidelines to ensure the proposed project meets performance measures set by the San Francisco Public Utilities Commission related to stormwater runoff rate and volume prior to connection to the existing combined sewer system.

Project Construction

Construction of the proposed project would last approximately 39 months, beginning in 2027 (see **Table 2**). Construction would begin with mobilization and staging, followed by demolition and site preparation, structural and large utility work, and architectural and site work. Some construction stages would overlap. Demolition would take approximately one month. Excavation and shoring would last approximately six months. Foundation and below-grade construction would last about 22 months. Building construction and exterior and interior finishing phases would partially overlap and last approximately 32 months. Construction of the basement levels and foundation installation would require excavation extending to approximately 15 feet below ground surface (bgs) for the replacement fire station and approximately 40 feet bgs for the 41-story building. Overall, excavation of the basement levels would remove approximately 42,000 cubic yards of soil.

Table 2 **Preliminary Construction Schedule**

Construction Stage	Start	Finish	Duration
Demolition	1/1/2027	2/5/2027	1 month
Grading/Excavation	2/6/2027	7/31/2027	6 months
Drainage/Utilities/Sub-Grade	3/14/2027	6/22/2027	3 months
Foundations and Concrete Pour	4/4/2027	1/13/2029	22 months
Building Construction	8/13/2027	3/20/2030	32 months
Architectural coatings	4/16/2029	4/1/2030	12 months
Paving	2/2/2030	4/1/2030	2 months
TOTAL			**39 months**

SOURCE: Related, 2024

During construction, fire department personnel and firetrucks would be relocated to nearby offsite fire stations and would continue to serve the Financial District neighborhood and the city in general. Relocation of fire equipment would take no more than eight hours to complete.

Project construction would generally occur six to seven days per week and between the hours of 6 a.m. to 6 p.m., which extends beyond the normal hours of the San Francisco Police Code section 2908 (7 a.m. and 8 p.m.). Construction activities that would extend beyond normal hours (i.e., between 8 p.m. and 7 a.m.), include four to six 20-hour concrete pours for the foundation, crane and hoist erection and adjustment activities, utility work, site maintenance activities and material delivery and handling. Construction activities

that extend beyond normal hours would be subject to review, permitting, and approval by the San Francisco Department of Building Inspection.

Required Project Approvals

The following is a preliminary list of anticipated approvals for the proposed project and is subject to change. These approvals may be considered by City decision-makers in conjunction with the required environmental review, but they may not be granted until completion of the environmental review.

Local Agencies

SAN FRANCISCO BOARD OF SUPERVISORS

- Approval of a Development Agreement for the proposed project, including a master conditional use authorization process to approve the project, including modifications to certain Planning Code controls and Administrative Code provisions.
- Approval of General Plan Amendment to the Downtown Area Plan to permit construction of a building that is approximately 600 feet tall.
- Approval of a Zoning map amendment for height district reclassification.
- Approval of Amendment to Conditional Property Exchange Agreement between the City and EQX JACKSON SQ HOLDCO LLC regarding transfers of land to facilitate project implementation.

SAN FRANCISCO PLANNING COMMISSION

- Recommend to the Board of Supervisors approval of a Development Agreement.
- Recommend to the Board of Supervisors approval of a General Plan Amendment to the Downtown Area Plan to permit construction of a building that is approximately 600-feet tall.
- Recommend to the Board of Supervisors approval of a Zoning Map Amendment for Height District Reclassification: The building height of the proposed project would exceed the height limit of the existing 200-S Height and Bulk District. The Board of Supervisors would need to approve an amendment to the Zoning Map Height and Bulk Districts pursuant to Planning Code section 302 to permit construction of an approximately 600-foot-tall building.
- Approval of shadowing on publicly accessible open space under the jurisdiction of the Recreation and Park Commission after consultation with the Recreation and Parks Commission (Planning Code section 295).
- Approval of a single Conditional Use Authorization pursuant to the Development Agreement to approve the project including certain Planning Code modifications.
- Approval of an allocation of office square footage under Planning Code sections 320-325.

SAN FRANCISCO HISTORIC PRESERVATION COMMISSION

- Recommend to the Board of Supervisors approval of an ordinance to rescind the landmark designation of 447 Battery Street and/or obtain a Certificate of Appropriateness to demolish the 447 Battery Street building under Planning Code Article 10.

JOINT ACTION BY THE PLANNING COMMISSION AND THE RECREATION AND PARK COMMISSION

- Approval of increase to annual cumulative shadow limit for Maritime Plaza and Sue Bierman Park

SAN FRANCISCO DEPARTMENT OF BUILDING INSPECTION

- Approval of building permit(s)

SAN FRANCISCO MUNICIPAL TRANSPORTATION AGENCY

- Approval of permits for streetscape modifications in the public right-of-way
- Approval of parking and traffic changes including fire station striping on Battery Street and color curb zones
- Approval of change to the transportation code for the removal of PM peak northbound lane on eastern side of Sansome Street adjacent to Project site

SAN FRANCISCO PUBLIC WORKS

- Approval of permits for streetscape modifications in the public right-of-way
- Approval of new, removed, or relocated street trees
- Approval of any situations involving construction that would need to extend beyond normal hours (i.e., between 8 p.m. and 7 a.m.), which could include concrete pours, crane and hoist erection and adjustment activities, site maintenance activities and material delivery and handling
- Approval of major encroachment permit for improvements to Merchant Street

SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH

- Approval of site mitigation plan pursuant to Maher Ordinance

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

- Issuance of permits for the installation and operation of emergency generators

SAN FRANCISCO PUBLIC UTILITIES COMMISION

- Approval of the use of groundwater wells during dewatering associated with construction
- Approval of landscape and irrigation plans to extent project installs or modifies 500 square feet or more of landscape area

SAN FRANCISCO FIRE COMMISSION

- Approval of demolition of existing Fire Station 13 and construction of replacement Fire Station 13

Certification of the final EIR by the planning commission establishes the start of the 30-day period for the appeal of the EIR to the board of supervisors pursuant to section 31.16(c)(2) of the San Francisco Administrative Code.

Summary of Potential Environmental Issues

The proposed project could result in potentially significant environmental effects. As such, the San Francisco Planning Department will prepare an initial study, consistent with CEQA Guidelines sections 15063(b)(1)(a) and 15063(c)(3), to provide documentation to determine which of the proposed project's effects warrant more-detailed environmental analysis in an EIR. As required by CEQA, the EIR will further examine those issues identified in the initial study that could result in potentially significant effects, identify mitigation measures, and analyze whether the proposed mitigation measures would reduce the environmental effects to less-than-significant levels. The initial study will be published as an appendix to the EIR and will essentially be part of the EIR.

The initial study and EIR will be prepared in compliance with CEQA (California Public Resources Code sections 21000 et seq.), the CEQA Guidelines, and chapter 31 of the San Francisco Administrative Code, and will address project-specific construction and operational impacts. The initial study and EIR are informational documents for use by governmental agencies and the public to aid in the planning and decision-making process. The initial study and EIR will disclose any physical environmental effects of the proposed project and identify possible ways of reducing or avoiding their potentially significant impacts.

The initial study and EIR will evaluate the environmental impacts of the proposed project resulting from construction and operational activities, and will propose mitigation measures for impacts determined to be significant. The initial study and EIR also will identify potential cumulative impacts that consider impacts of the proposed project in combination with impacts of other cumulative projects. The initial study and EIR will address all environmental topics in the San Francisco Planning Department's CEQA environmental checklist, including the following environmental topics:

- Land Use and Planning
- Population and Housing
- Cultural Resources
- Tribal Cultural Resources
- Transportation and Circulation
- Noise
- Air Quality
- Greenhouse Gas Emissions
- Wind
- Shadow
- Recreation
- Utilities and Service Systems
- Public Services
- Biological Resources
- Geology, Soils, and Paleontological Resources
- Hydrology and Water Quality
- Hazards and Hazardous Materials
- Mineral Resources
- Energy
- Agriculture and Forestry Resources
- Wildfire

In addition, the EIR will include an analysis of the comparative environmental impacts of feasible alternatives (such as full and partial preservation) to the proposed project that would reduce or avoid one or more of the significant impacts of the project while still meeting most of the project objectives, and will also describe any alternatives that were considered but rejected. The EIR will evaluate a No Project Alternative, which considers reasonably foreseeable conditions at the project site if the proposed project is not implemented. The EIR also will include a discussion of topics required by CEQA, including the proposed project's growth-inducing impacts, significant unavoidable impacts, significant irreversible impacts, any known controversy associated with the project and its environmental effects, and issues to be resolved by decision-makers. It will also identify the environmentally superior alternative.

The proposed project meets all the requirements of a transit-oriented infill development project under California Public Resources Code section 21099; therefore, the EIR will not analyze potential significant environmental effects related to aesthetics and parking.

Finding

This project may have a significant effect on the environment and an EIR is required. This finding is based upon the criteria of CEQA Guidelines sections 15064 (Determining Significant Effect) and 15065 (Mandatory Findings of Significance). The purpose of the EIR is to provide information about potential significant physical environmental effects of the proposed project, to identify possible ways to minimize the significant effects, and to describe and analyze possible alternatives to the proposed project. Preparation of an NOP or EIR does not indicate a decision by the City to approve or disapprove the project. However, prior to making any such decision, the decision makers must review and consider the information contained in the EIR.

Public Scoping Comments

The department welcomes your comments concerning potential environmental effects of this project. Written comments will be accepted until **5 p.m.** on December 9, 2024. Written comments should be sent to Sherie George, San Francisco Planning Department, 49 South Van Ness Avenue, Suite 1400, San Francisco, California 94103; or emailed to CPC.447Battery530SansomeEIR@sfgov.org.

If you work for an agency that is a Responsible or Trustee Agency, we need to know the views of your agency regarding the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency may need to use the EIR when considering a permit or other approval for this project. Please include the name of a contact person in your agency.

Members of the public are not required to provide personal identifying information when they communicate with the planning commission or the planning department. All written or oral communications, including submitted personal contact information, may be made available to the public for inspection and copying upon request and may appear on the department's website or in other public documents.

Recipients of this notice are encouraged to pass on this information to others who may have an interest in the project.

November 6, 2024
Date

Lisa Gibson
Lisa Gibson
Environmental Review Officer

Department of Toxic Substances Control

Yana Garcia
Secretary for
Environmental Protection

Katherine M. Butler, MPH, Director
8800 Cal Center Drive
Sacramento, California 95826-3200
dtsc.ca.gov

Gavin Newsom
Governor

SENT VIA ELECTRONIC MAIL

December 6, 2024

Sherie George
Senior Planner
San Francisco Planning
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103
sherie.george@sfgov.org

RE: NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE 447 BATTERY AND 530 SANSOME STREET PROJECT DATED NOVEMBER 08, 2024, STATE CLEARINGHOUSE NUMBER 2024110311

Dear Sherie George,

The Department of Toxic Substances Control (DTSC) reviewed the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the 447 Battery and 530 Sansome Street Project (Project). The Project proposes to demolish four existing buildings and construct a 4-story replacement fire station and a separate high-rise building up to 41 stories tall. The replacement fire station would be located on the 447 Battery Street parcel and would include approximately 31,200 square feet (sf) (including basement) in a 4-story, approximately 55-60-foot-tall building on the eastern portion of the Project site. The high-rise building, approximately 544-574 feet tall, would be located on the remaining three parcels and would include approximately 7,405 sf of retail/restaurant space; between approximately 344,840 and 390,035 sf of office space; approximately 27,195 sf of office amenity space; between approximately 127,710 and 188,820 sf of hotel space for approximately 100 to 200 hotel rooms; and approximately 10,135 sf of ballroom/pre-function/meeting space. There would be three below-grade levels under the high-rise building, which would provide approximately 74 vehicle

parking spaces, 77 Class 1 and 27 Class 2 bicycle parking spaces, and utility rooms. DTSC recommends and requests consideration of the following comments:

1. If buildings or other structures are to be demolished on any Project sites included in the proposed Project, surveys should be conducted for the presence of lead-based paints or products, mercury, asbestos containing materials, and polychlorinated biphenyl caulk. Removal, demolition, and disposal of any of the above-mentioned chemicals should be conducted in compliance with California environmental regulations and policies. In addition, sampling near current and/or former buildings should be conducted in accordance with DTSC's Preliminary Endangerment Assessment (PEA) Guidance Manual.
2. DTSC recommends that all imported soil and fill material should be tested to assess any contaminants of concern meet screening levels as outlined in DTSC's Preliminary Endangerment Assessment (PEA) Guidance Manual. Additionally, DTSC advises referencing the DTSC Information Advisory Clean Imported Fill Material Fact Sheet if importing fill is necessary. To minimize the possibility of introducing contaminated soil and fill material there should be documentation of the origins of the soil or fill material and, if applicable, sampling be conducted to ensure that the imported soil and fill material are suitable for the intended land use. The soil sampling should include analysis based on the source of the fill and knowledge of prior land use. Additional information can be found by visiting DTSC's Human and Ecological Risk Office (HERO) webpage.

DTSC appreciates the opportunity to comment on the NOP of a DEIR for the 447 Battery and 530 Sansome Street Project. Thank you for your assistance in protecting California's people and environment from the harmful effects of toxic substances. If you have any questions or would like clarification on DTSC's comments, please respond to this letter or via email for additional guidance.

Sincerely,

Tamara Purvis

Tamara Purvis
Associate Environmental Planner
HWMP - Permitting Division – CEQA Unit
Department of Toxic Substances Control
Tamara.Purvis@dtsc.ca.gov

cc: (via email)

Governor's Office of Land Use and Climate Innovation
State Clearinghouse
State.Clearinghouse@opr.ca.gov

Susan Yogi
Consultant
Environmental Science Associates
syogi@esassoc.com

Jim Abrams
Project Applicant
EQX Jackson SQ Holdco LLC
jabrams@jabramslaw.com

Dave Kereazis
Associate Environmental Planner
HWMP-Permitting Division – CEQA Unit
Department of Toxic Substances Control
Dave.Kereazis@dtsc.ca.gov

Scott Wiley
Associate Governmental Program Analyst
HWMP - Permitting Division – CEQA Unit
Department of Toxic Substances Control
Scott.Wiley@dtsc.ca.gov

Outlook

Please place me on notice list for project documents-Thanks

From Mary Miles <page364@earthlink.net>
Date Wed 11/13/2024 7:27 PM
To CPC.447Battery530SansomeEIR <CPC.447Battery530SansomeEIR@sfgov.org>

Dear Ms. George:

Please place me on the Notice list for the CPC.447Battery530SansomeEIR@sfgov.org Project EIR documents and hearings.
Thank you.

Mary Miles
Attorney at Law
364 Page St., #36
San Francisco, CA 94102
Email: page364@earthlink.net

Outlook

447 Battery and 530 Sansome Street Project

From Moorehead, Jack (DPW) <Jack.Moorehead@sfdpw.org>
Date Wed 11/20/2024 2:03 PM
To George, Sherie (CPC) <sherie.george@sfgov.org>
Cc Wong, Jason (DPW) <jason.c.wong1@sfdpw.org>; Ben-Pazi, Amnon (CPC) <amnon.ben-pazi@sfgov.org>

Hello Sherie,

A letter concerning an EIR Report for **447 Battery and 530 Sansome Street** was delivered to the 9th floor BSM-Mapping office, is BSM-Mapping to conduct any action on this project, or is the letter a mandatory EIR notice?

Additionally, BSM has **no record of Sidewalk Legislation** being submitted for this development project. If sidewalk bulb-outs, widening, or narrowing is detailed in the plans – **please advise the applicant to do so**.

Warmly,

Jack Moorehead | Student Design Trainee I | Subdivision and Mapping
Bureau of Street Use & Mapping | San Francisco Public Works
49 South Van Ness Avenue, 9th Floor | San Francisco, CA 94103

Outlook

(No subject)

From Jiahua Zhu <zujiahua@hotmail.com>
Date Wed 12/4/2024 2:59 PM
To CPC.447Battery530SansomeEIR <CPC.447Battery530SansomeEIR@sfgov.org>

December 4th, 2024
Sherie George
Sr. Environmental Planner
49 South Van Ness Ave, Suite 1400
San Francisco, CA 94103

Dear Sherie,

I hope this letter finds you well. I am writing to you today regarding the proposed demolition and construction of a new building at 447 Battery and 530 Sansome Streets, which is located right next door to my dental office at 401 Washington Street. As an adjacent local business, I believe this project could have a significant impact on my practice, my patients, and my staff members, and I deeply need your help in ensuring that the development is approached with consideration for our business.

Impact on My Business and Patient Care
The construction could harm my practice by reducing foot traffic and creating an unwelcoming atmosphere. My dental office serves a diverse patient base, many of whom are elderly, have compromised health, or rely on a quiet, professional environment. The constant noise, dust, and disturbances associated with construction could create hazardous conditions that severely affect patient comfort and safety. As a healthcare facility, it is crucial that we maintain a peaceful, clean environment, and this project threatens to compromise that. Moreover, patients may be discouraged from attending appointments, leading to a significant loss of revenue for my practice and potentially driving away long-time patients. In recent years, many major corporations have adopted "work-from-home" policies, which have reduced foot traffic in the area, particularly during weekday office hours. The absence of employees commuting to their offices means fewer potential patients who may have previously come in for appointments during their workday breaks. This shift has already compounded the challenges facing local businesses, and the proposed construction will only exacerbate the situation, potentially driving away more customers. This loss of business could have long-lasting financial consequences for my practice, which depends on a steady stream of customers.

Environmental and Health Considerations
I am deeply concerned about the environmental impact of this construction. In addition to road blockage, dust and noise pollution could affect our patients and our business. The dust and debris may worsen air quality issues, posing health risks, particularly for those with respiratory concerns. As a healthcare provider, I am particularly sensitive to the potential health hazards this project could bring to

the neighborhood. The disturbing noise could also deter dental patients and make daily business operations more difficult.

Challenges Post-COVID and Economic Hardship
Like many small businesses, operating a business in the post-COVID era has been incredibly challenging. However, we are still striving to rebuild. Besides the significant amount of money that we have already invested in renovations, equipment, and medical supplies, we must overcome the huge obstacles of staff recruitment and patient pool accumulation through advertising, which is expensive and takes years to accomplish.
We have a team of dedicated staff members whose livelihoods depend on the success of the practice. In addition, we have enormous business loans, high monthly rent that remains at pre-COVID rates, and other business expenses that are growing rapidly with today's inflation and must be met every month. The added disruption from major construction next door could prove devastating. The potential loss of patients, increased costs, and prolonged economic instability would place an unbearable strain on my business and could result in severe financial hardship for us.

Request for Alternatives
I respectfully urge the city to provide assistance to affected businesses. Additionally, I encourage the city to explore alternative locations or designs that would minimize disruption to local businesses. I cannot emphasize enough how much we need your help in protecting the health, stability, and future of our practice.

I would appreciate the opportunity to discuss these concerns further. Please feel free to contact me at (415) 283-7406 or zujiahua@hotmail.com to arrange a meeting or to provide additional information.

Sincerely,
Jiahua Zhu
Owner, Yerba Buena Dentistry
401 Washington Street
San Francisco, CA 94111
zujiahua@hotmail.com
415 283-7406

APPENDIX B

Initial Study

APPENDIX B

INITIAL STUDY
447 BATTERY AND 530 SANSOME STREET PROJECT
PLANNING DEPARTMENT CASE NO. 2024-007066ENV

Contents

Figures

Tables

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SECTION A PROJECT DESCRIPTION

The project description for the proposed project is included as draft environmental impact report (EIR) Chapter 2, Project Description, in the draft EIR to which this initial study is appended.

SECTION B PROJECT SETTING

The project setting for the proposed project is included in draft EIR Section 2.C, Project Location and Site Characteristics, to which this initial study is appended.

SECTION C COMPATIBILITY WITH EXISTING ZONING AND PLANS

	Applicable	Not Applicable
Discuss any variances, special authorizations, or changes proposed to the planning code or zoning map, if applicable.	☒	☐
Discuss any conflicts with any adopted plans and goals of the City or region, if applicable.	☒	☐
Discuss any approvals and/or permits from city departments other than the planning department or the Department of Building Inspection, or from regional, state, or federal agencies.	☒	☐

C.1 San Francisco Planning Code

The San Francisco Planning Code (planning code), which incorporates by reference the City's zoning maps, governs permitted land uses, densities, and building configurations in the city. Permits to construct new buildings (or alter or demolish existing ones) may not be issued unless the proposed project complies with the planning code, an exception or variance is granted pursuant to provisions of the planning code, or legislative amendments to the planning code are included and adopted as part of the proposed project.

Land Use

The project site is located within the Downtown Area Plan of the San Francisco General Plan (general plan) and is in the C-3-O (Downtown Office) zoning district, which covers the eastern portions of downtown north of Market Street. The C-3-O District serves as an employment center for the region and consists primarily of high-quality office development (planning code section 210.2).

The project site is located within the Priority Equity Geographies Special Use District (SUD). The 2022 update of the housing element established Priority Equity Geographies as areas with a higher density of vulnerable populations as defined by the San Francisco Department of Health. The 2022 housing element encourages targeted direct investment in these areas and identifies them as requiring improved access to well-paid jobs and business ownership; where the City needs to expand permanently affordable housing investment; where zoning changes must be tailored to serve the specific needs of the communities that live there; and where programs that stabilize communities and meet community needs need to be prioritized. Additionally, two SUDs are adjacent (but do not apply) to the project site. The Washington-Broadway SUD is located immediately north of the project site, and the Jackson Square SUD, which corresponds to the boundaries of the Jackson Square Historic District, is located northwest of the project site.

To approve the proposed project, the City would make findings of project consistency with the planning code. Within the C-3-O zoning district, residential, commercial, institutional, and retail sales and services are permitted. Hotel uses are conditionally permitted; therefore, the conditional use authorization provided for under the Development Agreement would permit a hotel for the high-rise building. The proposed project would require a general plan amendment to the Downtown Area Plan to permit construction of a building that is approximately 600 feet tall and a zoning map amendment for a height district reclassification. The Development Agreement for the proposed project would further provide for the conditional use authorization to allow modification of design controls that would typically otherwise require a planning code section 309 Downtown Project Authorization from the Planning Commission or variance from the Zoning Administrator. Adoption of the amendments to the general plan and planning code and approval of the Development Agreement would resolve any conflicts between the planning code and the proposed project.

Height and Bulk

The project site is in the 200-S Height and Bulk District, which limits the maximum allowable height on the site to 200 feet.[1] An “S” designation establishes bulk controls for the base, lower tower, and upper tower of a building. The bulk controls for a lower tower are a maximum length of 160 feet, a maximum floor size of 20,000 square feet, and a maximum diagonal dimension of 190 feet. The bulk controls for an upper tower are a maximum length of 130 feet, a maximum average floor size of 12,000 square feet, a maximum floor size for any floor of 17,000 square feet, and a maximum average diagonal dimension of 160 feet for the upper tower. The replacement fire station would be 55 feet tall and would not exceed the allowable height or average area and maximum dimensional lengths allowed in the 200-S Height and Bulk District. The proposed high-rise building would be 544 feet tall (about 574 feet including the rooftop mechanical equipment) and would exceed the allowable height and average area and maximum dimensional lengths allowed in the 200-S Height and Bulk District. The proposed project would require an amendment of the zoning map and height and bulk map to change the existing height limit of 200 feet to 600 feet on the high-rise building parcels. In addition, the Development Agreement for the proposed project would provide for the conditional use authorization to allow modifications to code sections 260(b) and 270 to allow rooftop appurtenances up to 30 feet and modifications to the “S” bulk control requirements. If the amendments and Development Agreement are approved with respect to height and bulk limits, building heights under the proposed project would be consistent with the revised height and bulk district applicable to the project site.

[1] An additional 20 feet of building height is permitted for rooftop appurtenances such as elevator penthouses and heating and cooling equipment.

Floor Area Ratio

Floor area ratio (FAR) is the ratio of gross floor area of all the buildings on a lot to the area of the lot. The base FAR for the C-3-O zone is 9:1 under planning code section 210.2. The FAR can be increased up to 18:1 through the purchase of transferable development rights (TDRs) under planning code section 124.

The existing FAR of the replacement fire station and high-rise building site are approximately 2.8:1 and 2.78:1, respectively. The base FAR for the 7,178-square-foot replacement fire station site would allow for development of a building with a gross floor area of up to 64,602 gross square feet (gsf). The proposed replacement fire station at 31,200 square feet would not exceed the allowable FAR.

The base FAR for the 17,653-square-foot high-rise building site would allow for development of a building with a gross floor area of up to 158,877 gsf. The Development Agreement for the proposed project would provide for the conditional use authorization to waive FAR limits, including the need to obtain TDRs pursuant to planning code sections 123(c) and 128 for the high-rise building.

Parking and Loading

Under planning code section 151.1, off-street parking is not required within the C-3 district. The proposed project would provide a private parking garage with 18 vehicle spaces in one below-grade level for the replacement fire station and an accessory off-street parking garage with 74 vehicle spaces in three below-grade levels for the high-rise building. The Development Agreement for the proposed project would provide for the conditional use authorization to establish a private parking garage for the fire department as a non-accessory use. Parking proposed for non-fire department uses in the proposed project is within permitted accessory parking amounts.

Planning code section 152.1 requires that the proposed project provide four off-street freight loading spaces for the high-rise building. The proposed project would include two off-street loading spaces on the northeastern portion of the first floor of the high-rise building, with ingress and egress from Washington Street. The Development Agreement for the proposed project would provide for the conditional use authorization to modify the technical requirements of planning code section 152.1 to authorize the proposed project with the two proposed off-street loading spaces.

Planning code section 155.2 requires that the proposed project provide a total of 81 class 1 bicycle parking spaces (4 spaces required at 447 Battery Street and 77 spaces required at 530 Sansome Street) and 20 class 2 bicycle parking spaces (20 spaces required at 530 Sansome Street). The proposed project would provide 81 class 1 bicycle parking spaces and 20 class 2 bicycle parking spaces. The proposed project would meet the minimum requirements of planning code section 155.2.

C.2 Plans and Policies

San Francisco General Plan

The general plan establishes objectives and policies to guide land use decisions related to the physical development of San Francisco. The general plan is divided into 10 elements that apply citywide: Air Quality, Arts, Commerce and Industry, Community Facilities, Environmental Protection, Housing, Recreation and

Open Space, Safety and Resilience, Transportation, and Urban Design. The general plan also includes area plans that identify objectives for specific geographic planning areas, such as the Downtown Area Plan, which includes the project site. The Downtown Area Plan establishes objectives and policies that guide development in the Financial District's neighborhoods. The general plan also includes a land use index, which consolidates the different land use policies contained in all the different elements of the general plan, including area plans. Centered on Market and Mission streets, the Downtown Area Plan covers an area roughly bounded by Van Ness Avenue to the west, Washington Street to the north, The Embarcadero to the east, and Folsom Street to the south. The Downtown Area Plan contains objectives and policies that address housing, urban form, safety and livability, streetscape, preservation, and transportation issues. The aim of the Downtown Area Plan is to encourage prime downtown office activity to grow, increase employment, retain a diverse base of support for commercial activity in and near downtown, expand the supply of housing in and adjacent to downtown, create and maintain a comfortable pedestrian environment, create building forms that are visually interesting and harmonious with surrounding buildings, and create attractive urban streetscapes.

Any conflict between the proposed project and policies that relate to physical environmental issues are discussed in Section E, Evaluation of Environmental Effects, p. 10. The compatibility of the proposed project with general plan policies that do not relate to physical environmental issues will be considered by decision-makers as part of their decision whether to approve or disapprove the proposed project. The project consists of the demolition of four existing buildings and construction of a 4-story replacement fire station and a 41-story mixed-use high-rise building. To approve the proposed project, the City would be required to make the findings that the project is consistent with the general plan. Adoption of amendments to the general plan would resolve any conflicts between the general plan objectives or policies and the proposed project. Thus, the proposed project would be consistent with the general plan.

The Accountable Planning Initiative (Proposition M)

In November 1986, the voters of San Francisco approved Proposition M, the Accountable Planning Initiative, which added section 101.1 to the planning code to establish eight priority policies. These policies, and the corresponding topics in Section E, Evaluation of Environmental Effects, p. 10, that address the environmental issues associated with the policies, are: (1) preservation and enhancement of neighborhood-serving retail uses; (2) protection of neighborhood character; (3) preservation and enhancement of affordable housing; (4) discouragement of commuter automobiles; (5) protection of industrial and service land uses from commercial office development and enhancement of resident employment and business ownership; (6) maximization of earthquake preparedness; (7) landmark and historic building preservation; and (8) protection of open space.

The sculpture *Untitled* on the building at 530 Sansome Street was determined to be individually eligible for listing in the California Register of Historical Resources (California register). Additionally, the 3-story commercial building located at 447 Battery Street is currently designated as a historic landmark under article 10 of the planning code. The removal of the sculpture and demolition of the building at 447 Battery Street could conflict with Priority Policy No. 7, which prioritizes the preservation of historic buildings (although the sculpture is not a building). The proposed project would require approval of an ordinance to demolish the building notwithstanding the provisions of planning code article 10. The physical environmental impacts and associated mitigation measures are discussed in draft EIR Section 3.A, Historic Architectural Resources.

Prior to issuing a permit for any project that requires an initial study under the California Environmental Quality Act (CEQA), and prior to issuing a permit for any demolition, conversion, or change in use, and prior to taking any action that requires a finding of consistency with the general plan, the City is required to find that the proposed project or legislation would be consistent with the priority policies. As noted above, the compatibility of the proposed project with general plan objectives and policies that do not relate to physical environmental issues will be considered by decision-makers as part of their decision whether to approve or disapprove the proposed project. Any potential conflicts identified as part of that process would not alter the physical environmental effects of the proposed project. The case report and approval motions for the proposed project will contain the department's comprehensive project analysis and findings regarding the consistency of the proposed project with the priority policies.

Other Local Plans and Policies

Other local plans and policies that are relevant to the proposed project are outlined below:

- *San Francisco Transit First Policy* is a set of principles that emphasize the City's commitment that the use of public rights-of-way by pedestrians, bicyclists, and public transit be given priority over the private automobile. These principles are embodied in the policies and objectives of the transportation element of the general plan. All City boards, commissions, and departments are required by law to implement the City's Transit First Policy principles in conducting the City's affairs.
- *San Francisco Better Streets Plan* was adopted in 2010 to support the City's efforts to enhance the streetscape and the pedestrian environment and consists of two components: the Streetscape Master Plan and the Pedestrian Transportation Master Plan. The Better Streets Plan classifies the City's public streets and rights-of-way and creates a unified set of standards, guidelines, and implementation strategies that govern how the City designs, builds, and maintains its public streets and rights-of-way.
- *San Francisco Climate Action Strategy* is a local action plan that examines the causes of global climate change and the human activities that contribute to global warming; provides projections of climate change impacts on California and San Francisco based on recent scientific reports; presents estimates of San Francisco's baseline greenhouse gas emissions inventory and reduction targets; and describes recommended actions for reducing the City's GHG emissions.
- *Vision Zero SF* was adopted in 2014 to support the City's efforts to eliminate all traffic deaths in San Francisco by the year 2024. The goal of Vision Zero SF is also to reduce severe injury inequities across neighborhoods, transportation modes, and populations and to build better and safer streets, educate the public on traffic safety, enforce traffic laws, and adopt policy changes that save lives.

Regional Plans and Policies

In addition to local plans and policies, several regional planning agencies have environmental, land use, and transportation plans and policies that consider the growth and development in the nine-county San Francisco Bay Area (Bay Area). Some of these plans and policies are advisory; some include specific goals and provisions that must be adhered to when evaluating a project under CEQA. The regional plans and policies that are relevant to the proposed project are discussed below.

- *Plan Bay Area 2050 (Plan Bay Area)*, prepared by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC), is a long-range land use and transportation plan for the

nine-county Bay Area that covers the period from 2020 to 2050. Plan Bay Area calls for concentrating housing and job growth around transit corridors, particularly within areas identified by local jurisdictions as Priority Development Areas. In addition, Plan Bay Area calls for concentrating, maintaining, managing, and improving the region's multimodal transportation network and proposes transportation projects and programs to be implemented from reasonably anticipated revenue for the nine Bay Area counties. Plan Bay Area was adopted in October 2021.[2]

The project site is located within the Downtown/Van Ness/Northeast Neighborhoods Priority Development Area.[3] This Priority Development Area is one of the Priority Development Areas in San Francisco in which a large share of new housing production and population growth is expected to take place. Accordingly, the proposed project would promote growth in a Priority Development Area and would be consistent with the goals and objectives of Plan Bay Area.

- *The 2035 Regional Transportation Plan* prepared by MTC is a policy document that outlines transportation projects for highway, transit, rail, and related uses through 2035 for the nine Bay Area counties.
- *The Bay Area Air Quality Management District's (air district's) Bay Area 2017 Clean Air Plan* requires implementation of "all feasible measures" to reduce ozone and provides a control strategy for reducing ozone, particulate matter, toxic air contaminants, and greenhouse gases. The 2017 Clean Air Plan describes the status of local air quality and identifies the emission control measures that are to be implemented.[4]
- *The Regional Water Quality Control Board's Water Quality Control Plan for the San Francisco Bay Basin* is a master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the state, including surface waters and groundwater, and includes implementation programs to achieve water quality objectives.[5]

Due to the location, size, and nature of the proposed project, the proposed project is not anticipated to be inconsistent with regional plans and policies.

[2] Metropolitan Transit Commission and Association of Bay Area Governments (MTC & ABAG), *Plan Bay Area 2050: A Vision for the Future,* Final, adopted October 21, 2021, https://planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_October_2021.pdf, accessed November 4, 2024.
[3] MTC & ABAG, 2024. *Priority Development Areas,* https://opendata.mtc.ca.gov/datasets/5572ccb7bfe2426eae086c35931f1d0e_0/explore?location=37.791945%2C-122.500174%2C11.67, accessed November 4, 2024.
[4] Bay Area Air Quality Management District*, 2017 Clean Air Plan: Spare the Air, Cool the Climate*, April 19, 2017, http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en, accessed November 4, 2024.
[5] San Francisco Regional Water Quality Control Board, *Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin*, November 5, 2019, https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/planningtmdls/basinplan/web/docs/ADA_compliant/BP_all_chapters.pdf, accessed November 4, 2024.

SECTION D SUMMARY OF ENVIRONMENTAL EFFECTS

The project could potentially result in adverse physical effects on the environmental resources checked below, and where those impacts are significant or potentially significant, CEQA requires identification of mitigation measures to reduce the severity of the impacts to a less-than-significant level to the extent feasible. This initial study presents a more detailed checklist and discussion of each environmental resource, unless otherwise noted below.

- ☐ Land Use and Planning
- ☐ Aesthetics
- ☐ Population and Housing
- ☒ Cultural Resources
- ☒ Tribal Cultural Resources
- ☐ Transportation and Circulation
- ☒ Noise
- ☒ Air Quality
- ☐ Greenhouse Gas Emissions
- ☒ Wind
- ☐ Shadow
- ☐ Recreation
- ☐ Utilities and Service Systems
- ☐ Public Services
- ☐ Biological Resources
- ☒ Geology and Soils
- ☐ Hydrology and Water Quality
- ☐ Hazards and Hazardous Materials
- ☐ Mineral Resources
- ☐ Energy
- ☐ Agriculture and Forestry Resources
- ☐ Wildfire
- ☒ Mandatory Findings of Significance

This initial study evaluates the potential for the project to result in significant environmental impacts and identifies which environmental resource topics are appropriately analyzed in the initial study and those that warrant more detailed analysis in the draft EIR.

D.1 Effects Found to Be Potentially Significant

On the basis of this initial study, the resource topics for which there is a potential for impacts to be significant or for which the analysis requires additional detail are analyzed in the draft EIR and are as follows:

- Cultural Resources (historic architectural resources)
- Air Quality (all topics)

D.2 Effects Found to Be Less than Significant

This initial study determined that the potential individual and cumulative environmental effects on the following resource topics are either less than significant or would be reduced to a less-than-significant level with the mitigation measures identified in this initial study:

- Land Use and Planning (all topics)
- Population and Housing (all topics)

- Cultural Resources (archeological resources)
- Tribal Cultural Resources (all topics)
- Greenhouse Gas Emissions (all topics)
- Recreation (all topics)
- Utilities and Service Systems (all topics)
- Public Services (all topics)
- Biological Resources (all topics)
- Geology and Soils (all topics)
- Hydrology and Water Quality (all topics)
- Hazards and Hazardous Materials (all topics)
- Mineral Resources (all topics)
- Energy (all topics)
- Agriculture and Forestry Resources (all topics)
- Wildfire (all topics)

Impacts associated with these topics are discussed and mitigation measures are included, where appropriate, in Section E, Evaluation of Environmental Effects, of this initial study. The topics identified above require no further environmental analysis in the draft EIR. All mitigation measures identified in this initial study are listed in Section F, Mitigation Measures. The project sponsors have agreed to implement the identified mitigation measures as part of the proposed project construction and operation, if approved. For each checklist item, the evaluation considers both project-specific and cumulative impacts, with the exception of greenhouse gas emissions, which are evaluated only in the cumulative context.

D.3 Approach to Cumulative Impact Analysis

The cumulative impact analyses for topics addressed in Section E, Evaluation of Environmental Effects, uses a combination of the list-based and citywide projections–based approach.[6] Reasonably foreseeable development and infrastructure projects that could potentially contribute to cumulative impacts on various resource topics are listed in draft EIR Table 3-1, Cumulative Projects within a 0.25-Mile Radius of the Project Site, p. 3-8.

[6] See draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, in the "Approach to Cumulative Impact Analysis" section, for a discussion of the list-based and projections-based approach to the cumulative analysis.

D.4 Aesthetics and Parking

In accordance with CEQA section 21099, Modernization of Transportation Analysis for Transit-Oriented Infill Projects, aesthetics and parking shall not be considered in determining if a project has the potential to result in significant environmental effects, provided the project meets all of the following three criteria:

a) The project is in a transit priority area;

b) The project is on an infill site; and

c) The project is residential, mixed-use residential, or an employment center.

The proposed project meets each of the above criteria; therefore, this initial study does not consider aesthetics or parking in determining the significance of project impacts under CEQA.[7]

Automobile Delay and Vehicle Miles Traveled

In addition, CEQA section 21099(b)(1) requires the Governor's Office of Planning and Research to develop revisions to the CEQA Guidelines to establish criteria for determining the significance of transportation impacts from projects that "promote a reduction in greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." CEQA section 21099(b)(2) states that, upon certification of the revised guidelines for determining transportation impacts, pursuant to section 21099(b)(1), automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment under CEQA.

In January 2016, the Governor's Office of Land Use and Climate Innovation (LCI)[8] published for public review and comment its *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA*,[9] recommending that transportation impacts for projects be measured using a vehicle-miles-traveled (VMT) metric. On March 3, 2016, in anticipation of the future certification of the revised CEQA Guidelines, the San Francisco Planning Commission adopted LCI's recommendation to use the VMT metric instead of automobile delay to evaluate the transportation impacts of projects (Resolution 19579). The VMT metric does not apply to the analysis of project impacts on non-automobile modes of travel, such as riding transit, walking, and bicycling.

[7] San Francisco Planning Department, *Eligibility Checklist: CEQA section 21099 – Modernization of Transportation Analysis for 447 Battery and 530 Sansome Street*, December 30, 2024.
[8] As of July 1, 2024, the Governor's Office of Planning and Research (OPR) was renamed the Governor's Office of Land Use and Climate Innovation (LCI).
[9] Governor's Office of Planning and Research, *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA*, http://www.opr.ca.gov/docs/Revised_VMT_CEQA_Guidelines_Proposal_January_20_2016.pdf. accessed December 30, 2024.

SECTION E EVALUATION OF ENVIRONMENTAL EFFECTS

E.1 Land Use and Planning

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
1. LAND USE AND PLANNING. Would the project:					
a) Physically divide an established community?	☐	☐	☐	☒	☐
b) Cause a significant physical environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐	☐

Impact LU-1: The proposed project would not physically divide an established community. ***(No Impact)***

Division of an established community typically involves constructing a physical barrier to neighborhood access, such as a new freeway, or removing a means of access, such as a bridge or a roadway. The proposed project would entail demolition of the existing buildings on the project site and construction of a 4-story replacement fire station with one below-grade level and a separate mixed-use building up to 41-stories tall with three below-grade levels. Although portions of the sidewalks adjacent to the project site may be closed for periods of time during project construction, the closures would be temporary. Following construction, sidewalk access would be restored. The proposed project would not construct a physical barrier to neighborhood access or remove an existing means of access, such as a bridge or roadway; therefore, it would not physically divide an established community. Accordingly, the proposed project would have ***no impact*** with respect to physically dividing an established community, and no mitigation measures are necessary.

Impact LU-2: The proposed project would not cause a significant physical environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. ***(Less than Significant)***

Land use impacts could be considered significant if the proposed project would conflict with any plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental impact. Environmental plans and policies are those that directly address environmental issues and/or contain targets or standards that must be met in order to preserve or improve characteristics of the city's physical environment. As described in Section C, Compatibility with Existing Zoning and Plans, p. 1, the proposed project would not conflict with any adopted environmental plan or policy, with the exception of the priority policy 7 regarding landmark and historic building preservation. As described in Section C, the proposed project would relocate the *Untitled* sculpture mounted on the existing fire station building's north façade, which is individually eligible for listing in the California register, and demolish the 3-story building at 447

Battery Street, which is currently designated as a historic landmark under article 10 of the planning code and is considered a historic resource. The proposed project requires Board of Supervisors approval of an ordinance to demolish the building at 447 Battery Street notwithstanding the provisions of planning code article 10. The physical environmental impacts that could result from these conflicts with historic preservation policies are discussed in draft EIR Section 3.A, Historic Architectural Resources.

In addition, the project site is within the C-3-O Downtown Office zoning district, which consists primarily of office development.[10] The C-3-O Downtown Office zoning district permits nonresidential uses including retail sales and services, except for drive-up facilities and waterborne commercial uses. Hotel uses are conditionally permitted; therefore, a conditional use authorization pursuant to the Development Agreement would be required to permit a hotel. The proposed project would include amendments to the general plan and the zoning map. The proposed general plan amendment to the Downtown Area Plan would permit the construction of an approximately 600-feet-tall building. The proposed zoning map amendment for the mixed-use high-rise building parcels would modify the existing applicable height limit of 200 feet to 600 feet. If the general plan and zoning map amendments are approved with respect to height limits, building heights under the proposed project would be consistent with the revised Height and Bulk District applicable to the project site.

To the extent that the proposed project would conflict with certain general plan objectives and policies that are unrelated to physical environmental issues, those conflicts would be considered by decision makers as part of their decision to approve or disapprove the proposed project independent of the CEQA environmental review process. In addition, the proposed project would not obviously or substantially conflict with any adopted environmental plan or policy, including the 2017 Clean Air Plan, as discussed in draft EIR Section 3.B, Air Quality; San Francisco's Strategies to Address Greenhouse Gas Emissions (GHG Reduction Strategy), as discussed in Section E.8, Greenhouse Gas Emissions, p. 94; and the San Francisco Urban Forestry Ordinance, as discussed in Section E.14, Biological Resources, p. 132. Therefore, the proposed project would have a ***less-than-significant*** impact with regard to conflicts with land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect, and no mitigation measures are necessary.

Impact C-LU-1: The proposed project, in combination with cumulative projects, would not result in a significant cumulative impact related to land use and planning. *(Less than Significant)*

Cumulative development in the project vicinity (within a 0.25-mile radius of the project site) includes projects that are either under construction or for which the planning department has a project application on file. Most of the cumulative development in the project vicinity (draft EIR Table 3-1, Cumulative Projects within a 0.25-Mile Radius of the Project Site, p. 3-8, and mapped on Figure 3-1, Cumulative Projects within a 0.25-Mile Radius of the Project Site, p. 3-11) are mixed-use projects that would include office, hotel, residential, and commercial uses. These projects would result in an intensification of land uses in the project vicinity, similar to the proposed project. However, they would be infill projects and would be consistent with the planning vision for the area, as adopted in the Downtown Area Plan, and therefore would not result in conflicts with land use plans or policies adopted for the purpose of avoiding or mitigating environmental impacts. In addition, the cumulative projects would not combine with the proposed project to alter the land use pattern of the immediate area or physically divide an established community. Therefore, the proposed

[10] San Francisco Planning Department, San Francisco Property Information Map, https://sfplanninggis.org/pim/?tab=Property&search=530+SANSOME+ST, accessed October 10, 2024.

project, in combination with cumulative projects, would not result in cumulative land use impacts. Accordingly, cumulative impacts related to land use would be ***less than significant***, and no mitigation measures are necessary.

E.2 Population and Housing

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
2. POPULATION AND HOUSING. Would the project:					
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐	☐
b) Displace substantial numbers of existing people or housing units, necessitating the construction of replacement housing?	☐	☐	☐	☒	☐

Impact PH-1: The proposed project would not induce substantial unplanned population growth, either directly or indirectly. *(Less than Significant)*

According to the U.S. Census Bureau's most recent American Community Survey, the city and county of San Francisco had an estimated population of about 808,988 residents and 418,146 housing units in 2023.[11] Households in San Francisco are expected to increase by 58 percent (213,000 households) between 2015 and 2050, for a total of approximately 578,000 households.[12] The American Community Survey 2022 five-year estimates census data indicates that census tract 611.01, which includes the project site and immediate vicinity, has a population of 1,861 and 1,116 housing units.[13]

In 2021, ABAG projected that housing needs in San Francisco for 2023–2031 will be 82,069 dwelling units, consisting of 20,867 dwelling units that would be affordable to households at the very low-income level (0–50 percent of the area median income), 12,014 at the low-income level (51–80 percent), 13,717 at the moderate-income level (81–120 percent), and 35,471 above the moderate-income level (above 120 percent).[14] As noted above, as part of the planning process for Plan Bay Area, San Francisco identified

[11] U.S. Census Bureau, *San Francisco County, California*, 2023, https://www.census.gov/quickfacts/sanfranciscocountycalifornia, accessed October 10, 2024.
[12] Association of Bay Area Governments & Metropolitan Transportation Commission (ABAG & MTC), 2021. *Plan Bay Area 2050 Growth Pattern*, updated January 21, 2021, https://planbayarea.org/sites/default/files/FinalBlueprintRelease_December2020_GrowthPattern_Jan2021Update.pdf, accessed October 24, 2024.
[13] U.S. Census Bureau, 2022. *American Community Survey 5-year estimates. Retrieved from Census Reporter Profile page for Census Tract 611.01, San Francisco, CA,* http://censusreporter.org/profiles/14000US06075061101-census-tract-61101-san-francisco-ca/, accessed October 24, 2024.
[14] Association of Bay Area Governments, 2021. *Final Regional Housing Needs Allocation (RHNA) Plan: San Francisco Bay Area, 2023-2031,* December 2021, https://abag.ca.gov/sites/default/files/documents/2021-12/Final_RHNA_Allocation_Report_2023-2031-approved_0.pdf, accessed October 24, 2024.

priority development areas, which are existing neighborhoods that are near transit and appropriate for future growth. The project site is in the Downtown/Van Ness/Northeast Neighborhoods Priority Development Area, as identified in Plan Bay Area.[15]

Employment in San Francisco is forecast to increase by 35 percent (236,000 jobs) between 2015 and 2050, for a total of approximately 918,000 jobs.[16] As of September 2024, the labor force in San Francisco consisted of 553,700 jobs.[17]

In general, a project would be considered growth inducing if its implementation would result in substantial unplanned population growth in an area, either directly or indirectly. The proposed project proposes no housing. Therefore, it would not induce substantial unplanned residential population growth. The proposed project also would not indirectly induce substantial unplanned residential population growth in the project area due to infrastructure improvements because the project site is an infill site located in an urbanized area and does not propose any extensions to area roads or other infrastructure that could enable additional development in currently undeveloped areas.

As noted above, employment in San Francisco is forecast to increase by 35 percent (236,000 jobs) between 2015 and 2050, for a total of approximately 918,000 jobs.[18] The fire station currently operates 24 hours per day, seven days per week and includes 34 permanently assigned personnel, 10 of whom are on site at any given time. The number of fire department staff would not increase from existing conditions. The proposed hotel, office, and retail/restaurant uses on the project site would result in an estimated net increase of between 1,450 and 1,524 jobs (90 to 180 employees for the hotel, 1,249 to 1,413 employees for the office space, and 21 employees for the retail/restaurant use).[19] The jobs created by the proposed project would represent approximately 0.5 to 0.7 percent of the 236,000 new jobs expected for the city by 2050. It is anticipated that most of the employees would live in San Francisco (or nearby communities) and that the proposed project would not generate demand for new housing to accommodate new employees. However, even if all of the approximately 1,450 to 1,524 employees associated with the proposed project were assumed to be new to San Francisco, project-related employment growth would represent less than 1 percent (0.7 percent) of the city's estimated job growth between 2015 and 2050. This estimated increase in employment would be negligible in the context of total jobs in San Francisco. Therefore, the proposed project would not directly or indirectly induce substantial unplanned population growth. The impact from the proposed project would be ***less than significant***, and no mitigation measures are necessary.

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[15] Metropolitan Transportation Commission (MTC), 2023. *Priority Development Areas (Plan Bay Area 2050 Plus),* updated December 27, 2023, https://opendata.mtc.ca.gov/datasets/5572ccb7bfe2426eae086c35931f1d0e_0/explore?location=37.797553%2C-122.404322%2C16.01, accessed October 24, 2024.

[16] ABAG & MTC, 2021. *Plan Bay Area 2050 Growth Pattern*, updated January 21, 2021, https://planbayarea.org/sites/default/files/FinalBlueprintRelease_December2020_GrowthPattern_Jan2021Update.pdf, accessed October 24, 2024.

[17] Employment Development Department of California, *San Francisco County Profile,* 2024,https://labormarketinfo.edd.ca.gov/cgi/databrowsing/localAreaProfileQSResults.asp?selectedarea=San+Francisco+County&selectedindex=38&menuChoice=localareapro&state=true&geogArea=0604000075&countyName=&submit1=View+Local+Area+Profile, accessed October 24, 2024.

[18] ABAG & MTC, 2021. *Plan Bay Area 2050 Growth Pattern*, updated January 21, 2021, https://planbayarea.org/sites/default/files/FinalBlueprintRelease_December2020_GrowthPattern_Jan2021Update.pdf, accessed October 24, 2024.

[19] City and County of San Francisco, *Transportation Impact Analysis Guidelines for Environmental Review*, October 2012, Table C-1, p. C-3. The employment projections are based on employee density factors for typical land uses. An employment density of 0.9 employees per room is used for hotel use. An employment density of 276 gsf per employee is used for office use. An employment density of 350 gsf per employee is used for retail/restaurant use. The range in employees reflects the potential programming (100 hotel rooms and more office or 200 hotel rooms and less office) of five of the middle floors of the building as either office or hotel.

Impact PH-2: The proposed project would not displace substantial numbers of existing people or housing units, necessitating the construction of replacement housing. ***(No Impact)***

The proposed project would not displace any residents or housing units because no housing units currently exist on the project site. Therefore, the proposed project would have ***no impact*** related to the displacement of housing units or people and would not necessitate the construction of replacement housing, and no mitigation measures are necessary.

Impact C-PH-1: The proposed project, in combination with cumulative projects, would not result in a significant cumulative impact related to population and housing. ***(Less than Significant)***

The cumulative analysis includes the development projects located in the vicinity of the project site, identified in draft EIR Table 3-1, Cumulative Projects within a 0.25-Mile Radius of the Project Site, p. 3-8, and mapped on Figure 3-1, Cumulative Projects within a 0.25-Mile Radius of the Project Site, p. 3-11. Most of the development projects are mixed-use projects that would include varying combinations of office, hotel, residential, and commercial uses. These projects would result in an intensification of land uses in the project vicinity, similar to the proposed project; however, they would be infill projects and would be consistent with the planning vision for the area as well as with projected regional and citywide growth in population, housing, and employment. As described above, the proposed project would not induce substantial direct or indirect population growth; displace a substantial number of existing housing units, people, or employees; or create demand for additional housing elsewhere. Accordingly, the proposed project, in combination with cumulative projects, would not result in a significant cumulative impact related to population and housing, and the impact would be ***less than significant***, and no mitigation measures are necessary.

E.3 Cultural Resources

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
3. CULTURAL RESOURCES. Would the project:					
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5, including those resources listed in article 10 or article 11 of the San Francisco Planning Code?	☒	☐	☐	☐	☐
b) Cause a substantial adverse change in the significance of an archeological resource pursuant to §15064.5?	☐	☒	☐	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐	☐

Impact CR-1: The proposed project could cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines section 15064.5. ***(Potentially Significant)***

The proposed project could cause a substantial adverse change in the significance of a historic resource; therefore, a ***potentially significant*** impact could occur, and this topic is addressed in draft EIR Section 3.A, Historic Architectural Resources. A significant impact would occur if a project would cause a substantial adverse change to a historic resource through physical demolition, destruction, relocation, or alteration of the resource.

Impact CR-2: The proposed project could cause a substantial adverse change in the significance of an archeological resource. ***(Less than Significant with Mitigation)***

Based on the results of the cultural resource review for the project, the project ground disturbance, such as demolition, mass excavation for the new foundation, and soils improvements and piles, have the potential to impact significant archeological resources, if present, at the project site.[20]

The project site was completely submerged in the waters of Yerba Buena Cove sometime between 2,000 and 4,000 years ago. Around 8,000 years ago the project site was about 600 feet west (landward) of the shoreline of the San Francisco Bay.[21] The potential land surface that was exposed prior to inundation by the bay, overlain by the fill and Bay Mud, has sensitivity for Native American archeological resources.

At the beginning of the Gold Rush, Yerba Buena Cove was packed with ships that had carried goods and people to the gold fields, many of these ships were abandoned, broken down for timber, or reused as storeships. Historical accounts and archeological evidence indicate that remains of dozens of these ships remain buried underneath the filled land that was once Yerba Buena Cove. Although there are not any identified buried ships within the project site, there are four recorded ships within 200 feet of the project site, including the *Georgian*, *Lousia*, *Niantic*, and *General Harison*. In the early 1850s, the Washington Street Wharf was immediately to the north of the project site and the Clay Street Wharf was about 150 feet south of the project site. Therefore, there is the potential for Gold Rush era maritime resources at the project site.

Between 1849 and 1851, seven fires ravaged the waterfront of San Francisco. In 1851, the shoreline had been extended to the Battery and Washington Street alignments. Two large warehouses or industrial buildings were erected on the project site adjacent to the new shoreline.[22] These buildings remained on the block in 1853 but the shoreline had been filled to two blocks to the east,[23] and by the close of the decade, the shoreline was four blocks east at Drumm Street.[24] The project site continued to be completely developed with commercial buildings throughout the 19th century. Outbuildings visible on late 19th century maps,[25] which may have functioned as privies, could be preserved since the footprint of the existing building at 447 Battery Street does not extend to these rear yard areas. Therefore, the project site has the potential for Gold Rush–era refuse associated with early fires as well as later 19th century refuse deposits.

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[20] San Francisco Planning Department, *Cultural Resource Review: 530 Sansome Street/447 Battery Street, December 6,2024*.
[21] Jack Meyer and Paul Brandy, 2019. Geoarcheological Assessment and Site Sensitivity Model for the City and County of San Francisco, California.
[22] United States Coast Survey, 1851.
[23] United States Coast Survey, 1853.
[24] United States Coast Survey, 1857.
[25] Sanborn Map Company, Insurance Maps of San Francisco, California, 1887, 1899, 1913.

Although some archeological resources may have been damaged by the installation of the existing basements and there are no recorded significant archeological resources within the project site, given the information above, the project's ground disturbing activities could result in significant impacts on potential significant archeological resources. To reduce impacts on archeological resources, the project sponsors would be required to implement **Mitigation Measures M-CR-2a, Archeological Testing**, and **M-CR-2b, Treatment of Submerged and Deeply Buried Resources**.

Mitigation Measure M-CR-2a: Archeological Testing.

Archeological Testing Program. The purpose of the archeological testing program will be to determine to the extent possible the presence or absence of archeological resources and to identify and to evaluate whether any archeological resource encountered on the site constitutes a historical resource under CEQA. The project sponsor shall retain the services of an archeological consultant from the rotational Qualified Archeological Consultants List (QACL) maintained by the planning department. After the first project approval action or as directed by the Environmental Review Officer (ERO), the project sponsor shall contact the department archeologist to obtain the names and contact information for the next three archeological consultants on the QACL. The archeological consultant shall undertake an archeological testing program as specified herein. The archeological consultant's work shall be conducted in accordance with this measure at the direction of the ERO.

All plans and reports prepared by the consultant as specified herein shall be submitted first and directly to the ERO for review and comment and shall be considered draft reports subject to revision until final approval by the ERO. In addition, the consultant shall be available to conduct an archeological monitoring and/or data recovery program if required pursuant to this measure. Archeological monitoring and/or data recovery programs required by this measure could suspend construction of the project for up to a maximum of four weeks. At the direction of the ERO, the suspension of construction can be extended beyond four weeks only if such a suspension is the only feasible means to reduce to a less than significant level potential effects on a significant archeological resource as defined in CEQA Guidelines section 15064.5 (a)(c).

A California Native American tribe traditionally and culturally affiliated with a geographic area of the project at their discretion shall provide a Native American cultural sensitivity training to all project contractors. A California Native American tribe traditionally and culturally affiliated with a geographic area of the project at their discretion shall provide monitoring of the archeological testing for Native American archeological resources.

Archeological Testing Plan. The archeological testing program shall be conducted in accordance with the approved Archeological Testing Plan (ATP). The archeological consultant and the ERO shall consult on the scope of the ATP, which shall be approved by the ERO prior to any project-related soils disturbing activities commencing. The ATP shall be submitted first and directly to the ERO for review and comment and shall be considered a draft subject to revision until final approval by the ERO. The archeologist shall implement the testing as specified in the approved ATP prior to and/or during construction. The ATP shall identify the property types of the expected archeological resource(s) that potentially could be adversely affected by the proposed project, lay out what scientific/historical research questions are applicable to the expected resource, what data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. The ATP shall also identify the testing method to be used, the depth

or horizonal extent of testing, and the locations recommended for testing and shall identify archeological monitoring requirements for construction soil disturbance as warranted.

Paleoenvironmental Analysis of Paleosols. When a submerged paleosol is identified, irrespective of whether cultural material is present, samples shall be extracted and processed for dating, flotation for paleobotanical analysis, and other applicable special analyses pertinent to identification of possible cultural soils and for environmental reconstruction. The results of analysis of collected samples shall be reported on in the results report that is submitted to planning as described in Archeological Resources Report section below.

Discovery Treatment Determination. At the completion of the archeological testing program, the archeological consultant shall submit a written summary of the findings to the ERO. The findings memo shall describe and identify each resource and provide an initial assessment of the integrity and significance of encountered archeological deposits.

If the ERO in consultation with the archeological consultant determines that a significant archeological resource is present and that the resource could be adversely affected by the proposed project, the ERO, in consultation with the project sponsor, shall determine whether preservation of the resource in place is feasible. If so, the proposed project shall be re-designed so as to avoid any adverse effect on the significant archeological resource and the archeological consultant shall prepare an archeological resource preservation plan (ARPP), which shall be implemented by the project sponsor during construction. The consultant shall submit a draft ARPP to the planning department for review and approval.

If preservation in place is not feasible, a data recovery program shall be implemented, unless the ERO determines that the archeological resource is of greater interpretive than research significance and that interpretive use of the resource is feasible. The ERO in consultation with the archeological consultant shall also determine if additional treatment is warranted, which may include additional testing and/or construction monitoring.

Archeological Sensitivity Training. If it is determined that the project would require ongoing archeological monitoring, the archeological consultant shall provide a training to the prime contractor; to any project subcontractor (including demolition, excavation, grading, foundation, pile driving, etc. firms); or utilities firm involved in soils-disturbing activities within the project site. The training shall advise all project contractors to be on the alert for evidence of the presence of the expected archeological resource(s), of how to identify the evidence of the expected resource(s), and of the appropriate protocol in the event of apparent discovery of an archeological resource by the construction crew.

Consultation with Descendant Communities. On discovery of an archeological site associated with descendant Native Americans, the Overseas Chinese, or other potentially interested descendant group an appropriate representative of the descendant group and the ERO shall be contacted. The representative of the descendant group shall be given the opportunity to monitor archeological field investigations of the site and to offer recommendations to the ERO regarding appropriate archeological treatment of the site, of recovered data from the site, and, if applicable, any interpretative treatment of the associated archeological site. A California Native American tribe traditionally and culturally affiliated with a geographic area of the project or appropriate

representative of the descendant group at their discretion shall provide a cultural sensitivity training to all project contractors. The ERO and project sponsor shall work with the tribal representative or other representatives of descendant communities to identify the scope of work to fulfill the requirements of this mitigation measure, which may include participation in preparation and review of deliverables (e.g., plans, interpretive materials, artwork). Representatives shall be compensated for their work as identified in the agreed upon scope of work. A copy of the Archeological Resources Report (ARR) shall be provided to the representative of the descendant group.

Archeological Data Recovery Plan. An archeological data recovery program shall be conducted in accordance with an Archeological Data Recovery Plan (ADRP) if all three of the following apply: (1) a resource has potential to be significant, (2) preservation in place is not feasible, and (3) the ERO determines that an archeological data recovery program is warranted. The archeological consultant, project sponsor, and ERO shall meet and consult on the scope of the ADRP prior to preparation of a draft ADRP. The archeological consultant shall submit a draft ADRP to the ERO. The ADRP shall identify how the proposed data recovery program will preserve the significant information the archeological resource is expected to contain. That is, the ADRP will identify what scientific/historical research questions are applicable to the expected resource, what data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, should be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archeological resources if nondestructive methods are practical.

The scope of the ADRP shall include the following elements:

- *Field Methods and Procedures.* Descriptions of proposed field strategies, procedures, and operations.
- *Cataloguing and Laboratory Analysis.* Description of selected cataloguing system and artifact analysis procedures.
- *Discard and Deaccession Policy.* Description of and rationale for field and post-field discard and deaccession policies.
- *Security Measures.* Recommended security measures to protect the archeological resource from vandalism, looting, and non-intentionally damaging activities.
- *Final Report.* Description of proposed report format and distribution of results.
- *Curation.* Description of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities.

Coordination of Archeological Data Recovery Investigations. In cases in which the same resource has been or is being affected by another project for which data recovery has been conducted, is in progress, or is planned, in order to maximize the scientific and interpretive value of the data recovered from both archeological investigations, the following measures shall be implemented:

a) In cases where archeological investigations have not begun for both of the projects, both archeological consultants and the ERO shall consult on coordinating and collaboration on

archeological research design, data recovery methods, analytical methods, reporting, curation, and interpretation to ensure consistent data recovery and treatment of the resource.

b) In cases where archeological data recovery investigation is already under way or has been completed for a prior project, the archeological consultant for the subsequent project shall consult with the prior archeological consultant, if available; review prior treatment plans, findings and reporting; and inspect and assess existing archeological collections/inventories from the site prior to preparation of the archeological treatment plan for the subsequent discovery, and shall incorporate prior findings in the final report of the subsequent investigation. The objectives of this coordination and review of prior methods and findings will be to identify refined research questions; determine appropriate data recovery methods and analyses; assess new findings relative to prior research findings; and integrate prior findings into subsequent reporting and interpretation.

Human Remains and Funerary Objects. The treatment of human remains and funerary objects discovered during any soil-disturbing activity shall comply with applicable State and Federal laws. This shall include immediate notification of the Office of the Chief Medical Examiner of the City and County of San Francisco (Medical Examiner). The ERO also shall be notified immediately upon the discovery of human remains. In the event of the Medical Examiner's determination that the human remains are Native American remains, the Medical Examiner shall notify the California State Native American Heritage Commission (NAHC), which will appoint a Most Likely Descendant (MLD). The MLD will complete his or her inspection of the remains and make recommendations or preferences for treatment within 48 hours of being granted access to the site (Public Resources Code section 5097.98(a)).

The landowner may consult with the project archeologist and project sponsor and shall consult with the MLD and ERO on preservation in place or recovery of the remains and any scientific treatment alternatives. The landowner shall then make all reasonable efforts to develop an Agreement with the MLD, as expeditiously as possible, for the treatment and disposition, with appropriate dignity, of human remains and funerary objects (as detailed in CEQA Guidelines section 15064.5(d)). Per PRC section 5097.98 (b)(1), the Agreement shall address and take into consideration, as applicable and to the degree consistent with the wishes of the MLD, the appropriate excavation, removal, recordation, scientific analysis, custodianship prior to reinterment or curation, and final disposition of the human remains and funerary objects. If the MLD agrees to scientific analyses of the remains and/or funerary objects, the archeological consultant shall retain possession of the remains and funerary objects until completion of any such analyses unless otherwise specified in the Agreement, after which the remains and funerary objects shall be reinterred or curated as specified in the Agreement.

Both parties are expected to make a concerted and good faith effort to arrive at an Agreement, consistent with the provisions of PRC section 5097.98. However, if the landowner and the MLD are unable to reach an Agreement, the landowner, ERO, and project sponsor shall ensure that the remains and/or mortuary materials are stored securely and respectfully until they can be reinterred on the property, with appropriate dignity, in a location not subject to further or future subsurface disturbance, consistent with state law.

Treatment of historic-period human remains and of associated or unassociated funerary objects discovered during any soil-disturbing activity, additionally, shall follow protocols laid out in the

project's archeological treatment documents, and in any related agreement established between the Medical Examiner and the ERO.

The project archeologist shall retain custody of the remains and associated materials while any scientific study scoped in the treatment document is conducted and the remains shall then be curated or respectfully reinterred by arrangement on a case-by case-basis.

Cultural Resources Public Interpretation Plan. The project archeological consultant shall submit a Cultural Resources Public Interpretation Plan (CRPIP) if a significant archeological resource is discovered during a project. As directed by the ERO, a qualified design professional with demonstrated experience in displaying information and graphics to the public in a visually interesting manner, local artists, or community group may also be required to assist the project archeological consultant in preparation of the CRPIP. If the resource to be interpreted is a tribal cultural resource, the CRPIP shall be prepared in consultation with and developed with the participation of Ohlone tribal representatives. The CRPIP shall describe the interpretive product(s), locations or distribution of interpretive materials or displays, the proposed content and materials, the producers or artists of the displays or installation, and a long-term maintenance program. The CRPIP shall be sent to the ERO for review and approval. The CRPIP shall be implemented prior to occupancy of the project.

Archeological Resources Report. Whether or not significant archeological resources are encountered, the archeological consultant shall submit a written report of the findings of the testing program to the ERO. The archeological consultant shall submit a draft Archeological Resources Report (ARR) to the ERO that evaluates the historical significance of any discovered archeological resource and describes the archeological, historical research methods employed in the archeological testing/monitoring/ data recovery program(s) undertaken, and if applicable, discusses curation arrangements. Formal site recordation forms (CA DPR 523 series) shall be attached to the ARR as an appendix.

Once approved by the ERO, copies of the ARR shall be distributed as follows: California Archeological Site Survey Northwest Information Center (NWIC) shall receive one copy and the ERO shall receive a copy of the transmittal of the ARR to the NWIC. The environmental planning division of the planning department shall receive one bound hardcopy of the ARR. Digital files that shall be submitted to the environmental division include an unlocked, searchable PDF version of the ARR, GIS shapefiles of the site and feature locations, any formal site recordation forms (CA DPR 523 series), and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. The PDF ARR, GIS files, recordation forms, and/or nomination documentation should be submitted via USB or other stable storage device. If a descendant group was consulted during archeological treatment, a PDF of the ARR shall be provided to the representative of the descendant group.

Curation. Significant archeological collections and paleoenvironmental samples of future research value shall be permanently curated at an established curatorial facility or Native American cultural material shall be returned to local Native American tribal representatives at their discretion. The facility shall be selected in consultation with the ERO. Upon submittal of the collection for curation the sponsor or archeologist shall provide a copy of the signed curatorial agreement to the ERO.

Mitigation Measure M-CR-2b: Treatment of Submerged and Deeply Buried Resources. This measure applies to projects that would include subgrade excavation to depths that would penetrate to native soil or below Young Bay Mud, or entail the use of piles, soil improvements or other deep foundations in landfill areas within former creeks, ponds, bay marshes or waters of the bay that may be sensitive for submerged or buried historical or Native American archeological resources; and shall be implemented in the event of the discovery of a submerged or deeply buried resource during archeological testing, archeological monitoring, or soil-disturbing construction activities that occur when an archeologist is not present. In addition to the measures detailed below, for any project during which a significant archeological resource is identified, a preservation or treatment determination shall be made consistent with the provisions of Mitigation Measure M-CR-2a.

The following shall be undertaken upon discovery of a potentially significant deeply buried or submerged resource to minimize significant effects from deep project excavations, soil improvements, pile construction, or construction of other deep foundation systems, in cases where the environmental review officer (ERO) has determined through consultation with the project sponsor, and with tribal representatives as applicable, that preservation-in-place—the preferred mitigation—is not a feasible or effective option.

Submerged or Buried Resource Treatment Determination. If the resource cannot feasibly or adequately be preserved in place, documentation and/or archeological data recovery shall be conducted, as described in Mitigation Measure M-CR-2a. However, by definition, submerged or deeply buried resources sometimes are located deeper than the maximum anticipated depth of project excavations, such that the resource would not be exposed for investigation, and/or under water or may otherwise pose substantial access, safety or other logistical constraints for data recovery; or the cost of providing archeological access to the resource may demonstrably be prohibitive.

In circumstances where the constraints identified above limit physical access for documentation and data recovery, the ERO, project sponsor, project archeologist, and tribal representative (for Native American archeological resources), shall consult to explore alternative documentation and treatment options to be implemented in concert with any feasible archeological data recovery. The appropriate treatment elements, which would be expected to vary with the type of resource and the circumstances of discovery, shall be identified by the ERO based on the results of consultation from among the treatment measures listed below. Additional treatment options may be developed and agreed upon through consultation if it can be demonstrated that they would be equally or more effective in recovering or amplifying the value of the data recovered from physical investigation of the affected resources by addressing applicable archeological research questions and in disseminating data and meaningfully interpreting the resource to the public.

Each treatment option below, or a combination of the treatment measures, in concert with any feasible standard data recovery methods applied as described above, would be effective in mitigating significant impacts to submerged and buried resources. The ERO, in consultation with the project archeologist and project sponsor, shall identify which of these measures that, individually or in combination, will be applicable and effective in recovering sufficient data, enhancing the research value of the data recovery, meaningfully interpreting the resource to the public, or otherwise effectively mitigating the loss of data or associations that will result from project construction.

Multiple treatment measures shall be adopted in combination, as needed to adequately mitigate data loss and, as applicable, impacts to tribal cultural values, as determined in consultation with the ERO and, as applicable, tribal representatives.

The project archeologist shall document the results of the treatment program consultation with respect to the agreed upon scope of treatment in a treatment program memo, for ERO review and approval. Upon approval by the ERO, the project sponsor shall ensure that treatment program is implemented prior to and during construction, as applicable. Reporting, interpretive, curation and review requirements are the same as delineated under the other cultural resources mitigation measures that are applicable to the project, as noted above. The project sponsor shall be responsible for ensuring the implementation of all applicable mitigation measures, as identified in the treatment program memo.

Treatment Options

- *Remote Archeological Documentation.* Where a historic feature cannot be recovered or adequately accessed in place by the archeologist due to size, bulk or inaccessibility, the archeologist shall conduct all feasible remote documentation methods, such as 3-D photography using a remote access device, remote sensing (e.g., ground penetrating radar with a low range (150 or 200 MHz) antenna), or other appropriate technologies and methods, to document the resource and its context. The project sponsor and contractor shall support remote archeological documentation as needed, by assisting with equipment access (e.g., drone, lights and camera or laser scanner mounted on backhoe); providing personnel qualified to enter the excavation to facilitate remote documentation; and accommodating training of construction personnel by the project archeologist so that they can assist in measuring or photographing the resource from inside the excavation in cases when the archeologist cannot enter.
- *Modification of Contractor's Excavation Methods.* At the request of the ERO, the project sponsor shall consult with the project archeologist and the ERO to identify potential modifications to the contractor's excavation and shoring methods to facilitate data recovery to prevent damage to the resource before it has been documented, to assist in exposure and facilitate observation and documentation, and to assist in data recovery. Examples include improved dewatering during excavation, use of a smaller excavator bucket or toothless bucket, providing a location where spoils can be spread out and examined by the archeologist prior to being offhauled, and phasing or benching of deep excavations to facilitate observation and/or deeper archeological trenching.
- *Data Recovery through Open Excavation.* If a project will include mass excavation to the depth of the buried/submerged deposit, archeological data recovery shall include manual (preferred) or controlled mechanical sampling of the deposit. If project construction would not include mass excavation to the depth of the deposit but would impact the deposit through deep foundation systems or soil improvements, the ERO and the project sponsor shall consult to consider whether there are feasible means of providing direct archeological access to the deposit (e.g., excavation of portion of the site that overlies the deposit to the subject depth so that a sample can be recovered). The feasibility consideration shall include an estimate of the project cost of excavating to the necessary depth and of providing shoring and dewatering sufficient to allow archeological access to the deposit for manual or mechanical recovery.

- *Mechanical Recovery.* If site circumstances limit access by archeologists to the find, the ERO, project archeologist, and project sponsor shall consult on the feasibility of mechanically removing the feature/ deposit or portion of it intact for off-site documentation and analysis, preservation, and interpretive use. The consultation above shall include consideration as to whether such recovery is logistically feasible and can be accomplished without major data loss. The specific means and methods and the type and size of the sample shall be identified, and the recovery shall be implemented as determined feasible by the ERO. The project sponsor shall assist with mechanical recovery and transport and curation of recovered materials and shall provide for an appropriate and secure off-site location for archeological documentation and storage as needed.
- *Salvage of Historic Materials.* Samples or sections of historical features that cannot be preserved in place (e.g., structural members of piers or wharves, sections of wooden sea wall, rail alignments, or historic utility or paving features of particular data value or interpretive interest) shall be tested for contamination and, if not contaminated, shall be salvaged for interpretive use or other reuse, such as display of a reconstructed resource; use of timbers or planks for site furniture and signage structures; installation in publicly accessible open spaces; or other uses of public interest. Historic wood and other salvageable historic structural material not used for interpretation shall be recovered for reuse, consistent with the San Francisco Ordinance No. 27-06, which requires recycling or reuse of all construction and demolition debris material removed from a project. If the project has the potential to encounter such features, the project sponsor shall plan in advance for reuse of salvaged historic materials to the greatest extent feasible, including identification of a location for interim storage and identification of potential users and reuses.
- *Data Recovery Using Geoarcheological Cores.* If it is deemed infeasible to expose a significant deposit resource for archeological data recovery, geoarcheological coring of the identified deposit shall be conducted at horizontal grid intervals of no greater than 15 feet within areas that will be impacted by project construction. The maximum feasible core diameter shall be used for data recovery coring. The objective of coring is to obtain a minimum of a five percent sample of the estimated total volume of the resource within areas that will impacted by project construction. However, due to the small size of each core, this method alone generally cannot recover a 5 percent sample volume or a sufficient quantity of data to adequately characterize the range of activities that took place at the site. For this reason, if the coring sample constitutes less than five percent of the estimated total volume of the archeological deposit that will be directly impacted by project construction, the project sponsor may elect implementation of one or more of the following additional compensatory measures to amplify the value of the recovered data.
- *Compensatory Treatment Measures:*
  - *Scientific Analysis of Data from Comparable Archeological Sites/"Orphaned Collections."* The ERO and the project archeologist shall consult to identify a known archeological site or historical feature, or curated collections or samples recovered during prior investigation of similar sites or features are available for further analysis; and for which site-specific or comparative analyses would be expected to provide data relevant to the interpretation or context reconstruction for the affected site. Examples would include reanalysis or comparative analysis of artifacts or archival records; faunal or paleobotanical analyses; dating; isotopes studies; or such other relevant studies based on the research design developed for the affected site and on data sets available from the impacted resource and

comparative collections. The scope of analyses shall be determined by the ERO based on consultation with the project archeologist, the project sponsor and, for sites of Native American origin Native American representatives.

Additional Off-Site Data Collection and/or Analysis for Historical and Paleoenvironmental Reconstruction. The ERO and project archeologist shall identify existing geoarcheological data and geotechnical coring records on file with the city; and/or cores extracted and preserved during prior geotechnical or geoarcheological investigations that could contribute to reconstruction of the environmental setting in the vicinity of the identified resource, to enhance the historical and scientific value of recovered data by providing additional data about Native American archeological environmental setting and stratigraphic sensitivity; and/or provide information pertinent to the public interpretation of the significant resource. Relevant data may also be obtained through geoarcheological coring at accessible sites identified by the ERO through consultation with San Francisco public agencies and private project sponsors.

With implementation of Mitigation Measures M-CR-2a and M-CR-2b, the impact on significant archeological resources from construction of the proposed project would be ***less than significant with mitigation***.

Impact CR-3: The proposed project could disturb human remains, including those interred outside of formal cemeteries. ***(Less than Significant with Mitigation)***

There are no known or suspected human remains, including those interred outside of formal cemeteries, located in the immediate vicinity of the project site. In the unlikely event that human remains are encountered during construction, any inadvertent damage to human remains would be considered a significant impact. Mitigation Measure M-CR-2a includes the required procedures to address, protect, and treat human remains should any be discovered during construction. With implementation of Mitigation Measures M-CR-2a and M-CR-2b, as described above, the proposed project's impacts on human remains would be ***less than significant with mitigation***.

Impact C-CR-1: The proposed project, in combination with cumulative projects, could cause a substantial adverse change in the significance of a historical resource, as defined in CEQA Guidelines section 15064.5. ***(Potentially Significant)***

The proposed project could cause a substantial adverse change in the significance of a historic resource; therefore, a ***potentially significant*** Impact could occur, and this topic is analyzed in draft EIR Section 3.A, Historic Architectural Resources.

Impact C-CR-2: The proposed project, in combination with cumulative projects, would not result in significant cumulative impacts on archeological resources and human remains. ***(Less than Significant with Mitigation)***

Project-related impacts on archeological resources and human remains are site-specific and generally limited to a project's construction area. Cumulative projects are considered to be projects that have the

potential to impact the same archeological resource. For this reason, the proposed project, in combination with the 545 Sansome Street project, could have a significant cumulative impact on archeological resources or human remains. With implementation of Mitigation Measures M-CR-2a and M-CR-2b, as described above, the proposed project's impacts on archeological resources and human remains would be less than significant with mitigation. Therefore, the proposed project, in combination with cumulative projects, would not result in a cumulatively considerable contribution to a significant cumulative impact and the cumulative impact would be ***less than significant with mitigation***.

E.4 Tribal Cultural Resources

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
4. TRIBAL CULTURAL RESOURCES. Would the project:					
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:					
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐	☐

Impact TCR-1: The proposed project could cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code section 21074. ***(Less than Significant with Mitigation)***

Pursuant to CEQA section 21074, tribal cultural resources (TCRs) are defined as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that

are also either (a) included or determined to be eligible for inclusion in the California register or (b) included in a local register of historical resources as defined in CEQA section 5020.1(k).

Pursuant to CEQA section 21080.3.1(d), on December 10, 2024, the planning department contacted Native American individuals and organizations for the San Francisco area, providing a description of the proposed project and requesting comments on the identification, presence, and significance of TCRs in the project vicinity. During the 30-day comment period, two Native American tribal groups requested to consult on the project. The planning department consulted with the Amah Mutsun Tribal Band of Mission San Juan Bautista and Association of Ramaytush Ohlone. Both groups concurred that archeological testing should be conducted given the potential for Native American archeological resource to be impacted as discussed above under Impact CR-2. The groups requested that cultural sensitivity training be conducted prior to project ground disturbance as well as well as Native American monitoring of the archeological testing. These recommendations were included in Mitigation Measure M-CR-2a, Archeological Testing. In addition, if a TCR is encountered during testing or project ground disturbance the tribes requested to be consulted regarding preservation in place and interpretation, which is reflected in M-TCR-1, Tribal Cultural Resources Program.

Based on discussions with Native American tribal representatives, in San Francisco, Native American archeological resources are presumed to be potential TCRs. A TCR is adversely affected when a project impacts its significance. As noted under Impact CR-2, the proposed project has potential for submerged Native American archeological resources.

However, as discussed under Impact CR-2, a disturbance of previously unidentified archeological resources, which is presumed to be a TCR, would be considered a significant impact. If a potential TCR is discovered during construction, the project sponsors would be required to implement **Mitigation Measure M-TCR-1, Tribal Cultural Resources Archeological Resource Preservation Plan and/or Interpretive Program**.

> **Mitigation Measure M-TCR-1: Tribal Cultural Resources Program.**
>
> *Preservation in Place.* In the event of the identification or discovery of a tribal cultural resource, the Environmental Review Officer (ERO), the project sponsor, and California Native American tribes traditionally and culturally affiliated with a geographic area of the project shall consult to determine whether preservation in place would be feasible and effective. The planning department shall notice California Native American tribes traditionally and culturally affiliated with a geographic area who will be given the opportunity to opt in to coordination regarding tribal cultural resources. This would include collaboration and review of the preservation plan proposed for the resource. If it is determined that preservation-in-place of the tribal cultural resource would be both feasible and effective, then the project sponsor in consultation with local Native American representatives and the ERO shall prepare a tribal cultural resource preservation plan (TCRPP). If the tribal cultural resource is an archeological resource of Native American origin, the archeological consultant shall prepare an archeological resource preservation plan (ARPP) in consultation with the local Native American representative, which shall be implemented by the project sponsor during construction. The consultant shall submit a draft ARPP to Planning for review and approval.
>
> *Interpretive Program.* The project sponsor, in consultation with California Native American tribes traditionally and culturally affiliated with a geographic area of the project, shall prepare a Tribal Cultural Resources Public Interpretation Plan (TCRIP) to guide Tribal Cultural Resource interpretive program. The TCRIP may be prepared in tandem with the Cultural Resources Public Interpretation

Plan (CRPIP) if required. The TCRIP shall be submitted to ERO for review and approval prior to implementation of the program. The plan shall identify, as appropriate, proposed locations for installations or displays, the proposed content and materials of those displays or installation, the producers or artists of the displays or installation, and a long-term maintenance program. The interpretive program may include artist installations, preferably by local Native American artists, oral histories with local Native Americans, cultural displays, educational panels, or other interpretive elements agreed upon by the ERO, sponsor, and local Native American representatives. Upon approval of the TCRIP and prior to project occupancy, the interpretive program shall be implemented by the project sponsor. The ERO and project sponsor shall work with the tribal representative to identify the scope of work to fulfill the requirements of this mitigation measure, which may include participation in preparation and review of deliverables (e.g., plans, interpretive materials, artwork). Tribal representatives shall be compensated for their work as identified in the agreed upon scope of work.

Implementation of Mitigation Measures M-CR-2a, M-CR-2b, and M-TCR-1 would require the appropriate involvement of concerned Native Americans in the treatment of TCRs discovered during construction and ensure that any such resource would be preserved, or that the information it represents would be preserved and interpreted to the public. These steps would ensure that project excavation would not cause a substantial adverse change in the significance of TCRs that could be encountered during construction, and that the proposed project's impact would be ***less than significant with mitigation***.

Impact C-TCR-1: The proposed project, in combination with cumulative projects, would not result in significant cumulative impacts to TCRs. ***(Less than Significant with Mitigation)***

Project-related impacts on TCRs are site-specific and generally limited to a project's construction area. For these reasons, the proposed project, in combination with the 545 Sansome project, could have a significant cumulative impact on TCRs. With implementation of Mitigation Measures M-CR-2a, M-CR-2b, and M-TCR-1, as described above, the proposed project's impacts on tribal cultural resources would be less than significant. Therefore, the proposed project, in combination with cumulative projects, would not result in a cumulatively considerable contribution to a significant cumulative impact and the cumulative impact would be ***less than significant with mitigation***.

E.5 Transportation and Circulation

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
5. TRANSPORTATION AND CIRCULATION. Would the project:					
a) Involve construction that would require a substantially extended duration or intensive activity, the effects of which would create potentially hazardous conditions for people walking, bicycling, or driving, or public transit operations; or interfere with emergency access or accessibility for people walking or bicycling; or substantially delay public transit?	☐	☐	☒	☐	☐
b) Create potentially hazardous conditions for people walking, bicycling, or driving or public transit operations?	☐	☐	☒	☐	☐
c) Interfere with accessibility of people walking or bicycling to and from the project site, and adjoining areas, or result in inadequate emergency access?	☐	☐	☒	☐	☐
d) Substantially delay public transit?	☐	☐	☒	☐	☐
e) Cause substantial additional vehicle miles travelled or substantially induce additional automobile travel by increasing physical roadway capacity in congested areas (i.e., by adding new mixed-flow travel lanes) or by adding new roadways to the network?	☐	☐	☒	☐	☐
f) Result in a loading deficit, the secondary effects of which would create potentially hazardous conditions for people walking, bicycling, or driving; or substantially delay public transit?	☐	☐	☒	☐	☐
g) Result in a substantial vehicular parking deficit, the secondary effects of which would create potentially hazardous conditions for people walking, bicycling, or driving; or interfere with accessibility for people walking or bicycling or inadequate access for emergency vehicles; or substantially delay public transit?	☐	☐	☒	☐	☐

The discussion of transportation and circulation impacts provided below is based on the transportation analysis and data prepared for the proposed project, which is included as Appendix D.

The proposed project would satisfy the eligibility criteria for a "transit-oriented infill project" under CEQA section 21099(d)(1) because it would consist of employment center uses; would be located on an infill site; and would be located within a transit priority area.[26] Therefore, the proposed project would be exempt from an analysis of impacts on (automobile) parking under CEQA. Furthermore, the proposed project would meet the map-based screening criterion for VMT impacts as discussed below, thereby exempting it from analyzing secondary effects related to parking, including potentially hazardous conditions for people walking, bicycling, or driving; interference with accessibility for people walking or bicycling; inadequate access for emergency vehicles; and substantial delay for public transit. For these reasons, topic E.5(g) is not applicable to the proposed project and is not discussed further in this initial study.

Transportation Setting

The transportation study area, where the project could potentially significantly affect transportation and circulation, includes the block and adjacent intersections bordered by Washington Street to the north, Clay Street to the south, Sansome Street to the west, and Battery Street to the east. Access to the project site by transit, on foot, or by bicycle is available from existing bus transit services, sidewalks, streets, and crosswalks near the site. **Figure 1** displays the project location and study area. **Figure 2** displays the existing transportation setting.

Field observations were conducted in June and November 2024. Intersection counts were collected on Tuesday, October 15, 2024, and Wednesday, October 16, 2024, during the p.m. peak period (4 p.m. to 6 p.m.) at intersections located within the proposed project transportation study area. The study area intersections for these counts are Battery and Washington streets, Battery and Clay streets, Sansome and Washington streets, and Sansome and Clay streets.

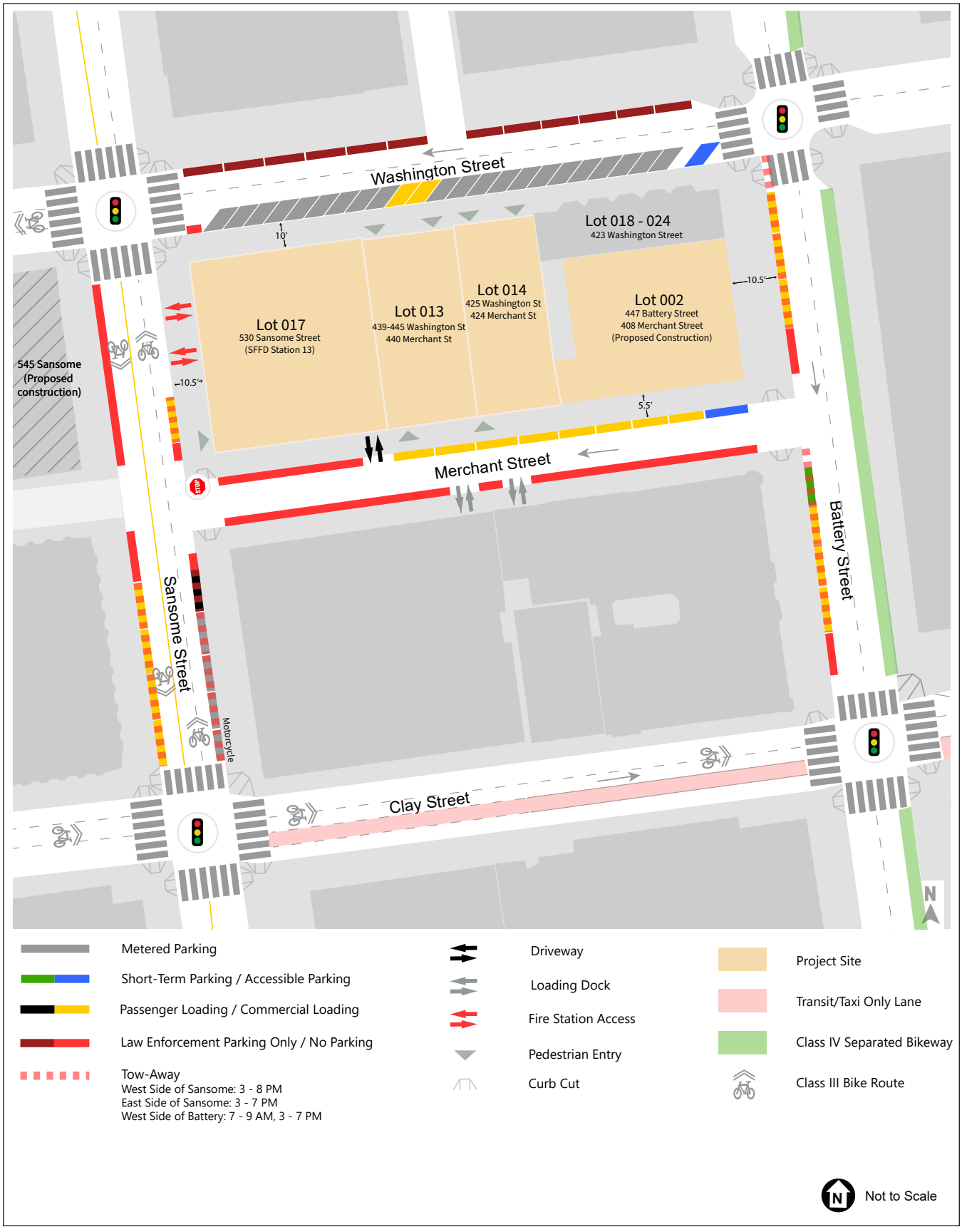
Roadways. Battery Street is designated as a secondary arterial roadway in the San Francisco General Plan and a Downtown Commercial street in the Better Streets Plan, oriented in the north–south direction, running between The Embarcadero/Lombard Street and Market Street/Bush Street. Battery Street carries one-way vehicular traffic in the southbound direction. Sansome Street is a secondary arterial roadway and a Downtown Commercial street, oriented in the north–south direction, running between The Embarcadero/ Chestnut Street and Sutter Street/Market Street. From 7 a.m.–8 p.m., Sansome Street carries one-way vehicular traffic in the northbound direction through the study area, and buses, delivery vehicles, and taxis can also travel southbound. From 8 p.m.–7 a.m., Sansome Street carries two-way vehicular traffic. Washington Street is a major arterial and a Downtown Commercial street, oriented in the east–west direction, running between The Embarcadero along the northeast waterfront and Arguello Boulevard in Presidio Heights and passing through the Financial District, Chinatown, Nob Hill, and Pacific Heights. Washington Street carries one-way vehicular traffic in the westbound direction through the study area. Clay Street is a Major Arterial and a Downtown Commercial street, oriented in the east–west direction, running between Drumm Street in the Financial District and Arguello Boulevard in Presidio Heights, passing through Chinatown, Nob Hill, and Pacific Heights. Clay Street carries one-way vehicular traffic in the eastbound direction through the study area. Merchant Street does not have a San Francisco General Plan designation but is designated as an alley in the Better Streets Plan and is oriented in the east–west direction, accessible to one-way vehicle traffic in the westbound direction between Battery and Kearny streets. An intermediate segment of Merchant Street east of the project site was vacated with development of the Transamerica Pyramid meaning the street now consists of two unconnected segments.

[26] San Francisco Planning Department, *Eligibility Checklist: CEQA section 21099 Modernization of Transportation Analysis*, March 19, 2021.

SOURCE: Fehr & Peers, 2024

447 Battery and 530 Sansome Street

FIGURE 1
PROJECT LOCATION AND STUDY AREA



SOURCE: Fehr & Peers, 2024

447 Battery and 530 Sansome Street

FIGURE 2
EXISTING TRANSPORTATION SETTING

Figure 3 displays the existing p.m. peak hour traffic volumes at the study intersections. During the p.m. peak hour, vehicle volumes are similar along all four streets adjacent to the block the project site is located on: Washington Street, Clay Street, Battery Street, and Sansome Street. During the p.m. peak hour, Washington Street was observed to carry the lowest traffic volumes (400 to 450 vehicles), while Battery Street was observed to carry the highest traffic volumes (600 to 650 vehicles). A keep clear zone on Sansome Street in front of Fire Station 13 maintains unobstructed access by the fire department during periods of heavy traffic. Vehicle queues were not observed to extend between intersections within the study area. The observed number of heavy vehicles (i.e., trucks), as a percentage of overall traffic volume at study intersections in the p.m. peak varies from five percent or less on Clay, Battery, and Washington streets to six to 33 percent on Sansome Street (six percent in the northbound direction and 33 percent in the southbound direction due to the southbound restrictions that require private vehicles to turn off Sansome Street). None of the roadways in the study area are included in the San Francisco High Injury Network.

Bicycle Facilities. Battery Street provides the primary north-south bicycle access through the Financial District, with approximately 80 bicyclists using the bidirectional class IV bidirectional cycle track between Market Street to Vallejo Street during the PM peak hour.[27] Battery Street provides a low-stress[28] bicycle route by separating bicycles from vehicles and by providing protected crossings through intersections with no-right turn on red restrictions and high-visibility markings in other conflict zones, such as the driveway to One Embarcadero Center south of Clay Street. Sansome Street provides secondary north-south bicycle access via a class III (shared lanes) bicycle route, with 30-40 northbound bicyclists and 15–20 southbound bicyclists using Sansome Street adjacent to the project site during the PM peak hour. Southbound Sansome Street provides a route for cyclists on a roadway where only buses, taxis, and commercial vehicles are permitted between 7 a.m. and 8 p.m. every day. Clay and Washington streets provide east-west access via class III (shared lanes) bicycle routes with fewer than 25 bicyclists on either street during the PM peak hour. Bicyclists must share the lane with vehicles on Sansome, Washington, and Clay streets, and are thus subject to conflicts such as "dooring" by parked vehicles[29] and navigating between passenger vehicles and larger, slow-turning vehicles, such as transit vehicles and trucks that are present on these streets. The Class III bicycle route on Sansome Street does include "sharrow" markings, which are aligned in a manner to aid bicyclists with proper lane position to avoid these dooring hazards and parking restrictions reduce conflicts between bicyclists and parked vehicles during the p.m. peak period. Based on field observations, there are not excessive vehicle speeds within the study area or blocked sight lines that could create hazardous conditions for people bicycling. As noted above, none of the streets in the study area are on San Francisco's High Injury Network. Refer to **Figure 4** for the existing bicycle facilities adjacent to the project site.

Pedestrian Facilities. All streets in the project vicinity have complete sidewalks on both sides of the street, including the four street segments adjacent to the project site. The typical sidewalk width is approximately 10.5 feet along Battery, Sansome, and Washington streets, and 5.5 feet along Merchant Street. The effective widths of the sidewalks are reduced in some locations by several feet due to the presence of parking meters, signage, streetlights, utility poles, trash receptacles, street trees and planters, and other obstructions; however, there is a 4-foot-wide minimum pathway provided on Battery, Sansome, and Washington streets, as required by the Americans with Disabilities Act (ADA).

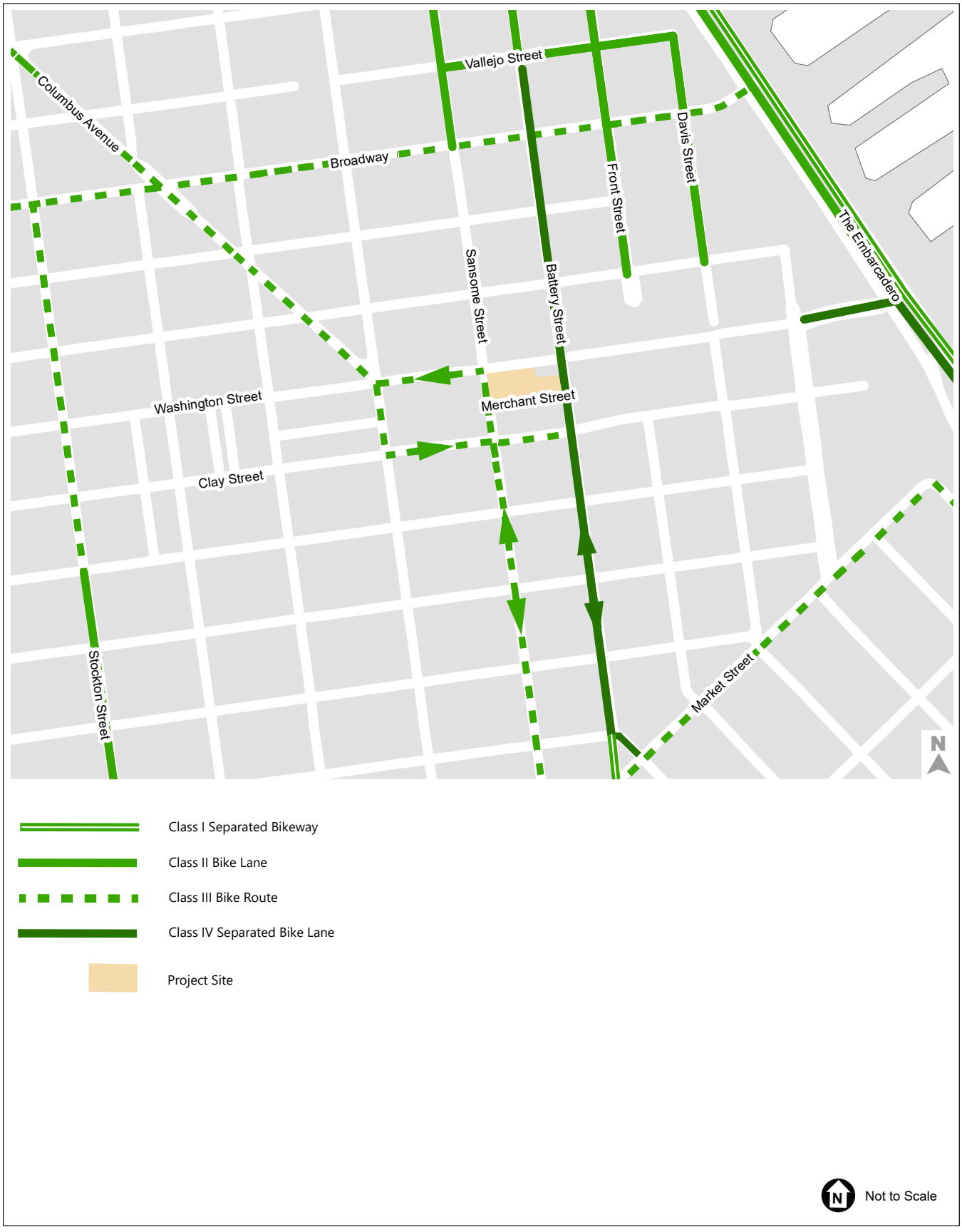
[27] San Francisco Bicycle Network Map, https://www.sfmta.com/maps/san-francisco-bike-network-map, accessed November 2024.
[28] The Mineta Transportation Institute and National Association of City Transportation Officials (NACTO) define a low-street bicycle facility as characterized by design features that minimize exposure of bicyclists to traffic stress, such as through enhanced horizontal and vertical separation.
[29] Dooring occurs when a driver fails to check for oncoming cyclists before exiting a parked vehicle causing the cyclist to collide with their door.

SOURCE: Fehr & Peers, 2024

447 Battery and 530 Sansome Street

FIGURE 3

INTERSECTION TRAFFIC VOLUMES (P.M. PEAK HOUR) EXISTING CONDITIONS



SOURCE: Fehr & Peers, 2024

447 Battery and 530 Sansome Street

FIGURE 4
EXISTING BICYCLE NETWORK

The four study area intersections bounding the block containing the project site are signalized and feature marked crosswalks on all legs of the intersections. These intersections generally have adequate pedestrian facilities, including continental crosswalks, curb ramps with tactile domes, and pedestrian countdown timers. The intersections of Sansome and Merchant streets and Battery and Merchant streets have no crosswalks and no permitted mid-block crossing of the respective major streets, which is typical of mid-block throughways in the study area. Right-turns on red are currently prohibited for vehicles turning from Washington Street to Battery Street and from Battery Street to Clay Street. This roadway safety feature reduces conflicts between people using the crosswalk and turning vehicles. No right turn on red restrictions are planned for the Sansome Street intersections to improve pedestrian safety by keeping crossing walks clear of turning vehicles. Based on field observations, there are not excessive vehicle speeds within the study area or blocked sight lines that could create hazardous conditions for people walking.

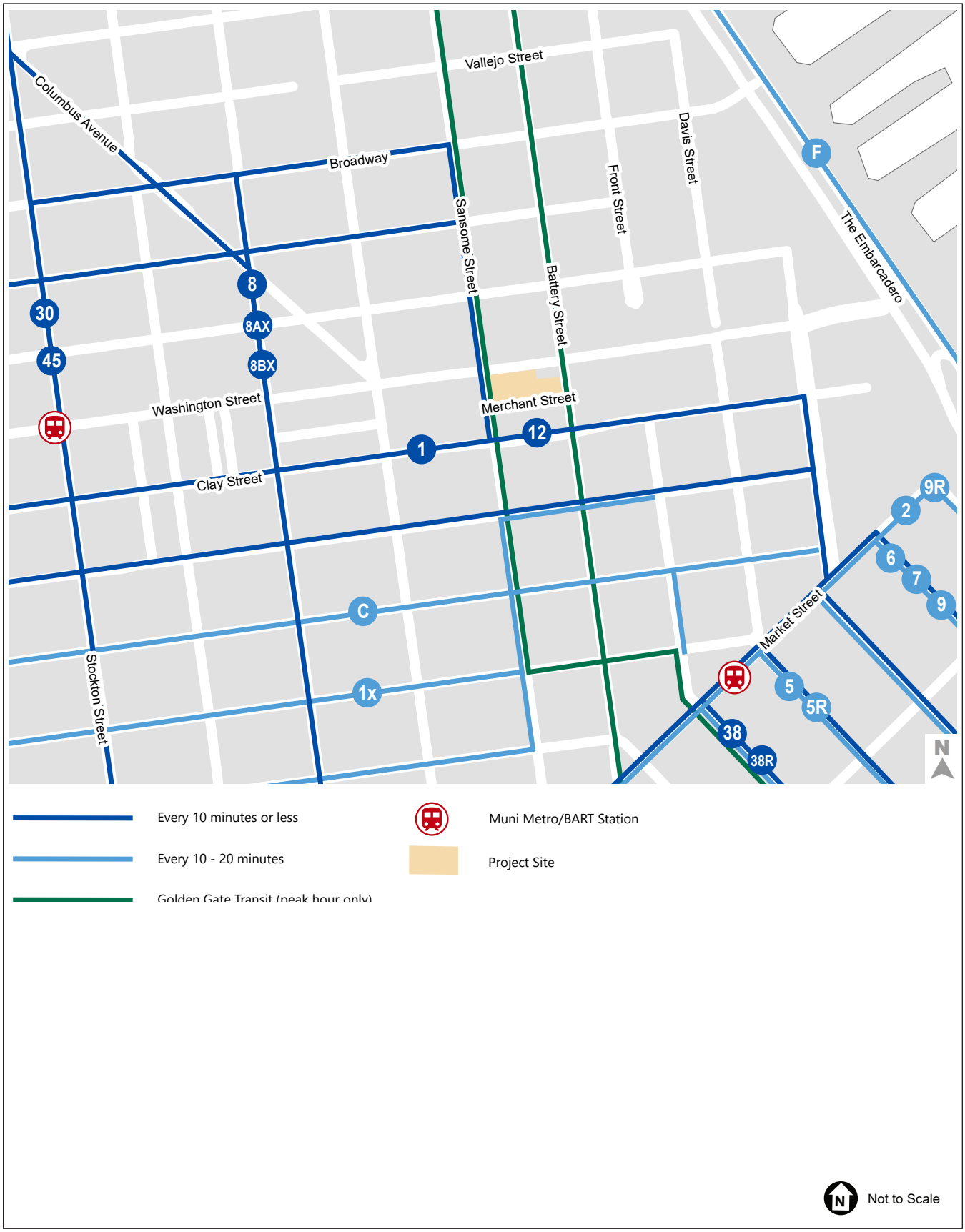
While pedestrian counts are not available for sidewalks on Sansome and Washington streets adjacent to the project site, approximately 500 people were counted using the southeast corner of Sansome and Washington streets during the p.m. peak hour, while 800 to 900 pedestrians were counted at the southwest corner of Battery and Washington streets and northeast corner of Sansome and Clay streets. The highest pedestrian activity during the p.m. peak hour within the study area was counted at the corner of southeast corner of Sansome and Clay streets, with approximately 1,400 people. During the site visits, Sansome and Washington Streets adjacent to the project site have lower pedestrian volumes compared to streets south of the project site where peak period pedestrian volumes noticeably increase as streets approach the local and regional transit services on Market Street.

Transit. The project site is at the northern edge of the Financial District and served by both local and regional transit services. Primary public transit access to the project site is provided by Muni bus service. Muni operates three bus routes (1-California, 1X- California Express, and 12-Folsom-Pacific) in the vicinity of the project site: two all-day routes and one peak-only route. The 1-California and 12-Folsom-Pacific both stop at the intersection of Sansome Street and Clay Street and operate at approximately 10-minute headways, during the morning and evening peak periods. Additional service to Marin and Sonoma Counties is provided by Golden Gate Transit, which operates six peak period-only routes along Sansome and Battery streets. These routes stop at Sansome Street and Sacramento Street and operate at 20- to 40-minute headways during the morning and evening peak periods. Refer to **Figure 5** for the existing transit facilities adjacent to the project site.

The East Bay, Peninsula, and South Bay are accessible via Muni connections, walking, or bicycling to stops on Market Street and to the south serving AC Transit (East Bay), WestCAT (East Bay), BART (East Bay and Peninsula), Caltrain (Peninsula and South Bay) and SamTrans (Peninsula).

In addition to the public transit services described above, privately-operated commuter shuttles operate in the Financial District. While there are no designated commuter shuttle stops in the vicinity of the project site, commuter shuttles, both large motor coaches and smaller vans, are allowed to travel on all roadways surrounding the project site.[30]

[30] San Francisco Commuter Shuttle Program, https://www.sfmta.com/projects/commuter-shuttle-program, accessed November 2024.



SOURCE: Fehr & Peers, 2024

447 Battery and 530 Sansome Street

FIGURE 5
EXISTING TRANSIT NETWORK

Emergency Access. As described in EIR Chapter 2, Project Description, Fire Station 13 is located within the project site, on the east side of Sansome Street between Washington and Merchant streets. The project site is located within the Central District of the San Francisco Police Department (police department), and the nearest police station is located on Vallejo Street, between Stockton and Powell streets, approximately 0.6 mile from the project site. All four local roadways providing access to the project site accommodate emergency vehicle access, and Sansome and Battery streets provide important north-south routes through the Financial District for emergency vehicles. While Merchant Street meets the minimum requirements specified by the fire department's Division of Planning and Research, larger vehicles may have difficulty accessing it and deploying the necessary apparatus.

Loading. There are several on-street commercial loading (yellow) zones on the block faces surrounding the project site. There are 14 spaces on the project frontage as follows:

- Two commercial loading spaces are on Washington Street
- One space on Sansome Street
- Eight spaces along the north side of Merchant Street
- Three spaces along Battery Street

Additional on-street commercial loading within approximately one-half block of the project site includes the following:

- Five spaces on the west side of Sansome Street between Merchant and Clay streets
- Three spaces on the west side of Sansome Street north of Washington Street
- Four spaces on the south side and two spaces on the north side Washington Street between Sansome and Hotaling Place

All of these spaces are metered and marked with yellow curb paint and with either yellow-topped meters (for standard commercial vehicles), or red-topped (for vehicles with six wheels or more). These spaces are restricted to commercial loading between 7 a.m. and 6 p.m. Mondays through Saturdays. There are no existing on-street passenger loading (white) zones located at the project site or surrounding block faces. The east side of Sansome Street between Clay Street and the fire station features a peak hour (3:00–7:00 p.m.) tow-away zone. The west side of Sansome Street between Clay Street and Washington Street also features a peak hour (3:00–8:00 p.m.) tow-away zone. Refer to Figure 2, p. 31, for a map of the existing curb designations.

Field observations of loading conditions conducted in November 2024 found that overall utilization of commercial loading spaces adjacent to the project site during peak loading hours (11:00 a.m.–2:00 p.m.) was less than 50 percent, with nine of the 21 adjacent on-street loading spaces occupied.

Vehicle Miles Traveled in San Francisco and Bay Area

Many factors affect travel behavior. These factors include density, diversity of land uses, design of the transportation network, access to regional destinations, distance to high-quality transit, development scale, demographics, and transportation demand management. Typically, low-density development at great distance from other land uses, located in areas with poor access to non-private vehicular modes of travel,

generates more automobile travel compared to development located in urban areas, where a higher density, mix of land uses, and travel options other than private vehicles are available.

Vehicle miles traveled per person (or per capita) is a measurement of the amount of driving based on the number of trips and average distance of trips that a resident, employee, or visitor drives, accounting for the number of passengers within a vehicle. Given these travel behavior factors, San Francisco has a lower vehicle miles traveled (VMT) ratio than the nine-county San Francisco Bay Area region. In addition, some areas of the city have lower VMT ratios than other areas of the city. These areas of the city can be expressed geographically through transportation analysis zones (TAZs).[31]

The San Francisco County Transportation Authority (the transportation authority) uses the San Francisco Chained Activity Model Process (SF-CHAMP) to estimate VMT by private automobiles and taxis for different land use types by TAZs. The SF-CHAMP model is a regional travel demand forecasting model that assigns all predicted trips within, across, or to or from San Francisco onto the roadway network and the public transit system. Travel behavior in SF-CHAMP is calibrated based on observed behavior from the California Household Travel Survey, census data regarding automobile ownership rates and county-to-county worker flows, and observed vehicle counts and transit boardings. SF-CHAMP uses a synthetic population, which is a set of individual actors that represent the Bay Area's actual population, who make simulated travel decisions for a complete day.

The model can be used to estimate daily typical weekday VMT for residential, office, and retail land use types. For residential and office uses, the transportation authority uses a tour-based analysis, which examines the entire chain of trips over the course of a day, not simply trips to and from a site. Tour-based analysis is appropriate in these cases because home and work are "anchor" locations that condition how people structure their travel, like where they might stop for coffee, or whether they choose to leave home by transit or in a car. For retail uses, the transportation authority uses a trip-based analysis, which counts VMT from individual trips to and from the project site (as opposed to an entire chain of trips). A trip-based approach, as opposed to a tour-based approach, is appropriate for retail projects as retail trips are more easily substituted for another location or at another time within a person's schedule than home- and work-related trips. In other words, retail sites are more likely to be chosen for their proximity and convenience to work and home.[32,33,34]

The project site is located within San Francisco TAZ 804. For residential development, the existing regional average daily VMT per capita is 18.2. For office development, the existing regional average VMT per employee

[31] TAZs are used in transportation planning models for transportation analysis and other planning purposes. The zones vary in size from single city blocks in the downtown core, multiple blocks in outer neighborhoods, to even larger zones in historically industrial areas like the Hunters Point Shipyard.
[32] San Francisco Planning Department, Transportation Impact Analysis Guidelines, Appendix L: Vehicle Miles Traveled/Induced Automobile Travel, October 2019.
[33] To state it another way, a tour-based assessment of VMT at a retail site would consider the VMT for all trips in the tour, for any tour with a stop at the retail site. If a single tour stops at two retail locations, for example, a coffee shop on the way to work and a restaurant on the way back home, then both retail locations would be allotted the total tour VMT. A trip-based approach allows us to apportion all retail-related VMT to retail sites without double-counting.
[34] Retail travel is not explicitly captured in San Francisco chained activity modeling process; rather, there is a generic "Other" purpose which includes retail shopping, medical appointments, visiting friends or family, and all other non-work, non-school tours. The retail efficiency metric captures all of the "Other" purpose travel generated by Bay Area households. The denominator of employment (including retail; cultural, institutional, and educational; and medical employment; school enrollment, and number of households) represents the size, or attraction, of the zone for this type of "Other" purpose travel.

is 25.8. For retail development, the existing regional average daily VMT per capita is 14.9.[35] Trips associated with the hotel land use are treated as residential for screening and analysis.[36]

Vehicle Miles Traveled Analysis Methodology

Land use projects may cause substantial additional VMT. The following identifies quantitative thresholds of significance and screening criteria used by the department to determine if a land use project would result in significant impacts under the VMT metric.

Pursuant to the 2019 San Francisco Transportation Impact Analysis Guidelines (SF Guidelines),[37] for residential projects, a project would generate substantial additional VMT if it exceeds the regional household VMT per capita minus 15 percent. For office projects, a project would generate substantial additional VMT if it exceeds the regional VMT per employee minus 15 percent. As documented in the December 2018 California Office of Planning and Research (now the Office of Land Use and Climate Innovation [LCI]) *Technical Advisory on Evaluating Transportation Impacts in CEQA* (technical advisory),[38,39] a 15 percent threshold below existing development is "both generally achievable and is supported by evidence that connects this level of reduction to the State's emissions goals." For retail projects, the planning department uses a VMT efficiency metric approach: a project would generate substantial additional VMT if it exceeds the regional VMT per retail employee minus 15 percent. This approach is consistent with CEQA section 21099 and the thresholds of significance for other land uses recommended in LCI's technical advisory. For mixed-use projects, each proposed land use is evaluated independently, per the thresholds of significance described above.

LCI's technical advisory provides screening criteria to identify types, characteristics, or locations of land use projects that would not exceed these VMT thresholds of significance. LCI recommends that if a project or land use proposed as part of the project meets any of the screening criteria below, then VMT impacts are presumed to be less than significant for that land use and a detailed VMT analysis is not required. These screening criteria and how they are applied in San Francisco are described below:

- *Map-Based Screening for Residential and Retail Projects.* LCI recommends mapping areas that exhibit where VMT is less than the applicable threshold for that land use. Accordingly, the transportation authority has developed maps depicting existing VMT levels in San Francisco for residential and retail land uses based on the SF-CHAMP 2020 base-year model run.[40] The planning department uses these maps and associated data to determine whether a proposed project is located in an area of the city that is below the VMT threshold.
- *Proximity to Transit Stations.* LCI recommends that residential and retail projects, as well as projects that are a mix of these uses, proposed within one-half mile of an existing major transit stop (as defined by CEQA Guidelines section 21064.3) or an existing stop along a high-quality transit corridor (as defined by

[35] San Francisco Planning Department, *San Francisco Transportation Information Map*, Available: https://sfplanninggis.org/tim/, Accessed: November 2024. Note: Regional values on the website are given as VMT minus 15 percent, the values stated here are the total regional values
[36] San Francisco Planning Department, Executive Summary: Resolution Modifying Transportation Impact Analysis, Appendix F, Attachment A, March 3, 2016.
[37] On February 14, 2019, the planning department published a comprehensive update to the 2002 Transportation Impact Analysis Guidelines for Environmental Review. This document was updated in October 2019 and is available online at https://sfplanning.org/project/transportation-impact-analysis-guidelines-environmental-review-update#impact-analysis-guidelines.
[38] California Office of Planning and Research, Technical Advisory on Evaluating Transportation Impacts in CEQA, December 2018, https://www.opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf, accessed December 2024.
[39] As of July 1, 2024, the Governor's Office of Planning and Research (OPR) was renamed the Governor's Office of Land Use and Climate Innovation (LCI).
[40] Per the "San Francisco Planning Department Transportation Team Updates for Consultants – April 2023", the SF-CHAMP 2020 base-year model run is the current travel model data available. SF-CHAMP is updated periodically as new data becomes available.

CEQA Guidelines section 21155) would not result in a substantial increase in VMT. However, this presumption would not apply if the project would: (1) have a floor area ratio of less than 0.75; (2) include more parking for use by residents, customers, or employees of the project than required or allowed, without a conditional use; or (3) is inconsistent with the applicable sustainable communities strategy.

LCI's technical advisory does not provide screening criteria or thresholds of significance for other types of land uses, other than those projects that meet the definition of a small project.[41] Therefore, the planning department provides additional screening criteria and thresholds of significance to determine if land uses similar in function to retail would generate a substantial increase in VMT. These screening criteria and thresholds of significance are consistent with CEQA section 21099 and the screening criteria recommended in LCI's technical advisory.

Average Daily Vehicle Miles Traveled Summary

Table 1 presents the existing average daily VMT per capita for the nine-county San Francisco Bay Area and for TAZ 804, the zone in which the project site is located. The existing average daily VMT per capita for residential uses in TAZ 804 (7.3 miles) is approximately 60 percent lower than the regional Bay Area average (18.2 miles). The existing average daily VMT per employee for office uses in TAZ 804 (9.9 miles) is approximately 40 percent lower than the regional Bay Area average (25.8 miles). The existing average daily VMT per employee for retail uses in TAZ 804 (12.9 miles) is approximately 13 percent lower than the regional Bay Area average (14.9 miles).

Table 1 Average Daily Vehicle Miles Traveled in TAZ 804 (Existing)

Land Use	Bay Area Regional Average	Bay Area Regional Average Minus 15% (Significance Threshold)	TAZ 804
Hotel (Residential)	18.2	15.8	7.3
Office	25.8	21.9	9.9
Retail	14.9	12.7	12.9

SOURCE: San Francisco Planning Department, *San Francisco Transportation Information Map*, 2019.

LCI's technical advisory also recommends screening small retail projects from any VMT analysis because smaller retail uses are typically local serving and reduce trip lengths that would otherwise be made to more distant regional serving retail uses. The project's retail component qualifies as a small retail project includes similar features to other buildings in the area with ground floor retail serving the tenants of the project and other nearby buildings. As a result, the small retail component of the proposed project is presumed as having a less-than-significant VMT impact. Therefore, retail VMT is presented in Table 1 for documentation but is not used for impact significance findings of the proposed project's retail uses. Retail VMT is not discussed further in this study.

[41] LCI recommends that lead agencies may generally assume that a project would not have significant VMT impacts if the project would generate fewer trips than the level for studying consistency with the applicable congestion management program or, where the applicable congestion management program does not provide such a level, fewer than 100 vehicle-trips per day. The SFCTA's *Congestion Management Program* (December 2015) does not include a trip threshold for studying consistency. Therefore, the Planning Department uses a screening criterion of fewer than 100 vehicle-trips per day for projects that are generally assumed to generate an increase in VMT that is not substantial.

The proposed project would meet the criteria for map-based screening of office projects. Per the SF TIA Guidelines (2019), residential is presented as a proxy for the proposed project's hotel land uses as they would provide an amenity to employees and visitors in downtown San Francisco. The proposed project would meet the criteria for map-based screening of residential projects. Therefore, the proposed project's hotel uses would be screened from quantitative VMT analysis.

Project Travel Demand

Figure 6 and **Figure 7** display the project's motor vehicle access and bicycle/pedestrian access, respectively. Localized daily and p.m. peak period trip generation for the proposed project were calculated using a trip-based analysis and information included in the SF Guidelines.[42] These trips are summarized in **Table 2**. Trip generation refers to the number of estimated trips people would take to and from the project site (person trips). These trips are broken down by mode, or the estimated way or method people travel (e.g., walking, bicycling, transit). Auto trips are further broken down into vehicle trips, which account for average vehicle occupancy in the census tract in which the project site is located.

Table 2 Proposed Project Travel Demand

	Proposed Project			
	Person Trips		Vehicle Trips	
Mode	Daily	PM Peak Period	Daily	PM Peak Period
Auto	1,792	178	1,333	129
TNC/Taxi	864	81	608	56
Transit	2,787	298		
Walk	5,655	600		
Bike	365	40		
TOTAL [a]	**11,463**	**1,197**	**1,941**	**185**

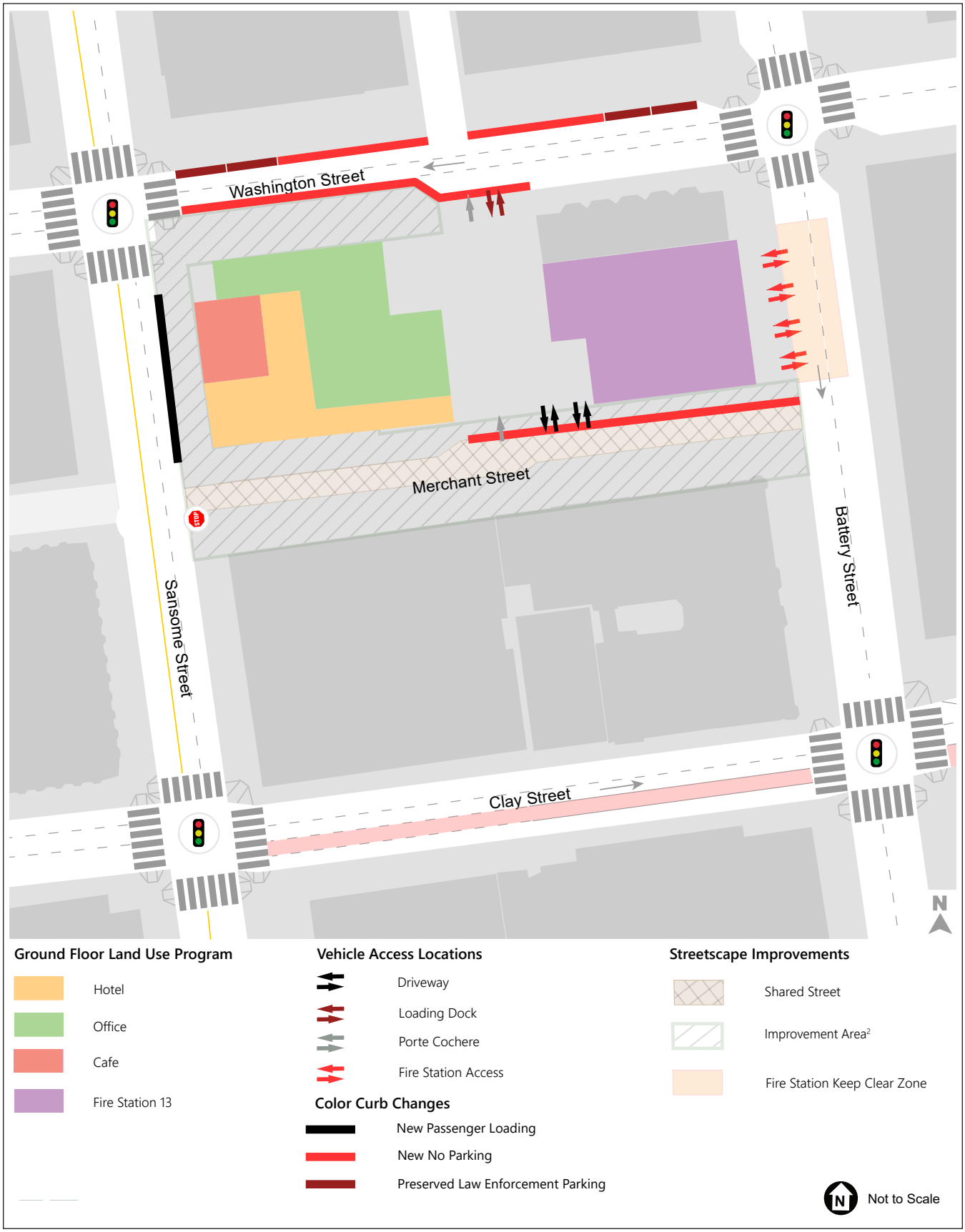
SOURCES: SF Planning Department, SF Guidelines, 2019; Fehr & Peers, 2024.

a. Daily and p.m. peak hour trip generation rates are based on 2019 SF Guidelines for office, hotel, and retail/restaurant.

The proposed fire station would not change the fire department operations nor trip generating characteristics from the existing fire station and therefore this land use is excluded from the project's trip generation calculation. No credit for trips removed from existing uses at 447 Battery Street is taken in the trip generation calculations given the lack of activity at the site in 2024.

As shown in Table 2, the proposed project would generate 11,463 daily person trips and 1,197 person trips during the weekday p.m. peak hour. Of those trips, approximately 1,941 daily trips and 185 p.m. peak hour trips would be vehicle trips (i.e., auto, TNC/taxi). **Figure 8** displays the distribution of these project trips. **Figure 9** displays the p.m. peak hour project trips at the study intersections.

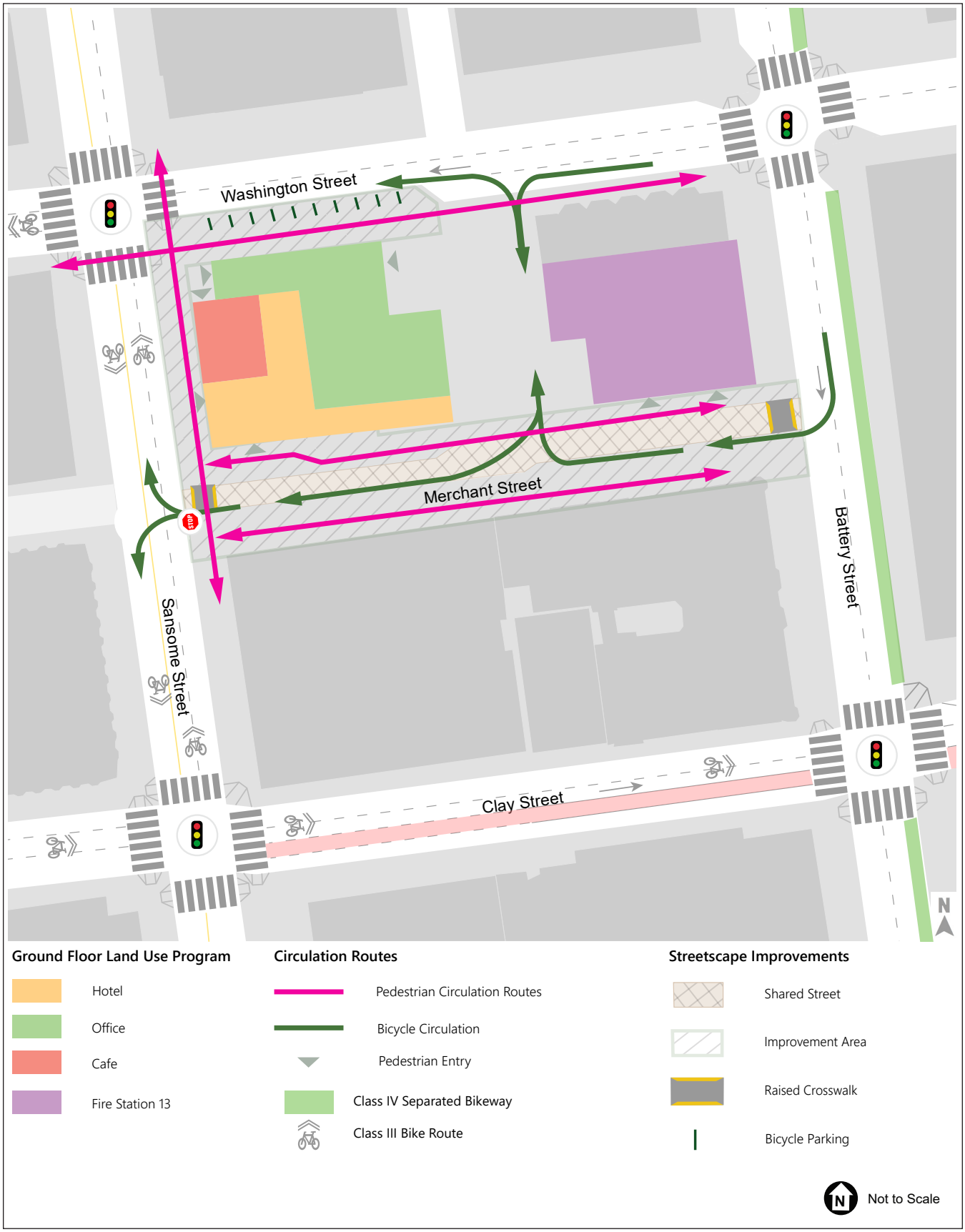
[42] San Francisco Planning Department, Travel Demand Tool, https://sftraveldemand.sfcta.org/, accessed September 28, 2020.



SOURCE: Fehr & Peers, 2024

447 Battery and 530 Sansome Street

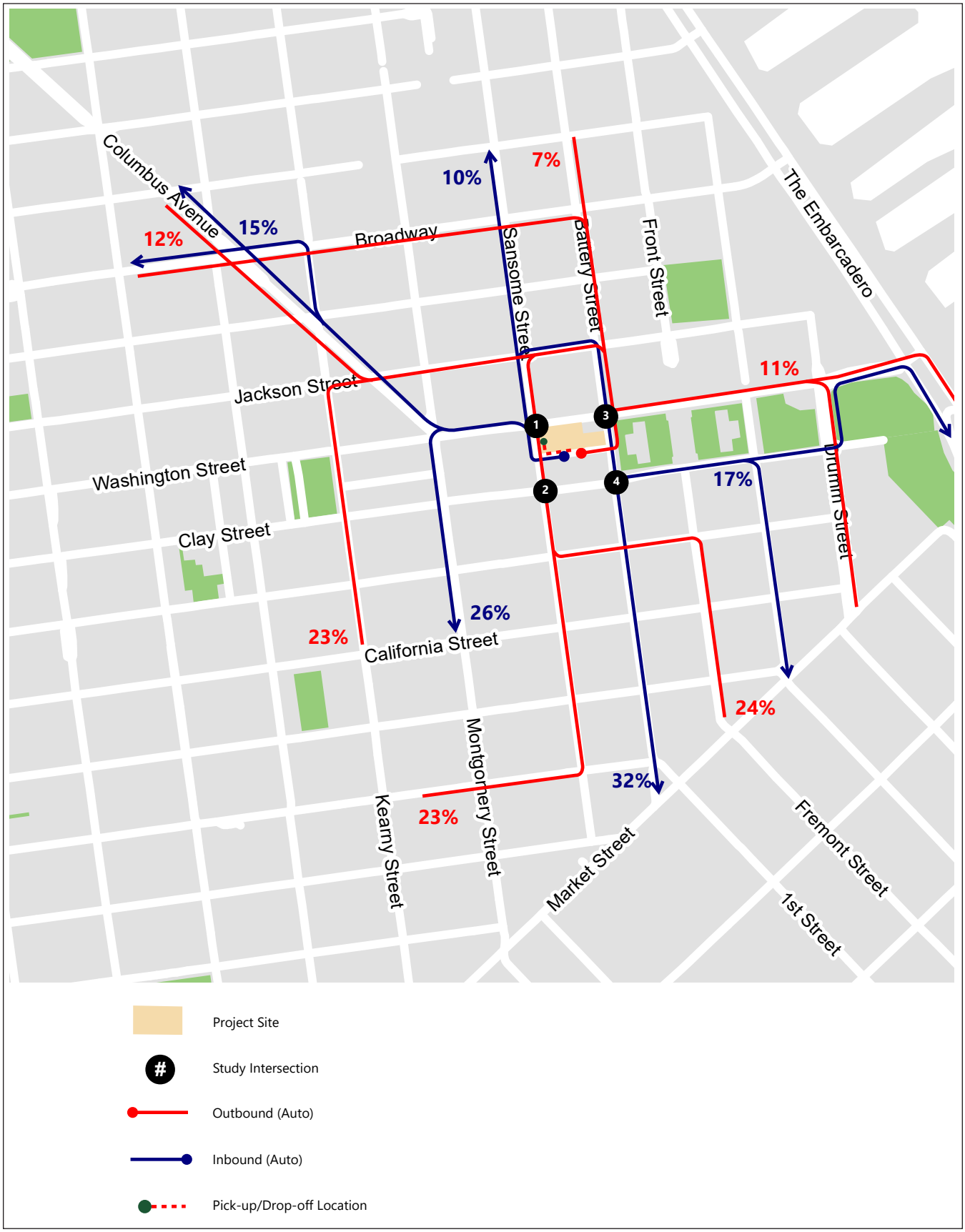
FIGURE 6
PROJECT MOTOR VEHICLE ACCESS



SOURCE: Fehr & Peers, 2024

447 Battery and 530 Sansome Street

FIGURE 7
PROJECT PEDESTRIAN AND BICYCLE ACCESS



SOURCE: Fehr & Peers, 2024

447 Battery and 530 Sansome Street

FIGURE 8
PROJECT TRIP DISTRIBUTION

SOURCE: Fehr & Peers, 2024

447 Battery and 530 Sansome Street

FIGURE 9

INTERSECTION TRAFFIC VOLUMES (P.M. PEAK HOUR) PROJECT TRIPS

While the proposed project would change access for fire trucks from Sansome Street to Battery Street, traffic generated by fire department employees would not change as the driveway for employee parking would remain on Merchant Street. Further, fire truck and employee trips do not occur regularly during the p.m. peak hour; therefore, fire department trips are excluded from the project trips assigned to study intersections.

The proposed project's freight and passenger loading demand was calculated based on the SF Guidelines. **Table 3** presents the proposed project's freight loading. **Table 4** presents the proposed project's passenger loading. Similar to the trip generation calculations, the proposed project's changes to Fire Station 13 at 530 Sansome Street would not affect freight or passenger loading demand and there is not any activity at 447 Battery Street that would substantively reduce existing loading demand. Therefore, the existing land uses are excluded from the loading demand calculations.

Table 3 Peak Hour Freight Loading Demand by Land Use

Land Use	KSF [a]	Rate per KSF	Spaces per KSF [b]	Peak Hour Loading Spaces [c]
Office	344.84	0.21	0.01	4.19
Hotel	188.82	0.09	0.01	0.98
Restaurant	7.41	3.60	0.21	1.54
TOTAL SPACES				**6.71**
TOTAL SPACES (rounded)				**7**

SOURCES: SF Guidelines, 2019, SF Planning Department; Fehr & Peers, 2024.

a. KSF represents 1,000 square feet.

b. Freight and delivery peak hour loading spaces per KSF calculation: $\frac{\left[\frac{(1.25)(Rate\ per\ KSF)}{9}\right]}{2.4}$

c. Freight and delivery peak hour loading spaces demand calculation: $KSF * Spaces\ per\ KSF$

Table 4 Passenger Loading Demand by Land Use

Land Use	PM Peak Hour Person Trips [a]	Passenger Loading %	Peak Hour Loading Spaces [b]	Peak 15-Min Loading Spaces [c]
Office	480	7.30%	0.58	1.17
Hotel	118	21.80%	0.43	0.86
Restaurant	599	5.50%	0.55	1.10
TOTAL SPACES			**1.56**	**3.13**
TOTAL SPACES (rounded)			**2**	**4**

SOURCES: SF Guidelines, 2019, SF Planning Department; Fehr & Peers, 2024.

a. Retail used as restaurant equivalent per 2019 San Francisco TIA Guidelines.

b. Peak hour passenger loading spaces demand calculation: $\frac{Person\ Trips * Passenger\ Loading\ \% * 1\ minute\ average\ stop\ duration}{60}$

c. Peak 15-min passenger loading spaces demand calculation: $\frac{\left(\frac{Person\ Trips * Passenger\ Loading\ \%}{2}\right) * 1\ minute\ average\ stop\ duartion}{15}$

As shown in Table 3, the proposed project would require a total of seven peak hour freight loading spaces. As shown in Table 4, the proposed project would require a total of 4 peak 15-minute passenger loading spaces.

Transportation Impacts

San Francisco Administrative Code chapter 31 directs the department to identify environmental effects of a project using as its base the environmental checklist form set forth in CEQA Guidelines Appendix G. As it relates to transportation and circulation, Appendix G asks whether the project would:

- Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities;
- Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b);
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses; and
- Result in inadequate emergency access.

The department uses significance criteria to facilitate the transportation analysis and address the Appendix G checklist. The department separates the significance criteria into construction and operation.

Construction

Construction of the proposed project would have a significant effect on the environment if it would require a substantially extended duration or intense activity; and the effects would create potentially hazardous conditions for people walking, bicycling, or driving, or public transit operations; or interfere with accessibility for people walking or bicycling or substantially delay public transit.

Operation

The operational impact analysis addresses the following five significance criteria. A project would have a significant effect if it would:

- Create potentially hazardous conditions for people walking, bicycling, or driving or public transit operations;
- Interfere with accessibility of people walking or bicycling to and from the project site, and adjoining areas, or result in inadequate emergency access;
- Substantially delay public transit;
- Cause substantial additional VMT or substantially induce additional automobile travel by increasing physical roadway capacity in congested areas (i.e., by adding new mixed-flow travel lanes) or by adding new roadways to the network; or
- Result in a loading deficit and the secondary effects would create potentially hazardous conditions for people walking, bicycling, or driving or substantially delay public transit.

Project-Level Transportation Impacts

Impact TR-1: Construction of the proposed project would require a substantially extended duration or an intense activity, but the secondary effects of that construction would not create potentially hazardous conditions for people walking, bicycling, or driving, or public transit operations; or interfere with emergency access or accessibility for people walking or bicycling; or substantially delay public transit. ***(Less than Significant)***

The SF Guidelines set forth screening criteria for types of construction activities that would not result in significant construction-related transportation effects based on project site context and construction duration and magnitude. The proposed project would not meet this screening criterion due to the construction duration and magnitude. The analysis below describes the proposed project's construction duration and intensity, site context, and its relation to secondary transportation effects.

Construction of the proposed project would take place over a period of approximately 39 months and would include site demolition, preparation, grading and excavation, pile installation, foundation construction, building construction, architectural coating, the installation of utilities, paving, interior finishing, and exterior streetscaping, hardscaping, and landscaping. During construction, fire department personnel and firetrucks would be relocated to nearby offsite fire stations and would continue to serve the Financial District neighborhood and the city in general. Relocation of fire equipment would take no more than eight hours to complete. All apparatuses would remain in service and fully staffed, as temporary relocation/rehousing of fire station personnel, equipment, and apparatus is routine during major facility renovations, demolition, and/or rebuild.

The San Francisco Regulations for Working in San Francisco Streets (the Blue Book)[43,44] contain regulations that are prepared and regularly updated by SFMTA under the authority derived from the San Francisco Transportation Code. The Blue Book serves as a guide for all city agencies (public works, SFMTA, public utilities commission, the port, etc.), utility crews, private contractors, and others who work in San Francisco's public rights-of-way. It establishes rules and guidance so that work can be done safely and with the least possible interference with people walking, bicycling, taking transit, or driving and/or transit operations. It also contains relevant general information, contact information, and procedures related to working in the public right-of-way when it is controlled by agencies other than SFMTA.

Prior to construction of the proposed project the project sponsor and/or construction contractor(s) would be required to meet with public works and SFMTA staff to develop and review construction plans in preparation for obtaining relevant construction permits. This may include reviewing truck routing plans for the disposal of excavated materials, material delivery and storage, as well as staging for construction vehicles. If SFMTA determines that a construction project impacts transit routing or infrastructure, including modifications to the overhead contact system (OCS), or alters the flow of vehicle, bicycle, or pedestrian traffic, a logistic plan would be required so that SFMTA permit staff can confirm what permits from SFTMA or public works are required for the project.

[43] San Francisco Municipal Transportation Agency, Regulations for Working in San Francisco Streets, 8th Edition, January 2012, https://www.sfmta.com/sites/default/files/reports-and-documents/2020/06/blue_book_8th_edition_6-23-20.pdf, accessed February 2021.
[44] The authority for the Blue Book comes from the San Francisco Transportation Code, https://codelibrary.amlegal.com/codes/san_francisco/latest/sf_transportation/0-0-0-2, accessed February 2021.

Should the proposed project's construction activities not comply with regulations in the Blue Book or the traffic routing specifications in the city contract or when two or more contractors work at a time on any one block,[45] the contractor would be required to apply for a special traffic permit from SFMTA prior to the commencement of on-site work. Some examples of circumstances when special traffic permits are required include, but are not limited to, closing a street or an alley, closing a sidewalk, closing or detouring a bicycle route, moving a bus zone outside the limits of the project, inability to provide the required number of lanes, and/or construction work occurring within one block of an existing construction site. As part of its review for special traffic permits, SFMTA, in coordination with public works, may include necessary measures in the special traffic permit to ensure the safety and accessibility of people walking, bicycling, driving, and public transit operations at or near the project site.

If a special traffic permit is required, the project contractor may not commence construction activities until the permit is issued. A special traffic permit is issued for no more than 30 calendar days, after which the contractor is required to renew to perform further construction activities.[46] SFMTA may refuse to issue, extend, or revoke a special traffic permit depending on transportation network conditions at or near the project site. Penalties may be assessed for violating the terms of a special traffic permit and/or the regulations described in the Blue Book or failing to obtain a special traffic permit when one is required. Additional penalty or six months in jail or both may be applied for the fourth and subsequent violations in a 12-month period.[47]

In addition to the regulations presented in the manual, all traffic control, warning and guidance devices must conform to the California Manual on Uniform Traffic Control Devices.[48]

The construction contractor would also be required to adhere to the San Francisco Public Works Code[49] and obtain all necessary permits for construction in the public-right-of-way. Specifically, the public works code section 724 requires that a property owner obtain a street space occupancy permit from public works for occupying any part of the fronting street or sidewalk for any purpose, including building construction operations. Section 724 also establishes requirements for the temporary occupation of the public right-of-way including, but not limited to, clearances for traffic-signal equipment, notice to all impacted fronting property owners, pedestrian clearances, construction worker parking plans in certain use districts, debris management, and clearances for San Francisco Fire Department equipment. Further, section 724 also requires that lights, barriers, barricades, signs, cones, and other devices be provided to ensure pedestrian and traffic safety.

The public works code section 2.4.20 addresses permits to excavate. For a permit for major work[50] or excavation that will affect the public right-of-way that is 30 consecutive calendar days or longer contractors are required to submit for public works review a contractor parking plan, including a proposal to reduce parking demand in the project site vicinity.

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[45] San Francisco Municipal Transportation Agency, *Regulations for Working in San Francisco Streets, 8th Edition*, January 2012, https://www.sfmta.com/reports/construction-regulations-blue-book, accessed November 2024.
[46] Ibid.
[47] Ibid.
[48] California Manual on Uniform Traffic Control Devices (MUTCD) Rev 5, 2014, https://dot.ca.gov/-/media/dot-media/programs/safety-programs/documents/ca-mutcd/rev-5/camutcd2014-rev5-a11y.pdf, accessed November 2024.
[49] San Francisco Public Works Code, https://codelibrary.amlegal.com/codes/san_francisco/latest/sf_publicworks/0-0-0-2, accessed November 2024.
[50] The public corks code section 2.4.4 defines "major work" as any reasonably foreseeable excavation that will affect the public right-of-way for more than 15 consecutive calendar days.

San Francisco Public Works Order No. 167,840,[51] identifies requirements related to the placement of various types of barricades at construction sites, such as A-frames, barrier caution tapes, fencing, and barricades around crosswalks. These requirements are intended to protect pedestrians near construction sites consistent with all local, state, and federal codes, including the Americans with Disabilities Act and California Building Code Title 24.

In addition to the regulations in the Blue Book and the public works code, the contractor would be responsible for complying with all city, state, and federal codes rules and regulations. These regulations include any requirements for work on public rights-of-way under the jurisdiction of the California Department of Transportation, the port, or the San Francisco Recreation and Park Department.

All equipment staging is expected to occur on-site; however, due to the limited area available on site, intermittent sidewalk and/or lane closures along project frontages may be required for public safety and to permit equipment access. Given that specific details about sidewalk and lane closures are not available at this time, under a worst-case scenario (i.e., a most impactful scenario), sidewalks adjacent to the project site could be closed on Sansome, Washington, Battery, and Merchant streets simultaneously. The sidewalk closure on Washington Street would require removal of the parking lane on the south side of Washington Street to create a temporary sidewalk. The sidewalk closure on Battery Street would require removal of the parking/loading lane on the western side of Battery Street to create a temporary sidewalk. The closure of the northern sidewalk on Merchant Street would require that people walk on the sidewalk on the south side of the alleyway. The closure of the eastern sidewalk on Sansome Street would require the temporary removal of the existing commercial loading spaces and closure of the northbound peak period (3 to 7 p.m.) tow-away lane.

Project construction would generally occur six to seven days per week and between the hours of 6 a.m. to 6 p.m., which extends beyond the normal hours of section 2908 of the San Francisco Noise Ordinance (noise ordinance) (7 a.m. and 8 p.m.). Construction activities that would extend beyond normal hours (i.e., between 8 p.m. and 7 a.m.), include four to six 20-hour concrete pours for the foundation, crane and hoist erection and adjustment activities, utility work, site maintenance activities and material delivery and handling. Construction activities that extend beyond normal hours would be subject to review, permitting, and approval by the San Francisco Department of Building Inspection.

Additionally, during construction fire truck operations would be relocated from Fire Station 13 to nearby stations (i.e., Stations 2, 28, 35, or 41) and would continue to serve the Financial District. The relocation would not cause a substantial disruption to emergency response coverage as those stations would be able to accommodate Fire Station 13 operations and services at existing levels. Furthermore, the relocation of Fire Station 13 operations would not require construction of any new facilities. The temporary relocation of fire vehicles and personnel to nearby stations is a part of routine operations for the fire department and would not represent a change to operations for the Fire Station 13 service area.

The proposed project would generate up to 60 trucks per day during excavation activities and approximately 20 trucks per day during the remaining phases of construction. Trucks would use Third and Kearny streets to reach Clay Street then Sansome Street to reach the project site. Trucks would access the site from Sansome or Washington streets, depending on where the construction is occurring. The proposed truck routes would be reviewed and approved by SFMTA to minimize conflicts and potentially hazardous conditions with other

[51] San Francisco Public Works. 2008. Guidelines for the Placement of Barricades at Construction Sites (Order No.167,840), http://sfpublicworks.org/sites/default/files/Guidelines_for_Placement_of_Barricades_0.pdf, accessed November 2024.

roadway users. The slower movement and larger turning radii of construction truck traffic may result in a temporary lessening of roadway capacities in the study area. Transit service may occasionally be temporarily delayed due to truck traffic in and out of the project site from Sansome Street; however, this level of truck traffic would not substantively delay public transit or result in hazardous conditions for people taking transit since trucks would be infrequent (average of five to six per hour) and would use streets designed to provide access to the existing fire station. Construction vehicles used for the proposed project would not be substantially larger than the fire department vehicles. Thus, these streets are wide enough for construction vehicles to maneuver into and out of the project site.

The approximate average number of construction workers onsite by shift would be 115, with a maximum of 500 workers between August 2027 and March 2030 during the building construction phase. As required by public works code section 2.4.20, the project sponsor would be required to prepare a contractor parking plan that addresses changes in parking supply. However, if parking shortfalls occur, they would be temporary in nature, variable depending on the construction activity, would occur prior to peak hours, and would be minimized by the contractor parking plan, the parking shortfalls would not substantially affect conditions for people walking, bicycling, or public transit. The addition of worker-related transit trips is similarly temporary, variable, and off-peak, and would not substantially affect transportation conditions.

Construction activities would comply with all applicable city codes and regulations, ensuring that such activities would not result in potentially hazardous conditions for people walking, bicycling, or driving, or for public transit operations; would not interfere with emergency access or accessibility for people walking or bicycling; and would not substantially delay public transit. Therefore, construction-related impacts of the proposed project would be ***less than significant***, and no mitigation measures are necessary.

Impact TR-2: Operation of the proposed project would not create potentially hazardous conditions for people walking, bicycling, or driving, or public transit operations. ***(Less than Significant)***

The proposed project would include design features that are consistent with the urban form of the surrounding blocks of the Financial District, which includes a mix of commercial and hotel uses with pedestrian-oriented frontages on major streets and parking garage entrances on minor streets or alleyways.[52] **Figure 10** displays the p.m. peak hour project trips at the study intersections under existing plus project conditions. As shown in Table 2, p. 41, the proposed project would generate 185 p.m. peak hour vehicle trips. This level of automobile traffic would not represent a substantial increase in traffic nor result in potentially hazardous conditions along streets adjacent to the project site. Furthermore, there are currently no roadways within the study area designated as part of the Vision Zero High Injury Network[53] and additional measures to improve roadway safety (no right-turn on red restrictions) are scheduled to be implemented on Sansome Street in 2025.[54]

[52] Refer to proposed project site plan in the Project Description.
[53] In 2014, the San Francisco Board of Supervisors adopted a resolution to implement an action plan that would reduce traffic fatalities to zero by 2024 through engineering, education, and enforcement (resolution 91-14). The numerous San Francisco agencies responsible for the action plan adopted similar resolutions. In 2017, the Board of Supervisors amended the Transportation and Urban Design elements of the San Francisco General Plan to implement Vision Zero (ordinance 175-17). The Vision Zero High Injury Network (2022) identifies streets that are particularly susceptible to high injury collisions: https://sfgov.maps.arcgis.com/apps/webappviewer/index.html?id=b2743a3fc0b14dd9814cf6668fc34773.
[54] No Turn on Red Downtown Expansion Progress Map, https://www.sfmta.com/reports/no-turn-red-downtown-expansion-progress-map, Accessed November 2024.

SOURCE: Fehr & Peers, 2024

447 Battery and 530 Sansome Street

FIGURE 10

INTERSECTION TRAFFIC VOLUMES (P.M. PEAK HOUR) EXISTING PLUS PROJECT CONDITIONS

The replacement fire department's entrance/exit for emergency vehicle access on Battery Street would include audible warnings to alert people walking and bicycling and vehicles would not conflict with the class IV cycle track on the east side of Battery Street. Fire trucks exiting the project site from the driveway onto Battery Street would use emergency sirens and lights to warn people walking and bicycling of vehicle activity. Furthermore, as noted in the trip generation section, the proposed project would not change the magnitude of person and staff vehicle trip generation nor fire truck activity associated with the existing fire station and, therefore, would not result in new potentially hazardous conditions along Battery Street or other surrounding streets.

In addition, the proposed project would not alter the existing street grid, reconfigure the intersections near the project site, or introduce other physical features that would create potentially hazardous conditions for people driving, walking, or bicycling, or for public transit operations. The proposed project would provide streetscape and sidewalk improvements along the block's street frontages in accordance with the San Francisco Better Streets Plan; streetscape improvements would include installation of a raised cross walk and roadway ramp at the Merchant Street intersections with Sansome and Battery streets, and a bulb-out at the corner of Sansome and Washington streets. In addition, the proposed project would convert Merchant Street between Sansome Street and Battery Street into a shared street/living alley[55] with approximately 12,695 square feet of privately maintained public open space improvements that would extend from Sansome Street to the eastern edge of the project site at Battery Street. Streetscape improvements include proposed tabletop crosswalks with detectable warnings, special paving materials, mid-block drive lane shifts, and overhead string lights, which are all intended to calm vehicular traffic and signal a non-standard street. Programming of Merchant Street could include lunchtime programming including temporary through-traffic street closure west of the proposed project's porte cochere to Sansome Street that would maximize opportunities for social use of Merchant Street at the time most likely to attract users.

The proposed project would include a total of six curb cuts along the following frontages:

- Washington Street: one 21-foot, 10-inch curb cut for vehicle egress from the porte cochere and one 24-foot, 6-inch curb cut for ingress and egress for freight loading.
- Merchant Street: one 15-foot, 7-inch curb cut for vehicle parking access for the fire station uses; one 16-foot curb cut for vehicle parking access for the office and hotel uses; and one 22-foot, 8-inch curb cut for vehicle ingress to the porte cochere.
- Battery Street: one 60-foot, 6-inch continuous curb cut for emergency vehicle ingress and egress to the fire station.

The proposed project would replace the existing 60-foot emergency vehicle curb cut on Battery Street with a standard sidewalk curb and thus remove curb cuts on the one frontage of the project site that has Muni routes.

The proposed project's driveway curb cuts are wider than advised in the SF Better Streets Plan and are therefore noncompliant. However, vehicle turning movements into and out of the project are not expected to create potentially hazardous conditions. Drivers would have unobstructed sightlines and/or adequate sight distance to see approaching people walking or bicycling, and the travel speeds of vehicles turning into or out of the site would be low as drivers execute their turns. Driveways would be equipped with

[55] A shared street/living alley is a narrow, low-volume traffic street designed to prioritize pedestrians, bicyclists, and provides space for social uses. Vehicles may access but with reduced speeds.

supplementary devices, such as mirrors, and would have audible and/or visual warning systems to alert people walking by when vehicles exit the project site.

The proposed project's changes to the streetscape and street network were reviewed by the City's Street Design Advisory Team. The street network changes would require review by SFMTA's Transportation Advisory Staff Committee and the fire department, along with other city agencies. The changes to the public right-of-way would also require subsequent approval processes, such as by public works and the SFMTA board, which would require any design changes necessary to be consistent with city policies and regulations. As a result of these permit and review processes, the proposed project would meet city standards and would not include any design features that would create potentially hazardous conditions.

Privately maintained public open space improvements and programming on Merchant Street would not introduce potentially hazardous conditions for people driving, walking, or bicycling, or for public transit operations due to the low roadway volumes during the mid-day period (when proposed changes to Merchant Street would occur). The shared street/living alley design of Merchant Street (which is part of both the proposed project) would slow vehicles entering and exiting the project's parking garage and the Fire Station's garage accessible from Merchant Street. In addition, the proposed project would implement a driveway and loading operation plan. The proposed project's driveway and loading operation plan would complement the Merchant Street improvements and programming and would ensure that neither the driveway nor the improvements and programming would introduce potentially hazardous conditions for people walking, bicycling, or driving on Merchant Street.

Based on the discussion above, the proposed project would not exacerbate existing conditions or create a new potentially hazardous condition for people walking, bicycling, or driving, or public transit operations; impacts would be ***less than significant***, and no mitigation measures are necessary.

Impact TR-3: Operation of the proposed project would not interfere with accessibility for people walking or bicycling to and from the project site, and adjoining areas, or result in inadequate emergency access. ***(Less than Significant)***

As shown in Table 2, p. 41, the proposed project would generate a total of 1,333 private auto vehicle trips and 608 TNC/taxi vehicle trips, and would add 2,787 transit trips, 5,655 walk trips, and 365 person trips by bicycle on a daily basis. During the p.m. peak hour, the proposed project would generate an estimated 129 private auto vehicle trips, 56 TNC/taxi vehicle trips, 298 transit trips, 600 walking trips, and 40 person trips by bicycle.

Pedestrian Facilities. As noted above in the *Transportation Setting* section, the pedestrian facilities on the roadways adjacent to the project site include adequate ADA facilities. The proposed project would increase the effective width of sidewalks for people walking along Sansome and Washington streets to a minimum 7.5-foot-wide pathway by relocating existing obstructions and widening sidewalks. The proposed project would increase the width of the portion of the Sansome Street sidewalk along the project frontage from 10.5 to 13 feet and increase the width of the portion of the Washington Street sidewalk along the project frontage up to 20 feet. The proposed project would not change the existing 10-foot-wide southern sidewalk along the eastern portion of Washington Street, which does not part of the frontage of the proposed project. The proposed project would also maintain the existing 12-foot sidewalk on the western side of Battery Street, adjacent to the proposed fire station relocation. These improvements as part of the proposed project would

comply with the Better Streets Plan, which requires a minimum 12 feet and recommended 15 feet width for sidewalks on typical commercial streets.

The project would add approximately 600 additional people walking (including transit riders) to the surrounding sidewalks during the p.m. peak period, or up to 800 people walking when accounting for passenger loading activity and people who may be walking from nearby parking garages. Most of these people would use Sansome Street or Merchant Street to access the primary entrances to the proposed building. As noted above, the proposed project would increase the width of the Sansome Street sidewalk along the project frontage to 13 feet and provide a shared street on Merchant Street to accommodate the increased activity associated with people accessing the proposed building. Fewer people walking would use Washington Street; activity would be limited to the sidewalk on the south side of the street, which would serve people walking to and from destinations to the east of the project site. In general, the increased level of pedestrian activity on Sansome or Washington streets that would result from the proposed project would be less than pedestrian activity levels at places such as the southwest corner of Sansome and Clay streets (approximately 400 people walking during the p.m. peak hour) and would be similar to nearby locations on Washington, Battery, and Clay streets, which have sidewalks similar in width to Sansome Street and currently have adequate capacity for people walking. Therefore, even with an increased level of pedestrian activity, the proposed project would not interfere with accessibility on surrounding streets.

The proposed project's improvements and programming on Merchant Street, including discouraging access for through vehicles, would not interfere with accessibility as it would expand space for people walking while allowing vehicles to access the proposed project's parking garage at all times. The project sponsor would be required to include design features in the proposed project that ensure that Merchant Street operations would not interfere with accessibility, subject to SFMTA and DPW approval, which would help to maintain accessibility for people walking or bicycling. These design features include proposed tabletop crosswalks with detectable warnings, varied non-standard paving materials, mid-block drive lane shifts, and overhead string lights, which are all intended to calm vehicular traffic and signal a non-standard street. In addition, the proposed project would implement a driveway and loading operation plan, which would complement the shared street/living alley design of Merchant Street and would help maintain accessibility for people walking. Following project entitlement, sponsor will collaborate with DPW, SFMTA, and SFPUC through the Street Improvement Permit process to refine the final scope of street improvement details to enhance the shared street condition.

Bicycle Facilities. As noted above in the *Transportation Setting* section, a Class IV cycle track is currently provided on Battery Street and Class III (shared lanes) bicycle facilities are currently provided on Sansome and Clay streets adjacent to the project site. Implementation of the proposed project would not eliminate or reconfigure any of these existing bicycle facilities. As previously discussed, the proposed project would generate 365 daily bicycle trips and 40 p.m. peak hour bicycle trips. This relatively low number of bicycle trips would not substantially conflict with or result in unsafe conditions to nearby bicycle paths or facilities.

Emergency Access. The proposed project would not include features that would inhibit emergency vehicle access to the project site, and pedestrian features such as corner bulb outs, the Merchant Street shared street/living alley, and street trees would be designed to accommodate emergency vehicle access. The proposed project would include features to support the replacement fire station access from Battery Street, including the emergency vehicle preemption system installed at the traffic signals on Washington Street at the Sansome Street and Battery Street intersections to facilitate fire truck egress onto westbound Washington Street via northbound Battery Street, red curbs, and 'KEEP CLEAR' markings on Battery Street.

California Vehicle Code section 21806 requires that all non-emergency vehicles yield right-of-way to emergency vehicles, so general traffic congestion in the vicinity of the project site would not result in substantial delay to emergency vehicle response. Turn templates for fire truck access via Battery Street for the replacement fire station are provided in Appendix D and show that turning radii are sufficient with the removal of four parking spaces on the east side of Battery Street adjacent to the Class IV cycle track. Therefore, emergency vehicles would continue to be able to access the project site and the proposed project would not interfere with accessibility for emergency services.

Based on the discussion above, accessibility impacts would be ***less than significant***, and no mitigation measures are necessary.

Impact TR-4: Operation of the proposed project would not substantially delay public transit. ***(Less than Significant)***

The proposed project would not directly change facilities for public transit routes surrounding the project site, including Muni and Golden Gate Transit routes, nor would they add driveways to streets with transit. As shown in Table 2, p. 41, the proposed project would generate 185 p.m. peak hour vehicle trips. This number of p.m. peak hour vehicle trips is below the planning department's transit delay screening criterion of 300 p.m. peak hour vehicle trips, which is the amount of traffic that could potentially substantially delay public transit vehicles operating on routes adjacent to a project site. Fire trucks would exit the project site under emergency conditions and any transit delay would be temporary. Therefore, impacts to public transit delay would be ***less than significant***, and no mitigation measures are necessary.

Impact TR-5: The proposed project would not cause substantial additional vehicle miles traveled or substantially induce additional automobile travel. ***(Less than Significant)***

As shown in Table 1, p. 40, the existing average daily VMT for TAZ 804 is 7.3 miles per capita for residential uses and 9.9 miles per employee for office uses, which is below the existing regional VMT per capita/per employee minus 15 percent.

As noted previously under *Project Travel Demand*, residential is presented as a proxy for the proposed project's hotel land uses and the proposed project would meet the City's map-based screening for residential (hotel). The project also meets the City's map-based screening for the office component of the project. The project would include similar features to other developments in the area in terms of density and mix of uses. As such, the proposed project's land uses would not generate a substantial increase in VMT. Furthermore, the project site meets the proximity to transit stations screening criterion, which also indicates that the proposed project's uses would not cause substantial additional VMT.

The proposed project is not a transportation project, but would include transportation features such as driveways for parking garages and loading docks, changes to color curbs, and pedestrian safety features (e.g., widened sidewalks, curb bulb outs, raised crosswalks). With respect to induced automobile travel, these transportation features fit within the planning department's general types of projects (discussed above in Approach to Analysis) that can be assumed not to generate a substantial amount of VMT.

Based on the discussion above, impacts related to VMT would be ***less than significant***, and no mitigation measures are necessary.

Impact TR-6: Operation of the proposed project would result in a loading deficit, but the secondary effects would not create potentially hazardous conditions for people walking, bicycling, or driving or substantially delay public transit. ***(Less than Significant)***

Freight Loading. The proposed project would remove up to 14 of the existing 21 freight loading spaces on the block surrounding the project site, including one space on Sansome Street, eight spaces on Merchant Street, two spaces on Washington Street, and three spaces on Battery Street. Seven on-street freight loading spaces would remain. The proposed project would provide two off-street freight loading spaces accessible from Washington Street approximately 100 feet east of the Sansome Street curb face. These loading spaces would be approximately 25 feet by 10 feet and 35 feet by 12 feet, respectively, which would meet code requirements and adequately accommodate freight trucks without blocking the sidewalk on Washington Street. Freight trucks would pull past the loading dock on Washington Street and reverse into the loading dock; these truck movements could be accommodated within Washington Street and would not interfere with fire department vehicles exiting the replacement fire station on Battery Street. There is no transit service on Washington Street east of Sansome Street that could be delayed by a freight loading turning movement. The project would provide the remaining required off-street loading spaces as four to six service vehicle spaces in the parking garage.

As presented in Table 3, p. 46, the total freight loading demand generated by the proposed land uses would be an estimated seven peak hour freight loading occurrences. As noted in the Project Travel Demand section, the fire station would not generate new freight demand. The majority of freight loading activity associated with proposed project's hotel and retail uses consist of smaller vehicle types such as light trucks and panel vans that could be accommodated within the proposed off-street freight loading spaces, service vehicle loading spaces, or within the porte cochere.[56] Approximately once or twice a day, a vehicle longer than 30 feet is expected to serve the project site and would need to load at convenient loading zones (e.g., within 250 linear feet of the project site) on adjacent streets, such as at the yellow loading zones on the west side of Sansome Street, south of Merchant Street.

The off-street freight loading space supply alone (two spaces) would not be sufficient to accommodate the peak hour (11 a.m. to 2 p.m.) freight loading demand of the project (seven peak hour spaces). As indicated above, nearly all the loading demand generated by the project will be light trucks or panel vans, which could also be accommodated within the port-cochere or in the service vehicle spaces in the parking garage. The peak for freight loading demand would occur during the middle of the day, outside of the peak hours for valet service in the port-cochere. The loading operations at the site would be operated by the on-site transportation coordinator as required through the proposed project's Driveway Loading and Operations Plan (DLOP). The DLOP will set forth protocols for on-site staff to direct smaller delivery vehicles or vans (e.g., UPS, DoorDash, Amazon, etc.) or light-truck service vehicles to use the porte cochere for smaller delivery activities or service vehicle spaces in the parking garage should the proposed project's loading dock be temporarily at capacity. The porte cochere would be accessible at all times, including when through traffic could be limited on Merchant Street during its programming hours, including the freight loading demand peak hour period.

[56] Figure 60, p. 111 of the San Francisco Travel Demand Update: Data Collection and Analysis (Fehr & Peers, 2018). This document is also Appendix F of the February 2019 SF Guidelines.

When spaces are not available within the port cochere or parking garage, the on-site transportation coordinator would direct deliveries or service vehicles to nearby on-street commercial loading zones.

While the proposed project would remove up to 14 existing on-street freight loading spaces on the block surrounding the project site, seven existing convenient on-street freight loading facilities would remain to accommodate the project's unmet freight loading demand within one half block or approximately 250 feet of the project site. However, the proposed project's removal of existing loading spaces could result in a freight loading deficit for the surrounding block's existing land uses. Approximately 40 percent of the existing freight loading spaces on the block surrounded by Washington, Battery, Merchant, and Sansome streets were observed to be used (approximately nine spaces), although some spaces were being used for non-permitted uses, such as parking and passenger loading. There are additional freight loading spaces outside of half block of the project site that may be able to accommodate excess demand within the study area (e.g., east of Hotaling Street on Washington or south of Clay Street on Battery Street). Further, given that some of the existing loading spaces are being used by non-permitted uses during the site visit, routine enforcement would result in adequate freight loading spaces for the surrounding land uses. Therefore, the existing on-street freight loading spaces that will remain are expected to fulfill the existing demand for freight loading of adjacent properties and would not result in potentially hazardous conditions for people walking, bicycling, or driving or substantially delay public transit.[57]

The proposed project would comply with local laws and regulations, and the street network changes associated with the proposed project have undergone review by SDAT and will have further review of color curb modifications by SFMTA. Furthermore, the proposed project's DLOP would create protocols for refuse collection, curbside management, TNC/taxi pickup and drop-off, valet services, signage/wayfinding, off-peak deliveries, large truck access, and other activities to coordinate these activities so as not to introduce potentially hazardous conditions for other roadway users.

For the above reasons, the project would not create potentially hazardous conditions for people walking, bicycling, or driving, or substantially delay public transit. Therefore, the proposed project would result in a ***less than significant*** freight loading impact, and no mitigation measures are necessary.

Passenger Loading. The proposed project would convert the existing PM peak towaway on the east side of Sansome Street between Merchant Street and Washington Street into an accessible passenger loading zone (approximately 75 feet in length) and daylighting zone (approximately 20 feet in length) at the approach of Washington Street, which equates to enough curb space to provide loading for three to four vehicles simultaneously.[58] This would result in the loss of on-street freight loading curbside space, which is discussed above, but would add on-street passenger loading curbside space. The proposed project would also comply with local laws and regulations, and the street network changes associated with the proposed project have undergone review by SDAT and will have further review of color curb modifications by SFMTA.

[57] SFMTA monitors utilization of on-street freight loading as a part of routine curb management operations and could determine to remove additional on-street parking spaces on the blocks surrounding the project to accommodate additional freight loading spaces if demand exceeds the supply in the future. SFMTA will determine final curbside loading and parking at time of occupancy.
[58] Mari Hunter, Transportation Planner, San Francisco Municipal Transportation Agency, email correspondence with Neil Smolen, Associate, Fehr & Peers, December 2, 2024.

As presented in Table 4, p. 46, the proposed project would generate demand for 94 p.m. peak-hour passenger loading occurrences and four passenger loading spaces per minute during the peak 15-minute periods.[59] The replacement fire station is not anticipated to generate any new passenger loading demand as described above. The proposed project would feature up to four passenger loading spaces, which meets the peak 15-minute passenger loading demand. Furthermore, the proposed project would implement a DLOP, which would create protocols for TNC/taxi pickup and drop-off and valet services that would provide on-site staff with the flexibility to direct passenger loading activities from the on-site passenger loading zone to the porte cochere if demand exceeded the loading supply during peak times.

Therefore, the proposed project would accommodate peak hour passenger loading demand within convenient on-street loading zones and would not result in a passenger loading demand that would create potentially hazardous conditions for people walking, bicycling, or driving or substantially delay public transit. The proposed project would result in a ***less-than-significant*** impact on passenger loading conditions, and no mitigation measures are necessary.

Cumulative Transportation Impacts

The analysis of whether the proposed project would contribute considerably to any significant cumulative impacts takes into account foreseeable changes in the transportation network; land development projects within approximately 0.25 mile of the project site that are approved or under review (see draft EIR Table 3-1, Cumulative Projects within a 0.25-Mile Radius of the Project Site, p. 3-8, and mapped on Figure 3-1, Cumulative Projects within a 0.25-Mile Radius of the Project Site, p. 3-11). The cumulative projects from draft EIR Table 3-1 includes the 545 Sansome Street project (described below). Other foreseeable changes in the transportation network and land development projects either would have a negligible effect on transportation and circulation in the immediate vicinity of the project site or are still in the planning stages where a detailed project description is not available. **Figure 11** displays the p.m. peak hour cumulative conditions.

- 545 Sansome Street Project – An approximately 50,000-square-foot office and 2,400-square-foot retail addition to an existing mixed-use retail and office building; no streetscape changes are proposed.
- Muni Forward – SFMTA does not have any specific Muni Forward service changes planned in the study area; however, the 1-California bus route is a Muni Forward corridor, and outreach regarding improvements is set to begin in 2025.

Impact C-TR-1: The proposed project, in combination with cumulative projects, would not result in significant construction-related transportation impacts. ***(Less than Significant)***

Construction of the proposed project may overlap with construction of the nearby project at 545 Sansome Street, which is across the street from the project site. The Muni Forward program does not include any physical construction through the study area.

[59] Peak loading demand is calculated using equations included in the SF TIA Guidelines (2019), which note that half of peak hour passenger loading demand occurs during the peak 15 minutes and the average stop duration is 1 minute.

SOURCE: Fehr & Peers, 2024

447 Battery and 530 Sansome Street

FIGURE 11

INTERSECTION TRAFFIC VOLUMES (P.M. PEAK HOUR) CUMULATIVE CONDITIONS

The construction schedule for the 545 Sansome Street project is also unknown; however, it would likely be much shorter than that for the proposed project as it includes the expansion of an existing building rather than construction of a new building. For the purposes of a conservative analysis, the construction period for the 545 Sansome Street project is assumed to occur at the same time as the proposed project.

The construction schedules and truck and worker routes required for the 545 Sansome Street project are unknown. However, the construction activities for the 545 Sansome Street project would be relatively minor compared to the proposed project. The 545 Sansome Street project would require fewer workers and vehicles on-site as it includes the expansion of an existing building rather than construction of a new building. Although the 545 Sansome Street project is across the street from the proposed project site, a different route would be required for construction trucks to access that site as trucks would not be allowed to turn left into the 545 Sansome Street project site from Sansome Street. Therefore, they would approach from Washington Street, which would generally not overlap with the primary access to the proposed project site.

Given the uncertainty of the construction timing for the above cumulative projects, if construction periods do overlap for the proposed project and the 545 Sansome Street project, the proposed project would be required to obtain a special traffic permit from SFMTA prior to the commencement of any construction work and comply with all applicable requirements in the Blue Book and public work code. As conditions for the special traffic permit, the sponsor for the proposed project would be required to work with various city departments to develop measures to minimize potential construction impacts related to construction vehicle routing, traffic control, transit vehicle operations, and accessibility and safety for people walking and biking adjacent to the construction area.

Overall, the proposed project and the cumulative projects' construction activities would be temporary and limited in duration, and conducted in accordance with city requirements. Thus, the proposed project, in combination with cumulative projects in the vicinity of the project site, would result in ***less-than-significant*** cumulative construction-related transportation impacts, and no mitigation measures are necessary.

Impact C-TR-2: The proposed project, in combination with cumulative projects, would not result in operation-related cumulative transportation and circulation impacts. ***(Less than Significant)***

Hazardous Conditions for People Walking, Bicycling, or Driving, or Public Transit Operations. As discussed in Impact TR-2, the proposed project would not create potentially hazardous conditions for people walking or bicycling or otherwise interfere with bicycle or pedestrian accessibility to or from the site or adjoining areas. The proposed project would not conflict with any planned or proposed improvements to bikeway facilities or affect pedestrian conditions. The proposed project includes the following physical changes to streets fronting the project site: streetscape changes along Merchant Street, a passenger loading zone along Sansome Street, the removal of existing parking spaces in the middle of the block on the north side of Washington Street and on the western half of the south side of Washington Street, and the removal of existing parking spaces on the west side of Battery Street and the north side of Merchant Street.

Likewise, none of the cumulative projects would create potentially hazardous conditions for people walking or bicycling or otherwise interfere with bicycle or pedestrian accessibility to or from the site or adjoining areas. The 545 Sansome Street project would not include any physical changes at the street-level; furthermore, the building does not have an off-street parking facility, and as such, vehicle traffic traveling to

or from the project site would be dispersed to or from off-site public parking facilities at nearby locations. Additionally, no Muni Forward projects are planned to change any rights-of-way in the study area. Therefore, the proposed project, in combination with cumulative projects, would not result in a cumulative transportation impact on bicycle and pedestrian conditions. Accordingly, cumulative impacts related to this topic would be ***less than significant***, and no mitigation measures are required.

Accessibility. As noted in Impact TR-3, the proposed project would result in increased levels of pedestrian activity when accounting for passenger loading activity and people who may be walking from nearby parking garages. However, the proposed project would increase the width of the Sansome Street sidewalk along the project frontage to 13 feet and provide a shared street on Merchant Street to accommodate the increased activity associated with people accessing the proposed building. In general, the increased level of pedestrian activity on Sansome or Washington streets that would result from the proposed project would be less than pedestrian activity levels at places such as the southwest corner of Sansome and Clay streets (approximately 400 people walking during the p.m. peak hour) and would be similar to nearby locations on Washington, Battery, and Clay streets, which have sidewalks similar in width to Sansome Street and currently have adequate capacity for people walking. Therefore, even with an increased level of pedestrian activity, the proposed project would not interfere with accessibility on surrounding streets.

The 545 Sansome Street project would not affect accessibility because it would not include any changes to off-street parking, driveways, or the streetscape.[60] While the sidewalk on Washington Street proposed by the project would not meet the Better Streets Plan standards, the highest number of people walking generated by the 545 Sansome Street project would occur along its project frontage on the west side of Sansome Street. As discussed above in *Project-Level Transportation Impacts*, sidewalks along the project site frontage on Sansome Street and, to a lesser extent, Washington Street, would host the majority of people walking to/from the project site; these sidewalks provide direct routes for a limited number of routes for people walking to and from the 545 Sansome Street project. Therefore, the 545 Sansome Street project would not generate a substantial amount of people walking on the sidewalks fronting the project site, and the proposed sidewalks would, therefore, be sufficient for anticipated cumulative pedestrian volumes and activity.

Similar to the existing plus project conditions discussed in Impact TR-3, the combination of the proposed project with cumulative projects would not create design features that would result in inadequate emergency access. The 545 Sansome Street project does not propose driveways or other physical features that would inhibit emergency vehicle access into or out of the replacement fire station. The 545 Sansome Street project does not propose any driveways for access to off-street facilities. When accounting for traffic of cumulative projects, including traffic generated by the nearby 545 Sansome Street project, the proposed project's measures to prioritize fire department emergency access would ensure that traffic growth under cumulative conditions would not interfere with emergency vehicle access. These measures include the preemption traffic signal system on Washington Street at the Sansome Street and Battery Street intersections and 'KEEP CLEAR' markings on Battery Street.

[60] Per SFMTA, any alterations to curb usage (including adding a passenger loading zone) require an evaluation of accessible parking on the relevant block faces and may require adding new on-street accessible parking spaces.

Based on the above discussion, the proposed project in combination with cumulative projects would not interfere with accessibility related to pedestrian, bicycle, or emergency access; therefore, cumulative impacts would be ***less-than-significant***, and no mitigation measures are necessary.

Public Transit Delay. The combination of the proposed project (185 p.m. peak hour vehicle trips) with the adjacent 545 Sansome Street project (fewer than 20 p.m. peak hour vehicle trips) would remain below the planning department's transit delay screening criteria of 300 p.m. peak hour vehicle trips under cumulative conditions. Additionally, future phases of Muni Forward improvements to the 1-California Muni route may improve transit reliability near the project site. Therefore, the proposed project would not combine with cumulative projects to cause substantial public transit delay. Therefore, this impact would be ***less than significant***, and no mitigation measures are necessary.

Vehicle Miles Traveled. As stated in the approach to analysis, VMT by its nature is largely a cumulative impact. As shown in Impact TR-5, the project would not exceed the project-level quantitative thresholds of significance for VMT. In addition, Plan Bay Area meets greenhouse gas reduction targets set by the California Air Resources Board. Furthermore, as shown in **Table 5**, projected 2050 average daily VMT per capita for the transportation analysis zone for the project site (i.e., TAZ 804), is below the projected 2050 regional average daily VMT.

Table 5 Average Daily Vehicle Miles Traveled in TAZ 804 (Cumulative 2040)

Land Use	Bay Area Regional Average	Bay Area Regional Average Minus 15% (Significance Threshold)	TAZ 804
Hotel (Residential)	16.7	14.5	8.2
Office	23.2	20.2	8.5

SOURCES: San Francisco Transportation Information Map, 2019; Fehr & Peers, 2024.

Table 5 presents the future (2040) average daily VMT per capita for the nine-county San Francisco Bay Area and TAZ 804. The future average daily VMT per capita for residential uses in TAZ 804 (8.2 miles) is approximately 50 percent lower than the regional Bay Area average (16.7 miles). The future average daily VMT per employee for office uses in TAZ 804 (8.5 miles) is approximately 63 percent lower than the regional Bay Area average (23.2 miles). As noted previously under *Project Travel Demand*, residential is presented as a proxy for the proposed hotel land uses and the proposed project's retail VMT is presumed as having a less-than-significant VMT impact. Because the project site is in an area where the VMT for the land uses in the proposed project are each more than 15 percent below future 2040 regional averages, the proposed project's contribution to any substantial cumulative increase in VMT would be less than considerable. Therefore, this impact would be ***less than significant***, and no mitigation measures are necessary.

Loading. As described in Impact TR-6, the proposed project would result in a reduction in 14 on-street freight loading spaces. The proposed project's estimated freight loading demand would be met at the proposed off-street loading dock, porte cochere, service vehicle spaces, and convenient on-street commercial loading zones.

The freight loading plans for the 545 Sansome Street project, the nearest planned development located adjacent to the project site, show that freight loading activity associated with the 545 Sansome Street project

would occur within the existing 36-foot on-street loading zone on Washington Street along the 545 Sansome Street frontage and would therefore not generate freight loading demand that would overlap and combine with the proposed project. Therefore, freight loading activity generated by the proposed project and nearby projects would not create potentially hazardous conditions for people walking, bicycling, or driving, or substantially delay public transit due to unmet freight loading demand. Thus, the cumulative freight loading impacts of the proposed project, in combination with the cumulative projects, would be less than significant.

The proposed project, in combination with other cumulative development projects, would accommodate peak hour passenger loading demand within convenient on-street loading zones and would not result in a passenger loading demand that would create potentially hazardous conditions for people walking, bicycling, or driving or substantially delay public transit.

The additional office space proposed by the 545 Sansome Street project would generate less passenger loading activity compared to the proposed project due to the smaller size of the project. This activity would likely occur along the 545 Sansome Street project's frontage on Washington Street and would not interfere with passenger loading activities of the proposed project on Sansome and Merchant streets, as people arriving at or leaving a building or other destination typically do so as close to the entrance as possible.

The proposed Muni Forward improvements would not affect loading conditions in the study area.

Therefore, passenger loading activity generated by the proposed project and nearby cumulative projects would not combine to create potentially hazardous conditions for people walking bicycling, or driving, or substantially delay public transit due to unmet passenger loading demand. Thus, the cumulative passenger loading impacts of the proposed project, in combination with the cumulative projects, would be ***less than significant***, and no mitigation measures are necessary.

E.6 Noise

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
6. NOISE. Would the project:					
a) Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐	☐
b) Generate excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan area or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	☐	☐	☐	☐	☒

The project site is not within an airport land use plan area, nor is it in the vicinity of a private airstrip. Therefore, topic E.6(c) is not applicable and is not discussed further.

Noise Principles and Descriptors

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. The sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. Sound pressure level is measured in decibels (dB), with 0 dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Because sound pressure can vary greatly within the range of human hearing, a logarithmic loudness scale is used to keep sound intensity numbers at a convenient and manageable level.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. When assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies. This method of frequency weighting is referred to as A-

weighting and is expressed in units of A-weighted decibels (dBA).[61] Frequency A-weighting is typically applied to community noise measurements.

Noise Exposure and Community Noise

An individual's noise exposure is a measure of noise over a period of time. A noise level is a measure of noise at a given instant in time. Community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic. What makes community noise variable throughout a day, besides the slowly changing background noise, is the addition of short-duration, single-event noise sources (e.g., aircraft flyovers, nearby motor vehicles, sirens), which are readily identifiable to the individual.

These successive additions of sound to the community noise environment change the community noise level from instant to instant, requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise effects. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

L_{eq}: The L_{eq}, or equivalent sound level, is used to describe noise over a specified period of time in terms of a single numerical value; the L_{eq} of a time-varying signal and that of a steady signal are the same if they deliver the same acoustic energy over a given time. The L_{eq} may also be referred to as the average sound level.

L_{max}: The maximum, instantaneous noise level experienced during a given period of time.

L_{min}: The minimum, instantaneous noise level experienced during a given period of time.

L_{dn}: Also termed the day-night average noise level (DNL), the L_{dn} is the average A-weighted noise level during a 24-hour day, obtained after an addition of 10 dB to measured noise levels between the hours of 10 p.m. and 7 a.m. to account for greater nighttime noise sensitivity.

CNEL: CNEL, or Community Noise Equivalent Level, is the average A-weighted noise level during a 24-hour day that is obtained after an addition of 5 dB to measured noise levels between the hours of 7 p.m. and 10 p.m. and after an addition of 10 dB to noise levels between the hours of 10 p.m. and 7 a.m. to account for greater noise sensitivity in the evening and nighttime, respectively.

Noise from Multiple Sources

In urban environments, noise commonly occurs from multiple sources simultaneously. Because sound pressure levels, in decibels, are based on a logarithmic scale, they cannot be combined in an additive fashion. When a new noise source is added to an existing noise source, with both producing noise at the same level, the noise-level value would not double, as would be the case when adding arithmetically.

Decibel additions from multiple noise sources can be estimated when the noise levels from two simultaneously operating sources are known. If the difference between the two noise sources is 1 dBA or

[61] All noise levels reported herein reflect A-weighted decibels unless otherwise stated.

less, the resultant noise level will be 3 dBA greater than the source with the higher decibel value. If the difference between the two noise sources is 2 to 3 dBA, the resultant noise level will be 2 dBA greater than the source with the higher decibel value. If the difference between two noise sources is 4 to 10 dBA, the resultant noise level will be 1 dBA greater than the source with the higher decibel value. When the difference between two noise sources is 10 dBA or more, the source with the higher decibel value will dominate, and the resultant noise level will be roughly equal to the source with the higher decibel value.

Effects of Noise on People

Noise is generally loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity that is a nuisance or disruptive. The effects of noise on people include subjective effects (e.g., dissatisfaction, annoyance), interference effects (e.g., communication, sleep, and learning interference), physiological effects (e.g., startle response), and physical effects (e.g., hearing loss). With regard to increases in A-weighted noise level, the following relationships generally occur:

- Except in controlled laboratory experiments, a change of 1 dB cannot be perceived;
- Outside of the laboratory, a 3 dB change in noise levels is considered to be a barely perceivable difference;
- A change in noise levels of 5 dB is considered to be a readily perceivable difference; and
- A change in noise levels of 10 dB is subjectively heard as doubling of the perceived loudness.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. The human ear perceives sound in a non-linear fashion; hence the decibel scale was developed. Since the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, but rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dB, the combined sound level would be 53 dB, not 100 dB.

Vibration and Groundborne Noise

Vibration is an oscillatory motion through a solid medium. Typically, groundborne vibrations generated by man-made activities attenuate rapidly with the distance from the source of the vibration. The effects of vibration on structures are typically measured by peak particle velocity (PPV) in inches per second (in/sec). The PPV is most frequently used to describe physical vibration effects on buildings. Typically, groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors to vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick people), and vibration-sensitive equipment.

Vibration decibels (VdB) is the unit used to assess effects of vibrations on people and to distinguish vibration decibels from sound decibels (dB). With the exception of long-term occupational exposure, vibration levels rarely affect human health. Instead, most people consider vibration to be an annoyance that can affect concentration or disturb sleep. People may tolerate infrequent, short-duration vibration levels, but human annoyance to vibration becomes more pronounced if the vibration is continuous or occurs frequently. High levels of vibration can damage fragile buildings or interfere with sensitive equipment. Depending on the age

of the structure and type of vibration (transient, continuous, or frequent intermittent sources), vibration levels as low as 0.5 to 2.0 in/sec PPV can damage a structure.[62]

Typical sources of groundborne vibration in San Francisco are large-scale construction projects that involve pile driving, vibratory construction equipment, or underground tunneling. Vibration is also caused by transit vehicles in the subway system and on the surface, including Muni light-rail vehicles, historic streetcars, and Bay Area Rapid Transit (BART) trains. In general, such vibration is only an issue when there are sensitive receptors located nearby. Since rubber tires and suspension systems reduce vibrations, rubber tire vehicles such as Muni buses, trucks, and automobiles rarely create substantial vibration absent a bump in the road surface.[63]

Groundborne noise refers to noise generated by vibrations from outside a structure but experienced inside the structure. Groundborne noise can be a problem in situations where the primary airborne noise path is blocked, such as in the case of a subway tunnel passing near homes or other noise-sensitive structures. The effects of groundborne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. The Federal Transit Administration (FTA) measure of the threshold of architectural damage for modern reinforced structures is 0.5 in/sec PPV.[64]

A vibration velocity level of 75 VdB is considered to be the approximate dividing line between barely perceptible and distinctly perceptible levels for many people.[65]

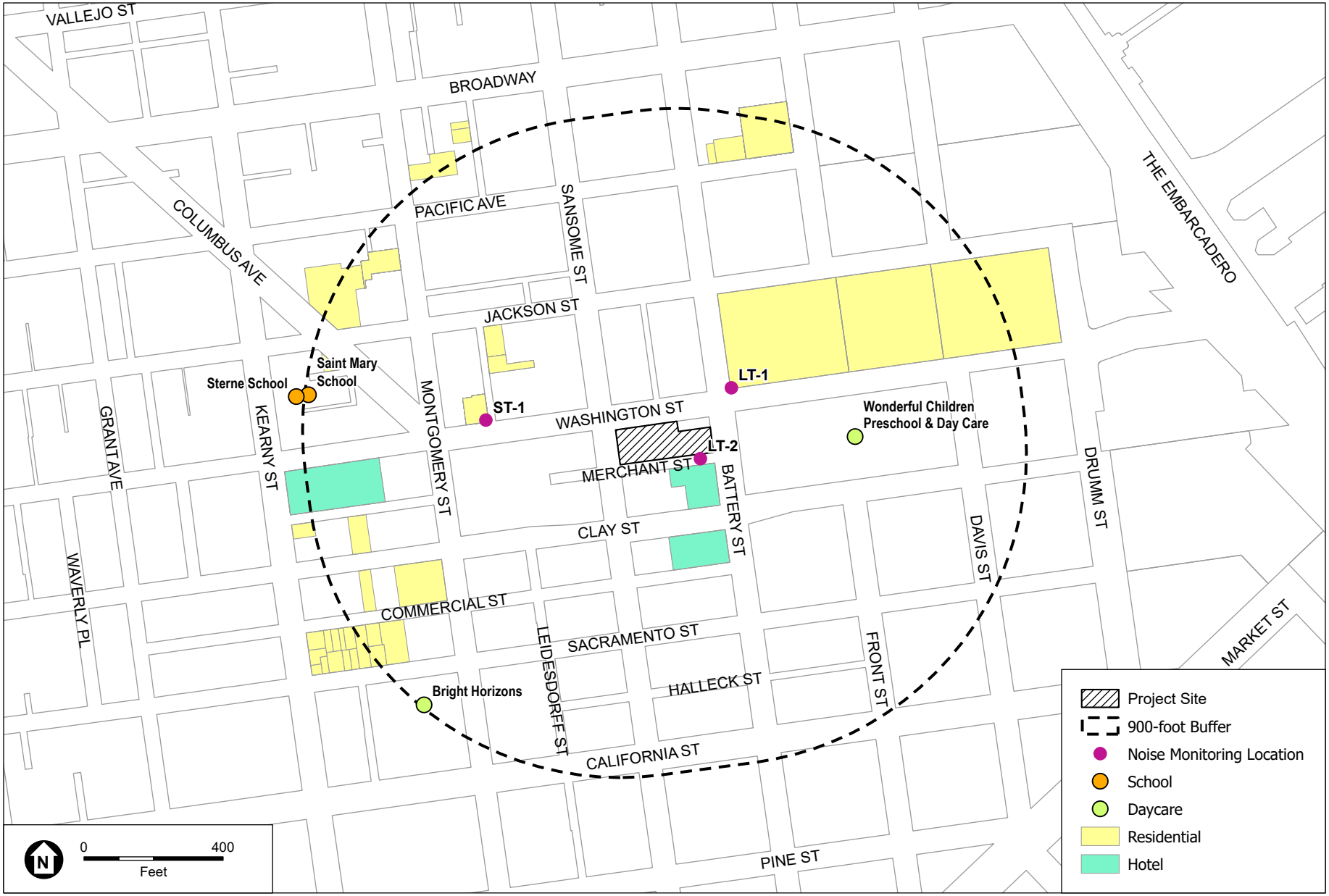
Impact NO-1: Construction of the proposed project could generate substantial temporary or periodic increases in ambient noise levels in the project vicinity. ***(Less than Significant with Mitigation)***

Existing Noise in the Project Vicinity

Two long-term (24-hour) and one short-term (15-minute) ambient noise measurements were taken near the project site in order to establish the existing ambient noise levels in the project area. The two long-term measurements were collected between Monday October 28, 2024, and Wednesday October 30, 2024, in front of Gateway Apartments at 550 Battery Street and at the corner of Merchant and Battery Streets, adjacent to the existing Club Quarters Hotel.[66] One short-term noise measurement was taken on Wednesday, October 30, 2024, to establish existing daytime noise levels at the residential receptors near the intersection of Hotaling Place and Washington Street.

The noise measurement locations are shown in **Figure 12**. **Table 6** summarizes the results of the noise measurement survey.

[62] California Department of Transportation, *Transportation and Construction Vibration Guidance Manual,* September 2020, Table 19, p. 38, https://dot.ca.gov/programs/environmental-analysis/noise-vibration/guidance-manuals, accessed January 24, 2025.
[63] U.S. Department of Transportation, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual,* September 2018, p. 11, https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf, accessed January 24, 2025.
[64] Ibid.
[65] Ibid.
[66] The complete dataset of measured noise levels is included as part of Appendix E.



SOURCE: San Francisco Planning Department, 2024; ESA, 2025

447 Battery and 530 Sansome Street

FIGURE 12

NOISE MONITORING LOCATIONS AND SENSITIVE RECEPTORS WITHIN 900 FEET OF THE PROJECT SITE

Table 6 Summary of Long-Term and Short-Term Noise Monitoring in the Project Vicinity

Measurement Location		Noise Levels (dBA) Day-Night Noise Level (L_{dn})	Daytime [a] Hourly Average L_{eq}	Nighttime [b] Hourly Average L_{eq}	24-Hour L_{90}	Noise Sources
Long-Term Measurements (24 hours)						
LT-1	Near 550 Battery Street in front of the Gateway Apartments	67	65	59	52	Vehicle traffic on Washington Street and Battery Street
LT-2	Southeast of project site at corner of Merchant and Battery Streets, adjacent to existing hotel building	70	66	62	54	Vehicle traffic on Battery Street
Short-Term Measurement (15 minutes)						
ST-1	Northeast corner of Washington Street and Hotaling Place	NA	65	NA	NA	Vehicle traffic, power tools operated nearby, and vocalization of pedestrians

SOURCE: ESA, 2024.

ABBREVIATIONS: NA = not applicable to short term measurements; LT = Long-Term; ST = Short Term

NOTES:

a. Daytime hours are considered to be 7 a.m. to 10 p.m.
b. Nighttime hours are considered to be 10 p.m. to 7 a.m.

Existing noise levels in the project area are characteristic of an urban/city environment, with both long-term measurements having a day-night sound level (L_{dn}) of 67 to 70 dBA. Fire Station 13 is located on the project site, approximately 300 feet from the noise measurement location LT-1. The fire station contributes intermittent siren and truck noise to the ambient noise environment.

Existing Sensitive Receptors

Some land uses are more sensitive to noise levels than others due to the types of activities typically associated with the uses. Residences, hotels, schools and childcare facilities, senior care facilities, and hospitals are generally more sensitive to noise than commercial and industrial land uses. There are no existing hospitals or skilled nursing facilities within 900 feet of the project site. The Gateway Apartments are located at 550 Battery Street (LT-1 in Figure 12) and is the nearest residential receptor located approximately 150 feet from the project site. The Club Quarters Hotel at 424 Clay Street (LT-2 in Figure 12) is approximately 30 feet south of the project site and while considered a commercial use during the daytime, it would be considered a sensitive receptor during nighttime hours. Other residential uses are located on the upper floors of Hotaling Place (ST-1 in Figure 12), approximately 360 to 480 feet west of the project site.

Daytime Construction Noise Evaluation

Table 7 shows the hourly noise levels (L_{max}) produced by various types of equipment likely to be used by the project at a reference distance of 50 feet from the equipment as well as at a 100-foot distance as dictated by the city's noise ordinance. Section 2907 of the city's noise ordinance prohibits operation of any powered construction equipment (non-impact), regardless of age or date of acquisition if such operation emits noise

at a level in excess of 80 dBA when measured at a distance of 100 feet from such equipment. Impact tools that exceed the limit are required to be fitted with mufflers, acoustical shields, or enclosures. As shown in Table 7, construction equipment used would operate within the constraints of the noise ordinance standards except for concrete saws. Concrete saws are generally used for relatively detailed demolition work, such as opening a specific area of roadway or sidewalk. As such, the duration and frequency of their use is usually not extensive. Concrete saws would be used during the foundation and building construction phases on an intermittent basis. Therefore, any noise impacts at a distance of 100 feet from such equipment would not be considered substantial as they would be short in duration. Given that all equipment, except the concrete saw, would meet the limits specified in the noise ordinance, and given the generally limited duration of concrete saw use, noise levels resulting from the use of individual pieces of equipment would generally be expected to comply with noise ordinance limits.

Table 7 Maximum Noise Levels from Construction Equipment

Construction Equipment	Noise Level at 50 Feet (dB, L_{max})	Noise Level at 100 Feet (dB, L_{max})
Air compressors	78	72
Backhoes	78	72
Bore/Drill rigs	84	78
Vibratory compactor	83	77
Concrete/Industrial saws	90	**84**
Concrete truck	79	73
Concrete pump	81	75
Cranes	81	75
Dump truck	76	70
Excavator	81	75
Flatbed truck	74	68
Forklifts	83	78
Generators	81	75
Pavers	77	71
Paving Equipment	77	71
Pumps	81	75
Rollers	80	74
Scrapers	84	78
Skid steer loaders	79	73
Sweepers	82	76
Welders	74	68

SOURCE: Federal Highway Administration, *Construction Noise Handbook*, 2006.

NOTE: **Bolded** values indicate exceedance of the 80 dBA limit. Impact tools that exceed the limit are required to be fitted with mufflers, acoustical shields, or enclosures.

The FTA has developed general quantitative assessment criteria for analyzing construction noise, which is based on the simultaneous operation of the two noisiest pieces of equipment. The general assessment criteria sets construction noise limits for residential, commercial and industrial outdoor noise levels, as summarized in **Table 8**. To evaluate a reasonable worst-case scenario, the analysis assumes that the two loudest pieces of equipment would operate simultaneously at the same location.

Table 8 FTA General Assessment Criteria for Construction Noise Limits

Land Use	One-Hour L_{eq} (dBA)	
	Day	Night
Residential	90	80
Commercial	100	100
Industrial	100	100

SOURCE: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, Office of Planning and Environment, 2018, https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf, accessed November 10, 2024.

ABBREVIATIONS: dBA = A-weighted decibel; L_{eq} = equivalent sound level

The daytime construction noise analysis quantitatively evaluates combined noise from the two loudest pieces of equipment at sensitive receptor locations to determine if construction noise would exceed 90 dBA at a noise-sensitive receptor during daytime hours or would be 10 dBA above the ambient daytime noise level. If so, the evaluation then qualitatively considers the frequency, duration, and intensity of noise levels in determining whether the project would result in a significant noise impact. The daytime construction noise associated with the worst-case noise levels for each major phase of construction is evaluated at the nearest residential receptors and is shown in **Table 9**. The nearest residential receptors are located at 550 Battery Street approximately 150 feet from the project's eastern boundary. Based on the equipment list provided by the project sponsor, the worst-case noise levels assume that the two loudest pieces of equipment from each construction phase would be operating simultaneously at the same location on the project site boundary closest to the nearest residential receptors.

The daytime construction noise analysis also quantitatively evaluates combined noise from the two loudest pieces of equipment at the nearest commercial/industrial receptor location to determine if construction noise would exceed 100 dBA at a commercial receptor during daytime hours as shown in **Table 10**. The nearest commercial receptors are located within the adjacent 401 Washington Street building, approximately 5 feet from the project site boundary. Though both the western and southern building façades of 401 Washington Street do not contain any exterior spaces, windows, or openings, due to the location of the secondary building entrance along Battery Street, commercial receptors entering and existing the building could be located as close as 5 feet from the project site boundary along Battery Street.

Table 9 Exterior Noise at Nearest Off-Site Sensitive Uses from Daytime Construction

Construction Phase	Nearest Off-Site Sensitive Receptor	Distance to Receptor (feet)[a]	Existing Monitored Noise Level (dBA L_{eq})	Loudest Two Noise Sources	Estimated Construction Noise Level (dBA L_{eq})	Exceed 90 dBA Exterior Daytime Standard?	Resultant Noise Level (Existing + Construction) (dBA L_{eq})	Increase over Existing (dBA L_{eq})	Exceed 10 dBA Above the Ambient Noise Level?
Phase 1: Demolition	Residential: 500 Battery Street	150	65	Forklift Forklift	73	No	74	9	No
Phase 2: Grading/Excavation	Residential: 500 Battery Street	150	65	Forklift Pump	72	No	73	8	No
Phase 3: Drainage/ Utilities/Subgrade	Residential: 500 Battery Street	150	65	Forklift Pump	72	No	73	8	No
Phase 4: Foundations	Residential: 500 Battery Street	150	65	Forklift Concrete Saw	75	No	75	10	No
Phase 5: Building Construction/Architectural Coatings/Paving	Residential: 500 Battery Street	150	65	Forklift Concrete Saw	75	No	75	10	No

SOURCE: ESA, 2025

NOTE:

a. The approximate distance as measured from the nearest project site boundary to the nearest sensitive-receptor property line.

Table 10 Exterior Noise at Nearest Commercial Receptors from Daytime Construction

Construction Phase	Nearest Commercial Receptor	Distance to Receptor (feet)[a]	Existing Monitored Noise Level (dBA L_{eq})	Loudest Two Noise Sources	Estimated Construction Noise Level (dBA L_{eq})	Exceed 100 dBA Exterior Daytime Standard?
Phase 1: Demolition	401 Washington Street	5	65	Forklift Forklift	**102**	**Yes**
Phase 2: Grading/Excavation	401 Washington Street	5	65	Forklift Pump	**102**	**Yes**
Phase 3: Drainage/Utilities/Subgrade	401 Washington Street	5	65	Forklift Pump	**102**	**Yes**
Phase 4: Foundations	401 Washington Street	5	65	Forklift Concrete Saw	**104**	**Yes**
Phase 5: Building Construction/Architectural Coatings/Paving	401 Washington Street	5	65	Forklift Concrete Saw	**104**	**Yes**

SOURCE: ESA, 2025.

NOTES:

Bolded values exceed FTA's 100 dBA exterior noise level standard for commercial receptors.

a. The approximate distance as measured from the nearest project site boundary to the commercial receptor property line.

As shown in Table 9, daytime construction noise levels by phase would range from 72 to 75 dBA at the nearest daytime (residential) receptor at a distance of 150 feet. Daytime construction noise would be below the FTA general assessment criterion of 90 dBA for sensitive residential receptors during all phases of construction. For the evaluation of noise impacts with respect to the 10 dBA increase above ambient noise levels, construction noise is added to the daytime ambient L_{eq} noise level of 65 dBA measured near the residential receptor (LT-1). As shown in Table 9, the estimated daytime construction noise levels combined with existing ambient noise would range from 73 to 75 dBA L_{eq} at the nearest residential receptor. Phases 1 to 3 of construction would not result in an increase of greater than 10 dBA over existing levels at the nearest sensitive receptor. Daytime noise during phases 4 and 5 would meet but not exceed the 10 dBA over ambient noise level criterion standard. Therefore, the impact from daytime construction noise at the nearest residential receptors would be less than significant.

As shown in Table 10, with respect to the nearest commercial receptors at 401 Washington Street, daytime construction noise would exceed FTA's 100 dBA exterior noise standard for commercial uses during all phases of construction resulting in a potentially significant impact.

Construction Truck Hauling Noise Impacts

Construction of the proposed project would require the use of on-road vehicles to deliver and haul materials to and from the project site. Maximum daily haul and vendor truck trips are anticipated to be approximately 60 truck trips per day. Spread across the proposed 10-hour workday, maximum hourly truck trips would be approximately six per hour. These six hourly truck trips would contribute 57.2 dBA to the hourly L_{eq} level at 50 feet from the roadway center.[67] As shown in Table 5, p. 70, daytime hourly L_{eq} monitored in the project vicinity is 65 to 66 dBA. The addition of the project's haul and vendor trucks would result in an increase of less than 0.3 dBA over existing noise levels and would not result in a perceptible increase in noise. Therefore, there would be no substantial increase in noise from construction traffic and this impact would be ***less than significant***, and mitigation measures are not necessary.

Nighttime Construction Noise Impacts

Section 2908 of the noise ordinance prohibits any person between the hours of 8 p.m. of any day and 7 a.m. of the following day from erecting, constructing, demolishing, excavating for, altering, or repairing any building or structure if the noise level created is in excess of the ambient noise level by 5 dBA at the nearest property line, unless a special permit has been applied for and granted.

Although most of the construction equipment would operate only during daytime hours, the proposed project would require construction activities that would extend beyond normal hours (i.e., between 8 p.m. and 7 a.m.), such as several 20-hour concrete pours, crane and hoist erection and adjustment activities, utility work, site maintenance activities and material delivery and handling.

The analysis of nighttime construction noise considers the closest nighttime sensitive receptors at 424 Clay Street (Club Quarters Hotel), located 30 feet south of the project site. Although the receptor at 424 Clay Street is a commercial use, it is considered a sensitive receptor during nighttime hours as it is a land use where people would reasonably be expected to sleep. The receptor distance for nighttime concrete pours assumes concrete mixer trucks and concrete pumps would be on Battery Street, which is approximately 30 feet from

[67] Based on the Federal Highway Administration's Traffic Noise Model.

424 Clay Street. As shown in **Table 11**, the existing average nighttime hourly L_{eq} at monitoring location LT-2 at 424 Clay Street is 62 dBA. Therefore, the applicable nighttime construction standard would be 67 dBA.

Table 11 Nighttime Noise Levels from Concrete Pours

Receptor	Existing Nighttime Noise Level (dBA, L_{eq})	Noise Source	Reference Noise Level (dBA) [a]	Distance to Receptor [a] (feet)	Adjusted L_{eq} Level (dBA)	Exceed 80 dBA Exterior Nighttime Standard?	Existing plus Construction Noise Exterior Noise Level (dBA)	Existing plus Construction Noise Interior Noise Level (dBA)	Exceed 45 dBA Interior Nighttime Standard?
424 Clay Street	62[b]	Concrete truck and concrete pump	79 81	30	**82**	**Yes**	82	**57**	**Yes**

SOURCE: ESA, 2025.

NOTES:

Bolded values exceed FTA's 80 dBA exterior nighttime standard or exceed the 45 dBA interior nighttime standard.

a. Distance for nighttime concrete pours assumes concrete mixer trucks and concrete pumps would be on Sansome Street or Washington Street.
b. The existing nighttime value is the average of the monitored L90 metric between the hours of 10 p.m. and 7 a.m.

As shown in Table 11, nighttime concrete pours would be expected to result in noise levels of 82 dBA, which would result in noise levels more than 5 dBA above existing nighttime noise levels.

Nighttime noise impacts are also assessed based on FTA's 80 dBA exterior noise criterion and for the potential to result in sleep disturbance at nearby residential and hotel uses (increase interior noise levels above 45 dBA) as established by the noise ordinance. For the nearest nighttime receptor to the project site at 424 Clay Street, a standard assumption of exterior-to-interior noise reduction of 25 dBA with windows closed is applied.[68] As shown in Table 10, p. 74, outdoor noise levels from nighttime concrete pours would be up to 82 dBA at the receptor at 424 Clay Street, which exceeds the 80 dBA exterior nighttime criterion for noise-sensitive receptors. The predicted interior noise levels from nighttime concrete pours at this sensitive receptor would also exceed the 45 dBA standard.

Nighttime construction associated with the proposed project would exceed both the 80 dBA exterior noise criterion and the 45 dBA interior standard, and result in noise levels exceeding the existing ambient noise levels by 5 dBA or more at the nearest nighttime sensitive receptor location at 424 Clay Street. This would result in a potentially significant impact.

As described above, the offsite commercial receptors would be subject to significant daytime construction-related noise levels. Implementation of **Mitigation Measure M-NO-1, Construction Noise Control**, would reduce the severity of noise impacts on commercial receptors.

> **Mitigation Measure M-NO-1: Construction Noise Control.** Prior to issuance of the Pre-Construction Environmental Compliance Letter, the project sponsor shall submit a construction noise control plan to the Environmental Review Officer (ERO) or the ERO's designee for approval. The construction noise control plan shall be prepared by a qualified acoustical engineer, with input from the

[68] U.S. EPA, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*, March 1974, http://nepis.epa.gov/Exe/ZyPDF.cgi/2000L3LN.PDF?Dockey=2000L3LN.pdf, accessed December, 2024.

construction contractor, and include all feasible measures to reduce construction noise. The construction noise control plan shall identify noise control measures to meet the daytime and nighttime performance targets for construction activities as identified below at noise-sensitive receptors (residences and hotels) and commercial receptors. The project sponsor shall ensure that requirements of the construction noise control plan are included in the contract specifications.

If nighttime construction is required, the plan shall include specific measures to reduce nighttime construction noise.

The plan shall include specific measures to reduce daytime construction noise to a performance target of 90 dBA exterior noise level and less than 10 dBA over ambient noise levels at noise-sensitive receptors; nighttime construction noise to a performance target of 80 dBA at nighttime noise-sensitive uses, less than 5 dBA increase over the ambient noise level at the property line and an interior noise level of 45 dBA; and daytime construction noise to a performance target of 100 dBA exterior noise level at commercial receptors. The plan shall also include measures for notifying the public of construction activities, complaint procedures, and a plan for monitoring construction noise levels in the event complaints are received.

The construction noise control plan shall include the following measures to the degree feasible, or other effective measures necessary to reduce construction noise levels, as required:

- Use construction equipment that is in good working order, and inspect mufflers for proper functionality;
- Select “quiet” construction methods and equipment (e.g., improved mufflers, use of intake silencers, engine enclosures);
- Use construction equipment with lower noise emission ratings whenever possible, particularly for air compressors;
- Prohibit the idling of inactive construction equipment for more than 5 minutes;
- Locate stationary noise sources (such as compressors) as far from nearby noise-sensitive receptors as possible, muffle such noise sources, and construct barriers around such sources and/or the construction site.
- Avoid placing stationary noise-generating equipment (e.g., generators, compressors) within noise-sensitive buffer areas (as determined by the acoustical engineer) immediately adjacent to neighbors.
- Enclose or shield stationary noise sources from neighboring noise-sensitive properties with noise barriers to the extent feasible. To further reduce noise, locate stationary equipment in pit areas or excavated areas, if feasible; and
- Install temporary barriers, barrier-backed sound curtains and/or acoustical panels around working powered impact equipment and, if necessary, around the project site perimeter. When temporary barrier units are joined together, the mating surfaces shall be flush with each other. Gaps between barrier units, and between the bottom edge of the barrier panels and the ground, shall be closed with material that completely closes the gaps, and dense enough to attenuate noise.

The construction noise control plan shall include the following measures for notifying the public of construction activities, complaint procedures and monitoring of construction noise levels:

- Designation of an on-site construction noise manager for the project;
- Notification of neighboring noise-sensitive receptors within 300 feet of the project construction area at least 30 days in advance of high-intensity noise-generating activities (e.g., activities that may generate noise levels greater than 90 dBA at noise-sensitive receptors or 100 dBA at commercial receptors) about the estimated duration of the activity;
- A sign posted on-site describing noise complaint procedures and a complaint hotline number that shall always be answered during construction;
- A procedure for notifying the planning department of any noise complaints within one week of receiving a complaint;
- A list of measures for responding to and tracking complaints pertaining to construction noise. Such measures may include the evaluation and implementation of additional noise controls at sensitive receptors; and
- Conduct noise monitoring (measurements) at the beginning of major construction phases (e.g., demolition, grading, excavation) and during high-intensity construction activities to determine the effectiveness of noise attenuation measures and, if necessary, implement additional noise control measures.

The project sponsor shall notify the ERO or their designee of any night noise permit application filed with the Department of Building Inspection on the day of filing and any emergency/unanticipated activity with the potential to exceed standards as soon as possible. The project sponsor shall implement the following noise reduction technique to reduce nighttime construction noise:

- Provide acoustically rated shielding around the concrete pump engine. This measure would be expected to reduce noise levels by 5 to 10 dBA depending on the proximity of shielding to the pump engine.

A reduction in construction noise levels would be achieved by locating stationary noise-producing equipment as far from receptors as possible, using noise barriers and mufflers. Although construction noise from the project's construction may at times exceed 90 dBA or 100 dBA 1-hour L_{eq}, 10 dBA above the ambient noise level, or an interior level of 45 dBA during nighttime hours at sensitive receptors even with mitigation, this mitigation measure would substantially reduce the intensity of construction noise and the duration of construction noise. Furthermore, construction noise levels would be temporary and would not persist upon completion of construction activities. With the implementation of Mitigation Measure M-NO-1, daytime and nighttime construction noise impacts on noise-sensitive and commercial receptors would be ***less than significant with mitigation***.

Impact NO-2: Operation of the proposed project could generate substantial temporary or periodic increases in ambient noise levels in the project vicinity. ***(Less than Significant with Mitigation)***

Stationary Mechanical Equipment Noise

For purposes of evaluating impacts from fixed noise sources, such as HVAC equipment at future buildings, a substantial permanent increase in ambient noise levels (in excess of standards) is determined based on compliance with the noise ordinance (discussed above). Section 2909 of the noise ordinance, enforced by the health department during the day and the police department during the night, limits stationary-source noise and generally prohibits noise levels from any machine, device, or music or entertainment venue (or any combination) as follows:

- Section 2909(a) - For residential properties, no more than 5 dBA above the local ambient noise level, as measured at any point outside the property plane;
- Section 2909(b) - For commercial and industrial properties, no more than 8 dBA above the local ambient noise level, as measured at any point outside the property plane;
- Section 2909(c) – For public property, no more than 10 dBA above the local ambient noise level at a distance of 25 feet or more from the noise source (unless the noise source is being operated to serve or maintain the property or as otherwise provided in the noise ordinance); and
- Section 2909(d) – In order to prevent sleep disturbance, protect public health and prevent the acoustical environment from progressive deterioration due to the increasing use and influence of mechanical equipment, no fixed noise source may cause the noise level measured inside any sleeping or living room in any dwelling unit located on residential property to exceed 45 dBA between the hours of 10 p.m. and 7 a.m. or 55 dBA between the hours of 7 a.m. and 10 p.m. with windows open except where building ventilation is achieved through mechanical systems that allow windows to remain closed.

The proposed project consists of a mixed-use commercial and hotel high-rise building and a replacement fire station. Because there are no residential uses, the standards of section 2909(a) are not considered further in this analysis. The standards provided in section 2909(a) through (c) are limits at specified locations (e.g., at the property plane, or for public properties, 25 feet from the noise source) and do not refer to a receptor. Section 2909(d) establishes maximum noise levels for fixed sources (e.g., mechanical equipment) at sensitive receptors (i.e., 55 dBA from 7 a.m. to 10 p.m. and 45 dBA from 10 p.m. to 7 a.m.) inside any sleeping or living room in any dwelling unit on residential property to prevent sleep disturbance with windows open, except where building ventilation is achieved through mechanical systems that allow windows to remain closed.

Common stationary noise sources in San Francisco that typically do not result in a substantial temporary increase in ambient noise levels include emergency backup generator testing, provided a project proposes no more than two emergency back-up generators. For the proposed project, a 1,079 horsepower diesel generator would be installed for the high-rise building. The existing 200 horsepower generator at Fire Station 13 would be replaced by a new 268 horsepower generator. Both proposed generators would be located on the rooftops of the two buildings and within acoustical screened rooms to provide noise attenuation during testing and operation. Other than during emergencies when backup power would be needed, these generators would routinely operate for approximately one hour per week for testing purposes; therefore, due to the infrequent nature of the noise source, the proposed generators would not result in a substantial increase in ambient noise levels and these sources are not considered further.

Other stationary mechanical equipment at the project site, including building equipment, would also contribute to the ambient noise environment. The proposed project would introduce new stationary noise sources such as heating, ventilation, and air-conditioning (HVAC) equipment, exhaust fans, a chiller, and cooling towers. All equipment would be located on the rooftops of the two buildings. Operation of stationary mechanical equipment associated with the high-rise building would be subject to noise ordinance section 2909(b), which limits noise produced at commercial and industrial properties to no more than 8 dBA above the local ambient condition at any point outside the property plane. In addition, stationary mechanical equipment noise would be limited by section 2909(d) to 55 dBA during daytime hours (7 a.m. to 10 p.m.) and 45 dBA during nighttime hours (10 p.m. to 7 a.m.) at residential/hotel interiors.

Based on the preliminary design and equipment specification sheets provided by the project sponsor, **Table 12** and **Table 13** present combined noise levels from mechanical equipment associated with the high-rise building and replacement fire station and compare them to the applicable standards of section 2909(b).

NOISE ORDINANCE COMPLIANCE

The ambient (24-hour L_{90}) noise level measured at LT-2 on Merchant Street closest to the project site boundary is 54 dBA. This ambient noise level is used to determine what the noise ordinance noise limits are. Therefore, the applicable standard under section 2909(b) would be 62 dBA (54 dBA + 8 dBA) at the property planes of the high-rise building and the replacement fire station. Table 12 presents combined noise levels from all proposed mechanical equipment associated with the high-rise building at the northern, eastern, southern and western property planes of 530 Sansome Street and compares them to the section 2909(b) 62 dBA standard. As shown in Table 12, additional attenuation of up to 13 dBA would be required for the mechanical equipment on the rooftop of the high-rise building to meet the section 2909(b) standard. Therefore, this impact is potentially significant with respect to compliance with section 2909(b). The project sponsors would be required to implement **Mitigation Measure M-NO-2, Noise Analysis and Attenuation for Stationary Mechanical Equipment**, for the high-rise building.

Table 13 presents combined noise levels from all equipment on the replacement fire station rooftop at the northern, eastern, southern and western property planes of 447 Battery Street and compares these noise levels to the 62 dBA standard. As shown in Table 13, additional attenuation of up to 13 dBA would be required for the mechanical equipment on the rooftop of the replacement fire station to meet the section 2909(b) standard. Therefore, this impact is potentially significant with respect to compliance with section 2909(b). The project sponsors would be required to implement Mitigation Measure M-NO-2 for the replacement fire station.

> **Mitigation Measure M-NO-2: Noise Analysis and Attenuation for Stationary Mechanical Equipment.** Prior to issuance of any building permit, the project sponsor shall engage a qualified acoustical engineer to prepare a project-specific stationary mechanical equipment acoustical analysis based on the final design, equipment selection and locations for the high-rise building and replacement fire station. The analysis shall show compliance with the standards in section 2909(b) and 2909(d) for the mixed-use high-rise building and replacement fire station. Attenuation requirements for compliance and specifications for the acoustical screens shall be identified, if needed. All recommendations from the acoustical analysis necessary to ensure that noise sources would meet applicable requirements of the noise ordinance and/or not result in substantial increases in ambient noise levels shall be incorporated into the building design and operations. The project sponsor shall submit this analysis with the final mechanical equipment design to the ERO or the ERO's designee for approval.

Table 12 Noise Levels from Stationary Mechanical Equipment – Rooftop of the High-Rise Building at 530 Sansome Street

Mechanical Equipment [a]	Reference Noise Level (dBA)	Reference Distance (feet)	Combined Noise Level at Property Plane (dBA) [b]				Section 2909(b) Limit at Property Plane (dBA)	Reduction Needed to Meet Noise Ordinance Standard (dBA)			
			North	East	South	West		North	East	South	West
Air Cooled Pump Chiller (ASP-R-1)	62	30	71.9	74.7	71.9	73.1	62.0	9.9	12.7	9.9	11.1
Air Cooled Pump Chiller (ASP-R-2)	62	30									
Air Cooled Pump Chiller (ASP-R-3)	60	30									
Air Cooled Pump Chiller (ASP-R-4)	60	30									
Cooling Tower (CT-R-1)	85	5									
Cooling Tower (CT-R-2)	85	5									

SOURCES: Meyers+ Engineers, 2025; ESA, 2025.

NOTES:

a. Based on preliminary design drawings and equipment selection provided by the project sponsor.
b. Distance measured to the property plane of 530 Sansome Street in all directions.

Table 13 Noise Levels from Stationary Mechanical Equipment – Rooftop of Replacement Fire Station at 447 Battery Street

Mechanical Equipment [a]	Reference Noise Level (dBA)	Reference Distance (feet)	Combined Noise Level at Property Plane (dBA) [b]				Section 2909(b) Limit at Property Plane (dBA)	Reduction Needed to Meet Noise Ordinance Standard			
			North	East	South	West		North	East	South	West
Heat Recovery Ventilator (HRV-R-1)	76	3.3									
Rooftop Packaged Air Unit (Heat Pump, MAU-R-1)	71	3.3									
Exhaust Fan (EF-R-1)	67	3.3									
Exhaust Fan (EF-R-2)	69	3.3									
Exhaust Fan (EF-R-3)	59	3.3	74.6	55.9	58.7	65.1	62	12.6	-6.1 [c]	-3.3 [c]	3.1
Exhaust Fan (EF-R-4)	69	3.3									
Tailpipe Exhaust System Fan (TES-R-4)	76	3.3									
Makeup Fab (SF-R-1)	74	3.3									
VRF Outdoor Condensing Unit (VRF-R-1)	69	3.3									

SOURCES: Meyers+ Engineers, 2025; ESA, 2025.

NOTES:

a. Based on preliminary design drawings and equipment selection provided by the project sponsor.
b. Distance measured to the property line in all directions.
c. The negative values show the level below the noise ordinance limits.

With the implementation of Mitigation Measure M-NO-2, noise from stationary mechanical equipment associated with the high-rise building and replacement fire station would not result in a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in sections 2909(b). This impact would be ***less than significant with mitigation***.

INTERIOR NOISE LEVELS

To address sleep disturbance impacts through interior noise standards established by noise ordinance section 2909(d), the new receptors within the proposed high-rise building 5 feet away would be the closest receptors to the proposed fire station's mechanical equipment. The combined noise level from all mechanical equipment on the rooftop of the fire station at the western property plane adjacent to the proposed high-rise building at 530 Sansome Street is 65.1 dBA. Assuming a 25 dBA exterior to interior attenuation, the interior noise level would be 40.1 dBA, which would be below both the 55 dBA daytime and 45 dBA nighttime interior noise standards of section 2909(d). The Club Quarters hotel receptors 30 feet to the south would be the closest receptors to the proposed high-rise building's mechanical equipment. The combined noise level from all mechanical equipment on the rooftop of the high-rise building at the nearest property plane of the Club Quarters Hotel at 424 Clay Street is 66.4 dBA. Assuming a 25 dBA exterior to interior attenuation, the interior noise level would be 41.4 dBA, which would be below both the 55 dBA daytime and 45 dBA nighttime interior noise standards of section 2909(d). Therefore, stationary mechanical equipment noise from the proposed project would not exceed the section 2909(d) standards. This impact would be ***less than significant***, and no mitigation measures are necessary.

Operational Fire Station Noise

The existing fire station generates noise from sirens associated with emergency response calls and occasional truck maintenance operations. The proposed project would replace the existing station and relocate the vehicle access bays from Sansome Street to Merchant Street approximately 150 feet closer to the residential receptors at 5550 Battery Street. However, there would be no increase in number of employees, the service area, or the level of operations; therefore, there would be no increase in operational noise from the replacement fire station when compared to existing conditions. The proposed project would have a ***less-than-significant impact*** with respect to an increase in operational noise associated with the fire station.

Traffic Noise

The increase in traffic resulting from implementation of the proposed project would increase the ambient noise levels at sensitive uses located along roadways providing access to the project site. A doubling (100 percent increase) in traffic volumes would result in a 3 dBA change in the noise level, which is barely noticeable to the human ear. Therefore, any increase in traffic that would be less than a doubling in volume would not be noticeable to existing sensitive receptors in the project vicinity. Based on guidance from the San Francisco Noise Element, a 5 dBA increase in the ambient noise level is considered a substantial permanent increase in noise environments designated as satisfactory based on the Land Use Compatibility Chart for Community Noise in the General Plan Noise Element. In "conditionally acceptable," "conditionally unacceptable," or "unacceptable" noise environments based on the Land Use Compatibility Chart for Community Noise, a traffic noise increase greater than 3 dBA is considered a significant increase. For residential uses in San Francisco, the Land Use Compatibility Chart for Community Noise identifies 60 dBA as the level below which noise environments are designated as "satisfactory". Permanent increases in

transportation noise levels from operational traffic along roadway segments are evaluated based on these standards.

Based on peak hour traffic volumes on roadway segments in the vicinity affected by project traffic, the analysis presented below evaluates operational traffic noise levels using algorithms of the Federal Highway Administration Traffic Noise Model, considering the existing traffic volumes and existing plus project traffic projections from the project's transportation analysis. Noise level estimates were modeled for roadway segments of Washington Street, Sansome Street, Battery Street and Clay Street for the worst-case weekday afternoon peak hour and are presented in **Table 14**. These roadway segments would be most affected by project traffic; all other roadway segments in the project vicinity would experience lower increases in project related traffic noise.

As shown in Table 14, the addition of project traffic would result in a less than 3 dBA increase in associated noise levels along all roadway segments modeled. Traffic noise increase along all analyzed roadway segments would be well below the applicable thresholds detailed earlier and shown in Table 14. Therefore, operational traffic noise impacts associated with the proposed project would be ***less than significant***, and no mitigation measures are necessary.

Table 14 P.M. Peak Hour Traffic Noise Levels in the Project Vicinity

Roadway Segment [a,b]	Existing Noise Level (dBA)	Does Existing Noise Exceed Residential Compatibility Standard?	Applicable Standard	Existing plus Project Noise Level (dBA)	Difference between Existing plus Project and Existing (dBA)	Exceed Standard?
Washington Street between Montgomery and Sansome Streets	60.3	Yes	>3 dBA increase in an area >60 dBA L_{dn}	60.8	+0.5	No
Washington Street between Sansome and Battery Streets	59.4	No	>5 dBA increase in an area <60 dBA L_{dn}	59.5	+0.1	No
Washington Street between Battery and Davis Streets	59.6	No	>5 dBA increase in an area <60 dBA L_{dn}	59.7	+0.1	No
Sansome Street between Jackson and Washington Streets	57.6	No	>5 dBA increase in an area <60 dBA L_{dn}	58.5	+0.9	No
Sansome Street between Washington and Clay Streets	60.1	Yes	>3 dBA increase in an area >60 dBA L_{dn}	60.3	+0.2	No
Battery Street between Jackson and Washington Streets	61.4	Yes	>3 dBA increase in an area >60 dBA L_{dn}	62.1	+0.7	No
Battery Street between Washington and Clay Streets	61.1	Yes	>3 dBA increase in an area >60 dBA L_{dn}	61.6	+0.5	No
Battery Street between Clay and Sacramento Streets	61.1	Yes	>3 dBA increase in an area >60 dBA L_{dn}	61.5	+0.4	No
Clay Street between Sansome and Battery Streets	61.2	Yes	>3 dBA increase in an area >60 dBA L_{dn}	61.2	0.0	No

SOURCES: Fehr & Peers, 2024; ESA, 2024.

ABBREVIATIONS: dBA = A-weighted decibel; L_{dn} = day-night noise level

NOTES:

a. Road center to receptor distance is 15 meters (approximately 50 feet) for all roadway segments. Noise levels were determined using algorithms of the FHWA Traffic Noise Prediction Model.
b. Traffic speeds for all vehicle classes were set at 25 mph for all vehicle classes.

Impact NO-3: Construction of the proposed project could generate excessive groundborne vibration or groundborne noise levels. ***(Less than Significant with Mitigation)***

Construction activities would involve the use of heavy equipment that would generate construction vibration. Heavy equipment produces vibration, which can be felt through the ground and in adjacent structures. Construction-related vibration could result in building damage impacts to modern or historic structures and, if occurring during nighttime hours, can result in human annoyance impacts primarily through sleep disturbance. While construction vibration can also impact vibration-sensitive equipment, there are no hospitals or research uses near the project site that may contain vibration-sensitive equipment, such as magnetic resonance imaging equipment or high-resolution lithographic, optical, or electron microscopes. As such, the proposed project would not cause vibration that would affect vibration-sensitive equipment, and such potential impacts are not considered in the following analysis.

Once construction is complete, the proposed project would not involve the use of heavy machinery that is often associated with large commercial or industrial uses. Therefore, no sources of operational vibration are anticipated as part of the proposed project and this topic is not discussed further.

Building Damage Impacts from Construction Vibration

The effects of construction vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to structural damage at the highest levels. Project construction activities would include grading, excavation, shoring, and foundation construction, which would have the potential to generate low levels of groundborne vibration. As such, existing structures located in the immediate vicinity of the project site could be exposed to the generation of excessive groundborne vibration or groundborne noise levels related to construction activities.

Groundborne vibration levels resulting from construction activities at the project site were estimated using data published by the FTA.[69] Potential vibration levels resulting from construction of the proposed project are identified for off-site locations based on their distance from construction activities.

While the city has not adopted any thresholds for construction or operational groundborne vibration impacts, this analysis uses the vibration criteria established in Caltrans' *Transportation and Construction Vibration Guidance Manual* document to evaluate the impact of vibration on buildings. As shown in **Table 15**, the Caltrans guidelines for assessing vibration damage potential to various types of buildings range from 0.08 to 0.12 inch per second PPV for extremely fragile historic buildings, ruins, and ancient monuments to 0.50 to 2.0 inches per second PPV for modern industrial/commercial buildings.

[69] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018, https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf, accessed December 2024.

Table 15 Caltrans Vibration Guidelines for Potential Damage to Structures

Structure and Condition	Maximum PPV (inches per second)	
	Transient Sources [a]	Continuous/Frequent Intermittent Sources [b]
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

SOURCE: Caltrans, *Transportation and Construction Vibration Guidance Manual* (Table 19, p.38), September 2013.

ABBREVIATION: PPV = peak particle velocity

NOTES:

a. Transient sources create a single isolated vibration event, such as blasting or drop balls.
b. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

The proposed project would not involve types of construction activities that could generate excessive groundborne vibration, such as from impact pile-driving or blasting for building demolition. However, equipment used for grading and excavation activities, such as a vibratory compactor, caisson drill, and loaded trucks, could generate varying degrees of groundborne vibration, as shown in **Table 16**. The most frequently used method to describe vibration impacts on buildings is peak particle velocity (PPV). The PPV levels for the types of construction equipment that would operate during the construction of the proposed project, and vibration levels at the closest structures are identified in Table 16. Drilling and compaction activities at the project site could occur as close as 5 feet from the adjacent building at 401 Washington Street. As shown in Table 16, temporary groundborne vibration levels from the caisson drill could reach as high as approximately 0.523 inch per second PPV if drilling for piles occurs within 5 feet of the adjacent building, and as high as approximately 1.23 inches per second PPV if vibratory compaction were to occur within 5 feet of the adjacent building at 401 Washington Street. The proposed project would also require the use of heavy trucks for material deliveries and off-site hauling of excavated soils. The groundborne vibration from the loaded trucks within 5 feet of the adjacent buildings could reach 0.44 inch per second PPV.

The building at 401 Washington Street was constructed in 1983 and falls within the "modern industrial/commercial building" category with regard to the criteria presented in Table 15. As shown in Table 16, construction activities 5 feet from the adjacent buildings would result in vibration levels that would exceed the Caltrans criterion of 0.5 PPV applicable to modern structures. Construction activities near the existing structure at 401 Washington Street could therefore result in structural damage and this impact would be significant. Implementation of **Mitigation Measure M-NO-3, Protection of Adjacent Buildings/Structures and Vibration Monitoring during Construction**, would reduce the vibration impact on the building at 401 Washington Street.

Table 16 Vibration Levels from Construction Equipment

Equipment	Approximate PPV (inch per second) [a]				
	5 feet (401 Washington Street)	25 feet (FTA reference Level)	30 feet (424 Clay Street)	60 feet (555 Battery Street, 545 Sansome Street)	200 feet (617–619 and 630 Sansome Street)
Vibratory Compactor	1.23	0.21	0.16	0.08	0.02
Caisson Drill	0.523	0.089	0.068	0.033	0.009
Loaded Trucks	0.44	0.076	0.058	0.030	0.008

SOURCES: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018; Table compiled by ESA in 2024.

ABBREVIATION: PPV = peak particle velocity

NOTES:

a. Dark-gray-shaded and gray-shaded vibration levels exceed the criteria for historic and modern structures. Gray-shaded vibration levels exceed the criteria for historic structures only.

All other historic structures in the immediate vicinity (630 Sansome Street, 555 Battery Street, 545 Sansome Street, and 617–619 Sansome Street) are greater than 60 feet from the proposed construction areas. As indicated in Table 16, groundborne vibration levels would result in estimated PPV levels between 0.008 to 0.08 inch per second, well below the 0.25 PPV criterion for causing damage to historic structures. Therefore, construction activities would not result in structural damage to these buildings.

Mitigation Measure M-NO-3: Protection of Adjacent Buildings/Structures and Vibration Monitoring during Construction. Prior to issuance of the Pre-Construction Environmental Compliance Letter, the project sponsor shall submit a Pre-construction Survey and Vibration Management and Monitoring Plan to the ERO or the ERO's designee for approval. The plan shall identify all feasible means to avoid damage to the potentially affected building at 401 Washington Street. The project sponsor shall ensure that the following requirements of the Pre-Construction Survey and Vibration Management and Monitoring Plan are included in contract specifications, as necessary.

Pre-construction Survey. Prior to the start of any ground-disturbing activity, the project sponsor shall engage a consultant to undertake a pre-construction survey of the potentially affected building at 401 Washington Street. Since the potentially affected building is not historic, a structural engineer or other professional with similar qualifications shall document and photograph the existing conditions of the building. The project sponsor shall submit the survey to the ERO or the officer's designee for review and approval prior to the start of vibration-generating construction activity.

Vibration Management and Monitoring Plan. The project sponsor shall undertake a monitoring plan to avoid or reduce project-related construction vibration damage to the adjacent building at 401 Washington Street to ensure that any such damage is documented and repaired. Prior to issuance of the Pre-Construction Environmental Compliance Letter the project sponsor shall submit the Plan to the ERO for review and approval.

The Vibration Management and Monitoring Plan shall include, at a minimum, the following components, as applicable:

- *Maximum Vibration Level.* Based on the anticipated construction and condition of the affected building at 401 Washington Street, a qualified acoustical/vibration consultant in coordination with a structural engineer (or professional with similar qualifications) shall establish a maximum vibration level that shall not be exceeded at this building, based on existing conditions, character-defining features, soil conditions, and anticipated construction practices (common standards are a peak particle velocity [PPV] of 0.25 inch per second for historic and some old buildings, a PPV of 0.3 inch per second for older residential structures, and a PPV of 0.5 inch per second for new residential structures and modern industrial/commercial buildings).
- *Vibration-generating Equipment.* The plan shall identify all vibration-generating equipment to be used during construction (including but not limited to site preparation, clearing, demolition, excavation, shoring, foundation installation, and building construction).
- *Alternative Construction Equipment and Techniques.* The plan shall identify potential alternative equipment and techniques that could be implemented if construction vibration levels are observed in excess of the established standard (e.g., drilled shafts [caissons] could be substituted for driven piles, if feasible, based on soil conditions, or smaller, lighter equipment could be used in some cases).
- *Buffer Distances.* The plan shall identify buffer distances to be maintained based on vibration levels and site constraints between the operation of vibration-generating construction equipment and the potentially affected building and/or structure to avoid damage to the extent possible.
- *Vibration Monitoring.* The plan shall identify the method and equipment for vibration monitoring to ensure that construction vibration levels do not exceed the established standards identified in the plan.
  - Should construction vibration levels be observed in excess of the standards established in the plan, the contractor(s) shall halt construction and put alternative construction techniques identified in the plan into practice, to the extent feasible.
  - The qualified structural engineer or other professional with similar qualifications (for effects on non-historic buildings and/or structures) shall inspect each affected building and/or structure (as allowed by property owners) in the event the construction activities exceed the vibration levels identified in the plan.
  - The structural engineer or other professional with similar qualifications shall submit monthly reports to the ERO during vibration-inducing activity periods that identify and summarize any vibration level exceedances and describe the actions taken to reduce vibration.
  - If vibration has damaged nearby buildings and/or structures that are not historic, the structural engineer or other professional with similar qualifications shall immediately notify the ERO and prepare a damage report documenting the features of the building and/or structure that has been damaged.

  - Following incorporation of the alternative construction techniques and/or planning department review of the damage report, vibration monitoring shall recommence to ensure that vibration levels at each affected building and/or structure on adjacent properties are not exceeded.

- *Periodic Inspections.* The plan shall identify the intervals and parties responsible for periodic inspections. The qualified structural engineer or other professional with similar qualifications (for effects on historic and non-historic buildings and/or structures) shall conduct regular periodic inspections of each affected building and/or structure on adjacent properties (as allowed by property owners) during vibration-generating construction activity on the project site. The plan will specify how often inspections shall occur.
- *Repair Damage.* The plan shall also identify provisions to be followed should damage to any building and/or structure occur due to construction-related vibration. The building(s) and/or structure(s) shall be remediated to their pre-construction condition (as allowed by property owners) at the conclusion of vibration-generating activity on the site.

Vibration Monitoring Results Report. After construction is complete the project sponsor shall submit to the ERO a final report from the qualified structural engineer or other professional with similar qualifications. The report shall include, at a minimum, collected monitoring records, building and/or structure condition summaries, descriptions of all instances of vibration level exceedance, identification of damage incurred due to vibration, and corrective actions taken to restore damaged buildings and structures. The ERO shall review and approve the Vibration Monitoring Results Report.

Mitigation Measure M-NO-3 would require the project sponsor to conduct a pre-construction assessment of affected buildings, establish vibration limits not to be exceeded based on the condition of the building, monitor vibration levels during construction, and repair any vibration-related damage to the building's pre-construction condition. Implementation of Mitigation Measure M-NO-3 would reduce or eliminate the likelihood of structural damage impacts to the adjacent non-historic building at 401 Washington Street to ***less than significant with mitigation***.

Human Annoyance Impacts from Construction Vibration

Human annoyance impacts primarily result from vibration generated by nighttime construction activities resulting in sleep disturbance at sensitive receptors where people could sleep (residential uses, hotels and motels, hospitals, etc.). While the proposed project would involve some nighttime construction for extended concrete pours, no major vibration generating equipment is anticipated to be used for these activities. Therefore, the project's nighttime construction activities are not anticipated to result in sleep disturbance impacts to the receptors in nearby residential and hotel uses. This impact would be ***less than significant***, and no mitigation measures are necessary.

Impact C-NO-1: The proposed project, in combination with cumulative projects, would not result in significant cumulative noise and vibration impacts. ***(Less than Significant with Mitigation)***

Construction Noise

Construction activities in the vicinity of the project site, such as excavation, grading, or building construction associated with other cumulative projects in the area, would occur on a temporary and intermittent basis. Based on the list of cumulative projects in the area, all cumulative projects are located beyond 900 feet from the project site except for the following four projects:

- 545 Sansome Street (60 feet west of the project site)
- 400 California Street (700 feet south of the project site)
- 100 Columbus Avenue (800 feet northwest of the project site)
- 100 Clay Street (800 feet east of the project site)

Construction-related noise is not likely to substantially increase ambient noise levels at locations greater than a few hundred feet from each project site. All four cumulative projects identified above are located further away from the project's nearest residential receptor (500 Battery Street) than the project and, as such, will contribute less construction noise. Of these four projects, the only project likely to combine with noise from construction of the proposed project to result in a cumulative construction noise impact is 545 Sansome Street. The 545 Sansome Street project proposes to demolish a single-story retail building at 501–505 Washington Street and a concrete capped, below-grade story at 517 Washington Street and construct an office addition to the existing nine-story building.

As shown in Table 9, p. 73, maximum daytime construction noise 150 feet from the project at the nearest residential receptor (Gateway Apartments) is estimated to be 75 dBA. Construction activities associated with 545 Sansome Street would take place approximately 450 feet from the Gateway Apartments. Therefore, even if 545 Sansome Street were to generate similar construction noise levels as the proposed project, the attenuated noise level at Gateway Apartments would be 65.2 dBA. Assuming that the construction schedule for 545 Sansome Street would overlap with the proposed project, the combined noise levels from the two projects at Gateway Apartments would be approximately 75.4 dBA, which would not exceed the FTA's 90 dBA criteria for daytime construction noise at a residential receptor but would result in an increase of greater than 10 dBA over existing levels at the nearest receptor (65 dBA at LT-1). The proposed project in combination with these cumulative projects has the potential to result in a significant cumulative impact.

As detailed under Impact NO-1, implementation of Mitigation Measure M-NO-1 would reduce the project's construction noise levels, and the cumulative noise increase to less than 10 dBA over ambient noise levels. Therefore, the proposed project's contribution to a significant cumulative construction noise impact would be ***less than significant with mitigation***.

With respect to nighttime construction, 545 Sansome Street is located approximately 240 feet from the Club Quarters Hotel at 424 Clay Street, the nearest nighttime receptor to the proposed project site. Conservatively assuming that 545 Sansome Street would generate similar noise levels from nighttime construction as the proposed project, the attenuated noise level at 424 Clay Street from nighttime construction would be approximately 65.2 dBA. This assumes that concrete trucks would operate on Sansome Street. Assuming that the construction schedule for 545 Sansome Street would overlap with the proposed project, the combined

noise level from the two projects at 424 Clay Street would be approximately 82.1 dBA, which would exceed the FTA's 80 dBA criteria for nighttime construction noise at a noise-sensitive receptor and also result in an increase of greater than 5 dBA over existing level (66 dBA at LT-2) as required by section 2908 of the noise ordinance. The combined nighttime noise from the two projects would also exceed the 45 dBA interior noise standard at 424 Clay Street to avoid sleep disturbance, which would be a significant cumulative impact. However, as discussed under Impact NO-1, implementation of Mitigation Measure M-NO-1 would reduce nighttime noise associated with the proposed project. The proposed project's contribution to the significant cumulative nighttime noise level would be ***less than significant with mitigation***.

Construction Vibration

The cumulative context for construction vibration impacts is the immediate area surrounding the project site. Of the cumulative projects identified within 0.25 mile of the project site, none of the projects would be located within 25 feet of the project site. Therefore, the proposed project would not combine with cumulative projects to create a significant vibration impact. This impact would be ***less than significant***, and no mitigation measures are necessary.

Traffic Noise

Localized traffic noise would increase in conjunction with foreseeable residential and commercial growth in the project vicinity. Therefore, the cumulative context for operational traffic noise includes the roadways in the vicinity of the project site and cumulative development.

Peak afternoon traffic volumes on segments of Washington Street, Sansome Street, Battery Street and Clay Street were analyzed in the cumulative context and the results are presented in **Table 17**. As shown in Table 17, cumulative plus project traffic noise levels would increase by less than the thresholds identified over existing traffic noise levels along all analyzed segments. Therefore, cumulative traffic noise impacts would be ***less than significant***, and no mitigation measures are necessary.

Fixed Mechanical Equipment Noise

Proposed project-related stationary-source noise, such as from HVAC equipment, exhaust fans, or emergency generators, would not substantially increase ambient noise levels at locations that are more than a few hundred feet from the project site. The project at 545 Sansome Street is the only cumulative development project close enough (within 500 feet) to consider the potential to result in a cumulative operational noise impact.

The 545 Sansome Street project proposes to demolish a single-story retail building at 501–505 Washington Street and construct an office addition to the existing nine-story building. The existing building at 545 Sansome already contains operational rooftop HVAC equipment and mechanical penthouses; therefore, this project is not expected to further contribute cumulatively to mechanical equipment noise that has not already been captured in the monitored noise levels for the project area. Because the proposed project would have equipment that would be located on the rooftops of the two proposed buildings of varying heights and because the equipment would be shielded with acoustic screens and enclosures, cumulative operational noise from the projects' stationary sources is not anticipated to combine and result in a significant cumulative impact and would comply with all applicable standards of noise ordinance section 2909.

Therefore, the proposed project would result in ***less-than-significant*** cumulative impacts related to operational noise, and no mitigation measures are necessary.

Table 17 Cumulative P.M. Peak Hour Traffic Noise Levels in the Project Vicinity

Roadway Segment [a,b]	Existing Noise Level (dBA)	Does Existing Noise Exceed Residential Compatibility Standard?	Applicable Standard	Cumulative plus Project Noise Level (dBA)	Difference between Cumulative Plus Project and Existing (dBA)	Exceed Applicable Standard?
Washington Street between Montgomery and Sansome Streets	60.3	Yes	>3 dBA increase in an area >60 dBA L_{dn}	61.7	+1.4	No
Washington Street between Sansome and Battery Streets	59.4	No	>5 dBA increase in an area <60 dBA L_{dn}	60.7	+1.3	No
Washington Street between Battery and Davis Streets	59.6	No	>5 dBA increase in an area <60 dBA L_{dn}	61.0	+1.4	No
Sansome Street between Jackson and Washington Streets	57.6	No	>5 dBA increase in an area <60 dBA L_{dn}	60.0	+2.4	No
Sansome Street between Washington and Clay Streets	60.1	Yes	>3 dBA increase in an area >60 dBA L_{dn}	63.0	+2.9	No
Battery Street between Jackson and Washington Streets	61.4	Yes	>3 dBA increase in an area >60 dBA L_{dn}	64.0	+2.6	No
Battery Street between Washington and Clay Streets	61.1	Yes	>3 dBA increase in an area >60 dBA L_{dn}	63.7	+2.6	No
Battery Street between Clay and Sacramento Streets	61.1	Yes	>3 dBA increase in an area >60 dBA L_{dn}	62.9	+1.8	No
Clay Street between Sansome and Battery Streets	61.2	Yes	>3 dBA increase in an area >60 dBA L_{dn}	62.0	+0.8	No

SOURCES: Fehr & Peers, 2024; ESA, 2024.

ABBREVIATIONS: dBA = A-weighted decibel; L_{dn} = day-night noise level

NOTES:

a. Road center to receptor distance is 15 meters (approximately 50 feet) for all roadway segments. Noise levels were determined using algorithms of the FHWA Traffic Noise Prediction Model.
b. Traffic speeds for all vehicle classes were set at 25 mph for all vehicle classes.

E.7 Air Quality

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
7. AIR QUALITY. Would the project:					
a) Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal, state, or regional ambient air quality standard?	☒	☐	☐	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☒	☐	☐	☐	☐

Implementation of the proposed project could have the potential to result in significant impacts related to air quality; therefore, this topic is further analyzed in draft EIR Section 3.B, Air Quality.

E.8 Greenhouse Gas Emissions

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
8. GREENHOUSE GAS EMISSIONS. Would the project:					
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐	☐
b) Conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐	☐

Greenhouse gas (GHG) emissions and global climate change represent cumulative impacts. GHG emissions cumulatively contribute to the significant adverse environmental impacts of global climate change. No single project could generate enough GHG emissions to noticeably change the global average temperature; instead,

the combination of GHG emissions from past, present, and future projects have contributed and will continue to contribute to global climate change and its associated environmental impacts. For this reason, the analysis of the proposed project's impact on climate change focuses on the project's contribution to cumulatively significant GHG emissions and this section does not include an individual project-specific impact statement.

On April 20, 2022, the air district adopted updated GHG thresholds.[70] Consistent with the CEQA Guidelines in sections 15064.4 and 15183.5, which address the analysis and determination of significant impacts from a proposed project's GHG emissions, the updated thresholds for land use projects, such as the proposed project, maintain the air district's previous GHG threshold that allow projects that are consistent with a GHG reduction strategy to conclude that the project's GHG impact would be less than significant. The updated thresholds also include an alternative performance-based threshold; if a project meets all of the following criteria, the project would result in a less-than-significant GHG impact:[71]

- Project does not include natural gas and would not result in wasteful, inefficient, or unnecessary energy use; and
- Project would result in VMT per capita that is 15 percent below the regional average and meets the California Green Building Standards Code (CALGreen) Tier 2 off-street electric vehicle requirement.

San Francisco's 2023 GHG Reduction Strategy Update[72] presents a comprehensive assessment of policies, programs, and ordinances that collectively represent San Francisco's GHG reduction strategy in compliance with the air district's guidelines and CEQA Guidelines. These GHG reduction actions have resulted in a 48 percent reduction in GHG emissions in 2022 compared to 1990 levels,[73] which far exceeds the goal of 2020 GHG emissions equaling those in 1990 set in Executive Order S-3-05[74] and the California Global Warming Solutions Act.[75] The City has also met and exceeded the 2030 target of 40 percent reduction below 1990 levels set in the California Global Warming Solutions Act of 2016[76] and the air district's 2017 Clean Air Plan[77] more than 10 years before the target date.

The fire department developed a departmental climate action plan (DepCAP) that was submitted in 2014, which reports on the City's fiscal year 2012–2013 data for its GHG inventory. To further reduce emissions, the fire department has committed to focusing efforts on (1) fire station facility upgrades; (2) modernizing the

[70] Bay Area Air Quality Management District, *CEQA Thresholds and Guidelines Update,* https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed October 8, 2024.
[71] A project need only demonstrate compliance with one of the thresholds (consistency with a GHG reduction strategy or performance criteria) to find that the project's GHG emissions are less than significant.
[72] San Francisco Planning Department, *2023 Greenhouse Gas Reduction Strategy Update,* October 2023, https://sfplanning.org/project/greenhouse-gas-reduction-strategies, accessed October 8, 2024.
[73] San Francisco Department of the Environment, *San Francisco's 2022 Carbon Footprint*, https://sfenvironment.org/carbonfootprint, accessed December 23, 2024.
[74] Office of the Governor, Executive Order S-3-05, June 1, 2005, https://www.library.ca.gov/wp-content/uploads/GovernmentPublications/executive-order-proclamation/5129-5130.pdf, accessed October 8, 2024.
[75] California Legislative Information, Assembly Bill 32, September 27, 2006, http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0001-0050/ab_32_bill_20060927_chaptered.pdf, accessed October 8, 2024.
[76] California Legislative Information, Senate Bill 32, September 8, 2016, https://leginfo.legislature.ca.gov/faces/billPdf.xhtml?bill_id=201520160SB32&version=20150SB3288CHP, accessed October 8, 2024.
[77] Bay Area Air Quality Management District, *Clean Air Plan*, September 2017, http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans, accessed October 8, 2024.

vehicle fleet by acquiring efficient replacement vehicles; (3) converting to lower emission fuels; and (4) modifying employee behavior to reduce energy, fuel, and water usage.[78]

San Francisco's GHG reduction goals, updated in July 2021 by ordinance 117-02,[79] are consistent with, or more aggressive than, the long-term goals established under executive orders S-3-05,[80] B-30-15,[81] B-55-18,[82] and the California Global Warming Solutions Act of 2016.[83] The updated GHG ordinance demonstrates the City's commitment to continued GHG reductions by establishing targets for 2030, 2040, and 2050 and setting other critical sustainability goals. In particular, the updated ordinance sets a goal to reach net-zero sector-based GHG emissions by 2040 and sequester any residual emissions using nature-based solutions.[84] Thus, the City's GHG reduction goal is consistent with the state's long-term goal of reaching carbon neutrality by 2045. The updated GHG ordinance required the San Francisco Environment Department to prepare and submit to the mayor a climate action plan (CAP) by December 31, 2021. The CAP, which was released on December 8, 2021, and will be updated every five years, carries forward the efforts of the City's previous CAPs and charts a path toward meeting the GHG commitments of the Paris Agreement (e.g., limit global warming to 1.5 degrees Celsius) as well as the reduction targets adopted in the GHG ordinance.

In summary, the CEQA Guidelines and air district–adopted GHG thresholds allow projects consistent with an adopted GHG reduction strategy to determine a less-than-significant GHG impact. San Francisco has a GHG reduction strategy that is consistent with near and long-term state and regional GHG reduction goals and is effective because the City has demonstrated its ability to meet state and regional GHG goals in advance of target dates. Therefore, projects that are consistent with San Francisco's GHG reduction strategy would not result in GHG emissions that would have a significant effect on the environment, and would not conflict with state, regional, or local GHG reduction plans and regulations.

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[78] San Francisco Fire Department, Departmental Climate Action Plan, Fiscal Year 2012–2013, April 11, 2014, https://sfenvironment.org/sites/default/files/fliers/files/sfe_cc_2014_sffd_cap_fy1213.pdf, accessed November 11, 2024.

[79] San Francisco Board of Supervisors, *Ordinance No. 117-21, File No. 210563*. July 20, 2021, https://sfbos.org/sites/default/files/o0117-21.pdf, accessed October 8, 2024. San Francisco's GHG reduction goals are codified in section 902(a) of the Environment Code and include the following goals: (1) By 2030, a reduction in sector-based GHG emissions of at least 61 percent below 1990 levels; (2) by 2030, a reduction in consumption-based GHG emissions equivalent to a 40 percent reduction compared to 1990 levels; (3) by 2040, achievement of net-zero sector-based GHG emissions by reducing such emissions by at least 90 percent compared to 1990 levels and sequestering any residual emissions; and (4) by 2050, a reduction in consumption-based GHG emissions equivalent to an 80 percent reduction compared to 1990 levels.

[80] Executive Order S-3-05 sets forth a goal of an 80 percent reduction in GHG emissions by 2050. San Francisco's goal of net zero sector-based emissions by 2040 requires a greater reduction of GHG emissions.

[81] Office of the Governor, *Executive Order B-30-15*, April 29, 2015, https://www.ca.gov/archive/gov39/2015/04/29/news18938/, accessed October 8, 2024. Executive Order B-30-15 sets a state GHG emissions reduction goal of 40 percent below 1990 levels by 2030. San Francisco's 2030 sector-based GHG reduction goal of 61 percent below 1990 levels requires a greater reduction of GHG emissions.

[82] Office of the Governor, *Executive Order B-55-18*, September 18, 2018, https://www.ca.gov/archive/gov39/wp-content/uploads/2018/09/9.10.18-Executive-Order.pdf, accessed: October 8, 2024. Executive Order B-55-18 establishes a statewide goal of achieving carbon neutrality as soon as possible, but no later than 2045, and achieving and maintaining net negative emissions thereafter. San Francisco's goal of net-zero sector-based emissions by 2040 is a similar goal but requires achievement of the target five years earlier.

[83] Senate Bill 32 amends California Health and Safety Code Division 25.5 (also known as the California Global Warming Solutions Act of 2006) by adding section 38566, which directs that statewide greenhouse gas emissions be reduced by 40 percent below 1990 levels by 2030. San Francisco's 2030 sector-based GHG reduction goal of 61 percent below 1990 levels requires a greater reduction of GHG emissions.

[84] Nature-based solutions are those that remove remaining emissions from the atmosphere by storing them in natural systems that support soil fertility or employing other carbon farming practices.

Impact C-GG-1: The proposed project would generate greenhouse gas emissions, but not at levels that would result in a significant impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing greenhouse gas emissions. ***(Less than Significant)***

The proposed project would increase the intensity of the use of the site by constructing a 4-story replacement fire station and a separate high-rise building up to 41 stories tall containing approximately 7,405 square feet of retail/restaurant space, between approximately 344,840 and 390,035 square feet of office space, approximately 27,195 square feet of office amenity space, between approximately 127,710 and 188,820 square feet of hotel space for approximately 100 to 200 hotel rooms, and approximately 10,135 square feet of ballroom/pre-function/meeting space.

Thus, the proposed project would contribute to the cumulative effects of climate change by directly or indirectly emitting GHGs during construction and operation. Direct operational effects from the proposed project include the GHG emissions from new vehicle trips and stationary sources (e.g., backup diesel generators). Indirect effects include the GHG emissions from electricity providers, including the generation of the energy required to pump, treat, and convey water; other GHG emissions are associated with waste removal, waste disposal, and landfill operations.

The proposed project would be subject to regulations adopted to reduce GHG emissions as identified in the GHG reduction strategy and demonstrated in the GHG checklist completed for the proposed project.[85,86] For example, compliance with the City's Commuter Benefits Ordinance, Emergency Ride Home Program, transportation management programs, Transportation Sustainability Program, bicycle parking requirements, and low-emission car parking requirements would reduce the proposed project's transportation-related emissions. These regulations reduce GHG emissions from single-occupancy vehicles by promoting the use of alternative transportation modes with zero or lower GHG emissions on a per capita basis.

The proposed project would be required to comply with the energy efficiency requirements of the City's green building code, Stormwater Management Ordinance, and Water Efficient Irrigation Ordinance, which would promote energy and water efficiency, thereby reducing the proposed project's energy-related GHG emissions.[87]

The proposed project's waste-related emissions would be reduced through compliance with the City's Recycling and Composting Ordinance, Construction and Demolition Debris Recovery Ordinance, Construction and Demolition Debris Recycling Ordinance, and green building code requirements. These regulations reduce the amount of materials sent to a landfill, reducing GHGs emitted by landfill operations. These regulations also promote reuse of materials, conserving their embodied energy[88] and reducing the energy required to produce new materials.

Compliance with the City's street tree planting requirements would serve to increase carbon sequestration. The proposed project would include nine new street trees along Sansome and Washington streets and 10 new street trees along Merchant Street. Other regulations, including those limiting refrigerant emissions and

[85] San Francisco Planning Department, *Greenhouse Gas Analysis: Compliance Checklist for 447 Battery Street,* March 5, 2025.
[86] San Francisco Planning Department, *Greenhouse Gas Analysis: Compliance Checklist for 530 Sansome Street,* March 5, 2025.
[87] Compliance with water conservation measures reduce the energy (and GHG emissions) required to convey, pump, and treat water required for the project.
[88] Embodied energy is the total energy required for the extraction, processing, manufacture, and delivery of building materials to the building site.

the air district's wood-burning regulations, would reduce emissions of GHGs and black carbon, respectively. Regulations requiring low-emitting finishes would reduce volatile organic compounds.[89]

The project sponsors are required to comply with these regulations, which have proved effective as San Francisco has reduced its GHG emissions by 48 percent below 1990 levels, which far exceeds statewide and regional 2020 GHG reduction targets. Furthermore, the City's GHG emission reductions in 2019 also met statewide and regional 2030 targets more than 10 years in advance of the target year. Therefore, because the proposed project would be subject to regulations adopted to reduce GHG emissions, the proposed project would be consistent with San Francisco's GHG reduction strategy and would not generate significant GHG emissions nor conflict with state, regional, and local GHG reduction plans and regulations.

The proposed project also meets the air district's performance based GHG threshold. As demonstrated in the GHG checklist for the proposed project, the project does not include natural gas infrastructure and the off-street parking spaces would be electric vehicle capable, meeting the 2022 CALGreen Tier 2 standards for electric vehicle infrastructure. Furthermore, as discussed in topic E.5, Transportation and Circulation, the proposed project would be located in a VMT-efficient area where VMT per capita is more than 15 percent below the regional average for residential (hotel) and office land uses. Lastly, as discussed in topic E.19, Energy, the proposed project would not result in a wasteful, inefficient, or unnecessary use of energy.

Therefore, because the proposed project would be consistent with the City's GHG reduction strategy as well as the air district's performance criteria related to GHGs, in addition to the GHG reduction goals of executive orders S-3-05, B-30-15, B-55-18, the California Global Warming Solutions Act of 2016, and the clean air plan, the proposed project would not conflict with these plans. Additionally, the proposed project would involve the construction of a replacement fire station, which would result in an upgraded, more energy efficient fire station, consistent with the fire department's DepCAP strategy of reducing fire department emissions through fire station facility upgrades. As such, the proposed project impact would be ***less than significant*** with respect to GHG emissions, and no mitigation measures are necessary.

E.9 Wind

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
9. WIND. Would the project:					
a) Create wind hazards in publicly accessible areas of substantial pedestrian use?	☐	☒	☐	☐	☐

The information in this section is based on a pedestrian wind study prepared for the proposed project, which is included as Appendix G to this EIR. Average wind speeds in the city are the highest in the summer and

[89] While not a GHG, volatile organic compounds are precursor pollutants that form ground level ozone. Increased ground level ozone is an anticipated effect of future global warming that would result in added health effects locally. Reducing volatile organic compound emissions would reduce the anticipated local effects of global warming.

lowest in winter. However, the strongest peak wind speeds occur in winter (wind direction is also most variable in the winter). Wind speeds are diurnal; that is, they fluctuate throughout each day, with the highest average wind speeds generally occurring during the mid-afternoon and the lowest in the early morning. However, during winter storm conditions—which typically generate the strongest peak wind speeds—diurnal variation is generally not present.[90]

In the city, westerly to northwesterly winds are generally the most frequent and strongest winds; however, the strongest peak wind speeds occur in the winter when wind direction is most variable and strong southerly and southeasterly winds, which are frequent during the approach of a winter storm, occur.[91] Of the 16 primary wind directions, five have the greatest frequency of occurrence: the northwest, west-northwest, west, west-southwest, and southwest.[92] Additionally, most of measured winds over 13 mph—the speed at which pedestrians begin to feel discomfort—blow from these directions.

Approach to Analysis

The wind assessment included wind tunnel tests conducted using a 1:300 scale model of the proposed project and surrounding buildings within an approximately 1,200-foot radius centered on the project site, which is sufficient to encompass the proposed project and nearby buildings that could affect winds on and near the site.

Using 36 wind directions, wind tunnel tests were conducted for the project site and vicinity using the following scenarios:

- Existing
- Existing plus proposed project
- Cumulative conditions

The scale model, which was equipped with permanently mounted wind speed sensors, was placed inside an atmospheric boundary layer wind tunnel. The model had 68 wind speed sensors (study test points) to measure mean and gust wind speeds at an equivalent full-scale height of 5 feet above ground to capture pedestrian conditions. Locations for study test points were selected to indicate how the general flow of winds would be directed around the project site. The locations of test points are primarily publicly accessible sidewalks and open spaces under with-project conditions, which are assumed to be areas of substantial pedestrian use.

Consistent with current planning department practice, the wind tunnel test relied on long-term wind data generated in 2021 using a Weather Research and Forecasting model as the basis of the analysis. The resulting wind statistics were combined with the wind tunnel data to predict the frequency of the occurrence of full-scale wind speeds in the vicinity of the project site.

Tall buildings and exposed structures can strongly affect the wind environment for pedestrians. A building that stands alone or is much taller than the surrounding buildings can intercept and redirect winds that

[90] Arens, E., et. al., "Developing the San Francisco Wind Ordinance and its Guidelines for Compliance," *Building and Environment,* Vol. 24, No. 4, pp. 297–303, 1989.
[91] Wind directions are reported as directions from which the winds blow.
[92] The 16 primary wind directions, clockwise beginning with west winds, are west, west-northwest, northwest, north-northwest, north, north-northeast, northeast, east-northeast, east, east-southeast, southeast, south-southeast, south, south-southwest, southwest, and west-southwest.

might otherwise flow overhead and bring them down the vertical face of the building to ground level, where they create ground-level wind and turbulence (variability in wind speed and pressure).

Planning code section 148, Reduction of Ground-Level Wind Currents in C-3 districts, requires buildings to be shaped so as not to cause ground-level wind currents to exceed, more than 10 percent of the time, the pedestrian comfort criteria of 11 mph in substantial pedestrian use areas, and 7 mph in public seating areas. Similarly, the planning code requires that buildings not cause equivalent wind speeds (wind speeds adjusted for the effects of turbulence) to reach or exceed the hazard level of 26 mph for a single full hour of the year.[93] With respect to wind hazards, section 148 states that new buildings and additions may not cause wind speeds that meet or exceed the hazard criterion, and no exception may be granted for buildings that result in winds that meet or exceed the hazard criterion. Accordingly, for the purposes of CEQA review, the planning department has determined that the pedestrian wind hazard criterion set forth in the San Francisco Planning Code is the standard for determining whether pedestrian winds would "substantially affect public areas" and therefore would result in a significant impact. Therefore, the CEQA significance criterion for wind is whether a project would meet or exceed the wind hazard speed (36 mph, 1-minute average) for a single hour of the year. With respect to conditions in which the wind hazard criterion is exceeded under existing conditions, a significant impact would typically result if the total number of locations where exceedances would occur would increase. This is because a CEQA evaluation is based on the change from existing conditions.

Impact WI-1: The proposed project would result in a net increase in wind hazards in publicly accessible areas of substantial pedestrian use. ***(Less than Significant with Mitigation)***

The project site is at the northern edge of Downtown San Francisco. The closest tall buildings include the Transamerica Pyramid, an 850-foot-tall, 48-story building located one-half block to the west at 600 Montgomery Street; the 20-story, approximately 245-foot-tall office building at 505 Sansome Street, southwest across Sansome Street; and the 15-story, 225-foot-tall U.S. Appraisers' Building north across Washington Street at 630 Sansome Street. Other nearby buildings include a nine-story, approximately 105-foot-tall, office building at 545 Sansome Street, directly west across Sansome Street; and an eight-story, approximately 110-foot-tall office building at 500 Sansome Street. Half a block east of the project site is a seven-story, 85-foot-tall office building at 423 Washington Street. The project site is generally flat with a ground surface elevation of approximately 3 feet above mean sea level.

Existing wind conditions in the vicinity of the project site are generally windy. As shown in **Table 18**, the wind hazard criterion speed of 36 mph (averaged over one minute) is exceeded at three of 68 test points. Across all test points, the existing average wind speed exceeded 1 hour per year is 26 mph. The total number of hours per year that the hazard criterion is exceeded under existing conditions is 6 hours.

[93] The wind hazard criterion of 26 mph is derived from a wind condition that would generate a 3-second gust of wind at 20 meters per second (45 mph), a commonly used guideline for wind safety. This wind speed, on an hourly basis, is 26 mph averaged for a full hour. However, because the Civic Center Federal Building wind data were collected at one-minute averages, the 26-mph one-hour average wind speed is converted to a corresponding one-minute average wind speed of 36 mph, which is then used to determine compliance with the planning code hazard criterion. (Arens, E. et al., "Developing the San Francisco Wind Ordinance and its Guidelines for Compliance," *Building and Environment*, Vol. 24, No. 4, pp. 297–303, 1989.) That is, when stated on the same basis as the comfort criteria winds, the hazard criterion speed is a one-minute average of 36 mph. Accordingly, all hazard wind speeds in this analysis are presented based on the 36-mph wind speed averaged over one-minute, and the hazard criterion is based on 36 mph. Therefore, the wind test results are comparable between the comfort and hazard analyses.

Table 18 Pedestrian-Level Wind Impacts for the Proposed Project

Scenario	Wind Hazard (Criterion = 36 MPH)	
	Total Hours	Total Exceedances/Number of Test Locations
Existing	6	3/68
Proposed Project	17	5/68
Proposed Project (Mitigated)	10	3/68
Cumulative	12	3/68

SOURCE: RWDI, 2025.

With implementation of the proposed project, which includes wind-reducing canopies along portions of the Sansome, Washington, and Merchant street's façades of the high-rise building (described in draft EIR Chapter 2, p. 2-28), the number of test points where the wind hazard criterion would be exceeded would increase from three to five locations. Two new exceedances of the hazard criterion would occur on Sansome Street, along the project's western frontage, and two additional new exceedances would occur on the south side of Washington Street near the corner of Battery Street. However, the project would eliminate two existing wind hazard exceedances, on the east side of Battery Street north of Washington Street, for a net increase of two hazard exceedances. The project would increase the number of hours of wind hazard exceedance from 6 hours to 17 hours, and would increase the average wind speed exceeded one hour per year from 26 mph to 29 mph. As stated above, when the wind hazard criterion is exceeded under existing conditions, the significance determination is made on the basis of whether the number of locations where exceedances would occur would increase. Because it would result in an increase of two wind hazard exceedances, the proposed project would have a significant impact and mitigation is required.

Additional wind testing was undertaken to evaluate mitigation schemes. Through this additional analysis, it was determined that planting of trees along the project's Sansome, Washington, and Merchant street frontages would reduce the number of exceedances of the wind hazard criterion from five exceedances to three exceedances, and would reduce the number of hours of wind hazard exceedance from 17 hours to 10 hours; the average wind speed exceeded one hour per year would remain at 29 mph. There would be three remaining hazard exceedances: one on the east side of Sansome Street and two on the south side of Washington Street. The project sponsors would be required to implement **Mitigation Measure M-WI-1, Tree Planting and Maintenance**.

> **Mitigation Measure M-WI-1: Tree Planting and Maintenance.** In order to reduce wind hazard exceedances on and around the project site the project sponsor must plant and maintain in perpetuity a minimum of 14 street trees along the frontages of the project site; including seven on the south side of Washington Street, two on the east side of Sansome Street, and five on the north side of Merchant Street. The project sponsor shall also prepare a maintenance plan for review and approval by the planning department to ensure maintenance in perpetuity of the streetscape features required pursuant to this measure. The maintenance plan shall also be reviewed and

approved by public works with respect to streetscape features (landscaping) in the public right-of-way.

With implementation of Mitigation Measure M-WI-1, the proposed project would not increase the number of locations where the wind hazard criterion would be exceeded, compared to existing conditions. Therefore, the proposed project's wind impact would be ***less than significant with mitigation***.

Impact C-WI-1: The proposed project, in combination with cumulative projects, would alter wind in a manner that substantially affects public areas. ***(Less than Significant with Mitigation)***

As shown in Table 18, with the introduction of cumulative development (projects at 545 Sansome Street, 875 Sansome Street, 900 Sansome Street, 955 Sansome Street, and 425 Broadway), along with the proposed project with mitigation, the number of exceedances of the hazard criterion would remain at three locations and the locations would be the same as those with the mitigated project. The number of hours during which the hazard criterion would be exceeded would increase slightly from mitigated project conditions, from 10 hours to 12 hours; the average wind speed exceeded one hour per year would remain at 29 mph. Because there would be no increase in the number of wind hazard locations from conditions with the mitigated project, no further mitigation measures would be required beyond Mitigation Measure M-WI-1, and the cumulative impact would be ***less than significant with mitigation***.

E.10 Shadow

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
10. SHADOW. Would the project:					
a) Create new shadow that substantially and adversely affects the use and enjoyment of publicly accessible open spaces?	☐	☐	☒	☐	☐

The information in this section is based on a shadow analysis report prepared for the proposed project, which is included as Appendix F.

Impact SH-1: The proposed project would not create new shadow that substantially and adversely affects the use and enjoyment of publicly accessible open spaces. ***(Less than Significant)***

Section 295 of the San Francisco Planning Code was adopted through voter approval of Proposition K in November 1994 to protect certain public open spaces from shadowing by new structures. Section 295 effectively limits shadow on city parks, requiring that specific findings be made before buildings greater than 40 feet in height can be approved that would shade property under the jurisdiction of or designated to be acquired by the San Francisco Recreation and Park Commission. Compliance with section 295 occurs

independent of the CEQA process. While the shadow analysis report depicts shadow on Washington Square, Willie "Woo Woo" Wong Playground, Maritime Plaza, Sue Bierman Park, Transamerica Redwood Park, Syndey G. Walton Square, and streets and sidewalks in the vicinity of the project site, shadow impacts are quantified for the first four listed parks and not for Transamerica Redwood Park or Sydney G. Walton Square because only the former are under the jurisdiction of the San Francisco Recreation and Park Department, and thus subject to section 295. Therefore, the analysis in this section includes quantification of shadow impacts for Washington Square, Willie "Woo Woo" Wong Playground, Maritime Plaza, and Sue Bierman Park, only. However, the impact determination under CEQA is based on qualitative criteria adopted by the recreation and park commission and planning commission. The qualitative criteria include evaluation of a proposed project's shadow impact during the time of day and time of year when shadow would be cast, the size, duration, and location within the park of the new shadow, and the public good served by the building casting the shadow.

Implementation of the proposed project would result in the construction of a building exceeding 40 feet in height. To identify the publicly accessible open spaces affected by proposed project shadow, a full-year shadow fan diagram was prepared, which takes into account the presence of existing shadow from nearby buildings. The shadow fan diagram identified six publicly accessible open spaces that would receive net new shadow from the proposed project. These are Washington Square, Willie "Woo Woo" Wong Playground, Maritime Plaza, Sue Bierman Park, Transamerica Redwood Park, and Sydney G. Walton Square. The first four open spaces are city parks under the jurisdiction of the San Francisco Recreation and Park Commission, while Transamerica Redwood Park and Sydney G. Walton Square are privately owned open spaces that are nevertheless open to the public.[94] In addition, nearby streets and sidewalks are analyzed pursuant to planning code section 147, which requires that new buildings exceeding 50 feet in height in C3 districts avoid substantial shadow impacts on public open spaces, other than those under the jurisdiction- of the Recreation and Park Commission. Because the proposed project would shade public open spaces, as discussed below, the proposed project would require an exception to planning code section 147, pursuant to planning code section 309.

Washington Square

Washington Square is a 2.26-acre landscaped plaza located in the North Beach neighborhood that is under the jurisdiction of the San Francisco Recreation and Park Department. Located about 0.6 mile northwest of the project site, Washington Square is bounded by Filbert Street to the north, Stockton Street to the east, Union Street to the south, and Powell Street to the west, with the small southwestern corner of the park divided from the remainder of the square by Columbus Avenue. Washington Square features include a large central grass area with a stand of trees in the center. Curving paved walkways with multiple connections to surrounding sidewalks surround the central lawn, and there are groups of large trees along with smaller grass and landscaped areas and numerous long benches between the walkway and the sidewalks. In the northwest corner of the park at Powell and Filbert streets, is a small children's play area, a bronze statue memorializing San Francisco's early volunteer firefighters, and a restroom building.

[94] While many privately owned public open spaces (POPOS) have been created and are regulated under planning code section 138 as part of implementation of the City's Downtown Plan, Transamerica Redwood Park predates the adoption of the Downtown Plan and section 138 and is therefore exempt from the requirements thereof. Sydney G. Walton Square, created as part of implementation of the Golden Gateway Redevelopment Plan, likewise predates the Downtown Plan and section 138. Moreover, section 138 applies only to the C-3 (Downtown) Use Districts and the Central SoMa Special Use District, which does not include Syndey G. Walton Square. However, both of these open spaces function similarly to POPOS subject to section 138, in that they are privately owned but publicly accessible.

A quantitative assessment of existing and net new shadow was performed for Washington Square. These results are summarized in **Table 19**.

Table 19 Shadow on Washington Square

	Proposed Project
Annual Existing Shadow	7.47%
Annual Net New Shadow Cast by Project	0.01%
Annual Total Shadow (Existing + Net New Shadow)	7.48%
Number of Days Annually When Net New Shading Would Occur	56 (November 23–January 17)
Average Daily Project Net New Shadow Duration on Affected Dates	5.5 minutes
Date of Most Square-Foot Hours of Annual Net New Shading	December 13 and December 28
Date and Time with Largest Instantaneous Net New Shadow Area	December 6 and January 4 at 8:10 a.m.
Area and Percentage of Net New Shadow on Date with Largest Instantaneous Shadow Area	6,828 sq. ft. (6.94%)

SOURCE: Prevision Design, 2025.

As shown in Table 19, shadow from existing buildings creates an existing "shadow load" of 7.47 percent of theoretical annual available sunlight,[95] with existing shadow occurring in the morning and early afternoon. The proposed project would affect Washington Square for 56 days per year (between November 23 and January 17). On the affected days, net new shadow would occur for an average of 5.5 minutes and would leave the park prior to 8:30 a.m. When it would reach the park, proposed project net new shadow would cover an average of about 5.5 percent of the park. The maximum net new project shadow would cover 6.94 percent of the park, on January 4 and December 6 at 8:10 a.m. The total net new shading from the proposed project would represent 0.01 percent of the theoretical annual available sunlight, bringing Existing-plus-Project shadow to 7.48 percent of theoretical annual available sunlight.

On the affected days, net new shadow would fall on a relatively narrow sliver of sunlit ground, extending from the east central portion of the lawn northwest to Filbert Street, where existing buildings do not already shade the park. New shadow from the proposed project would fall on Washington Square for less than 10 minutes per day in the early morning (before 8:30 a.m.) over an 8-week period around the winter solstice (December 20). Project shadow would leave the park before 8:30 a.m., and before 8:15 a.m. over four of the eight affected weeks. No project shadow would reach the children's playground at the square's northwest corner. New project shadow would also not fall on Washington Square during the midday and afternoon hours, when the park is well used by people eating lunch and, in good weather, sitting or lying on the central grassy area.

Given the very limited duration and physical extent of net new shadow, shadow cast by the proposed project is not likely to affect the majority of park users, and the park would be unaffected by project shadow during

[95] The theoretical annual available sunlight is the number of square foot-hours that would theoretically fall on a publicly accessible open space each day from an hour after sunrise to an hour before sunset summed over the course of a year, ignoring all shadow from any source.

the vast majority of the year. Therefore, users of Washington Square are not anticipated to be substantially or adversely affected by new shadow.

Willie "Woo Woo" Wong Playground

Willie "Woo Woo" Wong Playground is a 0.61-acre playground in the Chinatown neighborhood that is under the jurisdiction of the San Francisco Recreation and Park Department. The playground, about one-third mile west-southwest of the project site, is located mid-block on Sacramento Street between Stockton Street and Grant Avenue; entry to the playground is from Sacramento Street and from Hang Ah Alley to the west. The playground underwent major renovations in 2021. The playground spans 40 vertical feet and consists of three levels: an upper court, middle children's playground, and lower level that includes a clubhouse. The upper court area contains full-sized basketball and tennis courts along with other play equipment, while the middle and lower levels contain three separate playground areas as well as an entry from the playground area to the upper level of the clubhouse.

A quantitative assessment of existing and net new shadow was performed for Willie "Woo Woo" Wong Playground. These results are summarized in **Table 20**.

Table 20 Shadow on Willie "Woo Woo" Wong Playground

	Proposed Project
Annual Existing Shadow	48.03%
Annual Net New Shadow Cast by Project	0.01%
Annual Total Shadow (Existing + Net New Shadow)	48.04%
Number of Days Annually When Net New Shading Would Occur	41 (June 1–July 11)
Average Daily Project Net New Shadow Duration on Affected Dates	5.9 minutes
Date of Most Square-Foot Hours of Annual Net New Shading	June 21
Date and Time with Largest Instantaneous Net New Shadow Area	June 21 at 6:46 a.m.
Area and Percentage of Net New Shadow on Date with Largest Instantaneous Shadow Area	4,461 sq. ft. (16.9%)

SOURCE: Prevision Design, 2025.

As shown in Table 20, shadow from existing buildings generates an existing shadow load of 48.03 percent of theoretical annual available sunlight. The proposed project would affect Willie "Woo Woo" Wong Playground over 41 days (seven weeks) per year (between June 1 and July 11). On the affected days, net new shadow would occur for an average of less than six minutes in the early morning, before 7 a.m. When it would reach the park, project shadow would cover an average of about 9.8 percent of the park. The maximum net new project shadow would cover 16.9 percent of the playground, on June 21 at 6:46 a.m. The total net new shading from the proposed project would represent 0.01 percent of the theoretical annual available sunlight, bringing Existing-plus-Project shadow to 48.04 percent of theoretical annual available sunlight.

On the affected days, net new shadow would fall on a part of the central portion of Willie "Woo Woo" Wong Playground, shading parts of the tennis court, the northwestern corner of the mid-level children's play area, and the entry area off Hang Ah Alley. Shadow from the project would last no longer than 15 minutes.

Given the very limited duration and physical extent of net new shadow, and the fact that project shadow would be cast on the playground only in the very early morning, shadow cast by the proposed project is not likely to affect the majority of park users, and the park would be unaffected by project shadow during the vast majority of the year. Therefore, users of Willie "Woo Woo" Wong Playground are not anticipated to be substantially or adversely affected by new shadow.

Maritime Plaza

Maritime Plaza is a 1.99-acre publicly accessible open space under the jurisdiction of the San Francisco Recreation and Park Department. This plaza, directly east across Battery Street from the project site, is above a parking structure, about 25 feet above street level, and contains two separate areas between Washington and Clay streets, one on each side of the 400-foot-tall Alcoa building at One Maritime Plaza. Public access to Maritime Plaza is via stairwells at Washington and Clay streets and elevated walkways. The two separate areas of the plaza are connected by a breezeway through the Alcoa building. The western portion of the plaza contains a lawn, a sculpture garden, landscaping, seating areas, and a one-story office building that also contains the Punch Line, a private comedy club. The eastern portion of the plaza contains a sculpture garden; a fountain; landscaping; seating areas; and a one-story office building.

A quantitative assessment of existing and net new shadow was performed for Maritime Plaza. These results are summarized in **Table 21**.

Table 21 Shadow on Maritime Plaza

	Proposed Project
Annual Existing Shadow	67.84%
Annual Net New Shadow Cast by Project	2.08%
Annual Total Shadow (Existing + Net New Shadow)	69.92%
Number of Days Annually When Net New Shading Would Occur	237 (February 23–October 17)
Average Daily Project Net New Shadow Duration on Affected Dates	3 hours, 34 minutes
Date of Most Square-Foot Hours of Annual Net New Shading	June 21
Date and Time With Largest Instantaneous Net New Shadow Area	June 14 and June 28 at 5:45 p.m.
Area and Percentage of Net New Shadow on Date with Largest Instantaneous Shadow Area	18,061 sq. ft. (20.84%)

SOURCE: Prevision Design, 2025.

As shown in Table 21, the shadow load from existing buildings represents 67.84 percent of theoretical annual available sunlight. The proposed project would affect Maritime Plaza 237 days per year (between February 23 and October 17 annually). On the affected days, net new shadow would occur for an average of 3 hours, 34 minutes and would reach the park no earlier than 2:15 p.m. On affected days, proposed project

net new shadow would cover an average of about 9.2 percent of the park. The maximum net new project shadow would cover 20.84 percent of the park, on June 14 and June 28 at 5:45 p.m. The total net new shading from the proposed project would represent 2.08 percent of the theoretical annual available sunlight, bringing Existing-plus-Project shadow to 69.92 percent of theoretical annual available sunlight.

On the affected days, net new shadow would fall generally on the western half of the plaza, with a narrow band along the northern part of the eastern half of the plaza receiving limited new shadow around the spring and fall equinoxes. At different times of the afternoon, new shadow would cover the seating areas in the northwest and southwest corners of the park, the two westerly sculpture gardens, walkways, and the lawn in the western half of the plaza. For example, on the date of maximum shading (June 21), net new shadow would fall on these locations at various times between 3:45 p.m. and 6:00 p.m. Project shadow would reach Maritime Plaza for an average of about 3.5 hours per day, up to a maximum of just over 5 hours, on June 21.

The park was observed over six 30-minute observation periods on October 26, 29and 30, 2024, to identify park usage and to determine whether park users would be adversely or substantially affected by net new shadow. During the observed times, the number of park users ranged from 10 to 108 people, and the large majority of people passed through the park without stopping.[96] Those who did stop in the park primarily used the park for eating or conversing while seated on benches or the lawn. Overall, park usage was characterized as low to moderate. The periods of peak activity were during the weekday midday and afternoon hours, and the majority of activities were characterized as transitory in nature (i.e., people walking through without stopping). Of those who did spend relatively more time in the plaza, many were walking dogs, while others occupied seating or lawn areas for eating lunch or socializing.

Because transitory activities are less sensitive to the availability of sunlight than passive uses, such as lunching, reading, or talking with others, shadow occurring in the afternoon in spring, summer, and fall after 2 p.m. is not likely to substantially affect the majority of park users. During affected times, there would be other seating areas of the park that would be unshaded where, assuming sunlight is desirable for the park user, would be able to sit or lie down in sunlight instead of the areas receiving net new shadow from the proposed project. One exception is the date of maximum shading (June 21), when nearly the entire park would be shaded for approximately 17 minutes from 6:45 p.m. until sunset at 7:02 p.m. At this point in the day, the majority of the plaza is shaded under existing conditions, and usage—particularly passive usage—is relatively lower. Therefore, it is anticipated park users would be accustomed to shade and would expect it given the time of day not long before sunset. Given that, at most times when the proposed project would newly shade Maritime Square, other areas would remain in sunlight and that most park users are transitory (passing through), and given the time of day and relatively limited extent of net new shadow when the plaza would be fully shaded, park users are not anticipated to be substantially or adversely affected by new shadow cast by the proposed project.

Sue Bierman Park

Sue Bierman Park is a 4.09-acre urban park under the jurisdiction of the San Francisco Recreation and Park Department. The park, 0.2 mile east of the project site, is physically divided into two parts by Drumm Street, the western portion is bounded by Washington Street to the north, Clay Street to the south, and Davis Street to the west, while the eastern portion is bounded by Washington Street to the north, Clay Street to the south,

[96] Weekday usage of the plaza is considerably higher than that on weekends; hence the wide variation in observed users. On three weekday observations, the number of park users was 75 (afternoon and midday) to 108 (morning), while three weekend observations revealed 10 (afternoon) to 23 (morning) users.

and Embarcadero to the east. The western portion contains lawns, vegetated areas, a sculpture, and a pedestrian pathway, and the eastern portion contains lawns, a pedestrian pathway, benches, and a playground. The western portion of the park also includes a small utility building complex owned by SFPUC.

A quantitative assessment of existing and net new shadow was performed for Sue Bierman Park. These results are summarized in **Table 22**.

Table 22 Shadow on Sue Bierman Park

	Proposed Project
Annual Existing Shadow	42.694%
Annual Net New Shadow Cast	0.004%
Annual Total Shadow (Existing + Net New Shadow)	42.698%
Number of Days Annually When Net New Shading Would Occur	82 (March 16–April 25 & August 17–September 26)
Average Daily Project Net New Shadow Duration on Affected Dates	26.5 minutes
Date of Most Square-Foot Hours of Annual Net New Shading	September 20 & March 22
Date and Time with Largest Instantaneous Net New Shadow Area	September 20 & March 22 at 6 p.m.
Area and Percentage of Net New Shadow on Date with Largest Instantaneous Shadow Area	2,012 sq. ft. (1.13%)

SOURCE: Prevision Design, 2025.

As shown in Table 22, under existing conditions, the existing shadow load on Sue Bierman Park is 42.694 percent of the theoretical annual available sunlight, with most existing shadow occurring in the afternoon. The proposed project would contribute 0.004 percent net new shadow as a percentage of the theoretical annual available sunlight, bringing Existing-plus-Project shadow to 42.698 percent of theoretical annual available sunlight. The daily net new shadow on the 82 affected dates (March 16 to April 25 and August 17 to September 26) would occur for an average of 26.5 minutes and would cover on average about 0.5 percent of the park under the proposed project. The maximum net new project shadow would cover 1.13 percent of the park, on March 22 and September 20 at 6 p.m.

The park was observed over six 30-minute observation periods on October 27 and 29, 2024, to identify park usage and to determine whether park users would be adversely or substantially affected by net new shadow. During the times of observation, between 41 and 88 users were seen, and the large majority of people passed through the park without stopping. Overall, park usage was characterized as low to moderate, and the majority of activities were characterized as transitory in nature. Net new shadow would affect a sliver of the northern portion of both the eastern and western segments of the park, close to the Washington Street sidewalk, shading a portion of the lawn and some trees. During these times (generally, about 6 weeks each in early spring and late summer after 5 p.m.), the majority of park would be shaded from other buildings, and while there would be net new shading from the proposed project, park users would not be likely to notice

this new shadow given the time of day and large amount of existing shadow. Moreover, because net new shadow would be limited in area and duration, and would only affect the park for 12 weeks during the year in the late afternoon, for less than 30 minutes daily, new shadow would not be noticeable to park users and is not likely to substantially or adversely affect usage of the park.

TRANSAMERICA REDWOOD PARK

The Transamerica Redwood Park is a 1.25-acre privately owned but publicly accessible open space between the Transamerica Building, Washington Street, Sansome Street, and Clay Street. It functions similarly to a section 138 privately owned public open space (POPOS) in that it is owned by the entity that controls the Transamerica Building but is open for public use.

This park was recently renovated and contains over 50 mature redwood trees, along with other landscape plantings, 20 pieces of artwork, a fountain with a reflecting pool, a performance stage area, and numerous fixed benches, and points of access to nearby buildings. Pursuant to planning department guidance for shadow analysis, shadow from existing trees is not depicted in the shadow diagrams. However, it should be noted that the many mature redwood and other trees provide tree cover, and this is a defining feature of the park, and these trees also cast a substantial amount of shadow on the park, as do existing surrounding buildings.

The proposed project would cast net new shadow on this park from mid-April through late August, with the largest amount of shadow occurring around the summer solstice (June 21). Net new shadow cast on this park would range from a few minutes in the spring and fall to approximately four hours on the summer solstice; this longest shadow would occur only along the northernmost edge of the park. New shadow would cover the northwestern corner of the park along Washington Street, which includes a number of benches, and a narrow section in the middle of the space. The area of new shadow would cover 5 percent or less of the park area at any given time. Moreover, the seating area is adjacent to tall redwood trees that currently shade this area throughout the year. Therefore, net new shadow resulting from the project would likely not be noticeable given the amount of existing shadow from the large redwood trees adjacent to the seating area, and thus would not substantially or adversely affect the use and enjoyment of this park.

SYDNEY G. WALTON SQUARE

Sydney G. Walton Square is an approximately 1.7-acre mid-block privately owned, publicly accessible open space located on the block bounded by Jackson Street to the south, Front Street to the west, Davis Street to the east and a multifamily residential property to the north. It was developed in the 1960s in conjunction with the implementation of the Golden Gateway Redevelopment Plan. Like Transamerica Redwood Park, Sydney G. Walton Square functions similarly to a section 138 POPOS, in that it is owned and managed by one of the entities that owns Golden Gateway Center but is open for public use.

Walton Square includes open expanses of lawn separated by curvilinear, concrete paths, groves of pines, willows, and poplars. The park features several art installations including a bronze statue, a sculptural fountain and an old masonry arch salvaged from San Francisco's historical produce district, which was demolished as part of the redevelopment plan implementation. The park is fenced with entry points from the surrounding streets on the east, west, and south sides of the park. It also includes an elevated walkway bridging Jackson Street to the podium-level of an adjacent residential development. Under existing conditions, Walton Square is generally sunny during midday hours, except between late fall and early spring,

when there is substantial shadow all day long. In contrast, there is relatively little shadow on Walton Square from late spring through late summer, particularly in the midday hours.

The proposed project would cast net new shadow on Walton Square in the mid- to late afternoon from approximately late September through mid-March. Net new shadow would fall on various locations in the northern two-thirds of the square and would reach the park for less than 10 minutes per day, on average. The largest amount of net new shadow would occur in late October and again in mid-February; at these times, project shadow would range in duration from a few minutes to as much as an hour. Existing buildings would shade much of the remainder of the park at these times. Minimal project net new shadow would be cast on Walton Square around the winter solstice (December 20) because existing buildings already shade nearly the entire square beginning in mid-afternoon. While new project shadow on Walton Square would be noticeable at times—particularly around late October and mid-February—project shadow would be of limited duration and extent over most of the year and thus would not be anticipated to substantially or adversely affect the use and enjoyment of this park.

SIDEWALKS AND PRIVATE PROPERTIES

The proposed project would add shade to portions of streets, sidewalks, and private property in the vicinity of the project site at various times throughout the year. Shadows on streets and sidewalks would not exceed levels commonly expected in urban areas and would be considered a less-than-significant effect under CEQA. Although occupants of nearby properties may regard the increase in shadow as undesirable, shading of private properties as a result of the proposed project would not be considered a significant impact under CEQA.

Conclusion

The proposed project would cast net new shadow on Washington Square, Willie “Woo Woo” Wong Playground, Maritime Plaza, Sue Bierman Park, Transamerica Redwood Park, Syndey G. Walton Square, in the vicinity of the project. Net new shadow Washington Square, Willie “Woo Woo” Wong Playground, Sue Bierman Park and Transamerica Redwood Park would likely not be noticeable. While net new shadow could well be noticeable on Maritime Plaza and Sydney G. Walton Square, for the reasons stated above, net new shadow would not be anticipated to substantially affect the use and enjoyment of these open spaces. As a result, the proposed project would have a ***less-than-significant*** impact on affected open spaces, and no mitigation measures are necessary.

Impact C-SH-1: The proposed project, in combination with cumulative projects, would not result in a significant cumulative impact. ***(Less than Significant)***

Cumulative development projects located within an approximately 0.25-mile radius of the project site are identified in draft EIR Table 3-1, Cumulative Projects within a 0.25-Mile Radius of the Project Site, p. 3-8, and mapped on Figure 3-1, Cumulative Projects within a 0.25-Mile Radius of the Project Site, p. 3-11. The cumulative development for the shadow analysis consists of projects at 545 Sansome Street, 955 Sansome Street, 50 Main Street, 530 Howard Street, and Transbay Parcel F (542-550 Howard Street). Of these reasonably foreseeable projects, only 50 Main Street, a proposed 85-story, nearly 1,000-foot-tall building, and Transbay Parcel F, a proposed 61-story, approximately 800-foot-tall building, would cast shadow that would

combine with the shadow cast by the proposed project. The other three projects noted above would not add additional shadow to any of the open spaces evaluated and therefore are not considered further.[97]

Shadow from the 50 Main Street project, in combination with shadow from the proposed project, would increase shadow on Washington Square by 0.02 percent of theoretical annual available sunlight, compared to existing conditions (0.01 percent more than with the project alone). No other parks would be affected by cumulative project shadow in combination with the proposed project. This additional cumulative shadow would reach the park for 13 minutes from mid-November through early December and again from early through mid-January. Cumulative shadow would leave the park before 8:30 a.m. As with project shadow, cumulative shadow would fall on the northern park entrance along Filbert Street and a portion of the central lawn, and additionally on landscape and pathway areas in the northeast corner of the park. Because of its limited duration and extent, this additional increment of cumulative shadow would be unlikely to substantially or adversely affect the use and enjoyment of Washington Square, for the reasons described above under Impact SH-1.

Shadow from the 50 Main Street and Transbay Parcel F projects, in combination with shadow from the proposed project, would increase shadow on Willie "Woo Woo" Wong Playground by 0.03 percent of theoretical annual available sunlight, compared to existing conditions (0.02 percent more than with the project alone). The additional cumulative shadow from the 50 Main Street project would reach the playground for less than 30 minutes over about two weeks each around the spring and fall equinoxes and for about three weeks in the second half of March and mid- to late September.[98] The cumulative shadow would leave the playground before 8:30 a.m. Additional cumulative shadow would cast by the Transbay Parcel F project would fall on the playground for less than 15 minutes in the early morning (before 8:15 a.m.) in early December and early January. In addition to areas shaded by the proposed project, cumulative shadow would reach the basketball court. However, because of the limited duration and extent of cumulative shadow and the fact that, like project shadow, cumulative shadow would reach the playground only in the very early morning, this additional increment of cumulative shadow would be unlikely to substantially or adversely affect the use and enjoyment of Willie "Woo Woo" Wong Playground, for the reasons described above under Impact SH-1.

Shadow from the 50 Main Street project, in combination with shadow from the proposed project, would increase shadow at Maritime Plaza by 2.19 percent compared to existing conditions (0.11 percent more than with the project alone). This additional cumulative shadow would reach Maritime Plaza for between about 15 minutes and 75 minutes in early to mid-morning (between about 9 a.m. and 10:45 a.m., depending on the day; the variation in time is explained, in part, by the change between standard and daylight savings time). The additional cumulative shadow would fall on Maritime Plaza for about eight weeks each from late January through early March and from early October through mid-November, reaching only the western portion of Maritime Plaza.[99] Because of its relatively limited duration and extent, this additional increment of cumulative shadow would be unlikely to substantially or adversely affect the use and enjoyment of Maritime Plaza, for the reasons described above under Impact SH-1.

[97] The project at 545 Sansome Street would potentially shade Maritime Plaza; however, shadow from 545 Sansome Street would be fully subsumed within shadow cast by the proposed project and would not add to project shadow cast on Maritime Square.
[98] Shadow from 50 Main Street would also reach Willie "Woo Woo" Wong Playground in the early morning from early June through mid-July, but would be subsumed within shadow cast by the proposed project and would not add additional shadow to the playground at this time.
[99] Shadow from 50 Main Street would also reach Maritime Plaza in the afternoon from late February through mid-October, but would be subsumed within shadow cast by the proposed project and would not add additional shadow to the plaza at these times

Shadow from the 50 Main Street project, in combination with shadow from the proposed project, would increase shadow on Sue Bierman Park by 0.312 percent compared to existing conditions (0.308 percent more than with the project alone). This additional cumulative shadow would reach Sue Bierman Park for about four and a half months, from mid-October through late February, for up to about 2.5 hours per day. On average, cumulative shadow, when present, would last about 1 hour and 15 minutes. Cumulative shadow would reach the park during the midday period, beginning as early as about 10:45 a.m. and lasting until as late as about 1:15 p.m.[100] At its maximum extent, on December 13 and 28, cumulative shadow would cover about 16.6 percent of the park, reaching the eastern edge of the western half of the park and western and eastern edges of the eastern half of park and falling on grassy area and some trees. For the most part, cumulative shadow would not fall on any seating areas or pathways within the park. Because of this, the additional increment of cumulative shadow would be unlikely to substantially or adversely affect the use and enjoyment of Sue Bierman Park, for the reasons described above under Impact SH-1.

In each case, the additional cumulative shadow cast by the 50 Main Street project and, for Willie "Woo Woo" Wong playground, by the Transbay Parcel F project, would be limited in duration and extent, and/or would fall on areas relatively less sensitive to shadow. Accordingly, cumulative shadow would not be likely to combine with shadow from the proposed project to substantially or adversely affect the use and enjoyment of Washington Square, Willie "Woo Woo" Wong Playground, Maritime Plaza, or Sue Bierman Park, for the reasons described above under Impact SH-1 and, for Sue Bierman Park, as explained in the preceding paragraph. Accordingly, the cumulative impact from the proposed project shadow in combination with cumulative projects, would not result in a significant cumulative shadow impact. Cumulative impacts related to shadow would be ***less than significant***, and no mitigation measures are necessary.

E.11 Recreation

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
11. RECREATION. Would the project:					
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	☐	☐	☒	☐	☐
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☒	☐	☐

[100] Shadow from 50 Main Street would also reach Sue Bierman Park in the late afternoon from mid-March through late April and from mid-August through late September, but would be subsumed within shadow cast by the proposed project and would not add additional shadow to the park at these times

Impact RE-1: The proposed project would increase the use of existing parks and other recreational facilities, but not to such an extent such that substantial physical deterioration of the facilities would occur or be accelerated. *(Less than Significant)*

The project site is in a densely developed urban neighborhood that does not contain large regional park facilities but does include a number of smaller neighborhood parks, open spaces, and other recreational facilities.

The following public parks, open spaces, and recreation facilities are located within 0.3 mile of the project site:

- Transamerica Redwood Park (0.03 mile west of the project site)
- Sydney G. Walton Square (0.13 mile northeast of the project site)
- Maritime Plaza (0.14 mile east of the project site)
- Empire Park (0.15 mile southwest of the project site)
- Portsmouth Square Plaza (0.19 mile west of the project site)
- Sue Bierman Park (0.24 mile east of the project site)
- St Mary's Square (0.29 mile southwest of the project site)
- Mechanics Monument Plaza (0.30 mile south of the project site)
- Willie "Woo Woo" Wong Playground (0.32 mile southwest of the project site)
- Beale Street Plaza (0.33 mile southeast of the project site)
- One Bush Plaza (0.33 mile south of the project site)

The proposed project does not propose residential units; therefore, project implementation would not result in a permanent increase in demand for parks and recreational facilities in the vicinity. However, site visitors, including hotel, office, and restaurant/retail patrons, and up to approximately 1,524 employees who would work at the project site, may use nearby recreational facilities, as listed above. The proposed project would convert all of Merchant Street between Battery and Sansome streets into a shared street/living alley with approximately 12,695 square feet of privately maintained public open space improvements. This open space would partially offset the demand for open space generated by visitors and employees. With the availability of open space on and near the project site, proposed project–generated recreational demand could be accommodated by existing recreational facilities. Additionally, demand for existing parks and recreation facilities would be expected to be balanced among facilities, and demand would not result in substantial physical deterioration of any existing resource.

Overall, implementation of the proposed project would result in an increase in the demand for recreational resources on the project site, in the project area, and at the citywide level. On a citywide/regional basis, the increased demand on recreational facilities from visitors and employees would be minimal considering the number of people living and working in San Francisco and the region as well as the number of existing recreational facilities. The anticipated use of recreational resources would not be expected to substantially increase or accelerate the physical deterioration or degradation of existing recreational resources, and would not result in the need to provide new or expanded parks or recreational facilities since that demand would be partially offset by the development of privately maintained public open space improvements, and demand for parks and recreation facilities would be expected to be balanced among existing facilities. For

these reasons, implementation of the proposed project would not increase the use of existing recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. Therefore, the proposed project's impact on recreational resources would be ***less than significant***, and no mitigation measures are necessary.

Impact RE-2: The proposed project would not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. ***(No Impact)***

The proposed project would involve construction of a replacement fire station and a mixed-use high-rise building with office, hotel, and retail uses. The proposed project would not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. Therefore, the proposed project would have ***no impact*** related to the construction or expansion of recreational facilities, and no mitigation measures are necessary.

Impact C-RE-1: The proposed project, combined with cumulative projects, would not result in significant cumulative impacts to recreational. ***(Less than Significant)***

Cumulative development projects located within an approximately 0.25-mile radius of the project site are identified in draft EIR Table 3-1, Cumulative Projects within a 0.25-Mile Radius of the Project Site, p. 3-8, and mapped on Figure 3-1, Cumulative Projects within a 0.25-Mile Radius of the Project Site, p. 3-11. The cumulative projects at 955 Sansome Street, 425 Broadway, 749 Grant Avenue, 875 Sansome Street, and 652-660 Kearny Street would consist of residential development in the project vicinity and would result in an intensification of land uses. The intensification of land uses would result in a cumulative increase in the demand for recreational facilities and resources in the area and in the city overall. The City has accounted for such growth in the 2014 update of the recreation and open space element of the general plan.[101] As discussed under Impact RE-1, there are 11 parks, open spaces, or other recreational facilities within 0.3 mile of the project site. The proposed project would convert Merchant Street into a shared street/living alley with approximately 12,695 square feet of privately maintained publicly accessible open space on Merchant Street. It is expected that these existing and proposed recreational facilities would be able to accommodate the increase in demand for recreational resources generated by the proposed project (visitors and up to 1,524 employees) and the cumulative projects noted above, which would consist of residential development. For these reasons, the proposed project, combined with cumulative projects, would not result in a significant cumulative impact to recreation; therefore, impacts would be ***less than significant***, and no mitigation measures are necessary.

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[101] San Francisco Planning Department, *Recreation and Open Space Element*, April 2014, pp. 20–36.

E.12 Utilities and Service Systems

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
12. UTILITIES AND SERVICE SYSTEMS. Would the project:					
a) Require or result in the relocation or construction of new or expanded, water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☒	☐	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐	☐
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒	☐

The project site is within an urban area that is served by existing utility service systems, including water, wastewater and stormwater collection and treatment, solid waste collection and disposal, electric power, natural gas, and telecommunications facilities. The proposed project would add a new daytime and nighttime population to the site in the form of office, hotel, retail, and restaurant patrons and employees. This increase in the non-residential population would increase the demand for utilities and service systems on the site.

Background on the San Francisco Regional Water System

The San Francisco Regional Water System, operated by the San Francisco Public Utilities Commission (SFPUC), supplies water to approximately 2.7 million people. The system supplies both retail customers—primarily in San Francisco—and 27 wholesale customers in Alameda, Santa Clara, and San Mateo counties. The system supplies an average of 85 percent of its water from the Tuolumne River watershed, stored in Hetch Hetchy Reservoir in Yosemite National Park, and the remaining 15 percent from local surface waters in

the Alameda and Peninsula watersheds. The split between these resources varies from year to year depending on hydrological conditions and operational circumstances. Separate from the regional water system, the SFPUC owns and operates an in-city distribution system that serves retail customers in San Francisco. Approximately 97 percent of the San Francisco retail water supply is from the regional system; the remainder is comprised of local groundwater and recycled water.

2020 Urban Water Management Plan

The California Urban Water Management Planning Act[102] requires urban water supply agencies to prepare urban water management plans to plan for the long-term reliability, conservation, and efficient use of California's water supplies to meet existing and future demands. The act requires water suppliers to update their plans every five years based on projected growth for at least the next 20 years.

The current urban water management plan for San Francisco is the 2020 Urban Water Management Plan (2020 plan).[103] The 2020 plan projects water supplies and demand through 2045 and presents information on the SFPUC's water supply system, water supply reliability, Water Conservation Act of 2009 compliance, water shortage contingency planning, and water demand management. The 2020 plan relied on the San Francisco Planning Department's housing projections based on the Housing Element 2022 Update, which was still under development when the 2020 plan was adopted. The City adopted the Housing Element 2022 Update in January 2023 with slightly different housing projections. The next update for the Urban Water Management Plan will be in 2025 and anticipated to be released in spring 2026. Accordingly, the SFPUC prepared the 2023 Interim Water Demand Projections (2023 Interim Projections)[104] to document the SFPUC's projected retail water supplies when compared to projected retail water demands associated with the adopted Housing Element 2022 Update. References to the 2020 plan below refer to the 2020 plan together with the 2023 Interim Projections.

The 2020 plan compares anticipated water supplies to projected demand through 2045 for normal, single-dry, and multiple-dry water years.[105] Under normal hydrologic conditions, the SFPUC projects will have sufficient supplies to meet projected demands, which increase from 68.8 million gallons per day (mgd) in 2020 to 81.1 mgd in 2045 (see 2023 Interim projections Table 3, which supersedes Table 4-1 in the 2020 plan). According to the 2020 plan, available and anticipated future water supplies would fully meet projected demand in San Francisco through 2045 during normal years. There are several factors affecting the ability of the regional water system to deliver water during droughts, including the adoption of the 2018 Bay-Delta Plan Amendment (discussed below), potential state and federal regulations, and additional water supply decisions.

[102] California Water Code, division 6, part 2.6, sections 10610 through 10657, as last amended in 2020.
[103] San Francisco Public Utilities Commission, *2020 Urban Water Management Plan for the City and County of San Francisco*, adopted June 11, 2021. This document is available at https://www.sfpuc.gov/about-us/policies-plans/urban-water-management-plan.
[104] San Francisco Public Utilities Commission, *2023 Water Demand Projections for the City and County of San Francisco*, September 2023. This document is available online at https://www.sfpuc.gov/sites/default/files/documents/2023_Interim_Water_Demand_Projections_Sep2023_0.pdf. Accessed July 29, 2024.
[105] A "normal year" is based on historical hydrological conditions that allow the reservoirs to be filled by rainfall and snowmelt, allowing full deliveries to customers; similarly, a "wet year" and a "dry year" is based on historical hydrological conditions with above and below "normal" rainfall and snowmelt, respectively.

2018 Bay-Delta Plan Amendment

In December 2018, the State Water Resources Control Board (state water board) adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment), to establish water quality objectives with the stated goal of increasing salmonid populations in three San Joaquin River tributaries (the Stanislaus, Merced, and Tuolumne Rivers) and the Bay-Delta. Specifically, the Bay-Delta Plan Amendment requires the release of 30 to 50 percent of the unimpaired flow[106] from the three tributaries from February through June every year, whether it is wet or dry. In SFPUC modeling of the new flow standard, it is assumed that the required release from the Tuolumne River is 40 percent of unimpaired flow. During dry years, this would result in a substantial reduction in the SFPUC's water supplies from the Tuolumne River watershed.

If the Bay-Delta Plan Amendment is implemented, the SFPUC would be able to meet the projected demand in normal years but would experience supply shortages in single dry years and multiple dry years. Implementation of the Bay-Delta Plan Amendment would result in substantial dry-year and multiple dry year water supply shortfalls and rationing throughout the SFPUC's regional water system service area, including San Francisco. Without the implementation of the Bay-Delta Plan Amendment, the SFPUC would not experience shortages until the fourth and fifth year of a multi-year drought at 2045 levels of projected demand.

The state water board previously indicated its intent to implement the Bay-Delta Plan Amendment on the Tuolumne River by the year 2022, assuming all required approvals are obtained by that time. However, at this time, the implementation of the Bay-Delta Plan Amendment remains uncertain due to pending legal challenges and outstanding regulatory actions.[107]

In recognition of the obstacles to implementation of the Bay-Delta Plan Amendment, the state water board directed its staff to help complete a "Delta watershed-wide agreement, including potential flow measures for the Tuolumne River" by March 1, 2019, and to incorporate such agreements as an "alternative" for a future amendment to the Bay-Delta Plan to be presented to the [state water board] as early as possible after December 1, 2019." In accordance with the state water board's instruction, on March 1, 2019, the SFPUC, in partnership with other key interested parties, submitted a proposed project description for the Tuolumne River that could form the basis for an agreement with the state water board that would serve as an alternative path to implementing the Bay-Delta Plan's objectives. On March 26, 2019, the SFPUC adopted Resolution No. 19-0057 to support its participation in the Healthy Rivers and Landscapes agreement negotiation process. In November 2022, the SFPUC and partner water agencies on the Tuolumne River signed onto a memorandum of understanding between the State and other parties to structure their participation in the Healthy Rivers and Landscapes agreement negotiation process. This framework document is designed to facilitate the parties' development of enforceable agreements and amendments to the Bay-Delta Plan, with actions and funding to integrate additional water flows with the physical landscape to help improve habitat for native fish in the Sacramento-San Joaquin River Delta watershed, including on the Tuolumne River. On March 29, 2024, in furtherance of the memorandum of understanding, the SFPUC

[106] "Unimpaired flow" represents the water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds.
[107] For additional information, refer to Section 7.3, Factors Affecting Future RWS Supplies, in the 2020 plan.

submitted the key components of its proposed Healthy Rivers and Landscapes agreement to the state water board.[108] The SFPUC continues to actively participate in this process.

Whether, when, and the form in which the Bay-Delta Plan Amendment will be implemented, and how those amendments will affect the SFPUC's water supply, is currently unknown. Due to these uncertainties, the 2020 plan in conjunction with the 2023 Interim Projections presents future supply scenarios both with and without the Bay-Delta Plan Amendment. The three scenarios provided under the "Approach to Analysis" section present the range of potential future supply conditions for the Regional Water System.

Additional Water Supplies

The SFPUC is increasing and accelerating its efforts to acquire additional water supplies and explore other projects that would improve overall water supply resilience through the Alternative Water Supply Program. Developing these supplies would reduce water supply shortfalls and reduce rationing associated with such shortfalls. The SFPUC has taken action to fund the study of additional water supply projects, which are described in the water supply assessment for the proposed project and the 2020 plan.

The capital projects that are under consideration would be costly and are still in the early feasibility or conceptual planning stages. These projects would take 10 to 30 or more years to implement and would require environmental permitting negotiations, which may reduce the amount of water that can be developed. For these reasons, the yield from these projects is unknown and not currently incorporated into SFPUC's supply projections.

In addition to capital projects, the SFPUC is also considering developing related water demand management policies and ordinances, such as funding for innovative water supply and efficiency technologies and requiring potable water offsets for new developments.

Approach to Analysis

Under sections 10910 through 10915 of the California Water Code, urban water suppliers like the SFPUC must prepare water supply assessments for certain large projects, as defined in CEQA Guidelines section 15155.[109] Water supply assessments rely on information contained in the water supplier's urban water management plan and on the estimated water demand of both the proposed project and projected growth within the relevant portion of the water supplier's service area. Because the proposed project is a mixed-use high-rise building and replacement fire station that combined, would have more than 250,000 square feet of office use and would employ more than 1,000 persons, it meets the definition of a water demand project under CEQA. The project-specific analysis of impacts on water supply facilities is provided below.

[108] GLOBAL AGREEMENT TO THE HEALTHY RIVERS AND LANDSCAPES PROGRAM IN THE BAY-DELTA, accessed August 12, 2024.

[109] Pursuant to CEQA Guidelines section 15155(1), "a water-demand project" means:
(A) A residential development of more than 500 dwelling units.
(B) A shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
(C) A commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor area.
(D) A hotel or motel, or both, having more than 500 rooms, (e) an industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
(F) a mixed-use project that includes one or more of the projects specified in subdivisions (a)(1)(A), (a)(1)(B), (a)(1)(C), (a)(1)(D), (a)(1)(E), and (a)(1)(G) of this section.
(G) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

The SFPUC approved a water supply assessment for the proposed project on January 28, 2025.[110] The water supply assessment for the proposed project identifies the project's total water demand, including a breakdown of potable and non-potable water demands. The proposed project is subject to San Francisco's Non-potable Water Ordinance (Article 12C of the San Francisco Health Code). The Non-potable Water Ordinance requires new commercial, mixed-use, and multi-family residential development projects with 100,000 square feet or more of gross floor area to install and operate an onsite non-potable water system. Commercial buildings must meet their toilet and urinal flushing and drain trap demands through the collection, treatment, and use of available blackwater and condensate. Residential and mixed-use buildings must meet their toilet and urinal flushing, irrigation, clothes washing, and drain trap priming demands through the collection, treatment, and use of available graywater and condensate. While not required, residential and mixed-use projects may use treated blackwater if desired. Furthermore, projects may choose to apply non-potable water to other non-potable water uses, such as cooling tower blowdown and industrial processes, but are not required to do so under the ordinance. The proposed project would meet the requirements of the Non-potable Water Ordinance by using graywater and rainwater for toilet and urinal flushing and irrigation.

Both potable and non-potable demands for the project were estimated using the SFPUC's Non-potable Water Calculator and supplemented with additional calculations for non-potable water demand to water the 19 street-level trees for the first five years to establish landscaping at the site. According to the demand estimates, the project's total water demand would be 0.028 mgd, which would be comprised of 0.018 mgd of potable water and 0.01 mgd of non-potable water. Accordingly, 37.4 percent of the project's total water demand would be met by non-potable water.

Impact UT-1: The proposed project would not require or result in the relocation or construction of new or expanded, water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. ***(Less than Significant)***

The San Francisco Public Utilities Commission (SFPUC) provides and operates water supply and wastewater/stormwater collection and treatment facilities for the City. Pacific Gas and Electric Company provides electricity and natural gas to the project site, and various private companies provide telecommunication facilities. The project site is served by San Francisco's combined sewer system, which collects and treats most of the wastewater and stormwater at one of the three SFPUC treatment facilities. The Southeast Treatment Plant provides wastewater and stormwater treatment and management for the east side of the city, including the project site.

Implementation of the proposed project would incrementally increase wastewater flows from the project site due to the introduction of office space, retail/restaurant use, up to 200 hotel guest rooms, and up to approximately 1,524 employees. The replacement fire station would include 34 full-time personnel, 10 of which are on site at any given time and the same as existing conditions. The project site is within a designated recycled water use area. Because the high-rise building would involve new construction totaling 40,000 square feet or more, the high-rise building would be required to comply with the Recycled Water Program by installing recycled water systems for all applicable uses, including toilets and irrigation.[111] The

[110] SFPUC, *Water Supply Assessment for the 447 Battery and 530 Sansome Street Project*, December 31, 2024.
[111] SFPUC, *Recycled Water Installation Procedures for Developers,* 2024, https://www.sfpuc.gov/sites/default/files/documents/Recycled_Water_Installation_Procedures_for_Developers_Sep_2024.pdf, accessed October 24, 2024.

high-rise building would include a blackwater treatment facility, which would treat blackwater from the tower's cooling tower and plumbing systems. The treated water would be used for the tower's plumbing fixtures and potentially landscape irrigation. Because the replacement fire station would not involve new construction totaling 40,000 square feet or more, the replacement fire station is not required to comply with the Recycled Water Program. The proposed project would incorporate water-efficient fixtures, as required by California Code of Regulations title 24 and the San Francisco Green Building Ordinance. Compliance with these regulations would reduce wastewater flows and the amount of potable water used for building functions. The SFPUC infrastructure capacity plans account for projected population and employment growth. The incorporation of water-efficient fixtures into new development is also accounted for by the SFPUC because widespread adoption can lead to more efficient use of existing capacity. For these reasons, the proposed project would not require the construction of new or an expansion of existing wastewater treatment facilities.

The project site is developed and covered with impervious surfaces; thus, the proposed project would not create additional impervious surfaces. The proposed project would be required to comply with the San Francisco Stormwater Management Ordinance (Ordinance No. 83-10),[112] adopted in 2010 and amended in 2016, and the 2016 Stormwater Management Requirements and Design Guidelines,[113] which would require the project to reduce or eliminate the existing volume and rate of stormwater runoff discharged from the project site. Furthermore, because more than 50 percent of the project site is currently covered by impervious surfaces, some of which would be replaced by pervious surfaces as part of project design (e.g., landscaping), and because the project site is currently served by the combined sewer system, the stormwater management approach must reduce the existing runoff flow rate and volume for a two-year 24-hour design storm by 25 percent.

To achieve compliance with the Stormwater Management Requirements and Design Guidelines, the proposed project would be required to implement and install appropriate stormwater management systems that retain runoff onsite, promote stormwater reuse, and limit site discharges from entering the City's combined stormwater/sewer system. This, in turn, would limit the incremental demand on both the collection system and wastewater facilities resulting from stormwater discharges and would minimize the potential for constructing new or expanding existing stormwater drainage facilities. A stormwater control plan, required per the City's Stormwater Management Ordinance (Ordinance No. 83-10), would be designed for review and approval by the SFPUC because the proposed project would result in ground disturbance of an area greater than 5,000 square feet. The stormwater control plan would also include a maintenance agreement, signed by the project sponsor, to ensure proper care of the necessary stormwater controls. Therefore, the proposed project would not substantially increase the amount of stormwater runoff to the extent that existing facilities would need to be expanded or new facilities would need to be constructed. Impacts on stormwater infrastructure would be less than significant.

The proposed project would result in an incremental increase in the demand for electricity, natural gas, and telecommunications; however, this modest increase would not exceed the demand expected and provided for in the project area by utility service providers. As discussed in Impact UT-2 below, the proposed project

[112] City and County of San Francisco, 2010. *Ordinance No. 83-10, Requiring the Development and Maintenance of Stormwater Management Controls*, https://www.sfbos.org/ftp/uploadedfiles/bdsupvrs/ordinances10/o0083-10.pdf, accessed October 24, 2024.
[113] City and County of San Francisco, 2016. *San Francisco Stormwater Management Requirements and Design Guidelines*, May 2016, https://www.sfpuc.gov/sites/default/files/documents/SMR_DesignGuide_May2016.pdf, accessed October 24, 2024.

would result in an incremental increase in the demand for water supply but would not itself result in the need for the construction of new or expanded water treatment facilities or delivery infrastructure.

For these reasons, the utilities demand associated with the proposed project would not exceed the service capacity of the existing providers and would not require the construction of new facilities or expansion of existing facilities. Therefore, this impact would be ***less than significant,*** and no mitigation measures are necessary.

Impact UT-2: Sufficient water supplies are available to serve the proposed project and reasonably foreseeable future development in normal, dry, and multiple dry years unless the 2018 Bay-Delta Plan Amendment is implemented; in that event the SFPUC may develop new or expanded water supply facilities to address shortfalls in single and multiple dry years but this would occur with or without the proposed project. Impacts related to new or expanded water supply facilities cannot be identified at this time or implemented in the near term; instead, the SFPUC would address supply shortfalls through increased rationing, which could result in significant cumulative effects, but the project would not make a considerable contribution to impacts from increased rationing. ***(Less than Significant)***

Operational Water Demand Estimates

The water supply assessment estimates future citywide water demand through 2045 based on anticipated population and employment growth. The planning department has determined that the proposed project represents a portion of the planned growth accounted for in the city's general plan. Therefore, the project's demand is incorporated in the 2020 plan.

The water supply assessment determined that the project's potable water demand of 0.018 mgd would contribute 0.022 percent to the projected total demand for San Francisco water customers of 81.1 mgd in 2045. The project's total water demand of 0.028 mgd, which does not account for the 0.01 mgd savings anticipated through compliance with the non-potable water ordinance, would represent 0.034 percent of 2045 total demand for the city. Thus, the proposed project represents a small fraction of the total projected water demand in San Francisco through 2045.

The water supply assessment evaluates the ability of the water supply system to meet the demand of the proposed project in combination with both existing development and projected growth in San Francisco under the following water supply scenarios:

- Scenario 1: Current Water Supply
- Scenario 2: Bay-Delta Plan Healthy Rivers and Landscapes Agreement
- Scenario 3: 2018 Bay-Delta Plan Amendment

As discussed below, the water supply assessment concludes that water supplies would be available to meet the demand of the proposed project in combination with both existing development and projected growth in San Francisco through 2045 under each of these water supply scenarios with varying levels of rationing during dry years. The following is a summary of the analysis and conclusions presented in the SFPUC's water supply assessment for the project under each of the three water supply scenarios considered.

SCENARIO 1—CURRENT WATER SUPPLY

Scenario 1 assumes no change to the way in which water is supplied, and that neither the Bay-Delta Plan Amendment nor a Bay-Delta Plan Healthy Rivers and Landscapes Agreement would be implemented. Thus, the water supply and demand assumptions contained in the 2020 plan for the scenario without implementation of the Bay-Delta Plan Amendment would be applicable for the proposed project's water supply assessment. As stated above, the project is accounted for in the demand projections in the 2020 plan.

Under Scenario 1, the water supply assessment determined that retail water supplies would be available to meet the demand of the project in combination with existing development and projected growth in all years, except for an approximately 4.1 mgd or a 5.3 percent shortfall in years four and five during multiple dry years under 2045 demand levels. This relatively small shortfall is primarily due to implementation of the amended 2009 Water Supply Agreement. To manage a small shortfall such as this, the SFPUC may prohibit certain discretionary outdoor water uses and/or call for voluntary rationing by its retail customers. During a prolonged drought at the end of the 20-year planning horizon, the project could be subject to voluntary rationing in response to a 5.3 percent supply shortfall, when the 2018 amendments to the 2009 Water Supply Agreement are taken into account. This level of rationing is well within the SFPUC's regional water system supply level of service goal of limiting rationing to no more than 20 percent on a system-wide basis (i.e., an average throughout the regional water system).

SCENARIO 2—BAY-DELTA PLAN VOLUNTARY AGREEMENT

Under Scenario 2, the state water board would amend the Bay-Delta Plan Amendment to incorporate the Tuolumne River Healthy Rivers and Landscapes agreement as its implementation pathway. The state water board has not yet considered the March 29, 2024, proposed Healthy Rivers and Landscapes agreement sections, which the SFPUC and partner water agencies submitted to the state water board, and the shortages that would occur with its implementation are not known. Negotiations are ongoing under the SFPUC's November 2022 memorandum of understanding with the state and other parties. The Healthy Rivers and Landscapes agreement proposal contains a combination of flow and non-flow measures that are designed to benefit fisheries at a lower water supply cost, particularly during multiple dry years, than would occur under the 2018 Bay-Delta Plan Amendment. The resulting regional water system supply shortfalls during dry years would be less than those under the Bay-Delta Plan Amendment and would require rationing of a lesser degree and closer in alignment to the SFPUC's adopted level of service goal for the regional water system of rationing of no more than 20 percent system-wide during dry years.

SCENARIO 3—BAY-DELTA PLAN AMENDMENT

Under Scenario 3, the 2018 Bay-Delta Plan Amendment would be implemented as it was adopted by the state water board on December 12, 2018, without modification. Under this scenario, which would be implemented after project approval, water supplies would be available to meet projected demands through 2045 in wet and normal years with no shortfalls. However, under Scenario 3 the entire regional water system—including both the wholesale and retail service areas—would experience significant shortfalls in single dry and multiple dry years. Significant dry-year shortfalls would occur in San Francisco, regardless of whether the proposed project is constructed. Except for the currently anticipated shortfall of about 4.1 mgd (5.3 percent) that is expected to occur under Scenario 1 in years four and five during multiple dry years based on 2045 demand levels, these shortfalls would exclusively result from supply reductions resulting from implementation of the Bay-Delta Plan Amendment. The supply shortfalls under Scenario 3 would not be

attributed to the incremental demand associated with the proposed project because the demand is incorporated already in the growth and water demand/supply projections contained in the 2020 plan.

Under the Bay-Delta Plan Amendment, existing and planned dry-year supplies would be insufficient for the SFPUC to satisfy its regional water system supply level of service goal of no more than 20 percent rationing system-wide. As shown in Table 4 of the water supply assessment, total shortfalls under Scenario 3 would range from 11.8 mgd (16.5 percent) in a single dry year to 19.8 mgd (27.8 percent) in years two through five of a multiple year drought based on 2025 demand levels and from 21 mgd (25.9 percent) in a single dry year to 29 mgd (35.8 percent) in years four and five of a multiple year drought based on 2045 demand.

WATER SUPPLY IMPACT ANALYSIS

As described above, the supply capacity of the San Francisco Regional Water System that provides the majority of the city's drinking water far exceeds the potential demand of any single development project in San Francisco. No single development project alone in San Francisco would require the development of new or expanded water supply facilities or require the SFPUC to take other actions, such as imposing a higher level of rationing across the city in the event of a supply shortage in dry years. Therefore, a separate project-only analysis is not provided for this topic. The following analysis instead considers whether the proposed project in combination with both existing development and projected growth through 2045 would require new or expanded water supply facilities, the construction or relocation of which could have significant impacts on the environment. It also considers whether a high level of rationing would be required that could have significant cumulative impacts. It is only under this cumulative context that development in San Francisco could have the potential to require new or expanded water supply facilities or require the SFPUC to take other actions, which in turn could result in significant physical environmental impacts related to water supply. If significant cumulative impacts could result, then the analysis considers whether the project would make a considerable contribution to the cumulative impact.

IMPACTS RELATED TO NEW OR EXPANDED WATER SUPPLY FACILITIES

The SFPUC's adopted water supply level of service goal for the regional water system is to meet customer water needs in non-drought and drought periods. The system performance objective for drought periods is to meet dry-year delivery needs while limiting rationing to a maximum of 20 percent system-wide reduction in regional water service during extended droughts. As the SFPUC has designed its system to meet this goal, it is reasonable to assume that to the extent the SFPUC can achieve its service goals, sufficient supplies would be available to serve existing development and planned growth accounted for in the 2020 plan (which includes the proposed project) and that new or expanded water supply facilities are not needed to meet system-wide demand. While the focus of this analysis is on water demand in San Francisco and not the regional water system as a whole, this cumulative analysis considers the SFPUC's regional water supply level of service goal of rationing of not more than 20 percent in evaluating whether new or expanded water supply facilities would be required to meet the demands of existing development and projected growth in San Francisco through 2045. If a shortfall would require rationing more than 20 percent to meet system-wide dry-year demand, the analysis evaluates whether as a result, the SFPUC would develop new or expanded water supply facilities that result in significant physical environmental impacts. It also considers whether such a shortfall would result in a level of rationing that could cause significant physical environmental impacts. If the analysis determines that there would be a significant cumulative impact, then per CEQA Guidelines section 15130, the analysis considers whether the project's incremental contribution to any such effect is "cumulatively considerable".

As discussed above, existing and planned dry-year supplies would meet projected demands for San Francisco water customers through 2045 under Scenario 1 within the SFPUC's regional water system adopted water supply reliability level of service goal. Therefore, the SFPUC could meet the water supply needs for the proposed project in combination with existing development and projected growth in San Francisco through 2045 from the SFPUC's existing system. The SFPUC would not be expected to develop new or expanded water supply facilities for San Francisco customers under Scenario 1 and there would be no significant cumulative environmental impact.

The effect of Scenario 2 cannot be quantified at this time but as explained previously, if it can be designed to achieve the SFPUC's level of service goals and is adopted, it would be expected to have effects similar to Scenario 1. Given the SFPUC's stated goal of maintaining its level of service goals under Scenario 2, it is expected that Scenario 2 effects would be more similar to Scenario 1 than to Scenario 3. In any event, any shortfall effects under Scenario 2 that exceed the SFPUC's service goals would be expected to be less than those under Scenario 3. Therefore, the analysis of Scenario 3 would encompass any effects that would occur under Scenario 2 if it were to trigger the need for increased water supply or rationing in excess of the SFPUC's regional water system level of service goals.

Under Scenario 3, the SFPUC's existing and anticipated water supplies would be sufficient to meet the demands of existing development and projected growth in San Francisco, including the proposed project, through 2045 in wet and normal years, which have historically occurred in approximately nine out of 10 years on average. During dry and multiple dry years, supply shortfalls of 16.5 to 35.8 percent could occur.

The SFPUC has indicated in its water supply assessment that as a result of the adoption of the Bay-Delta Plan Amendment and the resulting potential limitations on supply to the regional water system during dry years, the SFPUC is increasing and accelerating its efforts to develop additional water supplies and explore other projects that would increase overall water supply resilience. It lists possible projects that it will study. While the SFPUC has taken action to fund several alternative water supply options, the projects are still in the early feasibility or conceptual planning stages. The SFPUC has determined that the identified potential projects would take anywhere from 10 to 30 years or more to implement.

There is also a substantial degree of uncertainty associated with the implementation of the Bay-Delta Plan Amendment and its ultimate outcome, and therefore, there is substantial uncertainty in the amount of additional water supply that may be needed, if any. Moreover, there is uncertainty and lack of knowledge as to the feasibility and parameters of the possible water supply projects the SFPUC is beginning to explore. Consequently, the physical environmental impacts that could result from future supply projects is speculative at this time and would not be expected to be reasonably determined for a period of time ranging from 10 to 30 years. Although it is not possible at this time to identify the specific environmental impacts that could result, this analysis assumes that if new or expanded water supply facilities, such as those listed above under "Additional Water Supplies," were developed, the construction and/or operation of such facilities could result in significant adverse environmental impacts.

As discussed above, the proposed project would represent 0.034 percent of total demand and 0.022 percent of potable water demand in San Francisco in 2045, whereas implementation of the Bay-Delta Plan Amendment would result in a retail supply shortfall of up to 35.8 percent. Thus, new or expanded dry-year water supplies would be needed under Scenario 3 regardless of whether the proposed project is constructed. As such, any physical environmental impacts related to the construction and/or operation of new or expanded water supplies would occur with or without the proposed project. Therefore, the proposed project

would not have a considerable contribution to any significant cumulative impacts that could result from the construction or operation of new or expanded water supply facilities developed in response to the Bay-Delta Plan Amendment.

IMPACTS RELATED TO RATIONING

Given the long lead times associated with developing additional water supplies, in the event the Bay-Delta Plan Amendment were to take effect sometime after project approval and result in a dry-year shortfall, the expected action of the SFPUC for the next 10 to 30 years (or more) would be limited to increased rationing. The remaining analysis therefore focuses on whether rationing at the levels that might be required under the Bay-Delta Plan Amendment could result in any cumulative impacts, and if so, whether the project would make a considerable contribution to these impacts.

The SFPUC has established a process through its 2020 Water Shortage Contingency Plan for actions it would take under circumstances requiring rationing. Rationing at the level that might be required under the Bay-Delta Plan Amendment would require restrictions on irrigation and other outdoor water uses (e.g., car washing), changes to water use behaviors (e.g., shorter and/or less-frequent showers), and changes to how businesses operate, all of which could lead to undesirable socioeconomic effects. Any such effects would not constitute physical environmental impacts under CEQA.

High levels of rationing could however lead to adverse physical environmental effects, such as the loss of vegetation cover resulting from prolonged restrictions on irrigation. Prolonged high levels of rationing within the city could also make San Francisco a less desirable location for residential and commercial development compared to other areas of the state not subject to such substantial levels of rationing, which, depending on location, could lead in turn to increased urban sprawl. Sprawl development is associated with numerous environmental impacts, including, for example, increased greenhouse gas emissions and air pollution from longer commutes and lower density development, higher energy use, loss of farmland, and increased water use from less water-efficient suburban development.[114] In contrast, as discussed in the transportation section, the proposed project is located in an area where VMT per capita is well below the regional average; projects in San Francisco are required to comply with numerous regulations that would reduce greenhouse gas emissions, as discussed in the greenhouse gas section of this initial study, and San Francisco's per capita water use is among the lowest in the state. Thus, the higher levels of rationing on a citywide basis that could be required under the Bay-Delta Plan Amendment could lead directly or indirectly to significant cumulative impacts. The question, then, is whether the project would make a considerable contribution to impacts that may be expected to occur in the event of high levels of rationing.

While the levels of rationing described above apply to the retail service area as a whole (i.e., 5.3 percent under Scenario 1, 16.5 to 35.8 percent under Scenario 3), the SFPUC may allocate different levels of rationing to individual customers based on customer type (e.g., dedicated irrigation, single-family residential, multi-family residential, commercial, etc.) to achieve the required level of citywide rationing. Allocation methods and processes that have been considered in the past and may be used in future droughts are described in Section 4 of the SFPUC's current Water Shortage Contingency Plan.[115]

[114] Pursuant to the SFPUC 2020 Urban Water Management Plan, San Francisco's per capita water use is among the lowest in the state.
[115] San Francisco Public Utilities Commission, *2020 Urban Water Management Plan for the City and County of San Francisco, Appendix K – Water Shortage Contingency Plan,* adopted June 11, 2021. This document is available at Urban Water Management Plan | SFPUC.

In accordance with the Retail Water Shortage Allocation Plan, the level of rationing that would be imposed on the proposed project would be determined at the time of a drought or other water shortage and cannot be established with certainty prior to the shortage event. However, newly constructed buildings, such as the proposed project, have water-efficient fixtures and non-potable water systems that comply with the latest regulations. Thus, if these buildings can demonstrate below-average water use, they would likely be subject to a lower level of rationing than other retail customers that meet or exceed the average water use for the same customer class.

While any substantial reduction in water use in a new, water efficient building likely would require behavioral changes by building occupants that are inconvenient, temporary rationing during a drought is expected to be achievable through actions that would not cause or contribute to significant environmental effects. The effect of such temporary rationing would likely cause occupants to change behaviors but would not cause the substantial loss of vegetation because vegetation on this urban infill site would be limited to ornamental landscaping, and non-potable water supplies would remain available for landscape irrigation in dry years. The project would not include uses that would be forced to relocate because of temporary water restrictions, such as a business that relies on significant volumes of water for its operations. While high levels of rationing that would occur under Scenario 3 could result in future development locating elsewhere, existing hotel and office workers, and businesses occupying the proposed project would be expected to tolerate rationing for the temporary duration of a drought.

As discussed above, implementation of the Bay-Delta Plan Amendment would result in substantial system-wide water supply shortfalls in dry years. These shortfalls would occur with or without the proposed project, and the project's incremental increase in potable water demand (0.022 percent of total demand for retail water customers) would have a negligible effect on the levels of rationing that would be required throughout San Francisco under Scenario 3 in dry years.

As such, temporary rationing that could be imposed on the project would not cause or contribute to significant environmental effects associated with the high levels of rationing that may be required on a city-wide basis under Scenario 3. Thus, the project would not make a considerable contribution to any significant cumulative impacts that may result from increased rationing that may be required with implementation of the Bay-Delta Plan Amendment, were it to occur.

CONCLUSION

As stated above, there is considerable uncertainty as to whether the Bay-Delta Plan Amendment will be implemented. If the Bay-Delta Plan Amendment is implemented, the SFPUC will need to impose higher levels of rationing than its regional water system level of service goal of no more than 20 percent rationing during drought years by 2025 and for the next several decades. Implementation of the Bay-Delta Plan Amendment would result in a shortfall ranging from 16.5 percent in a single dry year and year one of multiple dry years to up to 27.8 percent in years two through five of a multiple year drought in 2025, and dry year shortfalls by 2045 ranging from 25.9 percent in a single dry year and years one through three of a multiple year drought to up to 35.8 percent in years four and five of a multiple year drought. While the SFPUC may seek new or expanded water supply facilities, it has not made any definitive decision to pursue particular actions and there is too much uncertainty associated with this potential future decision to identify environmental effects that would result. Such effects are therefore speculative at this time. In any case, the need to develop new or expanded water supplies in response to the Bay-Delta Plan Amendment and any related environmental impacts would occur irrespective of the water demand associated with the proposed

project. Given the long lead times associated with developing additional supplies, the SFPUC's expected response to implementation of the Bay-Delta Plan Amendment would be to ration in accordance with procedures in its Water Shortage Contingency Plan.

Both direct and indirect environmental impacts could result from high levels of rationing. However, the proposed project is a mixed-use urban infill development that would be expected to tolerate the level of rationing imposed on it for the duration of the drought, and thus would not contribute to sprawl development caused by rationing under the Bay-Delta Plan Amendment. The project itself would not be expected to contribute to a loss of vegetation because project-generated non-potable supplies would remain available for irrigation in dry years. Nor would the small increase in potable water demand attributable to the project compared to citywide demand substantially affect the levels of dry-year rationing that would otherwise be required throughout the city. Thus, the proposed project would not make a considerable contribution to a cumulative environmental impact caused by implementation of the Bay-Delta Plan Amendment. Therefore, for the reasons described above, under all three scenarios, this impact would be considered ***less than significant***, and no mitigation measures are necessary.

Impact UT-3: The proposed project would not generate solid waste in excess of state or local standards, in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. ***(Less than Significant)***

In September 2015, the City entered into a landfill disposal agreement with Recology, Inc., for disposal of all solid waste collected in San Francisco, at the Recology Hay Road Landfill in Solano County, through September 2024 or until 3.4 million tons have been disposed, whichever occurs first. Then in June 2024, the City renewed this agreement for a period of six years or until an additional 1.6 million tons have been disposed, whichever occurs first.[116] The Recology Hay Road Landfill has a maximum permitted capacity of 42 million cubic yards, and is permitted to accept up to 3,200 tons per day of solid waste; as of May 2018, 24.9 million cubic yards of disposal capacity was available for solid waste disposal.[117,118] At that maximum permitted rate, the landfill has the capacity to accommodate solid waste until approximately 2065. The City's contract with the Recology Hay Road Landfill will extend until 2031 or when the City has disposed 5 million tons of solid waste, whichever occurs first. At that point, the City would either further extend the landfill contract or find and entitle an alternative landfill site.

Further, the proposed project would be required to implement the City's Mandatory Recycling and Composting Ordinance (Ordinance No. 100-09), the objective of which is to minimize the city's landfill trash generation. In compliance with this ordinance, the proposed project would be required to provide convenient facilities for the separation of recyclables, compostables, and landfill trash for its users. Occupants of the project site would be required to separate disposed material.

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[116] San Francisco Planning Department, *Agreement for Disposal of San Francisco Municipal Solid Waste at Recology Hay Road Landfill in Solano County, Final Negative Declaration, Planning Department Case No. 2014.0653*, May 21, 2015, http://sfmea.sfplanning.org/2014.0653E_Revised_FND.pdf, accessed October 24, 2024.

[117] Solano County, Recology Hay Road Landfill Conditional Use Permit Amendment No. 2 Draft Subsequent EIR, State Clearinghouse Number 2018032031, December 2019, https://files.ceqanet.opr.ca.gov/4110-3/attachment/U3LhwXbuHh2b_Q4mFkxUXUHwdXkKVSYn5_el0-ZYaUUWri944CgEBvuueqJfYQHw_ukr4qoclP1Lutp-0, accessed October 24, 2024.

[118] Solid Waste Facility Permit, Recology Hay Road, issued December 10, 2021.

Construction of the proposed project also would generate demolition and construction waste. The City's Construction and Demolition Debris Recovery Ordinance (Ordinance No. 27-06) prohibits construction and demolition material from being taken to landfill or placed in the garbage. All mixed debris must be transported by a registered hauler to a registered facility to be processed for recycling, and source separated material must be taken to a facility that recycles or reuses those materials.

As discussed above, the City has access to adequate landfill capacity at least through 2031 and potentially through 2065 and anticipates that an adequate alternative site will be identified at that point. On this basis, the City has adequate solid waste capacity to serve the proposed project, and the impact with respect to landfill capacity would be ***less than significant***, and no mitigation measures are necessary.

Impact UT-4: The proposed project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. ***(No Impact)***

The California Integrated Waste Management Act of 1989 (Assembly Bill 939) requires municipalities to adopt an integrated waste management plan to establish objectives, policies, and programs related to waste disposal, management, source reduction, and recycling. Reports filed by the San Francisco Environment Department show that the city generated approximately 870,000 tons of waste material in 2000. By 2010, that figure decreased to approximately 455,000 tons. Waste diverted from landfills is defined as recycled or composted. San Francisco successfully achieved the state-mandated 50 percent landfill diversion by 2000 and exceeded its goal of 75 percent diversion from landfill and incineration two years early. In September 2018, the zero waste goals were updated to include reducing municipal solid waste generation by 15 percent by 2030 (reducing what goes to recycling, composting, and trash) and reducing disposal to landfill and incineration by 50 percent by 2030 (reducing what goes in the black trash bins).[119]

San Francisco's Construction and Demolition Ordinance (Ordinance No. 27-06) requires a minimum of 65 percent of all construction and demolition debris to be recycled and diverted from landfills. Furthermore, San Francisco Ordinance No. 100-09 (the Mandatory Recycling and Composting Ordinance) requires everyone in San Francisco to separate their solid waste into recyclables, compostables, and trash. The proposed project would be subject to and would comply with San Francisco Ordinance No. 27-06, San Francisco Ordinance No. 100-09, and all other applicable statutes and regulations related to solid waste. Accordingly, the proposed project would be required to follow state and federal regulations related to the disposal of hazardous wastes, and hazardous wastes would be transported to a permitted disposal or recycling facility. The proposed project would comply with all applicable local, state, and federal laws and regulations pertaining to solid waste, and there would be ***no impact***.

Impact C-UT-1: The proposed project, in combination with cumulative projects, would not result in a significant cumulative impact on utilities and service systems. ***(Less than Significant)***

Implementation of the proposed project, in combination with cumulative development in the project vicinity, would result in an incremental increase in population, water consumption, and wastewater and solid waste generation. The SFPUC has accounted for such growth in its water demand and wastewater

[119] San Francisco Environment Department, 2024. Frequently Asked Questions (FAQ) about Zero Waste, https://www.sfenvironment.org/zero-waste-faqs?repaired, accessed October 24, 2024.

service projections, and the City has implemented various programs to divert solid waste from landfills. Furthermore, all projects in San Francisco would be required to comply with the same regulations described above that reduce stormwater, potable water, and waste generation. For these reasons, the proposed project, in combination with cumulative projects, would not result in a significant cumulative impact on utilities and service systems and impacts would be ***less than significant***, and no mitigation measures are necessary.

E.13 Public Services

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
13. PUBLIC SERVICES. Would the project:					
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services such as fire protection, police protection, schools, parks, or other public facilities?	☐	☐	☒	☐	☐

The proposed project's impacts on parks and open spaces are discussed in Section E.11, Recreation, p. 112. Impacts on other public services are discussed below.

Impact PS-1: The proposed project would increase the demand for public services such as fire protection, police protection, schools, or other services but not to an extent that construction of new or physically altered facilities would be required. ***(Less than Significant)***

Fire Protection Services

The San Francisco Fire Department (fire department) provides fire suppression services and unified emergency medical services and transport, including basic life support and advanced life support services, in the City. The project site is within the service area of the fire department's Battalion 1, and Fire Station 13 is located on the project site.[120] Other stations in Battalion 1 include Station 2 (1340 Powell Street at Broadway), Station 28 (1814 Stockton Street at Greenwich Street), and Station 41 (1325 Leavenworth Street at Jackson Street).[121] Of these three, Station 2 is the closest fire station, located approximately 0.45 mile northwest of the project site.

[120] San Francisco Fire Department, 2024. *Find Your Station*, https://sf-fire.org/find-your-station, accessed October 10, 2024.
[121] San Francisco Fire Department, 2024. *Organization Chart*, https://sf-fire.org/organization-chart, accessed October 10, 2024.

As part of the proposed project, all buildings on the project site would be demolished, including Fire Station 13. As described in draft EIR Chapter 2, Project Description, during construction, fire department personnel and fire trucks would be relocated to existing fire department facilities as close to the project site as possible and would continue to serve the Financial District neighborhood and the city in general. No construction or tenant improvements would be required for temporary relocation. Thus, no interruption of fire department services would occur, and the existing levels of fire protection would be maintained during construction of the proposed project.

Thus, impacts on fire protection during construction would be temporary and ***less than significant***, and no mitigation measures are necessary.

As discussed in draft EIR Chapter 2, Project Description, the proposed project would construct a replacement fire station on the eastern portion of the project site on 447 Battery Street. The replacement fire station would be approximately 31,200 square feet (approximately 12,574 square feet larger than the existing fire station on the project site). The environmental impacts of construction of the replacement fire station are analyzed throughout the draft EIR, to which this initial study is appended. Operational impacts related to the replacement fire station, such as noise impacts from sirens and staffing levels, would be similar to existing conditions.

The fire department and building department would review building plans to ensure that proposed buildings comply with the latest California Building Code requirements for fire and life safety measures as specified in the San Francisco Fire Code. These requirements include measures related to emergency access and egress; fire hydrants and sprinkler systems; fire-rated design, construction, and materials; restrictions on occupant loads; emergency lighting; smoke alarms; and mechanical smoke control and emergency notification systems. The proposed project and replacement fire station design has been prepared with the input of the fire department. The project sponsors would continue to work with the fire department to determine utility and access requirements for fire protection and emergency services at the project site. Adherence to San Francisco Fire Code requirements as part of the project design would minimize demand for future fire protection services.

The proposed project would be constructed in a fully developed area of San Francisco. However, implementation of the proposed project would result in a more intensive use of the project site than currently exists. The proposed project's increase in use and service population at the project site would therefore increase demand for public fire protection and emergency medical services. Once constructed and under operation, the proximity of the project site to Fire Station 13 would help minimize fire department response times should incidents occur at the project site. The environmental impacts of demolition, temporary relocation of fire equipment and personnel, and construction of the replacement fire station are analyzed throughout the draft EIR, to which this initial study is appended, and the construction of additional fire facilities beyond those proposed by the project sponsors would not be required. This impact would be ***less than significant***, and no mitigation measures are necessary.

Police Protection Services

The San Francisco Police Department (police department) provides police protection in the city. Police department services include responding to calls for police assistance, monitoring and managing traffic, and performing general surveillance duties. The project site is within the police department's Central District,

and the closest police station is the Central Police Station at 766 Vallejo Street (between Stockton and Powell streets), approximately 0.50 mile northwest of the project site.[122]

The proposed project would result in a more intensive use at the project site compared with current conditions with the addition of hotel rooms, office, and restaurant/retail space; therefore, it would most likely incrementally increase the number of police service calls in the project area. The increased demand from the proposed project would not be considered substantial given the ongoing staffing analysis and dynamic resource deployment that occurs on a citywide basis. In compliance with the City charter mandate, police department resources are regularly redeployed based on need in order to maintain charter-mandated staffing and acceptable service ratios. Therefore, implementation of the proposed project would not require the construction of new or alteration of existing police facilities. This impact would be ***less than significant***, and no mitigation measures are necessary.

School Services

John Yehall Chin Elementary School, at 350 Broadway (approximately 0.20 mile north of the project site); Gordon J. Lau Elementary School, at 950 Clay Street (approximately 0.40 mile west of the project site); and Garfield Elementary School, at 420 Filbert Street (approximately 0.50 mile northwest of the project site) are the nearest public elementary schools to the project site. The closest middle school is Francisco Middle School, at 2190 Powell Street (approximately 0.80 mile to the northwest of the project site), and the closest high school is the Galileo Academy of Science and Technology, at 1150 Francisco Street (approximately 1.32 miles northwest of the project site).[123]

The proposed project would not include any residential units and, thus, would not directly contribute to school-aged children or the demand for school services. Therefore, implementation of the proposed project would not necessitate the need for new school facilities or the expansion of existing school facilities, which could result in significant environmental impacts. Therefore, there would be a ***less-than-significant impact*** on school facilities associated with implementation of the proposed project, and no mitigation measures are necessary.

Other Public Services

Because the proposed project would not include new residential units, increased demand for other government services and facilities, such as public libraries, is not anticipated with proposed project implementation. Although some hotel patrons and employees may use government services and facilities, such use would not be expected to rise to a level that could not be accommodated by existing facilities.

The Chinatown Branch of the San Francisco Public Library is located at 1135 Powell Street, approximately 0.46 mile west of the project site.[124] The North Beach Branch is located at 850 Columbus Avenue, approximately 0.79 mile northwest of the project site.[125] Given there are multiple library facilities within 1 mile of the project site, these resources would accommodate the demand for library services generated by the hotel patrons and employees of the proposed project. Therefore, the proposed project would not require

[122] San Francisco Police Department, 2024. *Station Finder*, https://www.sanfranciscopolice.org/your-sfpd/sfpd-stations/station-finder, accessed October 10, 2024.
[123] San Francisco Unified School District, 2024. *School Finder*, https://www.sfusd.edu/schools/enroll/discover/school-finder?map-visible=true&grade=All&address=530+Sansome+St%2C+San+Francisco%2C+CA+94111%2C+USA, accessed October 10, 2024.
[124] San Francisco Public Library, 2024. *Chinatown/Him Mark Lai,* https://sfpl.org/locations/chinatown, accessed October 14, 2024.
[125] San Francisco Public Library, 2024. *North Beach*, https://sfpl.org/locations/north-beach, accessed October 14, 2024.

construction of new or expanded library facilities. Therefore, impacts on library services would be ***less than significant***, and no mitigation measures are necessary.

Impact C-PS-1: The proposed project, in combination with cumulative projects, would not result in a significant cumulative impact on public services. ***(Less than Significant)***

The geographic context for cumulative fire, police, and library impacts are the police, fire, and library service areas, while the geographic context for cumulative school impacts is the school district service area. Cumulative development in the project vicinity would result in an intensification of land uses and a cumulative increase in the demand for fire protection, police protection, school services, and other public services. The fire and police departments, the school district, libraries, and other city agencies respond to growth and other changing service needs through ongoing analysis of applicable metrics, such as staffing, capacity, response times, and call volumes. As a result, projected future development would not result in any service gap in citywide police, fire and emergency medical services. As mentioned above, the proposed project would not include any residential units and, thus, would not combine with cumulative projects to create a significant cumulative impact related to demand for school services and libraries. Therefore, the proposed project would not combine with cumulative projects to create a significant cumulative impact on public services. This impact would be ***less than significant***, and no mitigation measures are necessary.

E.14 Biological Resources

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
14. BIOLOGICAL RESOURCES. Would the project:					
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☐	☒

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
c) Have a substantial adverse effect on state- or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐	☐
f) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☐	☒

The project site is paved with existing buildings and located within a built urban environment. The project site does not contain any riparian habitat, other sensitive natural community, or federally protected wetlands. There are no adopted habitat conservation plans, natural community conservation plans, or other approved local, state, or regional habitat conservation plans that apply to the project site. Therefore, topics E.14(b), E.14(c), and E.14(f) are not applicable to the proposed project.

Impact BI-1: The proposed project would not have a substantial adverse effect, either directly or indirectly through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service; and would not interfere with the movement of native resident or wildlife species or with established native resident or migratory wildlife corridor, or impede the use of native wildlife nursery sites. ***(Less than Significant)***

The project site is fully developed and entirely impervious. Therefore, it does not provide habitat for any special-status plant or wildlife species. Thus, project implementation would not affect the habitat of any such species. However, migrating birds regularly pass through San Francisco, which is situated along the Pacific Flyway, a migratory route that is used by numerous avian species.[126] Migratory birds, their nests, and eggs are fully protected by the federal Migratory Bird Treaty Act (MBTA).[127] Although the proposed project would be subject to the MBTA, the project site does not contain habitats that support migratory birds. The proposed project would construct new buildings that would be taller than those currently on the project site.

[126] Audubon Society, San Francisco Bay, https://ca.audubon.org/conservation/conservation/seas-shores/san-francisco-bay, accessed October 10, 2024.
[127] USFWS, Migratory Bird Treaty Act of 1918, 2017, https://www.fws.gov/law/migratory-bird-treaty-act-1918#:~:text=The%20Migratory%20Bird%20Treaty%20Act,all%20protected%20migratory%20bird%20species, accessed October 10, 2024.

The location, building height, and building materials, particularly transparent or reflective glass, may present risks for birds as they travel along their migratory paths. The likelihood of migratory bird collisions could increase because of the proposed façade, which would include a contemporary glass design. The City has adopted guidelines to address this issue and has regulations for bird-safe designs within the city. Planning code section 139, Standards for Bird-Safe Buildings, establishes building design standards to reduce avian mortality rates associated with bird strikes.[128] The building standards are based on two types of hazards: (1) location-related hazards where the siting of a structure inside or within 300 feet of an Urban Bird Refuge (open spaces that are 2 acres and larger and dominated by vegetation or open water) creates an increased risk to birds, and (2) feature-related hazards, which may increase risks to birds regardless of where the structure is located. For new building construction where the location-related standard would apply, the façade requirements include no more than 10 percent untreated glazing and minimal lighting. Any lighting that is used must be shielded and prevented from resulting in any uplighting. Feature-related hazards include free-standing glass walls, wind barriers, skywalks, greenhouses on rooftops, and balconies that have unbroken glazed segments 24 square feet or larger in size. Any structure that contains these elements must treat 100 percent of the glazing.

The project site is not in or within 300 feet of an Urban Bird Refuge.[129] Therefore, the standards related to location-specific hazards are not applicable to the proposed project. The proposed project would comply with the feature-related hazards standards[130] of section 139 by using bird-safe glazing on 100 percent of any feature-related hazards.

The proposed project would be subject to, and would comply with, City-adopted regulations for bird-safe buildings, as well as federal and state migratory bird regulations. Therefore, because implementation of the proposed project would not have a substantial adverse effect on migratory avian species, and because the project site does not support habitat for any special-status species, native resident, and wildlife species, impacts would be ***less than significant***, and no mitigation measures are necessary.

Impact BI-2: The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. ***(Less than Significant)***

The project site does not contain existing trees or other vegetation that would need to be removed as part of the proposed project. The removal of street trees or significant trees, as well as the planting of new street trees, is subject to the provisions of the San Francisco Urban Forestry Ordinance, which is codified as article 16 of the San Francisco Public Works Code.[131]

Implementation of the proposed project would remove three existing street trees along the north side of Merchant Street. The proposed project would comply with San Francisco Public Works Code section 806(d)(2) requirements for street trees associated with new developments by including nine new street trees along Sansome and Washington streets and 10 new street trees along Merchant Street. An in-lieu fee would be paid for street tree plantings otherwise required by the public works code that cannot

[128] San Francisco Planning Department, Standards for Bird-Safe Buildings, July 14, 2011, https://sfplanning.org/sites/default/files/documents/reports/bird_safe_bldgs/Standards%20for%20Bird%20Safe%20Buildings%20-%2011-30-11.pdf, accessed October 10, 2024.
[129] San Francisco Planning Department, Urban Bird Refuge, July 23, 2014, https://sfplanning.org/sites/default/files/resources/2018-08/Urban%20Bird%20Refuge.pdf, accessed October 10, 2024.
[130] Feature-related hazards are defined as the uninterrupted glazed segments of a building that measure 24 square feet or larger.
[131] Street trees and significant trees are defined in article 16, sections 802 and 810A, respectively, of the San Francisco Public Works Code.

reasonably be accommodated on the site. Therefore, the proposed project would not conflict with the City's local tree ordinance and impacts would be ***less than significant***, and no mitigation measures are necessary.

Impact C-BI-1: The proposed project, in combination with cumulative projects, would not result in a significant cumulative impact related to biological resources. ***(Less than Significant)***

The cumulative development projects identified in draft EIR Table 3-1, Cumulative Projects within a 0.25-Mile Radius of the Project Site, p. 3-8, and mapped on Figure 3-1, Cumulative Projects within a 0.25-Mile Radius of the Project Site, p. 3-11, would result in an overall intensification of land uses within the surrounding dense urban environment, as is typical of infill development. The project site is fully developed and impervious. It does not provide habitat for any special-status plant or wildlife species. However, the proposed project and other nearby projects would add numerous tall buildings in the vicinity, which could, in the event of a bird strike, injure or kill birds. However, as with the proposed project, nearby cumulative projects would be subject to the MBTA, which protects special-status bird species; the California Fish and Game Code; and the bird-safe building and urban forestry ordinances. As with the proposed project, compliance with these ordinances would reduce the effects of other development projects to less-than-significant levels. Therefore, the proposed project would not combine with cumulative development projects to result in a significant cumulative impact related to biological resources. Cumulative impacts on biological resources would be ***less than significant***, and no mitigation measures are necessary.

E.15 Geology and Soils

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
15. GEOLOGY AND SOILS. Would the project:					
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:					
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐	☐
iv) Landslides?	☐	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐	☐
c) Be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐	☐

The proposed project would connect to San Francisco's sewer and stormwater collection and treatment system and would not use a septic water disposal system. Therefore, topic E.15(e) is not applicable.

This section describes the geology, soils, and seismicity characteristics of the project area as they relate to the proposed project. The analysis in this section is based on the preliminary geotechnical investigation report prepared for the proposed project by an independent consultant.[132] This preliminary geotechnical investigation report is the primary source of information included in this section. The scope of the geotechnical investigation included rotary-wash borings, a downhole geophysical survey, laboratory testing for engineering properties, and evaluation of soil and groundwater conditions at the site.

Site Geology

The project site is underlain by Franciscan Complex bedrock, which is locally overlain by native clay and sand deposits, Bay Mud, and artificial fill. The fill consists of loose to medium-dense sands and significant amounts of debris. The Bay Mud is a compressible, very soft to medium-stiff clay and may be normally consolidated (i.e., has not experienced higher overburden pressure in its depositional past). Thin layers of loose to medium-dense marine sand may be present within the Bay Mud; the thickness of Bay Mud would be expected to increase to the east (toward the Bay). Underlying the artificial fill and Bay Mud, dense to very dense clayey sands/medium stiff to hard sandy clays and dense to very dense sands were previously encountered in the project vicinity. Maps of historically highest groundwater levels indicate a depth to groundwater of approximately 10 feet below ground surface (bgs), or an elevation of -8 feet mean sea level. Monitoring wells north and west of the site measured water at about -10 feet mean sea level. Groundwater levels would be expected to fluctuate, based on rainfall and seasonal variations.

Project Features

The proposed project would involve demolition of four buildings on adjoining parcels and construction of and construction of a 4-story replacement fire station on the 447 Battery Street parcel and a separate high-rise building up to 41-stories tall on the remaining three parcels. The project's deep foundation is anticipated to require the use of auger pressure-grouted displacement piles, drilled shafts, auger cast piles, Fundex piles, or Torque Down® piles. The project site would be excavated up to 15 feet bgs for the replacement fire station and up to approximately 51 feet bgs to accommodate the three below-grade levels under the high-rise building. The proposed project would require approximately 42,000 cubic yards of excavated soil to be removed from the project site and disposed of at an appropriate facility. Groundwater was encountered on the project site at 12 to 13 feet bgs; therefore, dewatering will be required during construction.

Regulatory Framework

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (Alquist-Priolo Act). The Alquist-Priolo Act (Public Resources Code section 2621 et seq.) is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location and construction of most types of structures intended for human occupancy[133] across the trace of active faults and strictly regulates construction in the corridors along active faults (i.e., earthquake fault zones).

[132] Langan, *Geotechnical Investigation, 530 Sansome Street, 425 and 435-445 Washington Street and 447 Battery Street, San Francisco, California*, June 21, 2024.
[133] With reference to the Alquist-Priolo Act, a *structure for human occupancy* is defined as one "used or intended for supporting or sheltering any use or occupancy, which is expected to have a human occupancy rate of more than 2,000 person-hours per year" (California Code of Regulations, title 14, division 2, section 3601[e]).

State Building Code Chapters 18 and 16. Chapter 18, Soils and Foundations, of the state building code provides the parameters for geotechnical investigations and structural considerations in the selection, design, and installation of foundation systems to support the loads from the structure above. Section 1803 (Geotechnical Investigations) sets forth the scope of geotechnical investigations conducted. Section 1804 (Excavation, Grading and Fill) specifies considerations for excavation, grading, and fill to protect adjacent structures and to prevent destabilization of slopes due to erosion and/or drainage. In particular, Section 1804.1 (Excavation near foundations) requires that adjacent foundations be protected against a reduction in lateral support as a result of project excavation. This is typically accomplished by underpinning or protecting said adjacent foundations from detrimental lateral or vertical movement, or both. Section 1807 (Foundation Walls, Retaining Walls, and Embedded Posts and Poles) specifies requirements for foundation walls, retaining walls, and embedded posts and poles to ensure stability against overturning, sliding, and excessive pressure, and water lift, including seismic considerations. Sections 1808 through 1810 (Foundations) specify requirements for foundation systems based on the most unfavorable loads specified in Chapter 16, Structural, for the structure's seismic design category in combination with the soil classification at the project site.

State Seismic Hazards Mapping Act of 1990 (Landslide and Liquefaction Hazard Zones). Pursuant to the Seismic Hazards Mapping Act of 1990 (seismic hazards act), the California State Geologist has designated seismic hazard zones for landslide and liquefaction hazards. These mapped areas enable cities and counties to adequately prepare the safety element of their general plans and to encourage land use management policies and regulations to reduce and mitigate those hazards in order to protect public health and safety.[134]

Projects located within a seismic hazard zone for liquefaction or landslide hazard are subject to the seismic hazards act requirements, which include the preparation of a geotechnical investigation by qualified engineer and/or geologist to delineate the area of hazard and to propose measures to address any identified hazards. The local building official must incorporate the recommended measures to address such hazards into the conditions of the building permit.

San Francisco Building Code

Building Department Permit Review Process. San Francisco relies on the state and local regulatory review process for review and approval of building permits pursuant to the California Building Standards Code (California Code of Regulations, title 24); the San Francisco Building Code, which is the state building code plus local amendments (including administrative bulletins) that supplement the state code; the building department's implementing procedures, including information sheets; and the Seismic Hazards Mapping Act of 1990 (Public Resources Code sections 2690 to 2699.6). Administrative Bulletin No. AB-82 provides guidelines and procedures for structural, geotechnical, and seismic hazard engineering design review.[135] Information Sheet No. S-05 identifies the type of work for which geotechnical reports are required, such as for new construction, building additions, and grading, and report submittal requirements.[136] The building department reviews project plans for conformance with the recommendations in project-specific

[134] In the context of the seismic hazards act, "mitigation" refers to measures that are consistent with established practice and that will reduce seismic risk to acceptable levels, rather than the mitigation measures that are identified under CEQA to reduce or avoid environmental impacts of a proposed project.
[135] San Francisco Department of Building Inspection, Administrative Bulletin No. AB-082, Guidelines and Procedures for Structural, Geotechnical, and Seismic Hazard Engineering Design Review, November 21, 2018. https://codelibrary.amlegal.com/codes/san_francisco/latest/sf_building/0-0-0-95162.
[136] San Francisco Department of Building Inspection, Information Sheet No. S-05, Geotechnical Report Requirements, May 7, 2019. Available at https://codelibrary.amlegal.com/codes/san_francisco/latest/sf_building/0-0-0-95162.

geotechnical report during its review of the building permit for the project and may require additional site-specific soils report(s) through the building permit application process.

Buildings 240 feet in Height or Taller. Administrative Bulletin AB-111 presents requirements and guidelines for developing a geotechnical site investigation program and preparing geotechnical reports for foundation design and construction of buildings greater than 240 feet in height.[137] This bulletin was developed by a volunteer group of experienced geotechnical engineers as an ad-hoc committee of the Structural Engineers Association of Northern California (SEAONC) and processed (and in some places revised) through subcommittees of the Building Inspection Commission.

Geotechnical design review is mandatory and must meet the requirements of AB-082. The geotechnical member(s) of the Engineering Design Review Team (EDRT) shall participate in the Early Site Permit phase of the project to review the Geotechnical Engineer of Record's plan for geotechnical site investigations. During the subsequent design review, the EDRT must use the following guidelines to review the geotechnical report prepared for foundation design and construction. At the conclusion of the review, the geotechnical members of the EDRT must determine in writing that the geotechnical site-investigation plan and geotechnical reports meet the requirements of the San Francisco Building Commission and AB-111.

Project submittal documents must be in accordance with the San Francisco Building Commission and DBI interpretations, Administrative Bulletins, and policies. In addition, documents relevant to the Geotechnical Design Review shall be submitted by the Engineer of Record to the Director and to the geotechnical members of the EDRT.

In coordination with the project architect and structural engineer, the following information (if available at the time of preparation of the geotechnical report) should be provided: The project description; a site location map; height of the structure; number of stories; number of basement levels; lateral and gravity loads resisting systems; anticipated gravity foundation loads or bearing pressures; applicable codes and design guidelines for seismic design of the building; description of the energy dissipation system (if used); and the approach for development of design ground motions.

The following topics are addressed in AB-111: site surface conditions; regional and local geology' seismicity; field Investigation and laboratory testing; subsurface conditions; foundation and geotechnical earthquake engineering studies, including Code-based site classification, ground-motion and seismic ground deformation characterization (including seismic slope stability and soil liquefaction hazards); settlement analysis (including shallow and deep foundations); sea level rise; static and seismic design of basement walls; foundation support (including driven concrete and steel piles, augered cast-in-place piles, and drilled shafts); shoring, dewatering, excavation and underpinning; instrumentation and construction monitoring (including selection of instrumentation and monitoring requirements, pre-construction monitoring, and reporting).

The geotechnical report should also address the effects of construction on adjacent buildings, notably where ground improvements or new foundations extend below the foundation of the adjacent buildings; the potential of loss of ground and displacements due to construction of large-diameter drilled shafts installed deeper than the foundation of an adjacent buildings; the impact of installation of deep foundations on

[137] San Francisco Department of Building Inspection, Administrative Bulletin AB-111, *Guidelines for Preparation of Geotechnical and Earthquake Ground Motion Reports for Foundation Design and Construction of Tall Buildings*, June 15, 2020. Available at https://sfdbi.org/sites/default/files/AB-111%20dated%2006-15-2020.pdf.

previously installed foundations; the potential impact of ground-surface heave or vibrations on adjacent structures and improvements; and the effect of construction on the groundwater level inside and outside of the construction area.

Prior to completion of all new tall building projects where the building would be supported on a shallow foundation (not bearing directly on bedrock), the project sponsor must contract with qualified surveyors and instrumentation engineers to monitor the settlement of buildings annually for a 10-year period. Should the settlement monitoring data exceed the geotechnical engineer's estimated time rate of settlement, the project sponsor must notify DBI and bring this condition to DBI's attention for immediate additional investigation.

Mandatory Interdepartmental Project Review. Projects that involve new construction of a building eight stories or more, new construction in a seismic hazard zone for liquefaction hazard, or new construction in a seismic hazard zone for landslide hazard are subject to a mandatory interdepartmental project review prior to a public hearing before the planning commission or the issuance of the new construction building permit. The interdepartmental review meeting must include representatives from the planning, building, public works, and fire departments to address compliance with applicable codes, and design and project construction considerations.[138]

San Francisco Public Works Code. Section 146, Construction Site Runoff Control, requires that all construction sites must implement best management practices to minimize surface runoff erosion and sedimentation. In addition, pursuant to section 146.7 if construction activities would disturb 5,000 square feet or more of ground surface, then the project sponsor must have an Erosion and Sediment Control Plan (erosion control plan) developed and submit a project application to the San Francisco Public Utilities Commission prior to commencing construction-related activities. An erosion control plan is a site-specific plan that details the use, location and emplacement of sediment and erosion control devices.

San Francisco Subdivision Code. Section 1358, Preliminary Soils Report, of the City's subdivision ordinance requires that developers file soil reports indicating any soil characteristics which may create hazards and identify measures to avoid soil hazards and prevent grading from creating unstable slopes. The ordinance requires that a state-registered civil engineer prepare the soils report.

Impact GE-1: The proposed project would not exacerbate the potential to expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, liquefaction, seismically induced ground failure, or landslides. ***(Less than Significant)***

To ensure that the potential for adverse geologic, soil, and seismic hazards is adequately addressed, San Francisco relies on state and local regulatory processes for review and approval of building permits, pursuant to the California Building Code; and the San Francisco Building Code, which is the state building code plus local amendments that supplement the state code, including the building department's administrative bulletins. The applicable state and local regulations applicable to this project are described above.

[138] San Francisco Planning Department, *Interdepartmental Project Review*, https://sfplanning.org/resource/interdepartmental-PRV-application.

The project site is within a seismic hazard zone (liquefaction zone), as discussed below; therefore, site design and construction must comply with the requirements of the Seismic Hazards Act.

Fault Rupture

The project site is not located within an earthquake fault zone, as defined by the Alquist-Priolo Earthquake Fault Zoning Act, and no known fault or potentially active fault exists within the project site.[139] In a seismically active area such as the Bay Area, the remote possibility exists for future faulting in areas where no faults were previously known to exist, but the likelihood of such fault rupture is extremely low.

Ground Shaking

The San Andreas, Hayward, and San Gregorio faults are the closest major faults.[140] The project site is approximately 13 miles east of the San Andreas Fault Zone, 16 miles west of the Hayward Fault Zone, and 19 miles east of the San Gregorio Fault. In addition, according to the U.S. Geological Survey, the overall probability of moment magnitude 6.7 or greater earthquake to occur within the Bay Area during the next 30 years is 72 percent.[141] The proposed project would most likely experience periodic minor earthquakes and perhaps a major earthquake (moment magnitude greater than 6) on one of the nearby faults during its service life.

The proposed project would include a high-rise building up to 41-stories tall at the western portion of the site and a 4-story fire station at the eastern portion of the site. The proposed high-rise building would be structurally separate from the replacement fire station. The top of the basement slabs for the replacement fire station and high-rise building would be approximately 12 feet and 37 feet below existing street grades, respectively.

To ensure that the potential for adverse effects related to geology and soils is adequately addressed, San Francisco relies on the state and local regulatory process for review and approval of building permits, pursuant to the California Building Code and the San Francisco Building Code, which is the California Building Code plus local amendments that supplement the California Building Code, including the building department's administrative bulletins and information sheets. The proposed project would be required to follow the building department's local implementing procedures, including administrative bulletins, which are part of the local building code, and information sheets, which clarify building department requirements and procedures. On November 21, 2018, the building department issued Administrative Bulletin AB-082, Guidelines and Procedures for Structural, Geotechnical, and Seismic Hazard Engineering Design Review,[142] superseding AB-082, originally issued March 25, 2008, and revised December 19, 2016. The guidelines describe the review process for structural, geotechnical, and seismic hazard engineering design, including the characteristics considered in determining whether review is required and, if so, which reviews are required. The guidelines were updated on January 1, 2023, for code references.

[139] California Geological Survey, Earthquake Zones of Required Investigation, 2024, https://maps.conservation.ca.gov/cgs/EQZApp/app/, accessed on October 14, 2024.
[140] Langan Engineering and Environmental services, Inc., *Geotechnical Investigation, 530 Sansome Street, 425 and 435-445 Washington Street and 447 Battery Street, San Francisco, California*, June 21, 2024.
[141] U.S. Geological Survey, Uniform California Earthquake Rupture Forecast (UCERF3), Fact Sheet 2015-3009, UCERF3: A New Earthquake Forecast for California's Complex Fault System, March 2015.
[142] San Francisco Department of Building Inspection, Administrative Bulletin 082, Guidelines and Procedures for Structural Design Review, January 1, 2023, https://codelibrary.amlegal.com/codes/san_francisco/latest/sf_building/0-0-0-95162, accessed October 14, 2024.

Because of the building department's permit review process, ensuring that structural and foundation plans comply with applicable building code provisions and conform to the measures recommended in the project-specific geotechnical investigation report, and the recommendations made by the engineering design review team, as required by AB-082,[143] the impacts of the proposed project related to strong seismic ground shaking would be ***less than significant***, and no mitigation measures are necessary.

Landslides, Liquefaction, Lateral Spreading, and Seismic Settlement

With respect to landslides, the project site is relatively level and not within a mapped landslide zone or within a designated earthquake-induced landslide zone.[144] Therefore, the proposed project would have no impact with respect to the potential for landslides, and this topic is not discussed further.

As described above, the project site is mapped as situated within a state-designated liquefaction hazard zone, according to the seismic hazards map for the area.[145] This means that there is potential for permanent ground displacement onsite, such as liquefaction. The California Geological Survey provided recommendations for the content of site investigation reports within seismic hazard zones in Special Publication 117A, which recommends that at least one exploration point extend to a depth of at least 50 feet to evaluate liquefaction potential.[146] Loose sand above the groundwater table may densify and loose to medium-dense sand below the groundwater table may liquefy during strong ground shaking due to a seismic event on a nearby fault.

The potential for liquefaction was analyzed during the geotechnical investigation. The geotechnical investigation identified the surface fill down to as deep as 8 feet bgs and the sand units below the Bay Mud below about 36 feet bgs as potentially susceptible to liquefaction during a future seismic event at the site. However, the fill with liquefaction potential would be removed in its entirety beneath the proposed high-rise tower footprint, and up to approximately 4 feet of fill would remain for the proposed replacement fire station. The geotechnical investigation estimates that post-earthquake, liquefaction-induced settlement at the bottom of the lowest basement slab from this layer could be on the order of 1 inch following a maximum considered earthquake event on a nearby active fault generating a peak ground acceleration of 0.61 times gravity amount of seismic shaking. Under the fire station, the geotechnical investigation estimates about one to four inches of liquefaction-induced settlement could occur at the bottom of the foundation subgrade. In addition, the geotechnical investigation concludes that additional investigation for liquefaction potential is needed in the proposed fire station portion of the project site. The geotechnical investigation estimates that fill settlement due to cyclic densification could be about 1 inch outside the proposed building footprint. Considering the fill susceptible to densification will be removed within the planned building excavations, the geotechnical investigation does not expect cyclic densification to occur below the proposed buildings. However, cyclic densification settlement could affect utilities and street improvements.

Although the risk of liquefaction, lateral spreading, and seismic densification is considered to be low, in accordance with the provisions of the CBC and Special Publication 117A, the building department permit review process would ensure that the project's structural and foundation plans comply with applicable building code provisions and conform to the measures recommended in the project-specific geotechnical

[143] Ibid.
[144] Langan Engineering and Environmental services, Inc., *Geotechnical Investigation, 530 Sansome Street, 425 and 435-445 Washington Street and 447 Battery Street, San Francisco, California*, June 21, 2024.
[145] Ibid.
[146] California Geological Survey, Guidelines for Evaluating and Mitigating Seismic Hazards in California, Special Publication 117A, September 11, 2008.

report. Conformance with the review process and recommendations made by the engineering design review team, as required by Administrative Bulletin AB-082, would ensure that the proposed project would not exacerbate the potential for seismic-related ground failure, including liquefaction and lateral spreading. Therefore, this impact would be ***less than significant***, and no mitigation measures are necessary.

Conclusion

During the building department's review of the building permit, the building department would review the construction plans for conformance with recommendations in the project-specific geotechnical report. The building permit would be reviewed pursuant to the building department's implementation of the building code including administrative bulletins, local implementing procedures such as the building department information sheets, and state laws, regulations, and guidelines would ensure that the proposed project would have no significant impacts related to soils, seismic, or other geological hazards. Thus, the project would not result in significant effects related to soils, seismic, or other geological hazards. Therefore, this impact would be ***less than significant***, and no mitigation measures are necessary.

Impact GE-2: The proposed project would not result in substantial soil erosion or the loss of topsoil. ***(Less than Significant)***

The project site is generally flat, impervious, and underlain by artificial fill, and does not contain native topsoil. Site preparation and excavation activities would disturb soil to a depth of up to 51 feet bgs, which would require excavation of approximately 42,000 cubic yards of material, creating the potential for windborne and waterborne soil erosion. Because the entire project site is presently covered with impervious surfaces and underlain by artificial fill, it does not contain native topsoil. Removal of the existing impervious surfaces during grading and excavation would expose soils to erosive forces such as wind and water, potentially resulting in soil erosion. However, compliance with the Construction Dust Control Ordinance would reduce the risk of erosion (see draft EIR Section 3.B, Air Quality).

Grading and excavation would expose topsoil on site and could potentially result in erosion. However, the project sponsor and their contractor would be required to comply with section 146, Construction Site Runoff Control, of the public works code which requires all construction sites to implement best management practices (BMPs) to minimize surface runoff erosion and sedimentation.[147] Pursuant to section 146.7, if construction activities disturb 5,000 square feet or more of ground surface, the project sponsor must develop an erosion and sediment control plan. The erosion and sediment control plan must be submitted to public utilities commission for review and approval prior to commencing construction-related activities. The erosion and sediment control plan would identify BMPs to control discharge of sediment and other pollutants from entering the city's combined sewer system during construction.

San Francisco Building Code section 1805 (Dampproofing and Waterproofing) requires the geotechnical report to identify the location of the existing groundwater table in relation to the lowest floor level, and cites conditions when a subsoil drainage system must be designed to ensure that water flows into an approved drainage system. In addition, the city's stormwater management ordinance includes requirements that would reduce stormwater runoff discharged from the project site.

[147] SFPUC, San Francisco Construction Site Runoff Control Program, available at https://sfwater.org/index.aspx?page=235.

Contractors and site supervisors are responsible for ensuring that best management practices are implemented and maintained throughout the construction process; failure to comply would result in citation and civil penalties. Compliance with section 146 of the public works code, sections 1804 and 105 of the building code, and the stormwater management ordinance would ensure that the proposed project would not result in substantial loss of topsoil or soil erosion. Therefore, impacts related to loss of topsoil or substantial soil erosion would be ***less than significant***, and no mitigation measures are necessary.

Impact GE-3: The proposed project would not be located on a geologic unit or soil that is unstable, or that could become unstable as a result of the project. ***(Less than Significant)***

The project site is not within a state-designated landslide hazard zone[148] or an area that is subject to the Slope and Seismic Hazard Zone Protection Act.[149] The project site and vicinity do not include any hills or cut slopes that could cause or be subject to a landslide. As discussed above, the project site is within a state-designated seismic hazard zone for liquefaction and would be subject to the requirements of the Seismic Hazards Act.

The project sponsors would be required to conduct geotechnical investigations prepared by a qualified geotechnical professional that include recommendations for demolition and site preparation, excavation, and construction of the proposed project, based on site and soil conditions. These recommendations, which would address the potential for onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse, would be implemented by the project sponsors' engineer of record and peer reviewed as required by AB-082.

The proposed project does not include the injection or extraction of water or petroleum oil and therefore would not be subject to or cause subsidence. As discussed above, the project site is within a state-designated seismic hazard zone for liquefaction and would be subject to the requirements of the Seismic Hazards Act. In addition, the sides of the excavation could be susceptible to collapse during construction.

During excavation, the shoring system could yield and deform laterally if not properly designed, which would cause the surrounding improvements to settle and move laterally. This would result in a potentially significant impact associated with soil instability. To avoid settlement and lateral deformation, and as discussed in the geotechnical investigation, the project would require the installation of shoring systems during basement excavation on all sides of the property. In addition, the proposed project would be required to comply with the mandatory provisions of the California Building Code and San Francisco Building Code. Adherence to these requirements would further ensure that the project sponsor adequately addresses any potential impacts related to unstable soils as part of the design-level geotechnical investigation that would be prepared for the proposed project. Therefore, any potential impacts related to unstable soils would be ***less than significant***, and no mitigation measures are necessary.

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[148] California Geological Survey, Earthquake Zones of Required Investigation, 2024, https://maps.conservation.ca.gov/cgs/EQZApp/app/, accessed on October 14, 2024.
[149] San Francisco Department of Building Inspection, 2022, *Comply with slope protection requirements for your building project*, *https://www.sf.gov/comply-slope-protection-requirements-your-building-project*, accessed: October 22, 2024.

Impact GE-4: The proposed project would not create substantial risks to life or property as a result of being located on expansive soil. ***(Less than Significant)***

Expansive soils are typically very fine grained with high percentage of clay and can damage structures and buried utilities and increase maintenance requirements. Expansive soils expand and contract in response to changes in soil moisture, most notably when near-surface soils fluctuate from saturated to low-moisture-content conditions and back again. Determinations regarding the presence of expansive soils are typically based on site-specific data. The site is underlain by fill, Bay Mud, and dense to very dense clayey sands/medium-stiff to hard sandy clays and dense to very dense sands. However, the proposed project would remove all of the shallow soils for construction of the underground parking levels, thus eliminating the potential for expansive soils to damage the structure. Accordingly, potential impacts related to expansive soils would be ***less than significant***, and no mitigation measures are necessary.

Impact GE-5: The proposed project would not directly or indirectly destroy a unique geologic feature of the site. ***(No Impact)***

A unique geologic or physical feature embodies distinctive characteristics of any regional or local geologic principles, provides a key piece of information important to geologic history, contains minerals not known to occur elsewhere in the county, and/or is used as a teaching tool. No unique geologic features exist at the project site; therefore, ***no impacts*** on unique geological features would occur, and no mitigation measures are necessary.

Impact GE-6: The proposed project could directly or indirectly destroy a unique paleontological geologic feature. ***(Less than Significant with Mitigation)***

Paleontological resources include fossilized remains or traces of animals, plants, and invertebrates from a previous geological period. Paleontological resources are deposited and preserved within particular lithologic (rock) units. Lithologic units that may contain fossils include sedimentary and volcanic formations. Collecting localities and the geologic formations containing those localities are also considered paleontological resources because they represent a limited, nonrenewable resource that, once destroyed, cannot be replaced. Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered have high potential for containing additional significant paleontological resources.[150]

Paleontological resources are lithologically dependent (i.e., the deposition and preservation of paleontological resources are related to the lithologic unit in which they occur). Particularly important are fossils found in situ (undisturbed) in the primary context (e.g., fossils that have not been subjected to disturbance subsequent to their burial and fossilization). As such, they aid in stratigraphic correlation, particularly those offering data for the interpretation of tectonic events, geomorphological evolution, paleoclimatology, the relationships between aquatic and terrestrial species, and evolution in general. Note that significance may also be stated for a particular rock unit, predicated on the research potential of fossils suspected to occur in that unit. Such significance is often stated as “sensitivity” or “potential.”

[150] Society of Vertebrate Paleontology, *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*, 2010.

The excavation for the proposed project would extend down to 15 feet and 51 feet bgs for the proposed replacement fire station and high-rise building, respectively. The geotechnical investigation indicates that the materials encountered would be fill, Bay Mud, and then an Upper Sand unit. The fill would not contain paleontological resources. The Bay Mud would likely be too young (less than 5,000 years) to contain unique paleontological resources. The Upper Sand would be older and could potentially contain paleontological resources. Previous occurrences of large late Pleistocene vertebrate remains from three individuals of Colombian mammoth (*Mammuthus columbi*) and remains from a single giant bison (*Bison latifrons*) have been recovered from gravelly sandy clay of the Colma Formation exposed in an excavation at the intersection of Pacific Avenue and Kearny Street, approximately 0.25 mile northwest of the project site.[151] As a result, the proposed project could have a moderate potential to encounter as-yet unknown paleontological features. Implementation of **Mitigation Measure M-GE-6a, Worker Environmental Awareness Training during Ground-Disturbing Construction Activities**; **M-GE-6b, Discovery of Unanticipated Paleontological Resources during Ground-Disturbing Construction Activities**; and **M-GE-6c, Preconstruction Paleontological Evaluation for Projects Located in Class 3 (Moderate) Sensitivity Areas**, would ensure that the proposed project would not cause a substantial adverse change to the scientific significance of a paleontological feature.

> **Mitigation Measure M-GE-6a: Worker Environmental Awareness Training Construction.** Prior to commencing construction, and ongoing throughout ground-disturbing activities (e.g., excavation, utility installation), the property sponsor and/or their designee shall engage a qualified paleontologist meeting the standards specified by the Society of Vertebrate Paleontology (Society of Vertebrate Paleontology 2010) to train all project construction workers regarding how to recognize paleontological resources and on the contents of the paleontological resources alert sheet, as provided by the department. The Paleontological Resources Alert Sheet shall be prominently displayed at the construction site during ground-disturbing activities for reference regarding potential paleontological resources.
>
> In addition, the paleontologist shall inform the project sponsor, contractor, and construction personnel of the immediate stop work procedures and other procedures to be followed if bones or other potential fossils are unearthed at the project site. Should new workers that will be involved in ground-disturbing activities begin employment after the initial training has occurred, the construction supervisor shall ensure that they receive the worker awareness training as described above.
>
> The paleontologist shall complete the standard form/affidavit confirming the timing of the worker awareness training and submit it to the environmental review officer (ERO). The affidavit shall confirm the project's location, the date of training, the location of the informational handout display, and the number of participants. The affidavit shall be transmitted to the ERO within five business days of conducting the training.
>
> **Mitigation Measure M-GE-6b: Discovery of Unanticipated Paleontological Resources during Construction.** In the event of the discovery of an unanticipated paleontological resource during construction, ground-disturbing activities shall temporarily be halted within 25 feet of the find until the discovery is examined by a qualified paleontologist as recommended by the Society of

[151] Rodda, Peter U. and Nina Baghai, "Late Pleistocene Vertebrates from Downtown San Francisco, California," *Journal of Paleontology,* Vol. 67, No. 6, November 1993.

Vertebrate Paleontology standards[152] and Best Practices in Mitigation Paleontology.[153] The paleontologist shall consult the ERO. Work within the sensitive area shall resume only when deemed appropriate by the qualified paleontologist in consultation with the ERO.

The qualified paleontologist shall determine (1) if the discovery is scientifically significant; (2) the necessity for involving other responsible or resource agencies and stakeholders, if required or determined applicable; and (3) methods for resource recovery. If a paleontological resource assessment results in a determination that the resource is not scientifically important, this conclusion shall be documented in a Paleontological Evaluation Letter to demonstrate compliance with applicable statutory requirements (e.g., Federal Antiquities Act of 1906, CEQA Guidelines section 15064.5, California Public Resources Code chapter 17, section 5097.5, Paleontological Resources Preservation Act 2009). The Paleontological Evaluation Letter shall be submitted to the ERO for review within 30 days of the discovery.

If the qualified paleontologist determines that a paleontological resource is of scientific importance, and there are no feasible measures to avoid disturbing this paleontological resource, the qualified paleontologist shall prepare a Paleontological Impact Reduction Program (impact reduction program). The impact reduction program shall include measures to fully document and recover the resource of scientific importance. The qualified paleontologist shall submit the impact reduction program to the ERO for review and approval. The impact reduction program shall be submitted to the ERO for review within 10 business days of the discovery. Upon approval by the ERO, ground-disturbing activities in the project area shall resume and be monitored as determined by the qualified paleontologist for the duration of such activities.

The mitigation program shall include (1) procedures for construction monitoring at the project site; (2) fossil preparation and identification procedures; (3) curation of paleontological resources of scientific importance into an appropriate repository; and (4) preparation of a Paleontological Resources Report (report or paleontology report) at the conclusion of ground-disturbing activities. The report shall include dates of field work, results of monitoring, fossil identifications to the lowest possible taxonomic level, analysis of the fossil collection, a discussion of the scientific significance of the fossil collection, conclusions, locality forms, an itemized list of specimens, and a repository receipt from the curation facility. The project sponsor shall be responsible for the preparation and implementation of the mitigation program, in addition to any costs necessary to prepare and identify collected fossils, and for any curation fees charged by the paleontological repository. The paleontology report shall be submitted to the ERO for review within 30 business days from conclusion of ground-disturbing activities, or as negotiated following consultation with the ERO.

Mitigation Measure M-GE-6c: Preconstruction Paleontological Evaluation for Projects Located in Class 3 (Moderate) Sensitivity Areas. The project site is located in San Francisco in Moderate Sensitivity Area (class 3), which require ground disturbance activities deeper than 5 feet and would include the removal of more than 2,500 cubic yards of soil. The property owner shall engage a qualified paleontologist to complete a site-specific Preconstruction Paleontological Resources Evaluation (paleontology preconstruction evaluation) prior to commencing soil-disturbing activities

[152] Society of Vertebrate Paleontology, *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*, 2010.
[153] Murphy, Paul C., Knauss, Georgia E., Fisk, Lanny H., Demere, Thomas A., Reynolds, Robert E. 2019. *Best Practices in Mitigation Paleontology, Proceedings of the San Diego Society of Natural History, Number 47*.

occurring on the project site. Prior to issuance of any demolition or building permit, the property owner shall submit the Preconstruction Paleontological Evaluation to the ERO for approval.

The purpose of the site-specific preconstruction evaluation is to identify early the potential presence of significant paleontological resources on the project site. At a minimum, the study shall include:

1. Project Description
2. Regulatory Environment – outline applicable federal, state and local regulations
3. Summary of Sensitivity Classification
4. Research Methods, including but not limited to:
   - 4.1. Field studies conducted by the approved paleontologist to check for fossils at the surface and assess the exposed sediments
   - 4.2. Literature Review to include an examination of geologic maps and a review of relevant geological and paleontological literature to determine the nature of geologic units in the project area
   - 4.3. Locality Search to include outreach to the University of California Museum of Paleontology in Berkeley
5. Results: To include a summary of literature review and finding of potential site sensitivity for paleontological resources; and depth of potential resources if known.
6. Recommendations for any additional measures that could be necessary to avoid or reduce any adverse impacts to recorded and/or inadvertently discovered paleontological resources of scientific importance, in addition to paleontology standard requirements for Worker Environmental Awareness Training during Construction (M-GE-6a) and Discovery of Unanticipated Paleontological Resources during Construction (M-GE-6b). Such measures could include:
   - 6.1. *Avoidance:* If the cost of fossil recovery or other impact reduction options is determined to be too high, or permanent damage to the resource caused by surface disturbance is considered to be unavoidable, given the proposed construction, it may be necessary to "avoid" or "reroute" the portion of the project that intersects the fossil locality in order to prevent adverse impacts on the resource. Avoidance should also be considered if a known fossil locality appears to contain critical scientific information that should be left undisturbed for subsequent scientific evaluation. Avoidance for later scientific research is the typical mitigation recommendation made for scientifically significant extensive paleontological discoveries.
   - 6.2. *Fossil Recovery:* If isolated small-, medium-, or large-sized fossils are discovered within a project area during field surveys or construction monitoring, and they are determined to be scientifically significant, they should be recovered. Fossil recovery may involve simply collecting a fully exposed fossil from the ground surface, or may involve a systematic excavation, depending upon the size and complexity of the fossil discovery. Fossil excavations should be designed in such a way as to minimize construction delays while properly collecting the fossil and associated data according to professional paleontological standards.

6.3. *Sampling:* Scientifically significant microfossils (vertebrate, invertebrate, plant, or trace fossils) may be identified in rock matrix during surveys or monitoring, or, if they are known to occur elsewhere in the same geologic unit or type of deposit in the general area, a determination of their presence or absence may require the use of test sampling of rock matrix for screen-washing in a paleontological laboratory. In some cases, depending upon the geologic unit involved, test sampling may be appropriate even if microfossils are not visible in the field. The fossils found, if any, will then be inspected and evaluated to determine their significance and whether additional steps are necessary to reduce paleontological impacts. Such steps may include collection of additional matrix for screen-washing. The decision to sample may not be made until monitoring is occurring, because it is usually triggered by conditions in the field.

6.4. *Monitoring:* If scientifically important paleontological resources are known to be present in an area, or if there is a moderate or high likelihood that subsurface fossils are present in geologic units or members thereof within a given project area based on prior field surveys, museum records, or scientific or technical literature, paleontological monitoring of construction excavations would be required. Monitoring involves systematic inspections of graded cut slopes, trench sidewalls, spoils piles, and other types of construction excavations for the presence of fossils, and the fossil recovery and documentation of these fossils before they are destroyed by further ground-disturbing actions. Standard monitoring is typically used in the most paleontologically sensitive geographic areas/geologic units (moderate, high and very high potential); while spot-check monitoring is typically used in geographic areas/geologic units of moderate or unknown paleontological sensitivity (moderate or unknown potential). The goal of monitoring is to identify scientifically significant subsurface fossils as soon as they are unearthed in order to minimize damage to them and remove them and associated contextual data from the area of ground disturbance, thereby resulting in subsurface paleontological clearance. Microfossil sampling, macrofossil recovery, and avoidance of fossils may all occur during any monitoring program.

With implementation of Mitigation Measures M-GE-6a through M-GE-6c, impacts on unique paleontological features would be ***less than significant with mitigation***.

Impact C-GE-1: The proposed project, in combination with cumulative projects, would not result in a significant cumulative impact on geology and soils. ***(Less than Significant)***

Geology, soil, and paleontological impacts are generally site specific and localized. Cumulative projects could require various levels of excavation or cut-and-fill activity, which would affect local geologic conditions and could affect paleontological resources. Cumulative projects would also be subject to building department requirements regarding geotechnical review and the state and local building codes. In addition, site-specific geotechnical review and monitoring for paleontological resources would reduce each project's impacts associated with geology, seismic safety, and paleontological resources. Furthermore, site-specific mitigation would be developed, when necessary, based on site conditions. Similar to the proposed project, the projects listed in draft EIR Table 3-1, Cumulative Projects within a 0.25-Mile Radius of the Project Site, p. 3-8, and mapped on Figure 3-1, Cumulative Projects within a 0.25-Mile Radius of the Project Site, p. 3-11, would be subject to these mandatory seismic safety standards and design review procedures. Compliance with these standards and procedures would ensure that the effects from nearby cumulative projects would

be reduced to less-than-significant levels. Therefore, cumulative impacts would be ***less than significant***. and no mitigation measures are necessary.

E.16 Hydrology and Water Quality

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
16. HYDROLOGY AND WATER QUALITY. Would the project:					
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:					
i) Result in substantial erosion or siltation on- or offsite;	☐	☐	☒	☐	☐
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite;	☐	☐	☒	☐	☐
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐	☐
iv) Impede or redirect flood flows?	☐	☐	☒	☐	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐	☐

The project site is located well inland from both the San Francisco Bay and the Pacific Ocean. It would not be subject to seiche or potential inundation in the event of a tsunami occurring along the San Francisco coast (see Maps 5 and 6 of the general plan's community safety element). The Storm Flood Risk Map indicates that the site is not within a Special Flood Hazard Area,[154] an area subject to a 100-year flood. Therefore, topic E.16(d) does not apply.

Impact HY-1: The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. ***(Less than Significant)***

Site preparation and excavation activities associated with the proposed project would disturb soil to a depth of up to 51 feet bgs, which would require excavation of approximately 42,000 cubic yards of material, which could adversely affect water quality. Contaminants from construction vehicles and equipment as well as sediment from soil erosion could increase the pollutant load in runoff being transported to receiving waters during construction.

As discussed in Section E.12, Utilities and Service Systems, p. 115, wastewater and stormwater from the project site would continue to flow into the city's combined stormwater and sewer system and be treated to the standards contained within the City's NPDES permit for the Southeast Water Pollution Control Plant prior to discharge into San Francisco Bay. Treatment would be provided pursuant to the effluent discharge standards included within the City's NPDES permit for the treatment plant. In addition, as new construction, the proposed project would be required to meet the standards for stormwater management identified in the San Francisco Stormwater Management Ordinance and meet the SFPUC stormwater management requirements, per the 2016 Stormwater Management Requirements and Design Guidelines.

The project sponsors would be required to submit for approval by the SFPUC a Stormwater Control Plan that complies with the city's 2016 Stormwater Management Requirements and Design Guidelines. Because the project would disturb more than 5,000 square feet of ground surface, the proposed project would be required to comply with public works code article 4.2, section 146 et seq. (Construction Site Runoff Control). A construction site runoff control permit would be obtained prior to any land-disturbing activities and would include an erosion and sediment control plan.

Groundwater encountered during construction of the proposed project would be subject to the requirements of article 4.1 of the San Francisco Public Works Code, Industrial Waste, which requires groundwater to meet specified water quality standards before it is discharged to the combined sewer system. These measures ensure the protection of water quality during construction, which represents a temporary condition. The Bureau of Systems Planning, Environment, and Compliance of the SFPUC must be notified regarding projects that necessitate dewatering. In this case, the SFPUC may require water quality analysis prior to discharge. The project sponsors would be required to obtain a Batch Wastewater Discharge Permit from the SFPUC Wastewater Enterprise Collection System Division prior to any dewatering activities.

[154] San Francisco Public Utilities Commission, *100-Year Storm Flood Risk Map*, July 2022, https://www.sfpuc.gov/learning/emergency-preparedness/flood-maps, accessed October 22, 2024.

The proposed project's construction and operational activities would not substantially degrade surface water or groundwater quality or violate water quality standards and waste discharge requirements. The proposed project would have ***less-than-significant*** impacts on water quality, and no mitigation measures are necessary.

Impact HY-2: The proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the proposed project may impede sustainable groundwater management of the basin. ***(Less than Significant)***

The project site is currently impervious and the proposed project would not increase the amount of impervious surface on the site. Therefore, the proposed project would not result in any change in infiltration on or increase runoff from the project site. Although groundwater was encountered approximately 12 to 13 feet bgs during the geotechnical investigation, this depth may vary with the seasons and the amount of rainfall. Because the proposed project would excavate to approximately 15 feet bgs for the replacement fire station and 51 feet bgs for the high-rise building, it is likely that groundwater would be encountered; therefore, dewatering would be required during construction.

The project site is located in the downtown San Francisco groundwater basin. All groundwater resources are managed by the SFPUC's groundwater management program, ensuring that local groundwater resources designated for current or future beneficial uses are properly protected to prevent overdraft, pollution, or contamination.

Project operation would not extract underlying groundwater supplies. Therefore, groundwater resources would not be substantially depleted, and the proposed project would not otherwise substantially interfere with groundwater recharge or impede sustainable groundwater management. The proposed project would have a ***less-than-significant*** impact on groundwater, and no mitigation measures are necessary.

Impact HY-3: The proposed project would not substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river or the addition of impervious surfaces that would result in substantial erosion, siltation, or flooding; substantially increase the rate or amount of surface runoff and result in flooding onsite or offsite; or create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. ***(Less than Significant)***

The project site is impervious and no streams or creeks are present on the project site. The proposed project would not change the area of impervious surfaces. However, new construction is subject to the 2016 Stormwater Management Ordinance.[155] The ordinance requires stormwater runoff to be reduced by 25 percent from existing conditions. The proposed project would be designed to incrementally reduce the amount of impervious surface material on the project site through implementation of low-impact development and other measures identified in the Stormwater Management Ordinance, which also requires a decrease in the amount of stormwater runoff associated with a proposed project, per the city's Stormwater Management Requirements and Design Guidelines. Overall, impervious surfaces on the site would not

[155] City of San Francisco, San Francisco Public Utilities Commission, Port of San Francisco, Lotus Water, and Water Resources Engineering, *San Francisco Stormwater Management Requirements and Design Guidelines*, 2016, https://www.sfpuc.gov/sites/default/files/documents/SMR_DesignGuide_May2016.pdf, accessed: October 22, 2024.

change substantially as part of the proposed project. The project site's drainage patterns would generally remain the same, and, ultimately, drainage would be improved. As such, the proposed project would not be expected to result in substantial erosion or flooding associated with changes in drainage patterns; the potential to result in erosion or flooding would be similar to existing conditions. The impact would be ***less than significant***.

During construction and operation of the proposed project, all wastewater and stormwater runoff from the project site would be treated at the Southeast Water Pollution Control Plant. As noted above, treatment would be provided pursuant to the effluent discharge standards contained in the City's NPDES permit for the plant. During construction and operation, the proposed project would be required to comply with all local wastewater discharge, stormwater runoff, and water quality requirements, including the 2016 Stormwater Management Requirements and Design Guidelines, described above under Impact HY-1, and the Stormwater Management Ordinance.

Compliance with the Stormwater Management Requirements and Design Guidelines would ensure that stormwater generated by the proposed project would be managed onsite to reduce the runoff flow rate and volume for a 2-year 24-hour design storm by 25 percent such that the proposed project would not contribute additional volumes of polluted runoff to the city's stormwater infrastructure. Compliance with the Stormwater Management Ordinance would ensure that the design of the proposed project would include the installation of appropriate stormwater management systems that would retain runoff onsite, promote stormwater reuse, and limit discharges from the site to the City's combined stormwater/sewer system. Furthermore, the addition of new street trees along the project site frontages and privately maintained public open space improvements along Merchant Street would allow runoff to infiltrate, thereby minimizing runoff that could exceed the capacity of existing or planned stormwater drainage systems. Therefore, the proposed project would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Furthermore, the proposed project would not impede or redirect flood flows. Therefore, this impact would be ***less than significant***, and no mitigation measures are necessary.

Impact HY-4: The proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. ***(Less than Significant)***

As described above, the proposed project would be required to meet the standards for stormwater management as well as the City's NPDES permit and SFPUC stormwater management requirements. In addition, the proposed project would also have to comply with the appropriate water quality objectives for the region. Commonly practiced best management practices would be implemented to control construction site runoff and reduce the discharge of pollutants to storm drain systems from stormwater and other nonpoint-source runoff. As part of compliance with permit requirements during ground-disturbing or other construction activities, implementation of water quality control measures and best management practices would ensure that water quality standards would be achieved, including the water quality objectives that protect designated beneficial uses of surface and groundwater, as defined in the basin plan.

The NPDES Construction General permit also requires stormwater discharges not to contain pollutants that cause or contribute to an exceedance of any applicable water quality objectives or water quality standards. In addition, the implementation of the SFPUC's groundwater management program and general plan

policies would require protection for groundwater recharge areas and groundwater resources, as required by a sustainable groundwater management plan. Therefore, the proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. The impacts would be ***less than significant***, and no mitigation measures are necessary.

Impact C-HY-1: The proposed project, in combination with cumulative projects, would not result in significant cumulative impacts on hydrology and water quality. ***(Less than Significant)***

Cumulative development in the project area would result in an intensification of land uses in the project vicinity, similar to the proposed project and could result in an increase in polluted runoff and stormwater discharges. However, other development projects would be subject to the same water conservation and stormwater management ordinances that are applicable to the proposed project. Because other development projects would be required to comply with drainage, dewatering, and water quality regulations, similar to the proposed project, peak stormwater drainage rates and volumes for the design storm would gradually decrease over time with new development, meaning that no substantial cumulative effects would occur. Compliance with these ordinances would reduce the effects of cumulative projects to less-than-significant levels. Therefore, the proposed project, in combination with past, present, and reasonably foreseeable future projects, would not result in a significant cumulative impact related to hydrology and water quality. Cumulative impacts would be ***less than significant***, and no mitigation measures are necessary.

E.17 Hazards and Hazardous Materials

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
17. HAZARDS AND HAZARDOUS MATERIALS. Would the project:					
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐	☐

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☐	☐	☒

The project site is not within an airport land use plan area, not included on the list of hazardous materials sites compiled pursuant to Government Code section 65962.5,[156,157] and not within or adjacent to a wildland fire area. Therefore, topics E.17(e) and E.17(g) are not applicable.

Impact HZ-1: The proposed project would not create a significant hazard through the routine transport, use, or disposal of hazardous materials. ***(Less than Significant)***

The proposed project would involve the demolition of structures, excavation of the site, and construction of a replacement fire station, mixed-use high-rise building, and basement levels up to approximately 51 feet deep. Construction activities would require the use and transport of limited quantities of hazardous materials such as fuels and oils, solvents and cleaning solutions, paints and thinners, and other common construction materials. These materials could be released during transport, use, or disposal of building materials and could cause a hazard for the public. However, the City would require the project sponsors and contractor to implement best management practices as part of grading permit requirements, including hazardous materials management measures, which would reduce short-term construction-related impacts pertaining to the transport, use, and disposal of hazardous materials. The project sponsors' contractors would be required to comply with Occupational Health and Safety Administration (OSHA) and California Division of Occupational Safety and Health (Cal/OSHA) health and safety requirements, all of which would be specified in the construction contracts. These regulations are effective in reducing potential risks to workers

[156] State Water Resources Control Board. GeoTracker, 540 Sansome Street, San Francisco, CA, 2024, https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=Search+GeoTracker, accessed October 22, 2024.
[157] Langan Engineering and Environmental Services, *Updated Phase I Environmental Site Assessment, 425 and 435-445 Washington Street, and 530 Sansome Street, San Francisco, California,* June 17, 2024.

by requiring the contractor to adhere to safety standards and provide safety training to workers. In addition, hazardous materials must be transported to and from the project site in accordance with the Resource Conservation and Recovery Act (RCRA) and U.S. Department of Transportation regulations and disposed of in accordance with the RCRA and the California Code of Regulations at a licensed facility that is permitted to accept the waste. These regulations provide a framework for controlling hazardous waste from cradle to grave, ensuring the safe transport, use, and disposal of hazardous materials during construction. These regulations govern record-keeping for all aspects of the hazardous materials lifecycle, mitigating and cleaning up existing contamination and hazardous materials spills, closing facilities with hazardous waste in place, describing requirements for emergency response, and ensuring that workers are trained to handle hazardous materials and respond appropriately to hazardous materials incidents. Because compliance with existing regulations is mandatory, construction of the proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Accordingly, impacts associated with short-term construction-related transport, use, and disposal of hazardous materials would be ***less than significant***.

Once constructed, the proposed project would likely result in the use of common types of hazardous materials that are typically associated with hotel, retail and office uses, such as cleaning products, disinfectants, and solvents. These products are labeled to inform users of their potential risks and provide instruction regarding appropriate handling procedures. Most of these materials are consumed through use, resulting in relatively little waste.

The proposed project's replacement fire station, hotel, office, and retail/restaurant uses would also be subject to San Francisco Health Code articles 21 and 22, implemented by the health department to ensure employee safety by identifying hazardous materials in the workplace, providing safety information to workers who handle hazardous materials, and adequately training workers. Under article 21, any facility that handles hazardous materials, including hazardous wastes, in excess of specified quantities would be required to obtain a certificate of registration from the health department and to implement a hazardous materials business plan that includes inventories, a program for reducing the use of hazardous materials and generation of hazardous wastes, site layouts, a program and implementation plan for training all new employees. and annual training for all employees, and emergency response procedures and plans. Under article 22 of the health code, generators of hazardous waste must pay an annual fee to the health department, based on the quantity of hazardous wastes generated annually. The replacement fire station would continue to store and use diesel and unleaded fuel for its vehicles and carbon dioxide (CO_2) tanks for its CO_2 unit,[158] as it does now. The fire department has no plans to increase the amount of hazardous materials at the replacement station. The fire department would be required to update their hazardous materials business plan for the replacement fire station. For these reasons, hazardous materials used during proposed project operation would not pose substantial public health or safety hazards resulting from routine use, transport, or disposal. Therefore, the project would result in ***less-than-significant*** impacts related to the use, transport, or disposal of hazardous materials during project construction or operation, and no mitigation measures are necessary.

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[158] The CO_2 unit is a portable fire extinguishing apparatus that can be used in electrical vault fires or confined spaces. The CO_2 is discharged as vapor and has a smothering effect on fire, excludes oxygen from the fire, and is a non-conducting extinguishing agent. San Francisco Fire Department, *San Francisco Fire Department Apparatus Inventory,* August 2009.

Impact HZ-2: The proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accidental conditions involving the release of hazardous materials into the environment. *(Less than Significant)*

The project site is located within the Maher zone and is therefore subject to the requirements of the San Francisco Health Code article 22A (also known as the Maher Ordinance).[159] The goal of the Maher Ordinance is to protect public health and safety by requiring appropriate handling, treatment, disposal and when necessary, remediation of contaminated soils that are encountered in the building construction process. Projects that disturb 50 cubic yards or more of soil that are located on sites with potentially hazardous soil or groundwater are subject to this ordinance. The proposed project would require excavation to a depth of approximately 51 feet bgs and the disturbance of approximately 42,000 cubic yards of soil. Therefore, the proposed project is subject to the Maher Ordinance, which is administered and overseen by the health department.

The Maher Ordinance requires the project sponsors to retain the services of a qualified professional to prepare an environmental site assessment that meets the requirements of San Francisco Health Code section 22.A.6. A site assessment determines the potential for site contamination and the level of exposure risk as a result of a project. Based on that information, the project sponsors may be required to conduct soil and groundwater sampling and analysis; where such analysis reveals the presence of hazardous substances in excess of state or federal standards, the project sponsors is required to submit a site mitigation plan to the health department or other appropriate state or federal agency and remediate any site contamination in accordance with the approved site mitigation plan prior to issuance of a building permit.

The Maher application and Phase I environmental site assessment were submitted to the health department in August 2024.[160] The project sponsors have prepared a Phase I environmental site assessment to determine the potential for site contamination. The Phase I environmental site assessment included (1) a reconnaissance-level site visit to look for evidence of past or current use that may involve release of hazardous materials or petroleum products; (2) review of information provided by the property owners; (3) environmental database records review; (4) review of local, state, and federal records pertinent to a Phase I environmental site assessment; (5) review of relevant documents and maps regarding local geologic and hydrogeologic conditions; and (6) review of historical documents, including aerial photographs, Sanborn fire insurance maps, and topographical maps.[161] The Phase I environmental assessment also analyzed previous Phase I assessments conducted at the site.

The Phase I environmental site assessment found that three underground storage tanks (USTs) (one 100-gallon waste oil UST, one 1,000-gallon diesel UST, and one 1,000-gallon gasoline UST) were removed from the 530 Sansome Street property in 1987 and 1995. Over-excavation was completed as part of the UST removal, and five groundwater monitoring wells were installed on the property for groundwater monitoring. Based on the removal of the former USTs, and the analytical results of soil and groundwater sampling, the health department issued a case closure letter dated October 30, 1998, in regard to the former USTs. The case closure summary identified that the majority of the petroleum contamination source had been removed by over excavation. Groundwater results indicated that the concentrations of total petroleum hydrocarbons

[159] San Francisco Planning Department, San Francisco Property Information Map – Map Viewer, 2024, https://sfplanninggis.org/pim/map.html?layers=Maher%20Ordinance, accessed October 22, 2024.
[160] EQX Jackson SQ Holdco LLC, *Maher Ordinance Application,* August 5, 2024.
[161] Langan Engineering and Environmental Services, *Updated Phase I Environmental Site Assessment, 425 and 435-445 Washington Street, and 530 Sansome Street, San Francisco, California,* June 17, 2024.

(TPH) as gasoline (TPHg), as diesel (TPHd), and benzene, toluene, ethyl benzene, and xylenes were decreasing. Benzene was detected at a concentration of less than one part per million (ppm) in groundwater.

The Phase I environmental site assessment identified one recognized environmental condition[162] (i.e., being located in the Maher zone) and one historical recognized condition (i.e., UST removals and cleanup described above).[163] Based on the information provided in the Phase I environmental site assessment, the project sponsors would be required to conduct soil and groundwater sampling and analysis. Where such analysis reveals the presence of hazardous substances in excess of state or federal standards, the project sponsors would be required to submit a site mitigation plan to the health department or other appropriate state or federal agency and remediate any site contamination in accordance with the approved site mitigation plan prior to issuance of a building permit. This required action would address any residual contamination from the former USTs that may be present at concentrations above regulatory standards.

The proposed project would include demolition of buildings constructed prior to 1970. Based on the dates of construction of these buildings, some of the building materials may pre-date the 1970s ban on the use of asbestos-containing materials and lead-based paint. Any hazardous materials currently on the site, such as asbestos or lead-based paint, would be removed during or prior to demolition of the building and project construction. The materials would be handled in compliance with applicable laws and regulations.

The California Department of Toxic Substances Control considers asbestos hazards and requires removal of asbestos-containing materials prior to demolition or construction activities that could result in disturbance of these materials. Asbestos-containing materials must be removed in accordance with local and state regulations, as well as air district, Cal/OSHA, and California Department of Health Services requirements. Specifically, California Health and Safety Code section 19827.5, adopted January 1, 1991, requires that local agencies not issue demolition or alteration permits until a project sponsor has demonstrated compliance with the notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos.

The California Legislature vests the local air district, in this case the Bay Area Air Quality Management District, with the authority to regulate airborne pollutants, including asbestos-containing material, through both inspection and law enforcement. The air district is to be notified 10 days in advance of any proposed demolition or abatement work. Any disturbance of asbestos-containing material at the project site would be subject to the requirements of air district Regulation 11, Rule 2, *Hazardous Materials—Asbestos Demolition, Renovation, and Manufacturing*. The local office of Cal/OSHA must also be notified of asbestos abatement. Asbestos abatement contractors must follow state regulations contained in California Code of Regulations title 8, section 1529 and sections 341.6 through 341.14, when their work involves 100 gross square feet or more of asbestos-containing material. Pursuant to California law, the building department would not issue the required permit until the project sponsors have complied with the requirements described above.

For buildings constructed prior to 1978, such as all the existing buildings at the project site, it is highly likely that lead-based paint was used during their construction. Work that could result in any disturbance of lead-

[162] Recognized environmental conditions are defined by ASTM Standard Practice E1527-05 as the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property.
[163] Historical recognized environmental conditions are defined by ASTM Standard Practice E1527-05 as environmental conditions that, in the past, would have been considered a recognized environmental condition but may or may not be considered a recognized environmental condition currently.

based paint must comply with San Francisco Building Code section 3423, Work Practices for Lead-Based Paint on Pre-1979 Buildings and Steel Structures. Section 3423 identifies prohibited practices that may not be used when removing lead-based paint, as well as notification requirements. Where work would disturb or remove lead-based paint on the exterior of a building, or the interior of occupied buildings built prior to or on December 31, 1978, section 3407 requires specific notification and work standards and identifies prohibited work methods and penalties.

The demolition would also be subject to the Cal/OSHA lead in construction standard (California Code of Regulations title 8, section 1532.1). This standard requires development and implementation of a lead compliance plan when materials containing lead are disturbed during construction. The plan must describe activities that could emit lead, methods that would be used to comply with the standard, safe work practices, and a plan to protect workers from exposure to lead during construction. Cal/OSHA would require 24-hour notification if more than 100 square feet of lead-containing material would be disturbed.

The proposed project would be required to conduct soil and groundwater sampling and prepare a site mitigation plan, if determined necessary by the health department. The health department would oversee this process, and compliance with health code article 22A and the related regulations identified above would ensure that project activities that disturb or release of hazardous substances that may be present at the project site would not expose people in the project vicinity to unacceptable risk levels. Based on mandatory compliance with existing regulatory requirements, the proposed project would not result in a significant hazard to the public or environment from contaminated soil and/or groundwater, asbestos, or lead-based paint, and the proposed project would result in a ***less-than-significant*** impact with respect to these hazards, and no mitigation measures are necessary.

Impact HZ-3: The proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. ***(Less than Significant)***

The project site is within 0.25 mile of Wonderful Children Preschool and Daycare located at 15 Whaleship Plaza, Edwin and Anita Lee Newcomer School (formerly the Chinese Education Center) located at 950 Clay Street, Sterne School (also called the St. Mary's Bilingual Preschool) located at 838 Kearney Street, and John Yehall Chin Elementary School located 350 Broadway.

During construction of the proposed project, any hazardous materials currently on the site, such as asbestos-containing material and lead-based paint, would be removed before or during demolition of the existing buildings and prior to construction. The materials would be remediated and handled in compliance with applicable laws and regulations, as described under Impact HZ-2 above. During operations, the project sponsors would be required to store, handle, and dispose of hazardous materials in accordance with the regulations described under Impact HZ-1, which would ensure that hazardous materials are handled safely and there would be no potential for such materials to affect the nearest schools. Therefore, the proposed project would have a ***less-than-significant*** impact related to hazardous emissions or materials within 0.25 mile of a school and no mitigation measures are necessary.

Impact HZ-4: The proposed project would not be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and would not create a significant hazard to the public or the environment. ***(Less than Significant)***

Pursuant to section 65962.5 of the Government Code, the California Environmental Protection Agency (CalEPA) maintains a list of hazardous waste and substances sites, commonly referred to as the Cortese list. The Cortese list includes hazardous waste sites from the Department of Toxic Substances Control's (DTSC's) EnviroStor database, hazardous facilities identified by DTSC that are subject to corrective action pursuant to Health and Safety Code Section 25187.5, leaking underground storage tank sites from the State Water Resources Control Board's (state board's) GeoTracker database, solid waste disposal sites maintained by the state board, and sites with active cease and desist orders and clean up and abatement orders.[164]

Most Cortese sites in San Francisco are on the state board's list of sites where underground storage tanks existed or still exist. These sites are generally associated with gas stations, auto body shops, and older homes that had underground fuel tanks. The state board provides regulatory oversight of abatement of unauthorized releases at underground storage tank sites in accordance with State laws and regulations.

The project site is not on the Cortese List and thus would not create a significant hazard to the public or environment. The impact would be ***less than significant***, and no mitigation measures are necessary.

Impact HZ-5: The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. ***(Less than Significant)***

The city's Emergency Management Program is part of a jurisdiction-wide system that provides emergency management guidance related to prevention, preparedness, response, and recovery. The city's Emergency Response Plan uses an all-hazards approach to emergency planning and, therefore, encompasses all hazards that are applicable to the city and county, both natural and human-made, ranging from planned events to large-scale disasters.[165]

San Francisco ensures fire safety primarily through provisions of the building and fire codes. Final building plans would be reviewed and approved by the fire department and building department, to ensure conformance with these provisions. In this way, potential fire hazards, including those associated with hydrant water pressures and emergency access, would be mitigated during the permit review process. Compliance with fire safety regulations would ensure that the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan or expose people or structures to a significant risk of loss, injury, or death involving fires. Implementation of the proposed project could add incrementally to transportation conditions in the immediate area in the event of an emergency evacuation. As discussed in Section E.5, Transportation and Circulation, p. 28, the proposed project's contribution to traffic conditions would not be substantial within the context of the urban setting of the project site, and it is expected that project-related traffic would be dispersed within the existing street grid, such that there would be no significant adverse impacts on transportation conditions. The project would not substantially increase hazards due to a design feature or incompatible uses and would not result in inadequate emergency access. Therefore, the proposed project

[164] CalEPA, Cortese List Data Resources, accessed March 3, 2025, https://calepa.ca.gov/sitecleanup/corteselist/
[165] City and County of San Francisco, Emergency Response Plan, May 2017.

would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. This impact would be ***less than significant***, and no mitigation measures are necessary.

Impact C-HZ-1: The proposed project, in combination with cumulative projects, would not result in significant cumulative impacts related to hazards and hazardous materials. ***(Less than Significant)***

Impacts from hazards and hazardous materials are generally site specific and typically do not combine with impacts from cumulative projects to result in significant cumulative impacts. Development in the city is subject to city and state controls designed to protect the public and the environment from risks associated with hazards and hazardous materials, and to ensure that emergency access routes are maintained. Any future development in the project vicinity would be subject to these same laws and regulations. Compliance with existing regulations pertaining to the treatment and management of hazardous materials would ensure that the proposed project would not combine with cumulative projects in the vicinity to result in a significant cumulative impact. Therefore, cumulative hazards impacts would be ***less than significant***, and no mitigation measures are necessary.

E.18 Mineral Resources

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
18. MINERAL RESOURCES. Would the project:					
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒	☐
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒	☐

Impact MR-1: The proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. ***(No Impact)***

For purposes of this analysis, mineral resources include sand, clay, gravel, and rock deposits that could be located within the project site and that would be of value to the region and residents of the state.

All land in San Francisco, including the project site, is designated Mineral Resource Zone 4 by the California Division of Mines and Geology under the Surface Mining and Reclamation Act of 1975.[166] This designation indicates that there is inadequate information available for assignment to any other mineral resource zone. Based on the Mineral Resource Zone 4 designation, the project site is not a designated area of known mineral deposits or a locally important mineral resource recovery site. For this reason, the proposed project would have ***no impact*** on mineral resources.

Impact MR-2: The proposed project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. ***(No Impact)***

The general plan's environmental protection element states that, as a very urban place, San Francisco does not contain mineral resources to any appreciable extent.[167] As a result, consideration of mineral resources is omitted from the general plan. Therefore, ***no impact*** related to local mineral resource recovery sites would occur as a result of implementation of the proposed project.

Impact C-MR-1: The proposed project, in combination with cumulative projects, would not result in a cumulative impact on mineral resources. ***(No Impact)***

As discussed above, San Francisco is not a designated area of significant mineral deposits and does not have locally important mineral resource recovery sites. Implementation of nearby cumulative projects would have no impact on mineral resources. For these reasons, the proposed project would not combine with cumulative projects in the project vicinity to create a significant cumulative impact on mineral resources, and ***no impact*** would occur.

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[166] California Department of Conservation, Division of Mines and Geology, Update of Mineral Land Classification: Aggregate Materials in the South San Francisco Bay Production-Consumption Region, Open File Report 96-03, 1996.
[167] San Francisco Planning Department, Environmental Protection Element, amended January 31, 2023, https://generalplan.sfplanning.org/I6_Environmental_Protection.htm#, accessed September 16, 2024.

E.19 Energy

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
19. ENERGY. Would the project:					
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐	☐

Impact EN-1: The proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation; or conflict with or obstruct a state or local plan for renewable energy or energy efficiency. ***(Less than Significant)***

The proposed project would increase the population and intensity of the use on the project site. However, this increased intensity would not exceed anticipated growth in the area. As new buildings in San Francisco, the replacement fire station and high-rise building would be subject to the energy conservation standards included in the San Francisco Green Building Ordinance. This would require the project to meet a number of conservation standards (e.g., install water-efficient fixtures and energy-efficient appliances) and provide features that encourage alternative modes of transportation, such as bicycle racks. Documentation showing compliance with the San Francisco Green Building Code would be submitted with building permits and enforced by the building department. In addition, the proposed project would be required to comply with title 24 of the California Code of Regulations, which regulates energy consumption associated with heating, cooling, and ventilation as well as lighting in nonresidential buildings; it is enforced by the building department. Compliance with title 24 and the San Francisco Green Building Ordinance would ensure a reduction in the use of fuel, water, and energy by the proposed project. The proposed project, by its character, would conserve fuel and energy because it would provide hotel, office, and retail/restaurant uses in an urban area that is accessible by transit and is also bicycle and pedestrian friendly. Therefore, the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources or conflict with state or local plans for renewable energy and energy efficiency. The impact would be ***less than significant***, and no mitigation measures are necessary.

Impact C-EN-1: The proposed project, in combination with cumulative projects, would not result in significant cumulative impacts related to the waste, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct state or local plan for renewable energy or energy efficiency. ***(Less than Significant)***

While overall energy demand in California is increasing commensurate with increasing population, the state is also making concerted energy conservation efforts. While the City produces a substantial demand for energy and fuel, both City and state policies seek to minimize increases in demand through conservation and

energy efficiency regulations and policies such that energy is not used in a wasteful manner, and the cumulative impacts with respect to energy and fuel use. Because San Francisco is substantially built out, development in the City's urban core focuses on densification, which effectively reduces per capita use of energy and fuel by concentrating utilities and services in locations where they can be used efficiently. Similarly, the City recognizes the need for water conservation and has instituted programs and policies to maximize water conservation. San Francisco has one of the lowest per capita water use rates in the state[168] and routinely implements water conservation measures through code requirements and policy. Nearby cumulative development projects would be subject to the same energy and water conservation ordinances applicable to the proposed project. Therefore, the proposed project, in combination with cumulative projects, would result in a ***less-than-significant*** cumulative impact related to energy, fuel, and water resources, and no mitigation measures are necessary.

E.20 Agriculture and Forestry Resources

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
20. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:					
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☐	☒

[168] San Francisco Public Utilities Commission, Water Resources Division Annual Report, Fiscal Year 2021–22, https://www.sfpuc.gov/sites/default/files/documents/Water%20Resources%20Annual%20Report%20FY%2021%2022.pdf, accessed November 5, 2024.

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☐	☒
e) Involve other changes in the existing environment that, due to their location or nature, could result in conversion of farmland to non-agricultural use or forest land to non-forest use?	☐	☐	☐	☐	☒

The project site is fully developed and does not contain any Prime Farmland, Unique Farmland, Farmland of Statewide Importance, forest, or timberlands; does not support agricultural or timber uses; and is not zoned for agricultural or timber uses.[169] Because the project site does not contain agricultural uses or forest land and is not zoned for such uses, the proposed project would not result in the conversion of farmland to non-agricultural use or forest land to non-forest use. Furthermore, the proposed project would not conflict with any existing agricultural zoning or Williamson Act contracts.[170,171] Therefore, none of the agriculture and forest resources significance criteria are applicable to the proposed project and these topics are not discussed further.

[169] California Department of Conservation (DOC), California Important Farmland Finder, 2020, https://maps.conservation.ca.gov/DLRP/CIFF/, accessed October 9, 2024.
[170] DOC, California Williamson Act Enrollment Finder, 2023, https://maps.conservation.ca.gov/dlrp/WilliamsonAct/App/index.html, accessed October 9, 2024.
[171] The Williamson Act is a California law enacted in 1965 that provides property tax relief to owners of farmland and open space land in exchange for a 10-year agreement that the land will not be developed or converted into another use. The City and County of San Francisco does not offer Williamson Act contracts.

E.21 Wildfire

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
21. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:					
a) Substantially impair an adopted emergency response plan or emergency evacuation plans?	☐	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☐	☒

The California Department of Forestry and Fire Protection maps areas and designated zones with varying degrees of fire hazard: moderate, high, and very high. San Francisco County does not contain any state responsibility area land or lands classified as very high fire severity zones.[172] There are no landslide-prone areas in the immediate vicinity of the site.[173] Furthermore, the project site is not located within the boundaries of an area designated as a Wildland-Urban Interface of a fire-threatened community.[174] Therefore, none of the wildfire significance criteria are applicable to the proposed project and these topics are not discussed further.

[172] California Department of Forestry and Fire Protection (CAL FIRE), Fire Hazard Severity Zone Viewer, April 1, 2024, https://experience.arcgis.com/experience/03beab8511814e79a0e4eabf0d3e7247/, accessed October 9, 2024.
[173] Metropolitan Transportation Commission and Association of Bay Area Governments (MTC and ABAG), 2024, https://mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8, accessed October 9, 2024.
[174] CAL FIRE, Wildland-Urban Interface Fire Threat for the San Francsico Bay Region, 2022, https://www.arcgis.com/apps/mapviewer/index.html?layers=d45bf08448354073a26675776f2d09cb, accessed October 9, 2024.

E.22 Mandatory Findings of Significance

Topic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
22. MANDATORY FINDINGS OF SIGNIFICANCE. Does the project:					
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐	☐
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☒	☐	☐	☐	☐
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐	☐

NOTE: Authority cited: Public Resources Code sections 21083 and 21083.05, 21083.09. Reference: Section 65088.4, Gov. Code; Public Resources Code sections 21073, 21074, 21080(c), 21080.1, 21080.3, 21083, 21083.05, 21083.3, 21080.3.1, 21080.3.2,21082.3, 21084.2, 21084.3, 21093, 21094, 21095, and 21151; *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296; *Leonoff v. Monterey Board of Supervisors* (1990) 222 Cal.App.3d 1337; *Eureka Citizens for Responsible Govt. v. City of Eureka* (2007) 147 Cal.App.4th 357; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th at 1109; *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

a) As discussed in the various topics in this initial study, the proposed project is anticipated to have less-than-significant impacts on most of the environmental topics discussed. Specifically, initial study Section E.14, Biological Resources, discusses the potential for the project to substantially affect habitats, fish/wildlife populations, and sensitive natural communities. As discussed, all impacts related to biological resources would be less than significant. Initial study Section E.3, Cultural Resources, and draft EIR Section 3.A, Historic Architectural Resources, discuss the potential for the project to affect important examples of California history. As discussed, the proposed project could result in a significant effect on historic architectural resources. Initial study Section E.3, Cultural Resources, initial study Section E.4, Tribal Cultural Resources, and initial study Section E.15, Geology and Soils, discuss the potential for the proposed project to affect important examples of California prehistory. All impacts on archeological resources, TCRs, and paleontological resources would be less than significant or less than significant with mitigation.

b) The proposed project, in combination with cumulative projects, as described in initial study Section E, would not result in significant cumulative impacts on land use and planning, population and housing, cultural resources (archeological resources), TCRs, transportation and circulation, noise, GHG emissions, wind, shadow, recreation, utilities and service systems, public services, biological resources, geology and soils, hydrology and water quality, hazards and hazardous materials, mineral resources, energy resources, agriculture and forestry resources, and wildfire with implementation of identified mitigation, if required. Consequently, the proposed project would not have impacts that are individually limited but cumulatively considerable. However, the proposed project, in combination with cumulative projects, could result in cumulative impacts related to historic architectural resources and air quality, which are analyzed in draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures.

c) Potential adverse effects on human beings have been considered as a part of the analysis of individual environmental topics in this initial study. As discussed above, the proposed project has the potential to result in significant impacts with respect to historic architectural resources, noise, and air quality which could adversely affect human beings. Draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, assesses these topics and identifies mitigation measures where applicable.

SECTION F MITIGATION MEASURES

The following mitigation measures have been identified in this initial study to reduce potentially significant impacts resulting from the proposed project to less-than-significant levels. The project sponsors have agreed to implement all mitigation measures identified in the initial study.

Mitigation Measure M-CR-2a: Archeological Testing.

Archeological Testing Program. The purpose of the archeological testing program will be to determine to the extent possible the presence or absence of archeological resources and to identify and to evaluate whether any archeological resource encountered on the site constitutes a historical resource under CEQA. The project sponsor shall retain the services of an archeological consultant from the rotational Qualified Archeological Consultants List (QACL) maintained by the planning department. After the first project approval action or as directed by the Environmental Review Officer (ERO), the project sponsor shall contact the department archeologist to obtain the names and contact information for the next three archeological consultants on the QACL. The archeological consultant shall undertake an archeological testing program as specified herein. The archeological consultant's work shall be conducted in accordance with this measure at the direction of the ERO.

All plans and reports prepared by the consultant as specified herein shall be submitted first and directly to the ERO for review and comment and shall be considered draft reports subject to revision until final approval by the ERO. In addition, the consultant shall be available to conduct an archeological monitoring and/or data recovery program if required pursuant to this measure. Archeological monitoring and/or data recovery programs required by this measure could suspend construction of the project for up to a maximum of four weeks. At the direction of the ERO, the suspension of construction can be extended beyond four weeks only if such a suspension is the only feasible means to reduce to a less than significant level potential effects on a significant archeological resource as defined in CEQA Guidelines section 15064.5 (a)(c).

A California Native American tribe traditionally and culturally affiliated with a geographic area of the project at their discretion shall provide a Native American cultural sensitivity training to all project contractors. A California Native American tribe traditionally and culturally affiliated with a geographic area of the project at their discretion shall provide monitoring of the archeological testing for Native American archeological resources.

Archeological Testing Plan. The archeological testing program shall be conducted in accordance with the approved Archeological Testing Plan (ATP). The archeological consultant and the ERO shall consult on the scope of the ATP, which shall be approved by the ERO prior to any project-related soils disturbing activities commencing. The ATP shall be submitted first and directly to the ERO for review and comment and shall be considered a draft subject to revision until final approval by the ERO. The archeologist shall implement the testing as specified in the approved ATP prior to and/or during construction. The ATP shall identify the property types of the expected archeological resource(s) that potentially could be adversely affected by the proposed project, lay out what scientific/historical research questions are applicable to the expected resource, what data classes the resource is expected to possess, and how the expected data classes would address the

applicable research questions. The ATP shall also identify the testing method to be used, the depth or horizonal extent of testing, and the locations recommended for testing and shall identify archeological monitoring requirements for construction soil disturbance as warranted.

Paleoenvironmental Analysis of Paleosols. When a submerged paleosol is identified, irrespective of whether cultural material is present, samples shall be extracted and processed for dating, flotation for paleobotanical analysis, and other applicable special analyses pertinent to identification of possible cultural soils and for environmental reconstruction. The results of analysis of collected samples shall be reported on in the results report that is submitted to planning as described in Archeological Resources Report section below.

Discovery Treatment Determination. At the completion of the archeological testing program, the archeological consultant shall submit a written summary of the findings to the ERO. The findings memo shall describe and identify each resource and provide an initial assessment of the integrity and significance of encountered archeological deposits.

If the ERO in consultation with the archeological consultant determines that a significant archeological resource is present and that the resource could be adversely affected by the proposed project, the ERO, in consultation with the project sponsor, shall determine whether preservation of the resource in place is feasible. If so, the proposed project shall be re-designed so as to avoid any adverse effect on the significant archeological resource and the archeological consultant shall prepare an archeological resource preservation plan (ARPP), which shall be implemented by the project sponsor during construction. The consultant shall submit a draft ARPP to the planning department for review and approval.

If preservation in place is not feasible, a data recovery program shall be implemented, unless the ERO determines that the archeological resource is of greater interpretive than research significance and that interpretive use of the resource is feasible. The ERO in consultation with the archeological consultant shall also determine if additional treatment is warranted, which may include additional testing and/or construction monitoring.

Archeological Sensitivity Training. If it is determined that the project would require ongoing archeological monitoring, the archeological consultant shall provide a training to the prime contractor; to any project subcontractor (including demolition, excavation, grading, foundation, pile driving, etc. firms); or utilities firm involved in soils-disturbing activities within the project site. The training shall advise all project contractors to be on the alert for evidence of the presence of the expected archeological resource(s), of how to identify the evidence of the expected resource(s), and of the appropriate protocol in the event of apparent discovery of an archeological resource by the construction crew.

Consultation with Descendant Communities. On discovery of an archeological site associated with descendant Native Americans, the Overseas Chinese, or other potentially interested descendant group an appropriate representative of the descendant group and the ERO shall be contacted. The representative of the descendant group shall be given the opportunity to monitor archeological field investigations of the site and to offer recommendations to the ERO regarding appropriate archeological treatment of the site, of recovered data from the site, and, if applicable, any interpretative treatment of the associated archeological site. A California Native American tribe

traditionally and culturally affiliated with a geographic area of the project or appropriate representative of the descendant group at their discretion shall provide a cultural sensitivity training to all project contractors. The ERO and project sponsor shall work with the tribal representative or other representatives of descendant communities to identify the scope of work to fulfill the requirements of this mitigation measure, which may include participation in preparation and review of deliverables (e.g., plans, interpretive materials, artwork). Representatives shall be compensated for their work as identified in the agreed upon scope of work. A copy of the Archeological Resources Report (ARR) shall be provided to the representative of the descendant group.

Archeological Data Recovery Plan. An archeological data recovery program shall be conducted in accordance with an Archeological Data Recovery Plan (ADRP) if all three of the following apply: (1) a resource has potential to be significant, (2) preservation in place is not feasible, and (3) the ERO determines that an archeological data recovery program is warranted. The archeological consultant, project sponsor, and ERO shall meet and consult on the scope of the ADRP prior to preparation of a draft ADRP. The archeological consultant shall submit a draft ADRP to the ERO. The ADRP shall identify how the proposed data recovery program will preserve the significant information the archeological resource is expected to contain. That is, the ADRP will identify what scientific/historical research questions are applicable to the expected resource, what data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, should be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archeological resources if nondestructive methods are practical.

The scope of the ADRP shall include the following elements:

- *Field Methods and Procedures.* Descriptions of proposed field strategies, procedures, and operations.
- *Cataloguing and Laboratory Analysis.* Description of selected cataloguing system and artifact analysis procedures.
- *Discard and Deaccession Policy.* Description of and rationale for field and post-field discard and deaccession policies.
- *Security Measures.* Recommended security measures to protect the archeological resource from vandalism, looting, and non-intentionally damaging activities.
- *Final Report.* Description of proposed report format and distribution of results.
- *Curation.* Description of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities.

Coordination of Archeological Data Recovery Investigations. In cases in which the same resource has been or is being affected by another project for which data recovery has been conducted, is in progress, or is planned, in order to maximize the scientific and interpretive value of the data recovered from both archeological investigations, the following measures shall be implemented:

a) In cases where archeological investigations have not begun for both of the projects, both archeological consultants and the ERO shall consult on coordinating and collaboration on

archeological research design, data recovery methods, analytical methods, reporting, curation, and interpretation to ensure consistent data recovery and treatment of the resource.

b) In cases where archeological data recovery investigation is already under way or has been completed for a prior project, the archeological consultant for the subsequent project shall consult with the prior archeological consultant, if available; review prior treatment plans, findings and reporting; and inspect and assess existing archeological collections/inventories from the site prior to preparation of the archeological treatment plan for the subsequent discovery, and shall incorporate prior findings in the final report of the subsequent investigation. The objectives of this coordination and review of prior methods and findings will be to identify refined research questions; determine appropriate data recovery methods and analyses; assess new findings relative to prior research findings; and integrate prior findings into subsequent reporting and interpretation.

Human Remains and Funerary Objects. The treatment of human remains and funerary objects discovered during any soil-disturbing activity shall comply with applicable State and Federal laws. This shall include immediate notification of the Office of the Chief Medical Examiner of the City and County of San Francisco (Medical Examiner). The ERO also shall be notified immediately upon the discovery of human remains. In the event of the Medical Examiner's determination that the human remains are Native American remains, the Medical Examiner shall notify the California State Native American Heritage Commission (NAHC), which will appoint a Most Likely Descendant (MLD). The MLD will complete his or her inspection of the remains and make recommendations or preferences for treatment within 48 hours of being granted access to the site (Public Resources Code section 5097.98(a)).

The landowner may consult with the project archeologist and project sponsor and shall consult with the MLD and ERO on preservation in place or recovery of the remains and any scientific treatment alternatives. The landowner shall then make all reasonable efforts to develop an Agreement with the MLD, as expeditiously as possible, for the treatment and disposition, with appropriate dignity, of human remains and funerary objects (as detailed in CEQA Guidelines section 15064.5(d)). Per PRC section 5097.98 (b)(1), the Agreement shall address and take into consideration, as applicable and to the degree consistent with the wishes of the MLD, the appropriate excavation, removal, recordation, scientific analysis, custodianship prior to reinterment or curation, and final disposition of the human remains and funerary objects. If the MLD agrees to scientific analyses of the remains and/or funerary objects, the archeological consultant shall retain possession of the remains and funerary objects until completion of any such analyses unless otherwise specified in the Agreement, after which the remains and funerary objects shall be reinterred or curated as specified in the Agreement.

Both parties are expected to make a concerted and good faith effort to arrive at an Agreement, consistent with the provisions of PRC section 5097.98. However, if the landowner and the MLD are unable to reach an Agreement, the landowner, ERO, and project sponsor shall ensure that the remains and/or mortuary materials are stored securely and respectfully until they can be reinterred on the property, with appropriate dignity, in a location not subject to further or future subsurface disturbance, consistent with state law.

Treatment of historic-period human remains and of associated or unassociated funerary objects discovered during any soil-disturbing activity, additionally, shall follow protocols laid out in the

project's archeological treatment documents, and in any related agreement established between the Medical Examiner and the ERO.

The project archeologist shall retain custody of the remains and associated materials while any scientific study scoped in the treatment document is conducted and the remains shall then be curated or respectfully reinterred by arrangement on a case-by case-basis.

Cultural Resources Public Interpretation Plan. The project archeological consultant shall submit a Cultural Resources Public Interpretation Plan (CRPIP) if a significant archeological resource is discovered during a project. As directed by the ERO, a qualified design professional with demonstrated experience in displaying information and graphics to the public in a visually interesting manner, local artists, or community group may also be required to assist the project archeological consultant in preparation of the CRPIP. If the resource to be interpreted is a tribal cultural resource, the CRPIP shall be prepared in consultation with and developed with the participation of Ohlone tribal representatives. The CRPIP shall describe the interpretive product(s), locations or distribution of interpretive materials or displays, the proposed content and materials, the producers or artists of the displays or installation, and a long-term maintenance program. The CRPIP shall be sent to the ERO for review and approval. The CRPIP shall be implemented prior to occupancy of the project.

Archeological Resources Report. Whether or not significant archeological resources are encountered, the archeological consultant shall submit a written report of the findings of the testing program to the ERO. The archeological consultant shall submit a draft Archeological Resources Report (ARR) to the ERO that evaluates the historical significance of any discovered archeological resource and describes the archeological, historical research methods employed in the archeological testing/monitoring/ data recovery program(s) undertaken, and if applicable, discusses curation arrangements. Formal site recordation forms (CA DPR 523 series) shall be attached to the ARR as an appendix.

Once approved by the ERO, copies of the ARR shall be distributed as follows: California Archeological Site Survey Northwest Information Center (NWIC) shall receive one copy and the ERO shall receive a copy of the transmittal of the ARR to the NWIC. The environmental planning division of the planning department shall receive one bound hardcopy of the ARR. Digital files that shall be submitted to the environmental division include an unlocked, searchable PDF version of the ARR, GIS shapefiles of the site and feature locations, any formal site recordation forms (CA DPR 523 series), and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. The PDF ARR, GIS files, recordation forms, and/or nomination documentation should be submitted via USB or other stable storage device. If a descendant group was consulted during archeological treatment, a PDF of the ARR shall be provided to the representative of the descendant group.

Curation. Significant archeological collections and paleoenvironmental samples of future research value shall be permanently curated at an established curatorial facility or Native American cultural material shall be returned to local Native American tribal representatives at their discretion. The facility shall be selected in consultation with the ERO. Upon submittal of the collection for curation the sponsor or archeologist shall provide a copy of the signed curatorial agreement to the ERO.

Mitigation Measure M-CR-2b: Treatment of Submerged and Deeply Buried Resources. This measure applies to projects that would include subgrade excavation to depths that would penetrate to native soil or below Young Bay Mud, or entail the use of piles, soil improvements or other deep foundations in landfill areas within former creeks, ponds, bay marshes or waters of the bay that may be sensitive for submerged or buried historical or Native American archeological resources; and shall be implemented in the event of the discovery of a submerged or deeply buried resource during archeological testing, archeological monitoring, or soil-disturbing construction activities that occur when an archeologist is not present. In addition to the measures detailed below, for any project during which a significant archeological resource is identified, a preservation or treatment determination shall be made consistent with the provisions of Mitigation Measure M-CR-2a.

The following shall be undertaken upon discovery of a potentially significant deeply buried or submerged resource to minimize significant effects from deep project excavations, soil improvements, pile construction, or construction of other deep foundation systems, in cases where the environmental review officer (ERO) has determined through consultation with the project sponsor, and with tribal representatives as applicable, that preservation-in-place—the preferred mitigation—is not a feasible or effective option.

Submerged or Buried Resource Treatment Determination. If the resource cannot feasibly or adequately be preserved in place, documentation and/or archeological data recovery shall be conducted, as described in Mitigation Measure M-CR-2a. However, by definition, submerged or deeply buried resources sometimes are located deeper than the maximum anticipated depth of project excavations, such that the resource would not be exposed for investigation, and/or under water or may otherwise pose substantial access, safety or other logistical constraints for data recovery; or the cost of providing archeological access to the resource may demonstrably be prohibitive.

In circumstances where the constraints identified above limit physical access for documentation and data recovery, the ERO, project sponsor, project archeologist, and tribal representative (for Native American archeological resources), shall consult to explore alternative documentation and treatment options to be implemented in concert with any feasible archeological data recovery. The appropriate treatment elements, which would be expected to vary with the type of resource and the circumstances of discovery, shall be identified by the ERO based on the results of consultation from among the treatment measures listed below. Additional treatment options may be developed and agreed upon through consultation if it can be demonstrated that they would be equally or more effective in recovering or amplifying the value of the data recovered from physical investigation of the affected resources by addressing applicable archeological research questions and in disseminating data and meaningfully interpreting the resource to the public.

Each treatment option below, or a combination of the treatment measures, in concert with any feasible standard data recovery methods applied as described above, would be effective in mitigating significant impacts to submerged and buried resources. The ERO, in consultation with the project archeologist and project sponsor, shall identify which of these measures that, individually or in combination, will be applicable and effective in recovering sufficient data, enhancing the research value of the data recovery, meaningfully interpreting the resource to the public, or otherwise effectively mitigating the loss of data or associations that will result from project construction. Multiple treatment measures shall be adopted in combination, as needed to adequately mitigate

data loss and, as applicable, impacts to tribal cultural values, as determined in consultation with the ERO and, as applicable, tribal representatives.

The project archeologist shall document the results of the treatment program consultation with respect to the agreed upon scope of treatment in a treatment program memo, for ERO review and approval. Upon approval by the ERO, the project sponsor shall ensure that treatment program is implemented prior to and during construction, as applicable. Reporting, interpretive, curation and review requirements are the same as delineated under the other cultural resources mitigation measures that are applicable to the project, as noted above. The project sponsor shall be responsible for ensuring the implementation of all applicable mitigation measures, as identified in the treatment program memo.

Treatment Options

- *Remote Archeological Documentation.* Where a historic feature cannot be recovered or adequately accessed in place by the archeologist due to size, bulk or inaccessibility, the archeologist shall conduct all feasible remote documentation methods, such as 3-D photography using a remote access device, remote sensing (e.g., ground penetrating radar with a low range (150 or 200 MHz) antenna), or other appropriate technologies and methods, to document the resource and its context. The project sponsor and contractor shall support remote archeological documentation as needed, by assisting with equipment access (e.g., drone, lights and camera or laser scanner mounted on backhoe); providing personnel qualified to enter the excavation to facilitate remote documentation; and accommodating training of construction personnel by the project archeologist so that they can assist in measuring or photographing the resource from inside the excavation in cases when the archeologist cannot enter.
- *Modification of Contractor's Excavation Methods.* At the request of the ERO, the project sponsor shall consult with the project archeologist and the ERO to identify potential modifications to the contractor's excavation and shoring methods to facilitate data recovery to prevent damage to the resource before it has been documented, to assist in exposure and facilitate observation and documentation, and to assist in data recovery. Examples include improved dewatering during excavation, use of a smaller excavator bucket or toothless bucket, providing a location where spoils can be spread out and examined by the archeologist prior to being offhauled, and phasing or benching of deep excavations to facilitate observation and/or deeper archeological trenching.
- *Data Recovery through Open Excavation.* If a project will include mass excavation to the depth of the buried/submerged deposit, archeological data recovery shall include manual (preferred) or controlled mechanical sampling of the deposit. If project construction would not include mass excavation to the depth of the deposit but would impact the deposit through deep foundation systems or soil improvements, the ERO and the project sponsor shall consult to consider whether there are feasible means of providing direct archeological access to the deposit (e.g., excavation of portion of the site that overlies the deposit to the subject depth so that a sample can be recovered). The feasibility consideration shall include an estimate of the project cost of excavating to the necessary depth and of providing shoring and dewatering sufficient to allow archeological access to the deposit for manual or mechanical recovery.
- *Mechanical Recovery.* If site circumstances limit access by archeologists to the find, the ERO, project archeologist, and project sponsor shall consult on the feasibility of mechanically

removing the feature/ deposit or portion of it intact for off-site documentation and analysis, preservation, and interpretive use. The consultation above shall include consideration as to whether such recovery is logistically feasible and can be accomplished without major data loss. The specific means and methods and the type and size of the sample shall be identified, and the recovery shall be implemented as determined feasible by the ERO. The project sponsor shall assist with mechanical recovery and transport and curation of recovered materials and shall provide for an appropriate and secure off-site location for archeological documentation and storage as needed.

- *Salvage of Historic Materials.* Samples or sections of historical features that cannot be preserved in place (e.g., structural members of piers or wharves, sections of wooden sea wall, rail alignments, or historic utility or paving features of particular data value or interpretive interest) shall be tested for contamination and, if not contaminated, shall be salvaged for interpretive use or other reuse, such as display of a reconstructed resource; use of timbers or planks for site furniture and signage structures; installation in publicly accessible open spaces; or other uses of public interest. Historic wood and other salvageable historic structural material not used for interpretation shall be recovered for reuse, consistent with the San Francisco Ordinance No. 27-06, which requires recycling or reuse of all construction and demolition debris material removed from a project. If the project has the potential to encounter such features, the project sponsor shall plan in advance for reuse of salvaged historic materials to the greatest extent feasible, including identification of a location for interim storage and identification of potential users and reuses.
- *Data Recovery Using Geoarcheological Cores.* If it is deemed infeasible to expose a significant deposit resource for archeological data recovery, geoarcheological coring of the identified deposit shall be conducted at horizontal grid intervals of no greater than 15 feet within areas that will be impacted by project construction. The maximum feasible core diameter shall be used for data recovery coring. The objective of coring is to obtain a minimum of a five percent sample of the estimated total volume of the resource within areas that will impacted by project construction. However, due to the small size of each core, this method alone generally cannot recover a 5 percent sample volume or a sufficient quantity of data to adequately characterize the range of activities that took place at the site. For this reason, if the coring sample constitutes less than five percent of the estimated total volume of the archeological deposit that will be directly impacted by project construction, the project sponsor may elect implementation of one or more of the following additional compensatory measures to amplify the value of the recovered data.
- *Compensatory Treatment Measures:*
  - *Scientific Analysis of Data from Comparable Archeological Sites/"Orphaned Collections."* The ERO and the project archeologist shall consult to identify a known archeological site or historical feature, or curated collections or samples recovered during prior investigation of similar sites or features are available for further analysis; and for which site-specific or comparative analyses would be expected to provide data relevant to the interpretation or context reconstruction for the affected site. Examples would include reanalysis or comparative analysis of artifacts or archival records; faunal or paleobotanical analyses; dating; isotopes studies; or such other relevant studies based on the research design developed for the affected site and on data sets available from the impacted resource and comparative collections. The scope of analyses shall be determined by the ERO based on

consultation with the project archeologist, the project sponsor and, for sites of Native American origin Native American representatives.

Additional Off-Site Data Collection and/or Analysis for Historical and Paleoenvironmental Reconstruction. The ERO and project archeologist shall identify existing geoarcheological data and geotechnical coring records on file with the city; and/or cores extracted and preserved during prior geotechnical or geoarcheological investigations that could contribute to reconstruction of the environmental setting in the vicinity of the identified resource, to enhance the historical and scientific value of recovered data by providing additional data about Native American archeological environmental setting and stratigraphic sensitivity; and/or provide information pertinent to the public interpretation of the significant resource. Relevant data may also be obtained through geoarcheological coring at accessible sites identified by the ERO through consultation with San Francisco public agencies and private project sponsors.

Mitigation Measure M-TCR-1: Tribal Cultural Resources Program.

Preservation in Place. In the event of the identification or discovery of a tribal cultural resource, the Environmental Review Officer (ERO), the project sponsor, and California Native American tribes traditionally and culturally affiliated with a geographic area of the project shall consult to determine whether preservation in place would be feasible and effective. The planning department shall notice California Native American tribes traditionally and culturally affiliated with a geographic area who will be given the opportunity to opt in to coordination regarding tribal cultural resources. This would include collaboration and review of the preservation plan proposed for the resource. If it is determined that preservation-in-place of the tribal cultural resource would be both feasible and effective, then the project sponsor in consultation with local Native American representatives and the ERO shall prepare a tribal cultural resource preservation plan (TCRPP). If the tribal cultural resource is an archeological resource of Native American origin, the archeological consultant shall prepare an archeological resource preservation plan (ARPP) in consultation with the local Native American representative, which shall be implemented by the project sponsor during construction. The consultant shall submit a draft ARPP to Planning for review and approval.

Interpretive Program. The project sponsor, in consultation with California Native American tribes traditionally and culturally affiliated with a geographic area of the project, shall prepare a Tribal Cultural Resources Public Interpretation Plan (TCRIP) to guide Tribal Cultural Resource interpretive program. The TCRIP may be prepared in tandem with the Cultural Resources Public Interpretation Plan (CRPIP) if required. The TCRIP shall be submitted to ERO for review and approval prior to implementation of the program. The plan shall identify, as appropriate, proposed locations for installations or displays, the proposed content and materials of those displays or installation, the producers or artists of the displays or installation, and a long-term maintenance program. The interpretive program may include artist installations, preferably by local Native American artists, oral histories with local Native Americans, cultural displays, educational panels, or other interpretive elements agreed upon by the ERO, sponsor, and local Native American representatives. Upon approval of the TCRIP and prior to project occupancy, the interpretive program shall be implemented by the project sponsor. The ERO and project sponsor shall work with the tribal representative to identify the scope of work to fulfill the requirements of this mitigation measure,

which may include participation in preparation and review of deliverables (e.g., plans, interpretive materials, artwork). Tribal representatives shall be compensated for their work as identified in the agreed upon scope of work.

Mitigation Measure M-NO-1: Construction Noise Control. Prior to issuance of the Pre-Construction Environmental Compliance Letter, the project sponsor shall submit a construction noise control plan to the Environmental Review Officer (ERO) or the ERO's designee for approval. The construction noise control plan shall be prepared by a qualified acoustical engineer, with input from the construction contractor, and include all feasible measures to reduce construction noise. The construction noise control plan shall identify noise control measures to meet the daytime and nighttime performance targets for construction activities as identified below at noise-sensitive receptors (residences and hotels) and commercial receptors. The project sponsor shall ensure that requirements of the construction noise control plan are included in the contract specifications.

If nighttime construction is required, the plan shall include specific measures to reduce nighttime construction noise.

The plan shall include specific measures to reduce daytime construction noise to a performance target of 90 dBA exterior noise level and less than 10 dBA over ambient noise levels at noise-sensitive receptors; nighttime construction noise to a performance target of 80 dBA at nighttime noise-sensitive uses, less than 5 dBA increase over the ambient noise level at the property line and an interior noise level of 45 dBA; and daytime construction noise to a performance target of 100 dBA exterior noise level at commercial receptors. The plan shall also include measures for notifying the public of construction activities, complaint procedures, and a plan for monitoring construction noise levels in the event complaints are received.

The construction noise control plan shall include the following measures to the degree feasible, or other effective measures necessary to reduce construction noise levels, as required:

- Use construction equipment that is in good working order, and inspect mufflers for proper functionality;
- Select "quiet" construction methods and equipment (e.g., improved mufflers, use of intake silencers, engine enclosures);
- Use construction equipment with lower noise emission ratings whenever possible, particularly for air compressors;
- Prohibit the idling of inactive construction equipment for more than 5 minutes;
- Locate stationary noise sources (such as compressors) as far from nearby noise-sensitive receptors as possible, muffle such noise sources, and construct barriers around such sources and/or the construction site.
- Avoid placing stationary noise-generating equipment (e.g., generators, compressors) within noise-sensitive buffer areas (as determined by the acoustical engineer) immediately adjacent to neighbors.

- Enclose or shield stationary noise sources from neighboring noise-sensitive properties with noise barriers to the extent feasible. To further reduce noise, locate stationary equipment in pit areas or excavated areas, if feasible; and
- Install temporary barriers, barrier-backed sound curtains and/or acoustical panels around working powered impact equipment and, if necessary, around the project site perimeter. When temporary barrier units are joined together, the mating surfaces shall be flush with each other. Gaps between barrier units, and between the bottom edge of the barrier panels and the ground, shall be closed with material that completely closes the gaps, and dense enough to attenuate noise.

The construction noise control plan shall include the following measures for notifying the public of construction activities, complaint procedures and monitoring of construction noise levels:

- Designation of an on-site construction noise manager for the project;
- Notification of neighboring noise-sensitive receptors within 300 feet of the project construction area at least 30 days in advance of high-intensity noise-generating activities (e.g., activities that may generate noise levels greater than 90 dBA at noise-sensitive receptors or 100 dBA at commercial receptors) about the estimated duration of the activity;
- A sign posted on-site describing noise complaint procedures and a complaint hotline number that shall always be answered during construction;
- A procedure for notifying the planning department of any noise complaints within one week of receiving a complaint;
- A list of measures for responding to and tracking complaints pertaining to construction noise. Such measures may include the evaluation and implementation of additional noise controls at sensitive receptors; and
- Conduct noise monitoring (measurements) at the beginning of major construction phases (e.g., demolition, grading, excavation) and during high-intensity construction activities to determine the effectiveness of noise attenuation measures and, if necessary, implement additional noise control measures.

The project sponsor shall notify the ERO or their designee of any night noise permit application filed with the Department of Building Inspection on the day of filing and any emergency/unanticipated activity with the potential to exceed standards as soon as possible. The project sponsor shall implement the following noise reduction technique to reduce nighttime construction noise:

- Provide acoustically rated shielding around the concrete pump engine. This measure would be expected to reduce noise levels by 5 to 10 dBA depending on the proximity of shielding to the pump engine.

Mitigation Measure M-NO-2: Noise Analysis and Attenuation for Stationary Mechanical Equipment. Prior to issuance of any building permit, the project sponsor shall engage a qualified acoustical engineer to prepare a project-specific stationary mechanical equipment acoustical analysis based on the final design, equipment selection and locations for the high-rise building and

replacement fire station. The analysis shall show compliance with the standards in section 2909(b) and 2909(d) for the mixed-use high-rise building and replacement fire station. Attenuation requirements for compliance and specifications for the acoustical screens shall be identified, if needed. All recommendations from the acoustical analysis necessary to ensure that noise sources would meet applicable requirements of the noise ordinance and/or not result in substantial increases in ambient noise levels shall be incorporated into the building design and operations. The project sponsor shall submit this analysis with the final mechanical equipment design to the ERO or the ERO's designee for approval.

Mitigation Measure M-NO-3: Protection of Adjacent Buildings/Structures and Vibration Monitoring during Construction. Prior to issuance of the Pre-Construction Environmental Compliance Letter, the project sponsor shall submit a Pre-construction Survey and Vibration Management and Monitoring Plan to the ERO or the ERO's designee for approval. The plan shall identify all feasible means to avoid damage to the potentially affected building at 401 Washington Street. The project sponsor shall ensure that the following requirements of the Pre-Construction Survey and Vibration Management and Monitoring Plan are included in contract specifications, as necessary.

Pre-construction Survey. Prior to the start of any ground-disturbing activity, the project sponsor shall engage a consultant to undertake a pre-construction survey of the potentially affected building at 401 Washington Street. Since the potentially affected building is not historic, a structural engineer or other professional with similar qualifications shall document and photograph the existing conditions of the building. The project sponsor shall submit the survey to the ERO or the officer's designee for review and approval prior to the start of vibration-generating construction activity.

Vibration Management and Monitoring Plan. The project sponsor shall undertake a monitoring plan to avoid or reduce project-related construction vibration damage to the adjacent building at 401 Washington Street to ensure that any such damage is documented and repaired. Prior to issuance of the Pre-Construction Environmental Compliance Letter, the project sponsor shall submit the Plan to the ERO for review and approval.

The Vibration Management and Monitoring Plan shall include, at a minimum, the following components, as applicable:

- *Maximum Vibration Level.* Based on the anticipated construction and condition of the affected building at 401 Washington Street, a qualified acoustical/vibration consultant in coordination with a structural engineer (or professional with similar qualifications) shall establish a maximum vibration level that shall not be exceeded at this building, based on existing conditions, character-defining features, soil conditions, and anticipated construction practices (common standards are a peak particle velocity [PPV] of 0.25 inch per second for historic and some old buildings, a PPV of 0.3 inch per second for older residential structures, and a PPV of 0.5 inch per second for new residential structures and modern industrial/commercial buildings).
- *Vibration-generating Equipment.* The plan shall identify all vibration-generating equipment to be used during construction (including but not limited to site preparation, clearing, demolition, excavation, shoring, foundation installation, and building construction).

- *Alternative Construction Equipment and Techniques.* The plan shall identify potential alternative equipment and techniques that could be implemented if construction vibration levels are observed in excess of the established standard (e.g., drilled shafts [caissons] could be substituted for driven piles, if feasible, based on soil conditions, or smaller, lighter equipment could be used in some cases).
- *Buffer Distances.* The plan shall identify buffer distances to be maintained based on vibration levels and site constraints between the operation of vibration-generating construction equipment and the potentially affected building and/or structure to avoid damage to the extent possible.
- *Vibration Monitoring.* The plan shall identify the method and equipment for vibration monitoring to ensure that construction vibration levels do not exceed the established standards identified in the plan.
  - Should construction vibration levels be observed in excess of the standards established in the plan, the contractor(s) shall halt construction and put alternative construction techniques identified in the plan into practice, to the extent feasible.
  - The qualified structural engineer or other professional with similar qualifications (for effects on non-historic buildings and/or structures) shall inspect each affected building and/or structure (as allowed by property owners) in the event the construction activities exceed the vibration levels identified in the plan.
  - The structural engineer or other professional with similar qualifications shall submit monthly reports to the ERO during vibration-inducing activity periods that identify and summarize any vibration level exceedances and describe the actions taken to reduce vibration.
  - If vibration has damaged nearby buildings and/or structures that are not historic, the structural engineer or other professional with similar qualifications shall immediately notify the ERO and prepare a damage report documenting the features of the building and/or structure that has been damaged.
  - Following incorporation of the alternative construction techniques and/or planning department review of the damage report, vibration monitoring shall recommence to ensure that vibration levels at each affected building and/or structure on adjacent properties are not exceeded.
- *Periodic Inspections.* The plan shall identify the intervals and parties responsible for periodic inspections. The qualified structural engineer or other professional with similar qualifications (for effects on historic and non-historic buildings and/or structures) shall conduct regular periodic inspections of each affected building and/or structure on adjacent properties (as allowed by property owners) during vibration-generating construction activity on the project site. The plan will specify how often inspections shall occur.
- *Repair Damage.* The plan shall also identify provisions to be followed should damage to any building and/or structure occur due to construction-related vibration. The building(s) and/or structure(s) shall be remediated to their pre-construction condition (as allowed by property owners) at the conclusion of vibration-generating activity on the site.

Vibration Monitoring Results Report. After construction is complete the project sponsor shall submit to the ERO a final report from the qualified structural engineer or other professional with similar qualifications. The report shall include, at a minimum, collected monitoring records, building and/or structure condition summaries, descriptions of all instances of vibration level exceedance, identification of damage incurred due to vibration, and corrective actions taken to restore damaged buildings and structures. The ERO shall review and approve the Vibration Monitoring Results Report.

Mitigation Measure M-WI-1: Tree Planting and Maintenance. In order to reduce wind hazard exceedances on and around the project site the project sponsor must plant and maintain in perpetuity a minimum of 14 street trees along the frontages of the project site; including seven on the south side of Washington Street, two on the east side of Sansome Street, and five on the north side of Merchant Street. The project sponsor shall also prepare a maintenance plan for review and approval by the planning department to ensure maintenance in perpetuity of the streetscape features required pursuant to this measure. The maintenance plan shall also be reviewed and approved by public works with respect to streetscape features (landscaping) in the public right-of-way.

Mitigation Measure M-GE-6a: Worker Environmental Awareness Training Construction. Prior to commencing construction, and ongoing throughout ground-disturbing activities (e.g., excavation, utility installation), the property sponsor and/or their designee shall engage a qualified paleontologist meeting the standards specified by the Society of Vertebrate Paleontology (Society of Vertebrate Paleontology 2010) to train all project construction workers regarding how to recognize paleontological resources and on the contents of the paleontological resources alert sheet, as provided by the department. The Paleontological Resources Alert Sheet shall be prominently displayed at the construction site during ground-disturbing activities for reference regarding potential paleontological resources.

In addition, the paleontologist shall inform the project sponsor, contractor, and construction personnel of the immediate stop work procedures and other procedures to be followed if bones or other potential fossils are unearthed at the project site. Should new workers that will be involved in ground-disturbing activities begin employment after the initial training has occurred, the construction supervisor shall ensure that they receive the worker awareness training as described above.

The paleontologist shall complete the standard form/affidavit confirming the timing of the worker awareness training and submit it to the environmental review officer (ERO). The affidavit shall confirm the project's location, the date of training, the location of the informational handout display, and the number of participants. The affidavit shall be transmitted to the ERO within five business days of conducting the training.

Mitigation Measure M-GE-6b: Discovery of Unanticipated Paleontological Resources during Construction. In the event of the discovery of an unanticipated paleontological resource during construction, ground-disturbing activities shall temporarily be halted within 25 feet of the find until the discovery is examined by a qualified paleontologist as recommended by the Society of

Vertebrate Paleontology standards[175] and Best Practices in Mitigation Paleontology.[176] The paleontologist shall consult the ERO. Work within the sensitive area shall resume only when deemed appropriate by the qualified paleontologist in consultation with the ERO.

The qualified paleontologist shall determine (1) if the discovery is scientifically significant; (2) the necessity for involving other responsible or resource agencies and stakeholders, if required or determined applicable; and (3) methods for resource recovery. If a paleontological resource assessment results in a determination that the resource is not scientifically important, this conclusion shall be documented in a Paleontological Evaluation Letter to demonstrate compliance with applicable statutory requirements (e.g., Federal Antiquities Act of 1906, CEQA Guidelines section 15064.5, California Public Resources Code chapter 17, section 5097.5, Paleontological Resources Preservation Act 2009). The Paleontological Evaluation Letter shall be submitted to the ERO for review within 30 days of the discovery.

If the qualified paleontologist determines that a paleontological resource is of scientific importance, and there are no feasible measures to avoid disturbing this paleontological resource, the qualified paleontologist shall prepare a Paleontological Impact Reduction Program (impact reduction program). The impact reduction program shall include measures to fully document and recover the resource of scientific importance. The qualified paleontologist shall submit the impact reduction program to the ERO for review and approval. The impact reduction program shall be submitted to the ERO for review within 10 business days of the discovery. Upon approval by the ERO, ground-disturbing activities in the project area shall resume and be monitored as determined by the qualified paleontologist for the duration of such activities.

The mitigation program shall include (1) procedures for construction monitoring at the project site; (2) fossil preparation and identification procedures; (3) curation of paleontological resources of scientific importance into an appropriate repository; and (4) preparation of a Paleontological Resources Report (report or paleontology report) at the conclusion of ground-disturbing activities. The report shall include dates of field work, results of monitoring, fossil identifications to the lowest possible taxonomic level, analysis of the fossil collection, a discussion of the scientific significance of the fossil collection, conclusions, locality forms, an itemized list of specimens, and a repository receipt from the curation facility. The project sponsor shall be responsible for the preparation and implementation of the mitigation program, in addition to any costs necessary to prepare and identify collected fossils, and for any curation fees charged by the paleontological repository. The paleontology report shall be submitted to the ERO for review within 30 business days from conclusion of ground-disturbing activities, or as negotiated following consultation with the ERO.

Mitigation Measure M-GE-6c: Preconstruction Paleontological Evaluation for Projects Located in Class 3 (Moderate) Sensitivity Areas. The project site is located in San Francisco in Moderate Sensitivity Area (class 3), which require ground disturbance activities deeper than 5 feet and would include the removal of more than 2,500 cubic yards of soil. The property owner shall engage a qualified paleontologist to complete a site-specific Preconstruction Paleontological Resources

[175] Society of Vertebrate Paleontology, *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*, 2010.
[176] Murphy, Paul C., Knauss, Georgia E., Fisk, Lanny H., Demere, Thomas A., Reynolds, Robert E. 2019. *Best Practices in Mitigation Paleontology, Proceedings of the San Diego Society of Natural History, Number 47*.

Evaluation (paleontology preconstruction evaluation) prior to commencing soil-disturbing activities occurring on the project site. Prior to issuance of any demolition or building permit, the property owner shall submit the Preconstruction Paleontological Evaluation to the ERO for approval.

The purpose of the site-specific preconstruction evaluation is to identify early the potential presence of significant paleontological resources on the project site. At a minimum, the study shall include:

1. Project Description
2. Regulatory Environment – outline applicable federal, state and local regulations
3. Summary of Sensitivity Classification
4. Research Methods, including but not limited to:
   - 4.1. Field studies conducted by the approved paleontologist to check for fossils at the surface and assess the exposed sediments
   - 4.2. Literature Review to include an examination of geologic maps and a review of relevant geological and paleontological literature to determine the nature of geologic units in the project area
   - 4.3. Locality Search to include outreach to the University of California Museum of Paleontology in Berkeley
5. Results: To include a summary of literature review and finding of potential site sensitivity for paleontological resources; and depth of potential resources if known.
6. Recommendations for any additional measures that could be necessary to avoid or reduce any adverse impacts to recorded and/or inadvertently discovered paleontological resources of scientific importance, in addition to paleontology standard requirements for Worker Environmental Awareness Training during Construction (M-GE-6a) and Discovery of Unanticipated Paleontological Resources during Construction (M-GE-6b). Such measures could include:
   - 6.1. *Avoidance:* If the cost of fossil recovery or other impact reduction options is determined to be too high, or permanent damage to the resource caused by surface disturbance is considered to be unavoidable, given the proposed construction, it may be necessary to "avoid" or "reroute" the portion of the project that intersects the fossil locality in order to prevent adverse impacts on the resource. Avoidance should also be considered if a known fossil locality appears to contain critical scientific information that should be left undisturbed for subsequent scientific evaluation. Avoidance for later scientific research is the typical mitigation recommendation made for scientifically significant extensive paleontological discoveries.
   - 6.2. *Fossil Recovery:* If isolated small-, medium-, or large-sized fossils are discovered within a project area during field surveys or construction monitoring, and they are determined to be scientifically significant, they should be recovered. Fossil recovery may involve simply collecting a fully exposed fossil from the ground surface, or may involve a systematic excavation, depending upon the size and complexity of the fossil discovery. Fossil excavations should be designed in such a way as to minimize construction delays while

properly collecting the fossil and associated data according to professional paleontological standards.

6.3. *Sampling:* Scientifically significant microfossils (vertebrate, invertebrate, plant, or trace fossils) may be identified in rock matrix during surveys or monitoring, or, if they are known to occur elsewhere in the same geologic unit or type of deposit in the general area, a determination of their presence or absence may require the use of test sampling of rock matrix for screen-washing in a paleontological laboratory. In some cases, depending upon the geologic unit involved, test sampling may be appropriate even if microfossils are not visible in the field. The fossils found, if any, will then be inspected and evaluated to determine their significance and whether additional steps are necessary to reduce paleontological impacts. Such steps may include collection of additional matrix for screen-washing. The decision to sample may not be made until monitoring is occurring, because it is usually triggered by conditions in the field.

6.4. *Monitoring:* If scientifically important paleontological resources are known to be present in an area, or if there is a moderate or high likelihood that subsurface fossils are present in geologic units or members thereof within a given project area based on prior field surveys, museum records, or scientific or technical literature, paleontological monitoring of construction excavations would be required. Monitoring involves systematic inspections of graded cut slopes, trench sidewalls, spoils piles, and other types of construction excavations for the presence of fossils, and the fossil recovery and documentation of these fossils before they are destroyed by further ground-disturbing actions. Standard monitoring is typically used in the most paleontologically sensitive geographic areas/geologic units (moderate, high and very high potential); while spot-check monitoring is typically used in geographic areas/geologic units of moderate or unknown paleontological sensitivity (moderate or unknown potential). The goal of monitoring is to identify scientifically significant subsurface fossils as soon as they are unearthed in order to minimize damage to them and remove them and associated contextual data from the area of ground disturbance, thereby resulting in subsurface paleontological clearance. Microfossil sampling, macrofossil recovery, and avoidance of fossils may all occur during any monitoring program.

SECTION G PUBLIC NOTICE AND COMMENT

On November 6, 2024, the planning department mailed a notice of preparation of an EIR and notice of availability (NOA) of the notice of preparation of an EIR to property owners and residents within 300 feet of the project site, public agencies, neighborhood groups, and interested parties. The planning department sent email notifications to neighborhood groups and individuals that requested project notifications from the planning department. The planning department posted these notices on the planning department's environmental review webpage and filed the NOA with San Francisco County Clerk's office. The planning department also published a newspaper advertisement in the San Francisco Examiner on November 6, 2024, announcing the opportunity for public comment on the project. On January 15, 2025, the Historic

Preservation Commission held a meeting focused on the scoping of preservation alternatives, comments from which are summarized in Chapter 5.A of the draft EIR.

Written comments regarding the scope of the EIR were accepted for a standard 30-day period, from November 6, 2024, to December 9, 2024. A total of four comment letters and emails were submitted to the planning department. Overall, concerns and issues raised by the public in response to the notice were taken into consideration and incorporated in the environmental review as appropriate.

The planning department received comments expressing concerns about:

- Construction-related air quality, health risk, and noise impacts
- Pedestrian circulation and access to adjacent building during construction
- Handling of hazardous waste during construction

The topics raised in the comment letters regarding physical environmental effect are addressed in this initial study and this EIR to which this initial study is attached, as appropriate (refer to draft EIR Chapter 1, Introduction, for additional detail on the public noticing and comments). The notice of preparation is included as draft EIR Appendix A.

SECTION H DETERMINATION

On the basis of this Initial Study:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☒ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental documentation is required.

Lisa Gibson
Environmental Review Officer
for
Rich Hillis
Director of Planning

DATE March 11, 2025

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APPENDIX C

Historic Resource Evaluations

- Appendix C.1, Historic Resource Evaluation, Part 1, 530 Sansome Street
- Appendix C.2, Historic Resource Evaluation Response, Part 1, 530 Sansome Street
- Appendix C.3, Historic Resource Evaluation Response, Part 2, 530 Sansome Street
- Appendix C.4, Historic Resource Evaluation, Part 1, 447 Battery Street
- Appendix C.5, Historic Resource Evaluation Response, Part 1, 447 Battery Street
- Appendix C.6, Historic Resource Evaluation Response, Part 2, 447 Battery Street
- Appendix C.7, Historical Evaluation of 425 and 439–445 Washington Street
- Appendix C.8, Preservation Alternatives Memorandum

APPENDIX C.1

Historic Resource Evaluation, Part 1, 530 Sansome Street

Final

HISTORIC RESOURCE EVALUATION REPORT, PART 1

530 Sansome Street
San Francisco, California

Prepared for
San Francisco Planning Department

September 2020

ESA

Final

HISTORIC RESOURCE EVALUATION REPORT, PART 1

530 Sansome Street
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Prepared for
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September 2020

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HISTORIC RESOURCE EVALUATION, PART 1

1 Introduction

Environmental Science Associates (ESA) was engaged by EQX Jackson SQ Holdco LLC to prepare a Historic Resource Evaluation, Part 1 report for a proposed project at 530 Sansome Street (APN 206/017, alternately addressed 532 Sansome Street) in San Francisco, California. The subject property is located in the Financial District. It measures 8,936 square feet and is zoned C-3-O (Downtown – Office). The subject property is occupied by the Brutalist-style San Francisco Fire Station No. 13, which was constructed in 1975 and is less than 50 years old. Additionally, an extant sculpture is mounted on the building's north façade and was constructed and installed in 1976.

This report includes: a summary of the current historic status of the subject property; an architectural description; a site history; a building permit history; historic contexts of the Financial District (focused on the immediate vicinity around the subject property as well as the San Francisco Fire Department), the Embarcadero Center, and Brutalist architecture in San Francisco; a list of previous owners and occupants; biographies of known design professionals; and an evaluation of the individual historical significance of the subject property. Planning staff does not require an analysis of the surrounding area as a potential historic district.[1] 530 Sansome Street is not a San Francisco City Landmark, and it is likewise not located within a designated historic district (Article 10) or within a conservation district (Article 11). **Appendix A** contains completed building permits on file at the Department of Building Inspection for 530 Sansome Street.

Methodology

This report was initiated after Governor Gavin Newsom issued Executive Order N-33-20, a statewide shelter-in-place order. This has limited travel and forced the closure of publicly accessible archives, and conducting in-person research at various repositories therefore is not possible. On April 21, 2020, the San Francisco Planning Department issued the following changes to its standard Historic Resource Evaluation (HRE) requirements:

> A. A combination of photos from the applicant along with online mapping and other online sites with dated recent photos can be used instead of a site visit if the property and its surroundings can be accurately understood, described, and evaluated in the HRE using these resources.
>
> B. [Department of Building Inspection (DBI)] permit records are not currently available and will not be required. Please use other sources in order to identify architect/

[1] Jørgen Cleemann, San Francisco Planning Department, email to Johanna Kahn, ESA. January 2, 2020.

builder, year built, property owners, and changes to the property. Please identify other sources you will use to research this information.

C. Both [the San Francisco Public Library] and City Hall are currently closed. Assessor photos are currently not available and will not be required.

D. The Department is working to provide consultants with electronic access to BMI Digital Reel from the Office of the Assessor-Recorder.[2]

Research conducted for this report includes:

- Reviews of building permits on file at DBI. ESA requested and received hard copies of all available building permits for the subject building, which are included in Appendix A. Because DBI is currently closed to the public and in-person research cannot be performed, a review of any architectural drawings was not possible;
- Review of property ownership records available online through the Digital Reel of the City and County of San Francisco Assessor-Recorder's Office;
- Historical aerial photographs available online;
- Sanborn Fire Insurance Co. maps (Sanborn maps) available online;
- Historical photographs available online from the San Francisco Historical Photograph Collection and Calisphere;
- Historical newspapers and periodicals available online; and
- Other online research (e.g. *Internet Archive*, *Guardians of The City*).

ESA staff completed an intensive-level pedestrian survey on May 30, 2020. ESA senior architectural historian Johanna Kahn, M.Ar.H., is the author of this report and meets the Secretary of the Interior's Professional Qualifications Standards for architectural history, architecture, and historic architecture. Becky Urbano, M.S., who meets the Secretary of the Interior's Professional Qualification Standards for architectural history, provided quality assurance and review.

Current Historic Status

In 2000, the San Francisco Landmarks Preservation Advisory Board (precursor to the Historic Preservation Commission) adopted the National Register of Historic Places (National Register) and California Register of Historical Resources (California Register) criteria of evaluation for use in all historic resource surveys in San Francisco.[3] 530 Sansome Street is not listed in the California Office of Historic Preservation's Built Environment Resource Directory (BERD) for San Francisco County. The building was recorded in 2011 when it was only 36 years old and assigned a California

[2] Allison Vanderslice, San Francisco Planning Department. "Historic Resource Evaluation Guidance During Shelter in Place." Memo to San Francisco Historic Resource Consultants, April 21, 2020.

[3] In 2003, the California Office of Historic Preservation released new California Historical Resource Status Codes (formerly known as the National Register Status Codes) to be assigned to evaluated historic resources during local surveys.

Historical Resource Status Code of "6Z," meaning that it was found ineligible for listing in the National Register, California Register, or as a San Francisco City Landmark.[4]

According to the San Francisco Planning Department's Property Information Map (PIM), 530 Sansome Street is currently identified as a "Category B" property, meaning that further consultation and review is required for evaluating whether it is a historical resource for the purposes of CEQA. The subject property is not located within any known historic districts, and Planning staff does not require an analysis of the surrounding area as a potential historic district.[5] The subject property is not identified in the 1968 Junior League of San Francisco Architectural Survey, *Here Today,* or the 1976 San Francisco Department of City Planning (DCP) Architectural Survey. 530 Sansome Street was identified in the 1979 San Francisco Architectural Heritage Survey, *Splendid Survivors,* but it was not assigned a survey rating.[6]

2 Building and Property Descriptions

The following section includes an architectural description of the subject property, a brief site history, and a summary of the building permit search. The architectural description is based on a pedestrian site survey that occurred on May 30, 2020.

Architectural Description

Fire Station No. 13

The subject property at 530 Sansome Street is an 8,937-square-foot, rectangular parcel on the east side of Sansome Street between Washington and Merchant streets. It is occupied by the subject building, a fire station designed in the Brutalist style by architect John C. Portman, Jr. The building's rectangular footprint occupies the entire parcel. It is constructed of poured-in-place, reinforced concrete and is capped by a flat roof. The lower portion of the façades (first floor and mezzanine) is clad in vertically oriented metal panels, and the exposed concrete structure composes the upper portion. The subject property contains no landscaping or other site features.

The primary façade faces west on Sansome Street (**Figure 1**). The first floor is composed of three structural bays. The north and center bays each feature a roll-up metal door that provides access into and out of the apparatus bays where vehicles are parked and maintained. Each doorway is flanked by concrete bollards. The south bay is clad in metal panels and features two bands of metal-sash windows: one at the first floor and one at the mezzanine level. (**Figure 2** shows the mezzanine's location in the south portion of the building.) Some, if not all, of the upper band of windows are awning sash. A glazed, metal-frame door with a fixed sidelight is also located in the south bay. Above the mezzanine level, a recessed channel spans the width of the façade, creating a horizontal shadow. The exposed concrete structure at the second floor above features no window or door openings. A circular metal emblem at the north end of the second floor reads "SFFD" and

4 Page & Turnbull. *San Francisco Fire Stations Historic Resource Study.* February 21, 2012.

5 Jørgen Cleemann, San Francisco Planning Department, email to Johanna Kahn, ESA. January 2, 2020.

6 Michael R. Corbett et al. *Splendid Survivors: San Francisco's Downtown Architectural Heritage* (San Francisco, CA: California Living Books, 1979), p. 218.

SOURCE: ESA 530 Sansome Street

Figure 1
Primary (West) Façade on Sansome Street

SOURCE: ESA 530 Sansome Street

Figure 2
View Showing the Location of the Mezzanine

identifies the building as a fire station. At the south end of the second floor are two vertical flag poles that rise above the roofline. The façade terminates in metal coping at the roofline.

The secondary façade faces north on Washington Street (**Figure 3**). The first floor is clad entirely in metal panels and features two bands of metal-sash windows: one at the first floor and one at the mezzanine level. There are no doors on this façade.

The south façade faces Merchant Street (**Figure 4**). Its design is similar to the north façade. The main difference is that the south façade features a roll-up metal door at the east end of the first floor and a tall, vertical duct that rises above the roofline.

SOURCE: ESA

530 Sansome Street

Figure 3
North Façade on Washington Street

SOURCE: ESA 530 Sansome Street

Figure 4
South Façade on Merchant Street

Untitled (1976)

At the west end of the subject building's north façade is a wall-mounted sculpture by artist Henri Marie-Rose named *Untitled.* The three-dimensional copper sculpture depicts firefighters with a hose next to the letters "SFFD" (**Figure 5**).

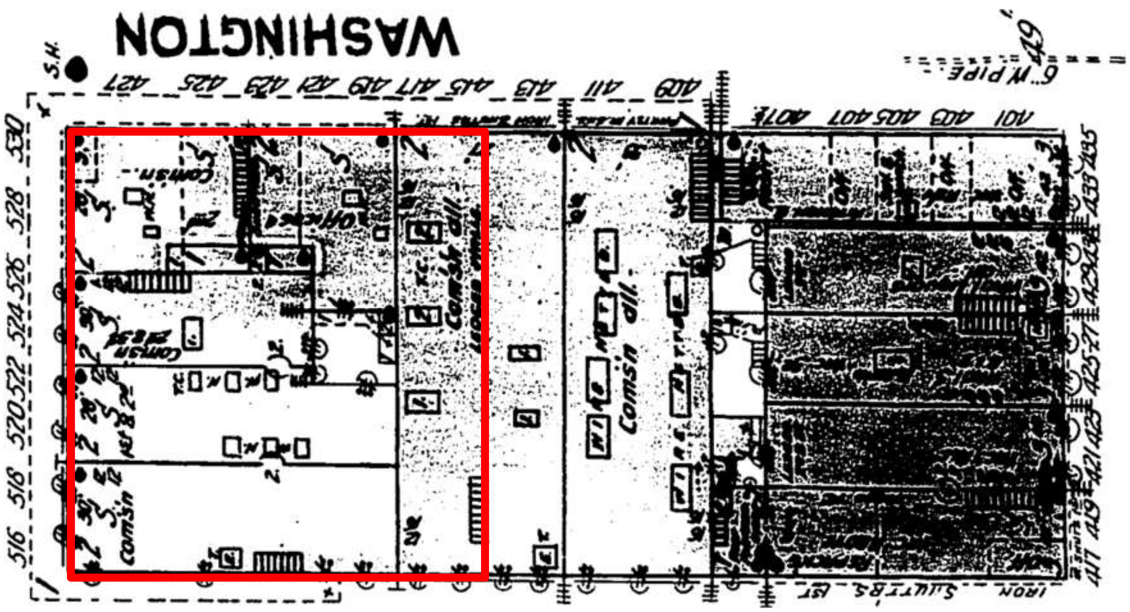
SOURCE: ESA 530 Sansome Street

Figure 5
Untitled (1976) by Henri Marie-Rose

Site History

Before the 1906 Earthquake and subsequent fires caused widespread destruction in downtown San Francisco, the subject property was occupied by a group of adjacent two-story commercial and office buildings (**Figure 6**). By 1907, the subject property was redeveloped with a two-story brick building with multiple commercial businesses and offices (**Figures 7 and 8**).[7]

[7] Figure 7 shows the newly constructed buildings on the subject property in 1907. Building permit application no. 22431, issued March 22, 1909, for alterations to an extant two-story brick building, is the earliest building permit on file for the subject property.

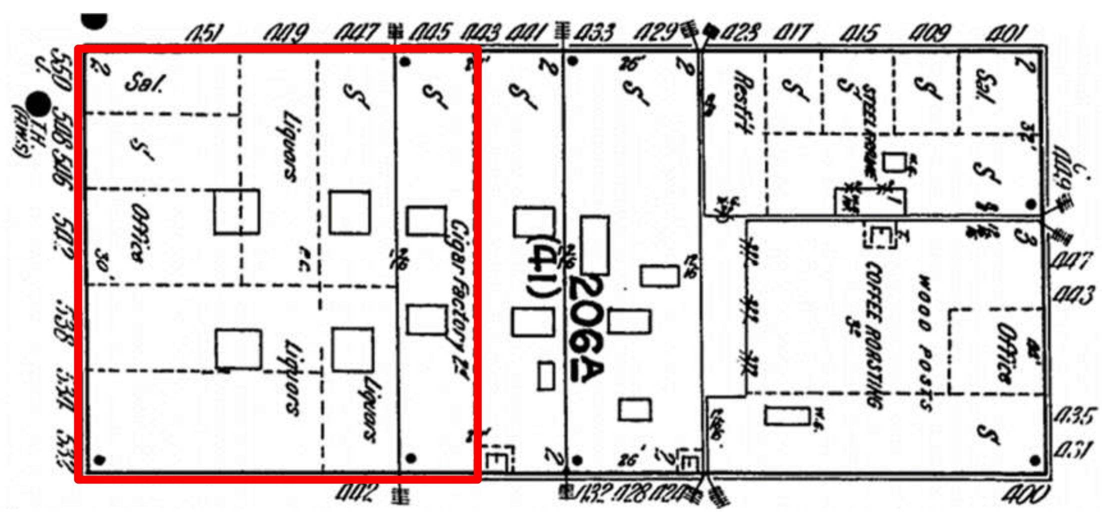


North is up. The subject property is outlined in red.

SOURCE: *ProQuest*

530 Sansome Street

Figure 6
1899 Sanborn Map



North is up. The subject property is outlined in red.

SOURCE: *ProQuest*

530 Sansome Street

Figure 7
1913 Sanborn Map

View of storefronts along Sansome Street. Visible signs for businesses include A. Galli Fruit Co. (516-518 Sansome Street), D. Biagi & Co. (520-522 Sansome Street), and V. Chiuda Commission Merchants (524-526 Sansome Street). Addresses for these businesses found in city directories correspond to the address convention seen in the 1899 Sanborn map.

SOURCE: Roy D. Graves Pictorial Collection Bancroft Library, UC Berkeley, Photo ID #291

530 Sansome Street

Figure 8
Earlier Building on the Subject Property, 1907

By 1909, alterations had already been made to the recently constructed building. That year, the southernmost commercial space was given a new storefront, and the saloon within was enlarged to accommodate a restaurant.[8] The building appears largely unchanged in the 1950 Sanborn map and a 1965 aerial photograph, and it existed on the subject property until it was demolished in 1974.

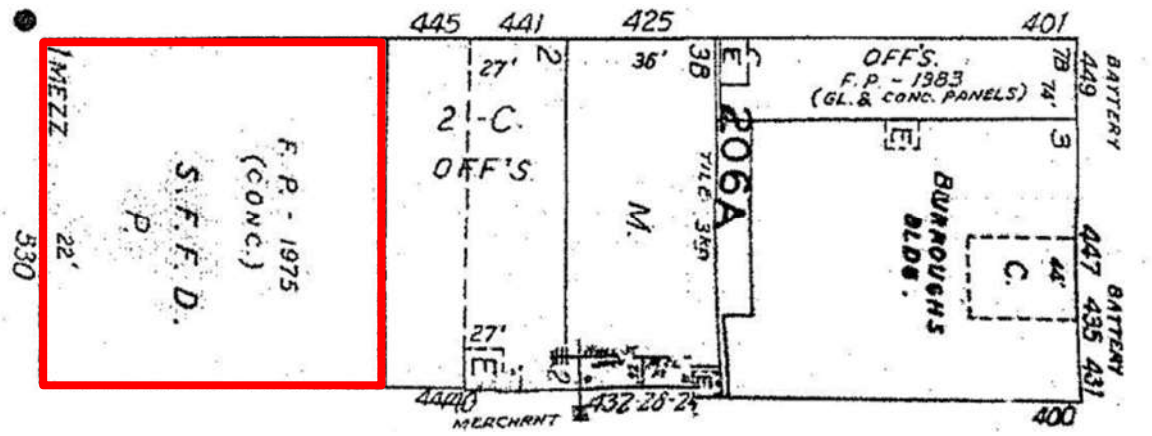
The City of San Francisco has owned the subject property since October 1967.[9] The application for the original building permit for the present firehouse was filed on January 11, 1974, and the earlier building on the subject property had been demolished by that time. The permit described a new three-story-plus-basement fire station at an estimated cost of $1,500,000. The building permit was issued on August 14, 1974,[10] and the fire station was completed and opened in September 1975 (**Figures 9, 10, and 11**).[11]

8 Building permit application no. 22431, issued March 22, 1909.

9 Deed. October 4, 1967. Book of records 182, p. 400. Digital Reel from the City and County of San Francisco Office of the Assessor-Recorder, 2020.

10 The application for Building permit no. 391562 was filed on January 11, 1975, for the construction of a new fire station. It includes the note "no other buildings on lot."

11 "Engine Company No. 13." *Guardians of the City* (website of the San Francisco Fire Department Museum). Accessed May 13, 2020, at https://www.guardiansofthecity.org/sffd/companies/engines/engine13.html.



North is up. The subject property is outlined in red.

SOURCE: San Francisco Property Information Map

530 Sansome Street

Figure 9
Mid-1990s Sanborn Map

SOURCE: San Francisco Historical Photograph Collection, Photo ID #AAD-8198

530 Sansome Street

Figure 10
Newly Constructed Fire Station No. 13 and Engine No. 13, 1976

SOURCE: San Francisco Historical Photograph Collection, Photo ID #AAD-8199

530 Sansome Street

Figure 11
Fire Station No. 13 and Engine No. 13, 1976

Building Permit History and Alterations

All building permits on file at the San Francisco Department of Building Inspection that have been issued and completed for the subject property are summarized in **Table 1**. Appendix A contains copies of all building permits on file at the Department of Building Inspection. Additionally, from October 2001 to September 2002, the subject building underwent a seismic retrofit.[12]

12 "Engine Company No. 13." *Guardians of the City* (website of the San Francisco Fire Department Museum). Accessed May 13, 2020, at https://www.guardiansofthecity.org/sffd/companies/engines/engine13.html.

TABLE 1
BUILDING PERMIT HISTORY FOR 530 SANSOME STREET

Permit #	Description of Work	Active Dates
391562	Construct a three-story-over-basement fire station measuring 8,930 square feet. Architects: John C. Portman, Jr. (Embarcadero Center) and Charles W. Griffith (City of San Francisco) Valuation: $1.5 million	Filed: January 11, 1974; Issued: August 14, 1974
712987	Alter existing boot room to create new women's toilet and shower room. Construct new boot/locker room and repair suspended acoustical ceiling. Alter plumbing/electrical work for new spaces, miscellaneous painting work as needed. Architect: Norman Karasick, Bureau of Architecture, Department of Public Works Builder: C&L Construction Valuation: $64,700	Filed: Dec. 8, 1992; Completed: Oct. 8, 1993
929069	Provide disabled access at first-floor entry, communication room and toilet, upgrade electrical and mechanical systems. Perform hazardous material abatement, upgrade finishes throughout and perform miscellaneous repairs. No structural work. Reroofing on entire building. Architect: Tara Lamont Valuation: $979,123	Filed: Nov. 12, 1999; Completed: Mar. 12, 2003
1292705	Reroofing in-kind Builder: Benito Olgvin Valuation: $105,000	Filed: Jul. 20, 2012; Completed: Dec. 11, 2013
1311084	Shower renovation inclusive of encapsulation of shower stalls with 1/4-inch solid surface shower pan, walls, dividers, sills, and edge trimming. Replacement of water control valves, shower heads, floor drains, P-trap, and new glass doors. Valuation: $132,000	Filed: Oct. 10, 2013; Completed: Sept. 29, 2015
1318722	Install new secondary containment plate over existing fuel supply piping. No concrete removal required. All work done in existing pipe routes. Builder: Jerry Brown Valuation: $1,500	Filed: Mar. 7, 2014
1361044	Shower replacement at one stall inclusive of tile removal and replacement, drain and valve replacement, widening of existing stall opening, and new glass shower door. Installation of new waterproofing throughout. Builder: Vito Vanoni Valuation: $30,000	Filed: Jun. 2, 2015; Completed May 5, 2016
1458176	Replacement of existing apparatus bay door (telescoping door) with new coiling door. Builder: Vito Vanoni Valuation: $40,000	Filed: Mar. 28, 2018; Completed: Feb. 2, 2019

SOURCE: San Francisco Department of Building Inspection

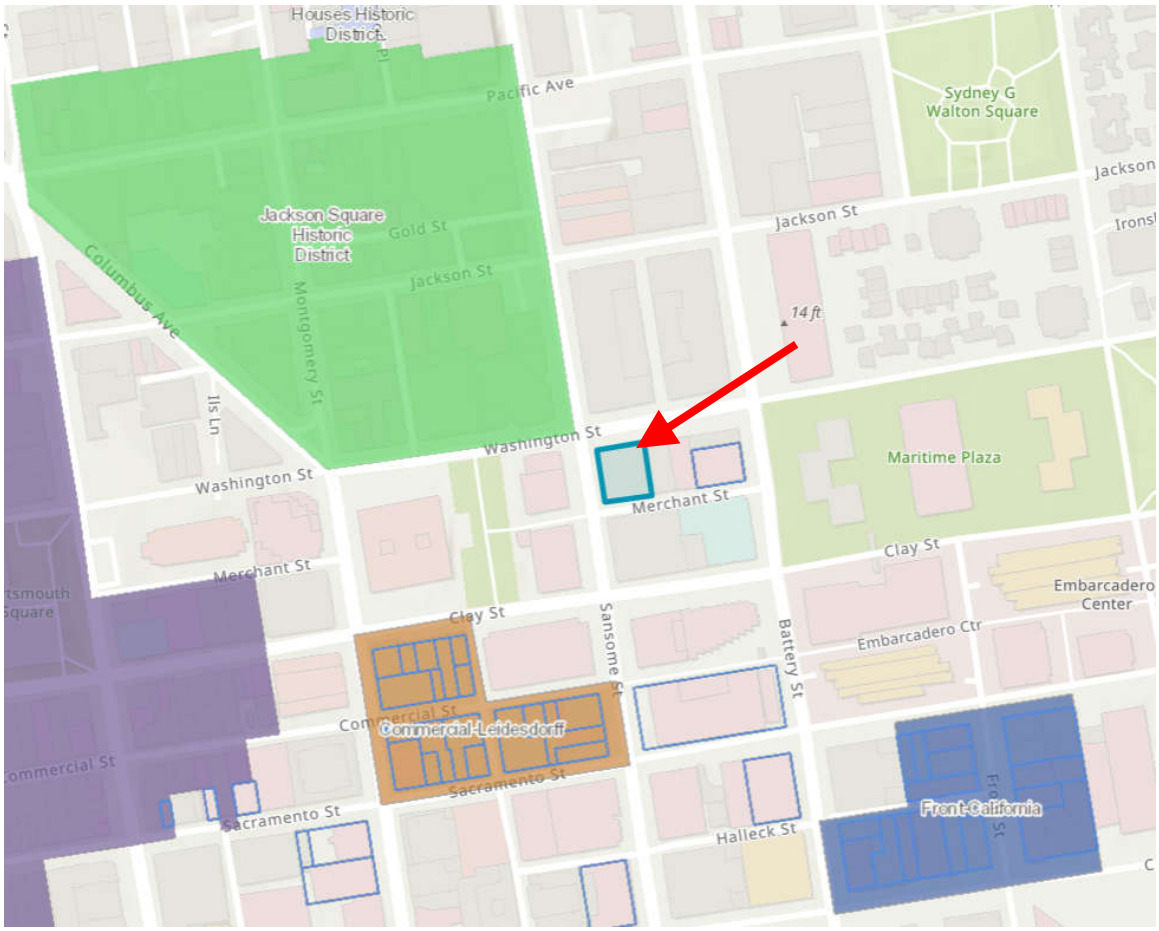
3 Historical Context

Financial District

The subject property is located in the Financial District, which is bordered by Broadway on the north; San Francisco Bay on the east; Folsom Street on the south; and Kearny, Stockton, and Fourth streets on the west. According to the PIM, a recent Historic Resource Evaluation Response (HRER) for nearby 447 Battery Street (located on the subject block) includes the following description of the surrounding neighborhood:

> The subject block is built on landfill that sits beyond the natural shoreline of San Francisco, in the middle of the historical Yerba Buena Cove. Currently considered part of the Financial District, until the mid-twentieth century this area hosted a wide range of stores, warehouses, and other mercantile establishments associated with the nearby produce market and working waterfront. Starting in 1959, much of this historic marketplace neighborhood was razed in connection with the Golden Gateway Redevelopment Project, a massive urban renewal scheme that was completed over the course of the subsequent decades. The results of this project are visible today as the collection of apartment towers, townhouses, office buildings, hotels, parks, plazas, parking garages, and shopping areas that occupy the blocks to the immediate east of the subject property.
>
> The blocks on the west side of Battery Street, including the subject block, have been absorbed into the Financial District, and include many buildings constructed in the late twentieth century, although there is nothing on the massive urban scale of the Golden Gateway Project to the east. The Transamerica Pyramid, San Francisco's tallest building from the time of its construction in 1972 unti1 2017, stands [one block] west of [530 Sansome Street]. The subject block and the block to the south across Merchant Street include several buildings constructed in the aftermath of the 1906 earthquake and fires (447 Battery Street, 1907; 439 Washington Street, 1907; 425 Washington Street, 1907 (altered); 432 Clay Street, 1912), a 1920s office building (500 Sansome Street, 1929), a modernist fire station (530 Sansome Street, [1975]), and a contemporary hotel building (425 Battery, early 2000s). Nearby historic buildings include the 1911 U.S. Customs House (555 Battery Street), the 1944 U.S. Appraisers Building (630 Sansome Street), and 545 Sansome Street, built in 1930. The identified historic district that is closest to the subject building is the Article 10 Jackson Square Historic District, known for its nineteenth century commercial buildings. Other nearby historic districts include the Article 11 Commercial-Leidesdorff and Front-California Conservation Districts, which contain commercial buildings from the early twentieth century [(**Figure 12**)].[13]

[13] Rachel Schuett and Jørgen Cleemann, San Francisco Planning Department. "Historic Resource Evaluation Response: 447 Battery Street (Case No. 2014-1036ENV)." December 18, 2017.



The subject property is identified with the red arrow. The Jackson Square Historic District (green), Commercial-Leidesdorff Conservation District (brown), Front-California Conservation District (blue), and Chinatown Historic District (purple) are shown for reference.

SOURCE: San Francisco Property Information Map

530 Sansome Street

Figure 12
Map of the Financial District

San Francisco Fire Department in the Financial District

The subject building, which has historically functioned as Fire Station No. 13, replaced an earlier fire station that was demolished as part of the Embarcadero Center development (discussed in more detail below). The earlier fire station was located at 115 Drumm Street (at the southwest corner of Drumm and Commercial streets) and was home to Engine Company No. 12 and Truck Company No. 13. The three-story, reinforced-concrete building was formally dedicated on July 28, 1915, and was considered to be the city's "largest and most modern equipped fire station."[14,15] The fire station at 115 Drumm Street was rebuilt several decades later as part of the

14 City and County of San Francisco. "Dedication of New Fire House." *Municipal Record,* Vol. 8, No. 1 (January 7, 1915), p. 251.

15 "New Fire Station in San Francisco." *Fire and Water Engineering,* Vol. 58, No. 22 (December 1, 1915), p. 339.

1952 Firehouse Bond Act (Proposition H, File No. 9395-3; Ordinance No. 7493),[16] and it officially reopened in the same location on April 1, 1957 (**Figure 13**).[17]

SOURCE: *Guardians of The City* 530 Sansome Street

Figure 13
Fire Station at 115 Drumm Street, ca. 1957

In the 1959 *Redevelopment Plan for the Golden Gateway: Embarcadero-Lower Market Approved Redevelopment Project Area E-1*, the recently reconstructed Drumm Street fire station was planned to remain intact and in use.[18] In 1963, the entire block in which the fire station was located (i.e., block no. 232) with the exception of the fire station itself was "scheduled for [commercial and office building development] but [is] not being marketed at the present time,"[19] and in 1966, the purchase price for the entire block (save for the fire station) was $2,066,522.[20] The Embarcadero Center master plan was unanimously approved by the San Francisco Redevelopment Agency and the San Francisco Planning Commission in April 1967.[21, 22]

16 Page & Turnbull. *676 Howard Street Historic Resource Evaluation.* May 2010. Pp. 27, 55.

17 "Former Firehouses: 115 Drumm Street." *Guardians of the City* (website of the San Francisco Fire Department Museum). Accessed April 7, 2020, at https://www.guardiansofthecity.org/sffd/firehouses/former/115_drumm.html.

18 San Francisco Redevelopment Agency. *Redevelopment Plan for the Golden Gateway: Embarcadero-Lower Market Approved Redevelopment Project Area E-1*. San Francisco, CA: Redevelopment Agency of the City and County of San Francisco, 1959. Pp. 6, 9, 12.

19 San Francisco Redevelopment Agency. *Commercial Development in the Golden Gateway, San Francisco*. San Francisco, CA: Redevelopment Agency of the City and County of San Francisco, 1963. P. 3.

20 San Francisco Redevelopment Agency. *Golden Gateway Commercial Parcels*. San Francisco, CA: Redevelopment Agency of the City and County of San Francisco, 1966.

21 "Embarcadero Center Gets a First OK." *San Francisco Chronicle,* April 5, 1967, pp. 1, 9.

22 Mel Wax. "Planners OK Embarcadero Center." *San Francisco Chronicle,* April 14, 1967, pp. 1, 18.

In 1969, the earlier exclusion of the City-owned Drumm Street fire station from the redevelopment area proved to be "very shortsighted planning" and a "profitable blunder" for the City of San Francisco. The fire station had become an obstruction to the Embarcadero Center development (specifically Three Embarcadero Center), and the developer – David Rockefeller & Associates – was forced to purchase the land from the San Francisco Redevelopment Agency for the price of $360,000.[23] Additionally, the developer was required to pay for the construction of a new fire station at 530 Sansome Street, a City-owned property located one block west of the redevelopment area.[24, 25] The Drumm Street fire station was demolished in May 1975.[26]

Engine Company No. 13

San Francisco Engine Company No. 13 was organized in 1883 and assigned to quarters at 1458 Valencia Street (extant). From 1958 to 1973, the company was quartered at 3880 26th Street (extant). After being quartered in the Mission District for 90 years, the company relocated to 115 Drumm Street in the Financial District, where it remained for less than two years before that fire station was demolished, as described above.[27]

Engine Company No. 13 moved into the new fire station at 530 Sansome Street on September 25, 1975. With the exception of a period from October 2001 to September 2002, during which time 530 Sansome Street was seismically retrofitted, the company has remained at this location until the present day.[28]

Truck Company No. 13

San Francisco Truck Company No. 13 was organized in 1915 and assigned to quarters at 115 Drumm Street (demolished). Truck 13 was temporarily quartered at 676 Howard Street (demolished) during construction of the new fire station at 115 Drumm Street (1956-57), after which the company returned to 115 Drumm Street, where it remained until April 1975. (115 Drumm Street was demolished the following month.[29]) Following another temporary (five-month) stay at 676 Howard Street, Truck Company No. 13 relocated to the new Station No. 13 at 530 Sansome Street (project site) on September 25, 1975, where it has remained until the present day except during the above-noted seismic retrofit of 2001-02, when the company was temporarily quartered at 2150 California Street.[30]

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23 Donald Canter. "Rocky May Buy New Firehouse: 'Blunder' Aids City." *San Francisco Examiner,* April 9, 1969, p. 36.

24 "The City Gets a Windfall -- $1 Million Fire House." *San Francisco Chronicle,* April 10, 1969, p. 6.

25 *San Francisco Fire Department Annual Report 1974-1975*, p. 19.

26 "Art and Debris." *San Francisco Chronicle,* May 12, 1975, p. 38.

27 "Engine Company No. 13." *Guardians of the City* (website of the San Francisco Fire Department Museum). Accessed April 7, 2020, at https://www.guardiansofthecity.org/sffd/companies/engines/engine13.html.

28 "Engine Company No. 13." *Guardians of the City* (website of the San Francisco Fire Department Museum). Accessed April 7, 2020, at https://www.guardiansofthecity.org/sffd/companies/engines/engine13.html.

29 "Art and Debris." *San Francisco Chronicle,* May 12, 1975, p. 38.

30 "Truck Company No. 13." *Guardians of the City* (website of the San Francisco Fire Department Museum). Accessed August 20, 2020, at https://www.guardiansofthecity.org/sffd/companies/trucks/truck13.html.

Embarcadero Center

Fire Station No. 13 at 530 Sansome Street was designed as part of Embarcadero Center, a commercial complex whose principal components are four office towers (One, Two, Three, and Four Embarcadero Center) and one hotel (Five Embarcadero Center, or the Hyatt Regency Hotel) on a 9.8-acre site located off the Embarcadero in San Francisco's Financial District (**Figure 14**).[31] The site was originally part of the Produce District, which contained a maze of low-scale commercial warehouses and smaller streets. When urban renewal plans took hold in the 1950s, city planner M. Justin Herman spearheaded a plan to redevelop the nearly 10-acre site comprising five city blocks. Called a city-within-a-city, the project was built incrementally over 14 years in tandem with the growth of the Financial District. The project developers were Trammell Crow, Portman Holdings, and David Rockefeller & Associates. The architect was John C. Portman, Jr.

The construction schedule was aggressive, comprising four successive phases of development that overlapped in order to maintain progress.[32] Construction of Phase 1 began in July 1968 with One Embarcadero Center, which was completed in March 1971. That same month, Phase 2 began with the construction of Five Embarcadero Center (i.e., the Hyatt Regency Hotel), which was completed in May 1973. Phase 3 began in March 1972 with the construction of Two Embarcadero Center, which was completed in April 1974. Phase 4 began that same month with the groundbreaking of Three Embarcadero Center, which was completed in September 1976, followed by Four Embarcadero Center, which was constructed between January 1976 and May 1981.[33] The four office towers range from 30 to 45 stories in height, and the hotel is 20 stories in height. At 4.8 million square feet of office, retail, hotel, dining, and entertainment space, Embarcadero Center is one of the largest mixed-use complexes in the western United States.[34]

The construction of the new fire station at 530 Sansome Street (as part of Phase 4) was an afterthought that had to be efficiently incorporated into the overall project schedule. As established above, the Embarcadero Center master plan was approved in April 1967,[35, 36] the first phase of construction began in July 1968, and it was not until April 1969 that the need to replace the existing fire station at 115 Drumm Street was identified to accommodate the construction of Three Embarcadero Center.[37, 38] The selection of location (April 1969), design (ca. 1970-73), construction (1974-75), and operation (Fall 1975)[39] of 530 Sansome Street could very well have

31 Embarcadero Center is one component of the larger Golden Gateway Project.

32 Scott Blakey. "The Embarcadero Center's Start." *San Francisco Chronicle,* May 5, 1969, p. 2.

33 Page & Turnbull. *Embarcadero Center Lobbies Historic Structures Report "Lite."* July 2018, p. 5.

34 "History of the Embarcadero Center." *Embarcadero Center.* Accessed November 28, 2012, at http://embarcaderocenter.com/about/.

35 "Embarcadero Center Gets a First OK." *San Francisco Chronicle,* April 5, 1967, pp. 1, 9.

36 Mel Wax. "Planners OK Embarcadero Center." *San Francisco Chronicle,* April 14, 1967, pp. 1, 18.

37 "The City Gets a Windfall -- $1 Million Fire House." *San Francisco Chronicle,* April 10, 1969, p. 6.

38 Donald Canter. "Rocky May Buy New Firehouse: 'Blunder' Aids City." *San Francisco Examiner,* April 9, 1969, p. 36.

39 "Engine Company No. 13." *Guardians of the City* (website of the San Francisco Fire Department Museum). Accessed April 7, 2020, at https://www.guardiansofthecity.org/sffd/companies/engines/engine13.html.

SOURCE: ESA

530 Sansome Street

Figure 14
Embarcadero Center Office Towers

held up the purchase of the 115 Drumm Street property (May 1974)[40] and its demolition (May 1975)[41] and, consequently, the timely completion of Three Embarcadero Center.

The complex of four office towers plus the Hyatt Regency Hotel are linked by footbridges that integrate retail and restaurant uses on the first three levels of each block-sized podium, with slender office towers above which cover only one-third of the site. The towers, clad in rough-finished, precast concrete panels, are composed of slab-like elements that are staggered to create 10 to 14 corner offices per floor instead of the usual four. Their slender profiles are a departure from the heavier towers on the skyline.[42]

Brutalism (discussed in more detail below) is the predominant architectural style of Embarcadero Center. Brutalist features exhibited at Embarcadero Center include the buildings' rough, unadorned poured concrete construction with visible imprints of wood formwork, deeply shadowed irregular openings, massive cubic forms, rectangular block-like shapes, recessed windows that read as voids, and precast concrete panels with exposed joinery. Bold geometric

40 *San Francisco Fire Department Annual Report 1973-1974*, p. 21.

41 "Art and Debris." *San Francisco Chronicle,* May 12, 1975, p. 38.

42 Sally B. and John M. Woodbridge. *San Francisco Architecture: The Illustrated Guide to Over 1,000 of the Best Buildings, Parks, and Public Artworks in the Bay Area*. San Francisco: Chronicle Books. 1992.

patterns are also found on the circular tile paving design which repeats throughout the complex's pedestrian shopping plazas.

In 1984, Embarcadero Center won the Urban Land Institute's Award of Excellence for Large-Scale Urban Development, a prestigious award recognizing projects that "[exemplify] superior design, relevance to contemporary issues and needs, and resourceful utilization of land while improving the quality of the living environment."[43] In 2019, John Portman & Associates published a firm profile and portfolio of completed projects, and the association of 530 Sansome Street with Embarcadero Center is confirmed by its listing as "San Francisco Fire Station, Embarcadero Center, 1976."[44]

Embarcadero Center continued to grow in size with the 1989 completion of a fifth office tower at 275 Battery Street known as Embarcadero West.

Embarcadero Center was the subject of a 2018 "Historic Structures Report-Lite," and the San Francisco Planning Department determined that the four office towers and the Hyatt Regency Hotel are historical resources based on this report.[45,46]

Brutalist Architecture in San Francisco

San Francisco Fire Station No. 13 at 530 Sansome Street was designed in a Modern architectural style often referred to as Brutalism. Brutalist buildings tend to be geometric in form and are usually constructed of large amounts of poured and textured concrete. British architects Alison and Peter Smithson invented the term in 1953 from the French *béton brut*, meaning "raw concrete." Swiss architect Le Corbusier originally used this phrase to describe the poured board-formed concrete with which he constructed many of his post-World War II buildings.[47] Brutalism gained considerable momentum in continental Europe and the United Kingdom during the mid-twentieth century, as economically depressed (and World War II-ravaged) communities sought inexpensive construction and design methods for low-cost housing, commercial, and government buildings. Brutalism was promoted as a positive option for forward-moving, modern urban housing. This style, which was prevalent in America in the 1960s and 1970s, and in San Francisco between 1960 and 1980, is often found at university campuses and within civic or institutional settings.

Brutalist buildings are usually formed with striking repetitive angular geometries. Concrete is the material most widely associated with Brutalist architecture, although not all Brutalist buildings are constructed of that material. Instead, a building may achieve its Brutalist quality through a rough, blocky appearance, and the expression of its structural materials, forms, and (in some cases) services on its exterior. When concrete is used, the buildings often reveal the texture of

43 Steve Womersley, ed. *John Portman and Associates: Selected and Current Works.* Mulgrave, Victoria, Australia: The Images Publishing Group Pty. Ltd., 2002. P. 226.

44 "Portman Recent Works" (firm profile). *John Portman & Associates, Inc.* March 2019, p. 175. Accessed January 22, 2020, at https://portmanarchitects.com/wp-content/uploads/2019/03/Portman_RecentWorks_E_Web-min.pdf.

45 Page & Turnbull. *Embarcadero Center Lobbies Historic Structures Report "Lite."* July 2018.

46 Jørgen Cleemann, San Francisco Planning Department, phone call with Johanna Kahn, ESA. June 11, 2020.

47 Mary Brown. *San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context Statement.* Prepared for the San Francisco City and County Planning Department, 2010. P. 132.

the wood formwork. Another common theme in Brutalist designs is the exposure of the building's functions—ranging from their structure and services to their human use—in the exterior of the building.

Character-defining features of Brutalist architecture identified in the *San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context Statement* include the following, some of which are reflected in Fire Station No. 13:

- Rough unadorned poured concrete construction
- Massive form and heavy cubic shapes
- Visible imprints of wood grain forms
- Recessed windows that read as voids
- Repeating geometric patterns
- Strong right angles and simple cubic forms
- Deeply shadowed irregular openings
- Rectangular block-like shapes
- Precast concrete panels with exposed joinery[48]

There are relatively few Brutalist buildings in San Francisco, and most were built between 1960 and the early 1980s. Such buildings are generally limited to large-scale commercial, hospital, service, and educational buildings. Extant examples include Embarcadero Center, Transamerica Pyramid (1972), Hilton Hotel on Portsmouth Square (1970), Fox Plaza (1966), Davies Medical Center (1968-71), San Francisco State University (SFSU) César Chávez Student Center (designed in 1975), SFSU Administration Building (1970), and San Francisco General Hospital (1976, recently renamed the Zuckerberg San Francisco General Hospital and Trauma Center).[49] All original Bay Area Rapid Transit (BART) stations were also designed in the Brutalist manner (1972-73), with the Glen Park BART station, in particular, often cited as the embodiment of the style.[50] In the East Bay, extant examples of Brutalist architecture include the Oakland Museum of California (1969), Wurster Hall at UC Berkeley (1964), and the former Berkeley Art Museum and Pacific Film Archive (1970). Elsewhere in the United States, extant examples of Brutalist architecture include the Boston City Hall by architects Kallmann, McKinnell and Knowles (1968), the J. Edgar Hoover Building (FBI Headquarters) in Washington, D.C. by the architecture firm Charles F. Murphy & Associates (1975), and the Salk Institute in La Jolla, California by architect Louis Kahn (1966).

In addition to Embarcadero Center (described above), of which Fire Station No. 13 at 530 Sansome Street is a component, a brief description and photographs of four exemplary

48 Mary Brown. *San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context Statement.* Prepared for the San Francisco City and County Planning Department, 2010. Pp. 190-191.

49 Mary Brown. *San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context Statement.* Prepared for the San Francisco City and County Planning Department, 2010. P. 192.

50 Mary Brown. *San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context Statement.* Prepared for the San Francisco City and County Planning Department, 2010. Pp. 126, 191.

Brutalist buildings/developments in San Francisco are provided below for comparison purposes with the subject building.

Hilton Hotel on Portsmouth Square (1970)

The Hilton Hotel, officially called the "Hilton San Francisco Financial District" is a 30-story, 544-room hotel located at 750 Kearny Street, across from Chinatown's Portsmouth Square (**Figure 15**). Completed in 1970 and designed in the Brutalist style by the architectural firm of John Carl Warnecke & Associates, with the lobby interior designed by Gensler based on the Chinese aesthetic practice of *feng shui*, the building was originally the "Holiday Inn San Francisco." The building underwent a $55 million interior renovation in 2006, but the exterior is still largely intact.[51] Brutalist features include the building's rough unadorned poured concrete construction with visible imprints of wood grain forms and exposed joinery, a massive vertical form with a flared base, and heavy cubic shapes especially at the top floor, where an observation level and ventilation ducts project outward.

SOURCE: ESA

530 Sansome Street

Figure 15
Hilton Hotel on Portsmouth Square

Davies Medical Center (1968-71)

California Pacific Medical Center (CPMC), Davies Campus, is a large hospital complex at 45 Castro Street that occupies and entire city block bounded by Castro, Duboce, Noe, and 14th streets in San Francisco's Castro/Duboce Park neighborhood (**Figure 16**). The hillside site comprises approximately 7.2 acres and contains five buildings: the North Tower, the South Tower (each tower is six stories tall), the Rehabilitation Center, the 45 Castro Medical Office

51 "Hilton San Francisco Financial District." *Wikipedia.* Accessed November 28, 2012, at http://en.wikipedia.org/wiki/Hilton_San_Francisco_Financial_District.

SOURCE: ESA

530 Sansome Street

Figure 16
Davies Medical Center

Building, and a parking garage for approximately 500 cars. The total floor space on the campus is approximately 500,000 gross square feet.[52]

The site was first developed as the 200-bed German Hospital by the General Benevolent Society in 1878. In 1917, German Hospital changed its name to Franklin Hospital in honor of Benjamin Franklin's pioneering work in medicine. By the 1960s, the old hospital had become obsolete and was replaced with the current hospital, which was designed by the architectural firm of Stone, Marraccini, and Patterson. The hospital officially opened in 1968, with the entire campus completed by 1971. At that time, it was renamed the Ralph K. Davies Medical Center in his honor of the philanthropist and long-time Franklin Hospital Trustee. In 1998, Davies Medical Center became part of CPMC, and in 2009 became part of Sutter Pacific Medical Foundation.[53]

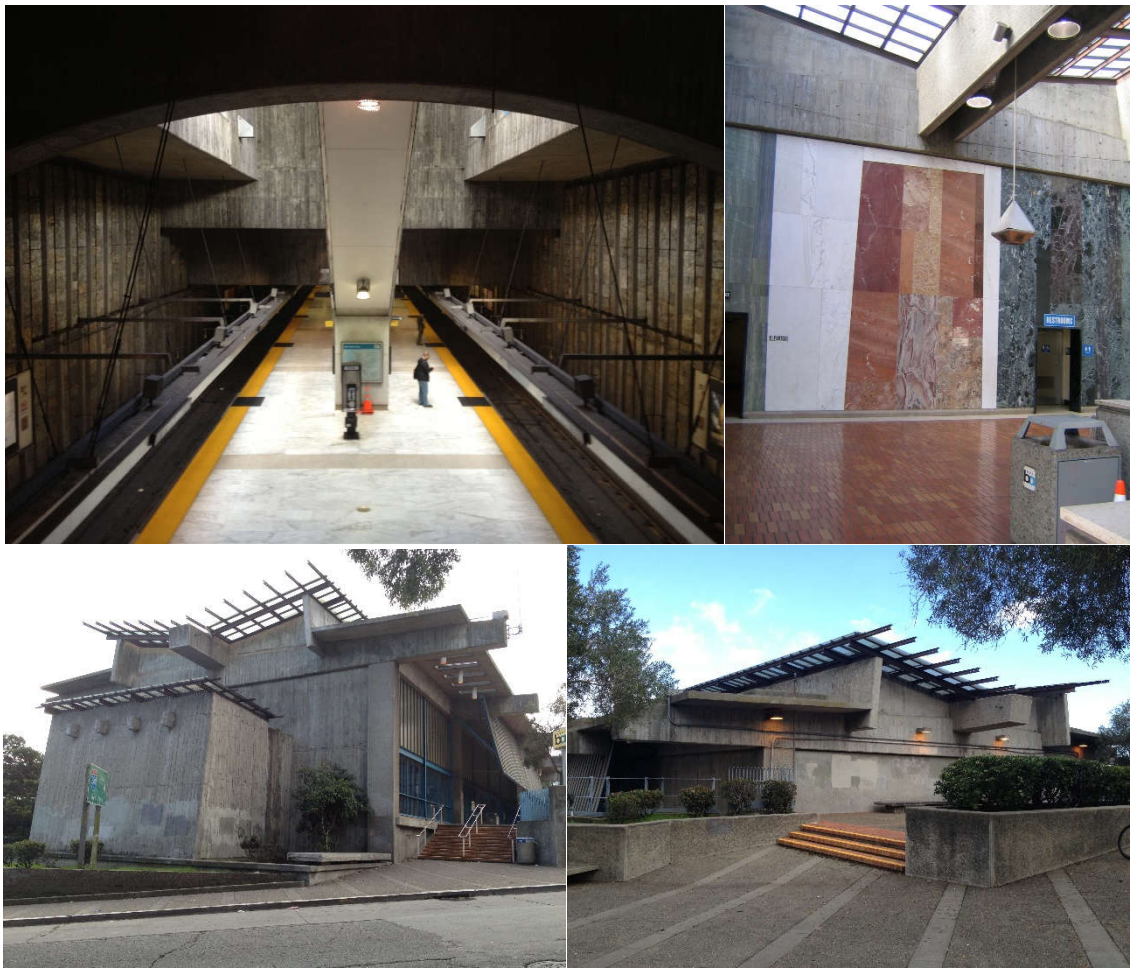
CPMC's Davies Campus was designed in the Brutalist style, with features including the building's rough, unadorned poured concrete construction with visible imprints of wood formwork, massive cubic forms, and recessed windows that read as voids and are separated by precast concrete panels which form repeating geometric patterns across all façades. Massive, flared concrete pillars buttress all four corners of both towers, and the entire development sits upon a massive, concrete slab which steps down the slope to the east.

Glen Park BART Station (1972)

The Glen Park BART Station is located in the Glen Park neighborhood at the intersection of Bosworth and Diamond streets (**Figure 17**). Interstate 280 is located on the south side of the station. The BART system was planned in the 1950s, designed in the 1960s, and opened in the 1970s. The Glen Park Station was completed by 1972 and service began on November 3, 1973. BART's

52 "California Pacific Medical Center (CPMC), Davies Campus." *San Francisco Planning Department.* Accessed November 28, 2012, at www.sf-planning.org/index.aspx?page=2727.

53 "A History of California Pacific Medical Center." *California Pacific Medical Center.* Accessed November 28, 2012, at http://www.cpmc.org/about/history/timeline.html.



SOURCE: ESA

530 Sansome Street

Figure 17
Glen Park BART Station

approach of employing different architects to design stations resulted in a variety of architectural styles for each station. Considered the "jewel of the BART system," the Glen Park Station was designed by the architectural firm of Corlett and Spackman and Ernest Born in the Brutalist style.

Born also designed a marble mural at the west end of the mezzanine, where over 100 pieces, few of which are cut at right angles, are presented in warm brown and red-brown tones.[54]

The November 1974 issue of *Architectural Record* included the following description of the station: "The dramatic volume of the station—one of the deepest in the system—unfolds at the escalator wells, where the full height (60 feet or 18 m) of the structure is visible. During the day, daylight from the skylights, one over the mezzanine, the other over the end escalator, pours in to the lower platform, an extraordinary sight in a subway."[55]

54 "Glen Park Station." Accessed November 28, 2012, at http://en.wikipedia.org/wiki/Glen_Park_Station.
55 "Two BART Stations." *Architectural Record*. November 1974.

At the platform level, one of the deepest platforms in the whole BART system, jagged stone blocks cover the interior retaining walls to reinforce the feeling of being in a man-made underground tunnel. The roughness of the blocks suggests that the tunnel has been carved out of the solid rock within the earth's core. At the concourse level, the treatment of the surrounding walls and the use of a glass roof create the feeling of being in a monumental vestibule, with the west end embellished with polished marble mosaic. The rough-hewn concrete walls continue to this level and characterize the exterior of the superstructure. The use of different finishes enriches the experience of going from the platform to the concourse; from the earth's core along rough walls to the refined room at the top. Capping the concourse with a glass roof highlights the experience of moving from the underground to the light and air. Design and finishes together support the theme of the station rising from the rails and platform up to the concourse and street; its perimeter walls like shards of concrete pushed upward through the earth.[56]

Brutalist features exhibited at the Glen Park BART Station include the building's rough, unadorned poured concrete construction with visible imprints of wood formwork, deeply shadowed openings, massive cubic forms, rectangular block-like shapes, repeating geometric patterns, strong right angles, and precast concrete panels with exposed joinery.

SFSU César Chávez Student Center (1975)

Located at 1650 Holloway Avenue in San Francisco's Sunset neighborhood, the César Chávez Student Center serves as the focal point of student activity at the SFSU campus (**Figure 18**). Completed in September 1975, the building is approximately 115,000 square feet in size, and contains a dining hall, bookstore, lecture halls, a billiards hall and pub, and student offices.[57]

SOURCE: ESA

530 Sansome Street

Figure 18
SFSU César Chávez Student Center

56 "Glen Park BART Station." *Design by the Bay*. Accessed November 28, 2012, at http://designbythebay.com/2009/09/glen-park-bart-station/.

57 "César Chávez Student Center." *San Francisco State University*. Accessed November 28, 2012, at http://www.sfsustudentcenter.com/about/.

Named after famed farm labor leader and civil rights activist César Chávez, the five-story building (three above ground and two below) has an irregular trapezoidal plan constructed entirely of poured concrete with bold geometric forms such as the two angular rooftop towers, one of which forms a bleacher-like exterior seating area overlooking the main campus quad. The building was designed by San Francisco modernist architect Paffard Keatinge-Clay, who designed the building to provide SFSU with a "village" center, incorporating ideas expressed by students. The building's two jutting towers, which represent "sound" and "silence," continue to draw praise and criticism.[58]

The building's structural expression came in the form of a triangulated series of poured-in-place concrete columns, ordered on a version of "triagrid" plan module that refers to Frank Lloyd Wright's Usonian house studies of the late 1940s. The student union was Keatinge-Clay's most ambitious and professionally tumultuous project of his career. Technical and legal difficulties on the project resulted in his eventual departure from the U.S. to Canada, followed by relocation to Spain in the late 1970s.[59]

Brutalist features exhibited at the SFSU César Chávez Student Center include the building's rough, unadorned poured concrete construction with visible imprints of wood formwork, deeply shadowed irregular openings, massive cubic forms, and recessed windows that read as voids. Other features include repeating geometric "triagrid" patterns such as the exposed structure comprised of diagonal concrete piers, beams, and posts.

4 Owner and Occupant History

The subject building has functioned historically as Fire Station No. 13 and has been occupied by Engine Company No. 13 almost continuously since it opened in 1975, except for the period from October 2001 to September 2002, during which time 530 Sansome Street was seismically retrofitted.[60]

The subject property has been owned by the City and County of San Francisco since October 1967.[61] All deeds for the subject property, which document ownership, that are available online through the City and County of San Francisco Assessor-Recorder's Office are summarized in **Table 2**. These date from 1967 to 2016.

58 "SFSU Centennial History." *San Francisco State University.* Accessed November 28, 2012, at http://www.sfsu.edu/~100years/textonlycent/time/longtime.htm.

59 "Paffard Keatinge-Clay." *Wikipedia.* Accessed November 28, 2012, at http://en.wikipedia.org/wiki/Paffard_Keatinge-Clay.

60 "Engine Company No. 13." *Guardians of the City* (website of the San Francisco Fire Department Museum). Accessed April 7, 2020, at https://www.guardiansofthecity.org/sffd/companies/engines/engine13.html.

61 Deed. October 4, 1967. Book of records 182, p. 400. Digital Reel from the City and County of San Francisco Office of the Assessor-Recorder, 2020.

TABLE 2
OWNERSHIP HISTORY FOR 530 SANSOME STREET

Year	Grantor(s)	Grantee(s)	Document Type/ID
1967	St. Francis Association	City and County of San Francisco	Deed 018893 (Book of records 182, p. 400)
1990	City property	SFUSD Community Facilities Dist. 90-1	Notice of special tax lien E585344-00
2016	Trinity Towers AS/YS LLC	Angelo Sangiacomo Marital Trust, Anne Marie Kane, James Sangiacomo, Maria Sangiacomo, Mark Sangiacomo, Maryanne Sangiacomo, Sandro Sangiacomo, Susan Sangiacomo, Yvonne Sangiacomo, Yvonne Sangiacomo Irrevocable Trust	Deed K347585-00

SOURCES: *CRiis.com,* 2020; Digital Reel from the City and County of San Francisco Office of the Assessor-Recorder, 2020.

5 Design Professionals

Research identified the design professionals associated with Fire Station No. 13. Brief histories of these individuals are presented below.

John C. Portman, Jr., FAIA

530 Sansome Street was constructed as part of Embarcadero Center, which was designed by Atlanta-based architecture firm John Portman & Associates. The following brief biography of the firm's founder is from the *San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context Statement*. A more detailed biography that includes Portman's numerous accolades and completed projects is presented in the 2002 book *John Portman and Associates: Selected and Current Works*.[62]

> John C. Portman [Jr.]'s [(1924-2017)] futuristic designs, massive atriums and highly successful concomitant role as developer and architect have made him one of the world's leading architect-developer of large-scale projects, particularly in the hotel industry. His mixed-use complexes aim to create a unique environments [*sic*], which is evident in the Embarcadero Center's elevated walkways, reflective pools and expansive interiors. His work can be found in major international cities. Most of his San Francisco work occurred after 1970, primarily a complex of buildings at the Embarcadero Center: One Embarcadero Center (formerly the Security Pacific Tower), 1971; Two Embarcadero Center, 1974; Three Embarcadero Center (formerly the Levi Strauss Building), 1977; Four Embarcadero Center, 1982; and the Hyatt Regency and Atrium (also known as Five Embarcadero Center), 1973. Later San Francisco projects include Le

[62] Steve Womersley, ed. *John Portman and Associates: Selected and Current Works.* Mulgrave, Victoria, Australia: The Images Publishing Group Pty. Ltd., 2002.

> Méridien San Francisco (formerly the Park Hyatt San Francisco), 1988[,] and Embarcadero West, 1989.[63]

Portman's other extant designs in San Francisco include the 1955 Ebenezer Lutheran Church at 678 Portola Drive and Fire Station No. 13 at 530 Sansome Street.[64]

Portman's legacy is defined in part by his role in transforming America's downtowns following postwar urban renewal. Of his numerous completed projects in the United States and abroad, Portman is perhaps best known for his large-scale commercial developments often described as "cities within cities," beginning with the 1965 Peachtree Center (the firm's largest mixed-use project) in Atlanta, Embarcadero Center (**Figure 19**), and the 1977 Renaissance Center in Detroit (**Figure 20**), all of which are extant. Portman was also renowned for his design of hotels in urban centers, often as part of larger mixed-use developments. A hallmark of Portman-designed hotels is the cavernous, seemingly gravity-defying atrium, the earliest of which appeared in his design for the Hyatt Regency Hotel that is a component of the Peachtree Center and was later repeated in San Francisco. The atrium space, which was carried through many of his other hotels and commercial towers and even appeared in movies,[65] became widely imitated by other architects. Before his death in 2017, Portman completed numerous projects in Europe, Asia, and the Middle East.[66]

SOURCE: *Atlanta Studies* 530 Sansome Street

Figure 19
Peachtree Center and Hyatt Regency Hotel, Atlanta

63 Mary Brown. *San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context Statement.* Prepared for the San Francisco City and County Planning Department, 2010. Pp. 258-259.

64 Mary Brown. *San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context Statement.* Prepared for the San Francisco City and County Planning Department, 2010. P. 259.

65 The atrium in the San Francisco Hyatt Regency Hotel appeared in "The Towering Inferno" (1974), "Freebie and the Bean" (1974), "High Anxiety" (1977), "Telefon" (1977) and "Time After Time" (1979).

66 Robert D. McFadden. "John Portman, Architect Who Made Skylines Soar, Dies at 93." *New York Times,* January 1, 2018, p. B4.

SOURCE: Jeff Kowalsky/AFP/Getty Images

530 Sansome Street

Figure 20
Renaissance Center, Detroit

Portman authored or co-authored several books: *The Architect as Developer* (McGraw-Hill Book Co., 1976), *John Portman* (The American Institute of Architects Press, 1990), *John Portman: An Island on an Island* (l'Arcaedizioni, 1997), and *Form* (Philip Jann Press, 2009; Images Publishing, 2010). Additionally, Portman was the subject of several other books and documentaries.[67]

John C. Portman, Jr., FAIA, qualifies as a master architect.

Henri Marie-Rose, Sculptor

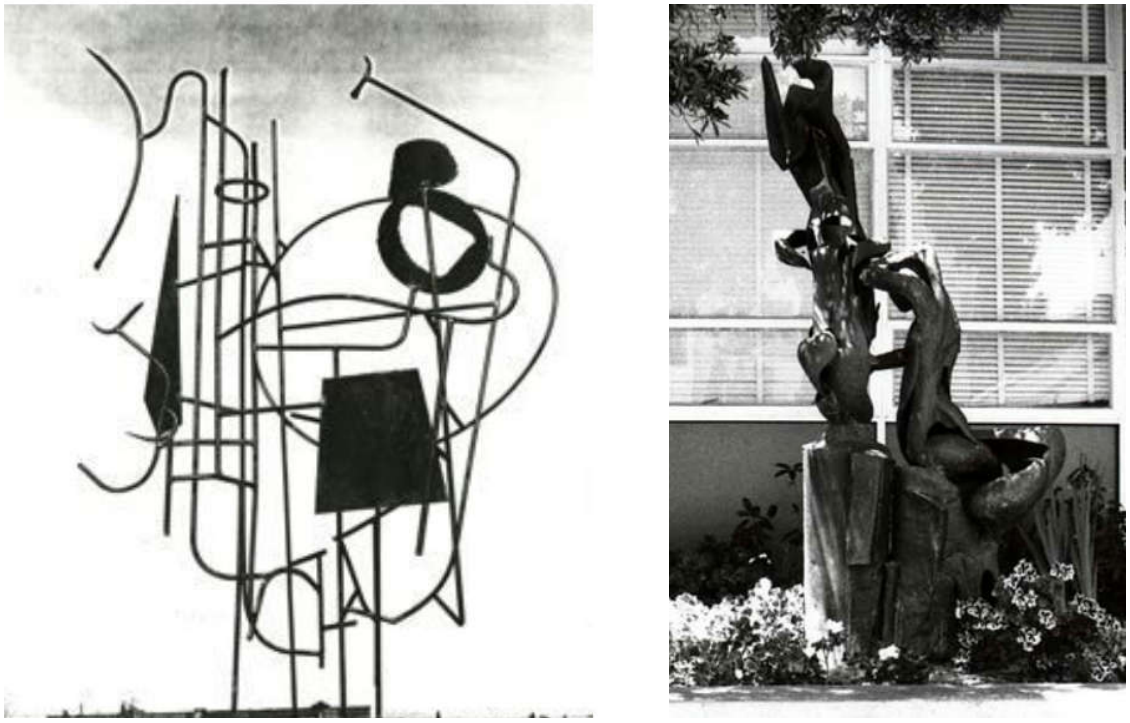
Born in Martinique, sculptor Henri Marie-Rose (1922-2010) designed the sculpture installed on the north façade of 530 Sansome Street (Figure 5). In 1976, the San Francisco Arts Commission's Acquisitions Committee held a competition for public art to be installed on the exterior of the recently completed Fire Station No. 13. Three finalists were selected during the first phase of the competition: Marie-Rose, Raymond Sells, and C. B. Johnson.[68] Marie-Rose's design ultimately won, earning him $6,000 for the copper sculpture *Untitled*, which depicts firefighters with a hose next to the letters "SFFD."[69] The San Francisco Arts Commission website lists three sculptures

67 "Books and Film." *John Portman & Associates, Inc.* Accessed January 22, 2020, at https://www.portmanarchives.com/books-films.

68 "Minutes, May 3, 1976." *Minutes of the Art Commission of the City and County of San Francisco: 1976*. Accessed January 23, 2020, at https://archive.org/details/artcommissionmin1976sanf/page/82.

69 "Sculpture for the Firehouse." *San Francisco Examiner,* January 24, 1977, p. 20.

by Marie-Rose in its collection:[70] *Jouons Ensemble* (1959, purchased by the commission for $650 in 1959),[71] *Sailor and Mermaid* (1969, purchased in 1969 for $4,500),[72] and *Untitled* (1976-77, purchased in 1976 for $6,000).[73] Archival research did not identify the present location of *Jouons Ensemble*, and *Sailor and Mermaid* was stolen in the early 1990s (**Figure 21**).[74,75] *Untitled* is believed to be the only remaining public artwork by Marie-Rose in San Francisco.[76]



Jouons Ensemble (1959) at left, and *Sailor and Mermaid* (1969) at right.

SOURCE: *San Francisco Arts Commission;* Cindy Casey (ArtandArchitecture-SF.com).

530 Sansome Street

Figure 21
Sculptures by Henri Marie-Rose

70 "Henri Marie-Rose." *San Francisco Arts Commission.* Accessed January 23, 2020, at http://kiosk.sfartscommission.org/objects-1/thumbnails?records=60&query=Artist_Maker%3D%22604%22.

71 "Minutes, October 5, 1959." *Minutes of the Art Commission of the City and County of San Francisco: 1959*. Accessed January 23, 2020, at https://archive.org/details/minutesofartcomm1959sanf/page/3842.

72 "Minutes, April 7, 1969." *Minutes of the Art Commission of the City and County of San Francisco: 1969*. Accessed January 23, 2020, at https://archive.org/details/artcommissionmin19sanf_3/page/70.

73 "Sculpture for the Firehouse." *San Francisco Examiner,* January 24, 1977, p. 20.

74 Joe Eskenazi. "Raiders of the Lost Art: Another San Francisco Sculpture Goes Missing." *SF Weekly,* August 5, 2014. Accessed January 23, 2020, at https://www.sfweekly.com/news/raiders-of-the-lost-art-another-san-francisco-sculpture-goes-missing/.

75 *Sailor and Mermaid* was originally located at the main entrance of the North Beach police station. By 1972, it had been relocated to Department of Public Health Building at 1351 24th Avenue. The sculpture was stolen in the early 1990s, and only the base remains.

76 Carol Peterson. "Sailor and Mermaid: A Siren Song Silenced." *The Potrero View,* April 2015. Accessed January 23, 2020, at https://www.potreroview.net/sailor-and-mermaid-a-siren-song-silenced/.

In 1945, Marie-Rose was awarded a scholarship by the French government to attend the École des Beaux-Arts in Paris. During his eight-year residency, he exhibited his paintings and sculptures throughout Europe and won numerous awards and accolades. He and his wife, Marjorie Raitt, relocated to San Francisco in 1953, eventually settling in the Potrero Hill neighborhood to raise their family. Marie-Rose found immediate success in San Francisco. Within his first decade in America, the San Francisco Museum of Art presented him with the Emanuel Walter Purchase Prize, he had a solo exhibition at the de Young Museum, and he hosted the 18-week "Techniques in Sculpture" series that was televised on KQED. He exhibited across the United States and abroad. In 2000 and 2006, he was an artist-in-residence at Recology San Francisco, where he was a longtime teacher and mentor.[77]

Henri Marie-Rose qualifies as a master artist.

6 Evaluation of Historical Significance

This section provides an evaluation of individual historical significance for the subject property at 530 Sansome Street based on the field survey and archival research and follows California Register Criteria 1 through 3.[78]

Previous Evaluation

530 Sansome Street was recorded in 2011 when it was only 36 years old and assigned a California Historical Resource Status Code of "6Z," meaning that it was found ineligible for listing in the National Register, California Register, or as a San Francisco City Landmark. In addition to being less than 50 years of age, the building was found to "not represent a particularly momentous event in the development of fire stations in San Francisco, nor is it an outstanding example of a particular style or architect."[79]

Special Criteria Consideration: Properties That Have Achieved Significance Within the Past 50 Years

For a property less than 50 years old (e.g., 530 Sansome Street) to be eligible for listing in the California Register under Criteria 1, 2, and/or 3, it must be demonstrated that sufficient time has passed to understand its historical importance.[80] Although less than 50 years old, 530 Sansome Street was constructed as part of the Embarcadero Center mixed-use development, a component of the larger Golden Gateway Redevelopment Project that has been extensively documented, publicized, critiqued, and otherwise studied. Embarcadero Center was identified in the *San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context*

77 "Henri Marie-Rose (obituary)." *San Francisco Chronicle,* April 25, 2010, p. C7.

78 The evaluation of the subject property for potential significance under Criterion 4 (Information Potential) is outside the scope of this report.

79 Page & Turnbull. *San Francisco Fire Stations Historic Resource Study.* February 21, 2012.

80 The San Francisco Planning Department automatically evaluates California Register eligibility when projects are proposed for buildings at least 45 years old. An evaluation can also be triggered if sufficient time has passed for a scholarly perspective to develop on the events or individuals associated with a resource. See also California Department of Parks and Recreation, "Technical Assistance Series #6: California Register and National Register: A Comparison (for Purposes of Determining Eligibility for the California Register)," p. 3.

Statement.[81] It was subsequently the subject of a 2018 historic structures report, and the San Francisco Planning Department determined that the four office towers and the Hyatt Regency Hotel are historical resources based on this report.[82,83] Sufficient association and historical perspective therefore exists to determine that 530 Sansome Street is exceptionally important in this context, and it therefore appears to meet the threshold of this special criteria consideration.

Criterion 1 (Events)

As discussed above, 530 Sansome Street is less than 50 years old; however, it has been demonstrated to have achieved significance and therefore appears to meet the threshold of this special criteria consideration.

As one of 45 fire stations currently in operation in San Francisco, Fire Station No. 13 at 530 Sansome Street is part of the infrastructure of the SFFD's citywide service network.[84] It was constructed in 1974-75 and is not associated with the 1952 Firehouse Bond Act.

Rather, it was constructed as part of the Embarcadero Center mixed-use development, identified as one of the City's "Influential Downtown Office Towers and Designed Landscapes" in the *San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context Statement*.[85] Although 530 Sansome Street is geographically separated from the four office towers and hotel and does not contain office or commercial space, the archival research presented above establishes the series of events that led to the construction of the fire station as part of the Embarcadero Center development. Embarcadero Center is one component of the larger Golden Gateway Redevelopment Project, identified in the context statement as a significant undertaking within the theme of urban renewal. The following succinct significance statement from a 2002 biography of John Portman & Associates is presented to emphasize the influence of Embarcadero Center as a successful, large-scale, mixed-use urban project: "The importance of Embarcadero Center is not that of any single building, although each stands strong in its own right, but it is how well they work together to enhance the city with a vastly improved human experience. This philosophy goes beyond Embarcadero Center, and extends into the broader context of looking at the city as a whole."[86]

As a small-scale support building with a civic function within the Embarcadero Center mixed-use development, 530 Sansome Street does not appear to be individually eligible for listing under California Register Criterion 1. However, it is historically associated with Embarcadero Center.

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81 Mary Brown. *San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context Statement.* Prepared for the San Francisco City and County Planning Department, 2010. Pp. 48-50, 141, 143, 155, 159, 200, 217, 258-259, 281, Appendix D.

82 Page & Turnbull. *Embarcadero Center Lobbies Historic Structures Report "Lite."* July 2018.

83 Jørgen Cleemann, San Francisco Planning Department, phone call with Johanna Kahn, ESA. June 11, 2020.

84 "Fire Station Locations." *City and County of San Francisco.* Accessed May 27, 2020, at https://sf-fire.org/fire-station-locations.

85 Mary Brown. *San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context Statement.* Prepared for the San Francisco City and County Planning Department, 2010. p. 143.

86 Steve Womersley, ed. *John Portman and Associates: Selected and Current Works.* Mulgrave, Victoria, Australia: The Images Publishing Group Pty. Ltd., 2002. p. 9.

As such, it may be eligible for listing under California Register Criterion 1 as a contributor to a potential discontiguous Embarcadero Center Historic District or a larger Golden Gateway Redevelopment Area Historic District. The analysis of a potential historic district is outside the scope of this report.[87]

Criterion 2 (Persons)

Numerous SFFD personnel have been stationed at 530 Sansome Street while it has been home to Engine Company No. 13 (1975-2001, 2002-present) and Truck Company No. 13 (1975-2001, 2002-present). Additionally, other companies have been temporarily quartered at 530 Sansome Street, including Engine Company No. 2 (1992-95), Engine Company No. 28 (1999-2000), Engine Company No. 35 (2006-09), Truck Company No. 1 (1998-99), Truck Company No. 2 (1994-95), Battalion No. 1 (1992-95), and Valve Unit No. 1 (1975-2000).[88] Preliminary research does not indicate that Fire Station No. 13 is significantly associated with the lives of persons important to local, California, or national history. (The significance of the building's architect, John Portman & Associates, and artist Henri Marie-Rose is discussed under Criterion 3, below.) For this reason, 530 Sansome Street does not appear to be individually eligible for listing under California Register Criterion 2.

Criterion 3 (Architecture/Design)

The following analysis under Criterion 3 recommends that the subject building is not individually eligible for listing in the California Register; however, similar to the analysis under Criterion 1, it appears to be eligible as a contributor to a potential historic district. Additionally, the sculpture mounted on the building's north wall, as an object, appears to be individually eligible for listing under Criterion 3.

Contemporary Fire Station Design

At this writing, there are 45 fire stations in operation in San Francisco. Fire stations are not a rare building type, and 1970s-era fire stations are also not uncommon. Preliminary research identified at least six extant fire stations of similar age and/or architectural style (i.e., Brutalist) as 530 Sansome Street:

- Station No. 3 (1067 Post Street): designed by Botaai, Overstreet & Associates (architect) and Charles W. Griffith (City architect) and completed in 1974. Previously recommended as individually ineligible for listing in the California Register under any criteria.[89]
- Station No. 9 (2245 Jerrold Avenue): designed by Charles W. Griffith (City architect) and Thomas R. Aidala (engineer) and completed in 1974. Previously recommended as individually ineligible for listing in the California Register under any criteria.[90]

87 Jørgen Cleemann, San Francisco Planning Department, email to Johanna Kahn, ESA. January 2, 2020.

88 "San Francisco Fire Department Companies." *Guardians of the City* (website of the San Francisco Fire Department Museum). Accessed May 29, 2020, at https://www.guardiansofthecity.org/sffd/companies/index.html.

89 Page & Turnbull. *San Francisco Fire Stations Historic Resource Study Round 2.* October 2, 2015, pp. 93-94.

90 Page & Turnbull. *San Francisco Fire Stations Historic Resource Study Round 2.* October 2, 2015, pp. 141-142.

- Station No. 14 (551 26th Avenue): designed by DeBrer & Heglund (architect) and completed in 1973. Previously recommended as individually ineligible for listing in the California Register under any criteria.[91]

- Station No. 26 (80 Digby Street): designed by Rockrise & Watson (architect) and Royston, Hanamoto, Mayes & Beck (landscape architect) and completed in 1963. Both George Rockrise and Robert Royston are identified as masters in their respective fields in the *San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context Statement*. The building was identified in the 1976 DCP Architectural Survey (assigned a survey rating of 2 out of 5) and the *San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context Statement*. The *Diamond Heights Historic Context Statement*, which recommends the building as individually eligible for listing in the California Register, describes the building as follows: "The fire station is the only Brutalist building in Diamond Heights and is an excellent expression of the architectural type; it has expressive massing and the vertical striations of the wood-forms are visible." [92]

- Station No. 33 (8 Capitol Avenue): designed by Sabin-O'Neal-Mitchel (architect) and Charles W. Griffith (City architect) and completed in 1974. Previously recommended as individually ineligible for listing in the California Register under any criteria.[93]

- Station No. 43 (720 Moscow Street): designed by Robert Hawley & Associates (architect) and Ephraim G. Hirsch and Ralph G. Gray (engineers) and completed in 1970. Previously recommended as individually ineligible for listing in the California Register under any criteria.[94]

Among these (and possibly other) buildings, 530 Sansome Street does not appear to be individually significant. It is among a handful of similarly aged and styled buildings that were previously recommended individually ineligible for listing in the California Register. Of these buildings, only 80 Digby Street was recommended as individually eligible for listing in the California Register.

Brutalist Architecture

530 Sansome Street is one of several Brutalist fire stations in San Francisco, and it does not appear to be "a high-style interpretation of the style," such as the Transamerica Pyramid, Davies Medical Center, or SFSU César Chávez Student Center. Rather, 530 Sansome Street appears to be a "utilitarian version" of the Brutalist style. Under the evaluation criteria established in the *San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context Statement*, "utilitarian versions that incorporated elements (i.e. poured reinforced concrete) of the style in order to expedite and lower the cost of construction are not considered architecturally significant."[95] As established above, the construction of 530 Sansome Street was an afterthought to the Embarcadero Center master plan, and it had to be efficiently incorporated into the overall

91 Page & Turnbull. *San Francisco Fire Stations Historic Resource Study Round 2.* October 2, 2015, pp. 75-76.

92 Hannah Lise Simonson. *Diamond Heights Draft Historic Context Statement.* Prepared for the San Francisco City and County Planning Department, 2016, pp. 73, Appendix A-10.

93 Page & Turnbull. *San Francisco Fire Stations Historic Resource Study Round 2.* October 2, 2015, pp. 11-12.

94 Page & Turnbull. *San Francisco Fire Stations Historic Resource Study.* February 21, 2012, pp. 55-56.

95 Mary Brown. *San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context Statement.* Prepared for the San Francisco City and County Planning Department, 2010. P. 203.

project schedule. The Portman Archives provided the following explanation of the choice of building materials, which confirms the expedited and utilitarian nature of the fire station:

> Mr. Portman […] needed to build this project quickly to meet the requirements of the land purchase. […] Mr. Portman spent time with the Chief Fireman and discussed their key concerns, which centered around safety and the comfort of the firemen who lived in the space. The materials had to be bulletproof and able to withstand a riot. The firemen also wanted light and an outdoor area as they were tired of being in an enclosed windowless space. […] At the time, firehouses were typically made of brick and mortar, windowless, and set back to give a larger driveway with a gated outdoor training area to provide outdoor space, but considering the requested elements needed, along with the need to perform well with environmental factors, such as earthquakes, Mr. Portman [chose] to build with concrete and to fill the entire lot. This choice seemed practical, provided safety, and was the same material studied and used for Embarcadero Center.[96]

Furthermore, 530 Sansome Street is a small-scale support building with a civic function within the Embarcadero Center mixed-use development. Even though it is the only fire station designed by master architect John C. Portman, Jr.,[97] it does not appear to be comparable to his significant works that include the designs of skyscrapers, hotels with grand interior spaces, and large-scale, master-planned developments. As such, 530 Sansome Street does not appear to be individually eligible for listing under California Register Criterion 3 within this context.

Potential Historic District Contributor

530 Sansome Street was constructed as part of Embarcadero Center, a large-scale, mixed-use development designed by John Portman & Associates. Embarcadero Center is identified as an important modern development and John C. Portman, Jr., is identified as a master architect in the *San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context Statement.* Embarcadero Center was the subject of a 2018 "Historic Structures Report-Lite," and the San Francisco Planning Department determined that the four office towers and the Hyatt Regency Hotel are historical resources based on this report.[98,99] Like the office towers and hotel, 530 Sansome Street embodies characteristics of the Brutalist Style in San Francisco (albeit not a "high-style interpretation" of the style like that employed for the towers and hotel), is the work of master architect John C. Portman, Jr., and is a component of a development that possesses high artistic values. To this last point, Embarcadero Center received the Urban Land Institute's Award of Excellence for Large-Scale Urban Development in part as a project that "exemplifies superior design."[100] Therefore, it logically follows that 530 Sansome Street, as a component of Embarcadero Center, may be eligible for listing under Criterion 3 as a contributor to a potential

96 Paige Adair, The Portman Archives. "ECFirehouse.pdf" (notes on an interview with Mickey Steinberg, structural engineer for the Embarcadero Center), August 25, 2020.

97 Paige Adair, The Portman Archives. Email to Johanna Kahn, ESA. June 15, 2020.

98 Page & Turnbull. *Embarcadero Center Lobbies Historic Structures Report "Lite."* July 2018.

99 Jørgen Cleemann, San Francisco Planning Department, phone call with Johanna Kahn, ESA. June 11, 2020.

100 Steve Womersley, ed. *John Portman and Associates: Selected and Current Works.* Mulgrave, Victoria, Australia: The Images Publishing Group Pty. Ltd., 2002. P. 226.

discontiguous Embarcadero Center Historic District or a larger Golden Gateway Redevelopment Area Historic District. The analysis of a potential historic district is outside the scope of this report.[101]

Sculpture

The sculpture *Untitled* is an object that appears to be individually eligible for listing under Criterion 3 because it is a significant public artwork designed by master artist Henri Marie-Rose, and it also possesses high artistic value. The sculpture was commissioned in 1976 by the San Francisco Arts Commission as a site-specific artwork to be publicly displayed at 530 Sansome Street. This was Marie-Rose's highest-earning commission of a public artwork in San Francisco and has been exhibited in situ since 1976. *Untitled* is believed to be the only remaining public artwork by Marie-Rose in San Francisco.[102] For these reasons, the sculpture *Untitled* is recommended as individually eligible for listing under California Register Criterion 3. The period of significance is 1976, which corresponds to the year the sculpture was commissioned, created, and installed at 530 Sansome Street.

7 Integrity

In addition to being eligible for listing under at least one of the California Register criteria, a property must also retain sufficient integrity to convey its historical significance in order to be considered a historical resource. The California Register defines integrity as the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance (i.e., character-defining features). As the subject building does not appear to be individually eligible under any criteria and therefore does not have a period of significance, a discussion of the building's integrity is not applicable. The sculpture *Untitled* is recommended as individually eligible for listing under California Register Criterion 3 with a period of significance of 1976. The following integrity analysis is specific to the sculpture.

Untitled remains mounted in situ on the north façade of 530 Sansome Street, a fire station, where it has been installed since 1976. The sculpture therefore retains integrity of location.

The neighborhood in which *Untitled* is located was fully developed before the subject building was constructed in 1974-75 and the sculpture was installed in 1976. 530 Sansome Street continues to function as a fire station, and the neighborhood continues to reflect its historically mixed-use commercial and civic character. For these reasons, the sculpture retains integrity of setting.

Untitled is unchanged from its original appearance in terms of design, materials, and workmanship, and it has undergone no apparent physical alterations or repairs. For this reason, the sculpture retains integrity of design, materials, and workmanship.

[101] Jørgen Cleemann, San Francisco Planning Department, email to Johanna Kahn, ESA. January 2, 2020.

[102] Carol Peterson. "Sailor and Mermaid: A Siren Song Silenced." *The Potrero View,* April 2015. Accessed January 23, 2020, at https://www.potreroview.net/sailor-and-mermaid-a-siren-song-silenced/.

Untitled has been associated with Fire Station No. 13 since it was installed on the building's north façade in 1976. The building has historically operated as part of SFFD's citywide service network, and the sculpture has been an outward symbol of the building's function. More generally, the sculpture is associated with the SFFD and the role of firefighters in San Francisco. For these reasons, the sculpture retains integrity of association.

Lastly, *Untitled* has been continuously displayed on the north façade of Fire Station No. 13 since it was installed in 1976. It embodies the "physical features that, taken together, convey the property's historic character" as an intact and site-specific 1970s-era copper sculpture covered with verdigris (i.e., the green patina that occurs naturally on copper).[103] As such, the sculpture retains integrity of feeling.

Overall, *Untitled* retains a high degree of integrity.

8 Character-Defining Features

Untitled is recommended individually eligible for listing in the California Register under Criterion 3, and it retains a high degree of integrity. The character-defining features of *Untitled* include (but may not be limited to):

- Visually prominent position on a building occupying a corner location;
- Visually prominent position on the exterior of Fire Station No. 13, with which the sculpture is historically associated;
- Copper construction;
- Verdigris (patina); and
- Overall design that includes abstract figures and typographic elements.

9 Conclusion

Based on a site survey, archival research, and analysis, ESA recommends the subject building at 530 Sansome Street as individually ineligible for listing in the California Register under Criteria 1, 2, and 3. However, 530 Sansome Street may be eligible for listing under Criteria 1 and 3 as a contributor to a potential discontiguous Embarcadero Center Historic District or a larger Golden Gateway Redevelopment Area Historic District. Therefore, the subject building would be considered a historical resource for the purposes of CEQA (California Historical Resource Status Code 3CD). The sculpture *Untitled* is recommended as individually eligible for listing under Criterion 3 because it is an important public sculpture designed by master artist Henri Marie-Rose; the period of significance is 1976. Additionally, the sculpture retains a high degree of integrity. Therefore, the sculpture would be considered a historical resource for the purposes of CEQA (California Historical Resource Status Code 3CS).

[103] National Park Service. *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation*, updated in 2002. P. 45.

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Appendix A

Building Permits for 530 Sansome Street

Approved: Jr R 73.69
C-3-6

Zone

CPC Setback

PROJECT HAS BEEN DETERMINED NOT TO HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT

JAN 21 1974 — Department of City Planning

Approved:

Approved: As noted

SPECIAL INSPECTION AND REPORTS REQUIRED UNDER SECTION 305.A SUBMIT REPORTS TO THE BUREAU OF BLDG. INSPECTION FOR THE FOLLOWING:

See Sheet 1 of Plans

Civil Engineer, Bureau of Building Inspection 8/8/74

Approved:

Department of Public Health 8/4/74

Approved 8-12-74 Subject to all stipulations of DPW Orders & Resolutions

Separate Permit Required For:
Street Space Use ✓
Driveway Construction ✓ Subj. to DPW Order
Sidewalk Construction ✓
Street Excavation ✓ See sub-permits Rig.

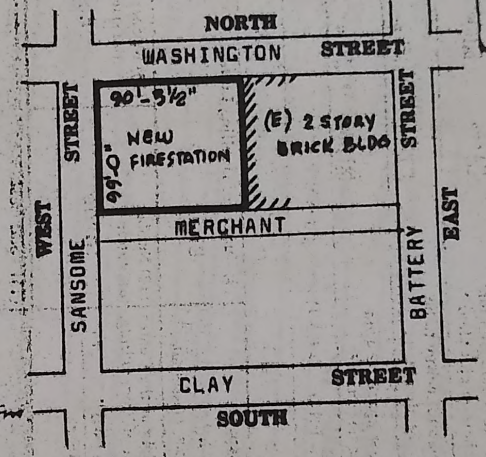
Bureau of Engineering

Approved:

Art Commission

Approved:

Grade lines as shown on drawings accompanying this application are assumed to be correct. If actual grade lines are not the same as shown revised drawings showing correct grade lines, cuts and fills together with complete details of retaining walls and wall footings required must be submitted to this bureau for approval.



Lot No. 9

Assessor's Block No. 206

NO PORTION OF BUILDING, STRUCTURE OR SCAFFOLDING TO BE CLOSER THAN 6 FT. TO ANY WIRE CONTAINING 750 VOLTS OR MORE OR 8 FT. FOR LESS THAN 750 VOLTS. CALIFORNIA STATE LAW (SEE SEC. 301 OF BUILDING CODE).

I AGREE TO COMPLY WITH ALL CONDITIONS OR STIPULATIONS OF THE VARIOUS BUREAUS OR DEPARTMENTS NOTED ON THIS APPLICATION.

OWNER'S AUTHORIZED AGENT
Bur. Yards. D.P.W.

BLDG. FORM 1 — No. 430564

APPLICATION OF 530 SANSOME

City & County of S.F. Owner

FOR PERMIT TO ERECT STRUCTURE

OFFICE COPY

Type (1, 2, 3, 4)

Location S.E. CORNER OF SANSOME AND WASHINGTON ~~Northeasterly corner of Block 206. Front facing west~~

~~Betw. Washington & Merchant St.~~

Total Cost $ 1,500,000.00 ✓ EPE

Filed 19

REFER TO Dept. of Health
~~Bur. of Engineering~~
~~D.P.W.~~

AUG 14 1974
APPROVED
Dept. Public Works

SUPERINTENDENT BUREAU BUILDING INSPECTION

Superintendent, Bureau of Building Inspection

WAIVED 391562

Permit No.

Issued AUG 14 1974 19

Certificate of Final Completion:

Issued 19

2-29-74 Alice Larsen

Plan Checker, Bureau of Building Inspection

SAN FRANCISCO DEPARTMENT OF BUILDING INSPECTION

CITY AND COUNTY OF SAN FRANCISCO

DEPARTMENT OF PUBLIC WORKS
BLDG. FORM

1

CENTRAL PERMIT BUREAU

APPLICATION FOR BUILDING PERMIT
FOR TYPE 1-2-3-4 STRUCTURES

Date January 11, 1974

Application is hereby made to the Department of Public Works of the City and County of San Francisco for permission to build in accordance with the plans and specifications submitted herewith and according to the description and for the purpose hereinafter set forth:

LOT DESCRIPTION

(1) Location: ☐ North ☒ East ☐ South ☐ West side of Sansome Street (Name of Street)

0 feet ☐ North ☐ East ☒ South ☐ West of Washington Street (Nearest Cross Street)

(2) Size of lot: front 99'-0" ft. rear 99'-0" ft. average depth 90.292 ft.

(3) Is any other building on lot? If yes, show on plot plan. ☐ yes ☒ no

(4) Is automobile runway to be installed or altered? ☐ yes ☒ no

(5) Will street space be used during construction? ☒ yes ☐ no

BUILDING DESCRIPTION

(6) Type of Building: ☒ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 1 Hr. ☐ N

(7) Use of building: Fire Station

(8) Occupancy: F-2 & F-3 (Bldg. Code Classification)

(9) Number of Dwelling Units: One

(10) Ground Floor Area: 8930 Sq. Ft.

(11) Height at the Center Line of Front of Bldg.: 34'-6" Ft.

(12) Number of Stories: Three

(13) Number of Basements: One

(14) Is building designed for additional stories? ☐ yes; how many? ☐ no

(15) Total Cost: $1,500,000.00

(16) Will sub-sidewalk space be used? ☐ yes ☒ no

(17) Design Live Load for floors: (To be posted, in commercial and industrial buildings)

(18) Supervision of construction by Bur. of Architecture Address City Hall

(19) General Contractor - California License No. -
Address - Telephone -

(20) Architect or Engr. (for design) John C. Portman, Jr. California Certificate No. C-5438
Address One Embarcadero Center Telephone 989-7275

(21) Engineer or Archt. (for construction) Charles W. Griffith California Certificate No. C-688
Address City Architect - City Hall Telephone 558-4601

I hereby certify and agree that if a permit is issued for the construction described and approved in this application, or in accompanying plans, all the provisions of all the laws and ordinances applicable to the construction will be complied with. I further agree to save San Francisco and its officials and employees harmless from all costs and damages which may accrue from the use or occupancy of the sidewalk, street, or sidewalk space, or from anything else in connection with the work authorized by this permit, or any work performed on or at the premises designated therein. The foregoing covenant shall be binding upon the owners of said property, the applicant, their heirs, successors and assignees.

(22) Owner City and County of San Francisco, D.P.W.

Address Bureau of Architecture-City Hall Phone No. 558-4601 (For contact by Bureau)

By [signature] Address Room 265 - City Hall

Owner's Authorized Agent to be Owner's Authorized Architect, Engineer or General Contractor

THIS PERMIT AND THE APPROVED PLANS MUST BE KEPT ON THE JOB

CONSTRUCTION LENDER
(Enter name and branch designation if any. If there is no known construction lender, enter "unknown".)

ADDRESS OF CONSTRUCTION LENDER

OFFICIAL COPY

SAN FRANCISCO
DEPARTMENT OF BUILDING INSPECTION

SFRA | PCD | PARAPET | PAD-STR | PAD-FD | PAD-ARCH | HEALTH | MID | CPB | DCP | CNTR | BE | BID-FP | DIST 2 | TIDF | TITLE 24-2 | EXPEDITER | YES | NO

APPROVED
Dept. of Public Works
JAN 04 1993

FIRE

APPROVED FOR ISSUANCE
DEC 15 1992

BLDG. FORM 3/8

APPLICATION NUMBER 9221053

OSHA APPROVAL REQ'D ☐
OSHA APPROVAL NUMBER:

3-24-92

No Viol. JL

93

83

APPLICATION FOR BUILDING PERMIT
ADDITIONS, ALTERATIONS OR REPAIRS

FORM 3 ☑ OTHER AGENCIES REVIEW REQUIRED
FORM 8 ☐ OVER-THE-COUNTER ISSUANCE

2 NUMBER OF PLAN SETS JL

12-1-93

CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF PUBLIC WORKS

OFFICE COPY

APPLICATION IS HEREBY MADE TO THE DEPARTMENT OF PUBLIC WORKS OF SAN FRANCISCO FOR PERMISSION TO BUILD IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS SUBMITTED HEREWITH AND ACCORDING TO THE DESCRIPTION AND FOR THE PURPOSE HEREINAFTER SET FORTH.

$8

C C

▼ DO NOT WRITE ABOVE THIS LINE ▼

DATE FILED	FILING FEE RECEIPT NO.	(1) STREET ADDRESS OF JOB	BLOCK & LOT
12-4-92	City Job	530 SANSOME STREET S.F.	206-

PERMIT NO.	ISSUED	(2A) ESTIMATED COST OF JOB	(2B) REVISED COST:
712987	1-4-93	64,700.00	BY: DATE:

INFORMATION TO BE FURNISHED BY ALL APPLICANTS

DESCRIPTION OF EXISTING BUILDING

(4A) TYPE OF CONSTR.	(5A) NO. OF STORIES OF OCCUPANCY:	(6A) NO. OF BASEMENTS AND CELLARS:	(7A) PRESENT USE:	(8A) OCCUP. CLASS	(9A) NO. OF DWELLING UNITS:
I	2		FIRE STATION #13	B-2	—

DESCRIPTION OF BUILDING AFTER PROPOSED ALTERATION

(4) TYPE OF CONSTR.	(5) NO. OF STORIES OF OCCUPANCY:	(6) NO. OF BASEMENTS AND CELLARS:	(7) PROPOSED USE (LEGAL USE)	(8) OCCUP. CLASS	(9) NO. OF DWELLING UNITS:
I	2		FIRE STATION (#13)	B-2 (10)	—

(10) IS AUTO RUNWAY TO BE CONSTRUCTED OR ALTERED?	(11) WILL STREET SPACE BE USED DURING CONSTRUCTION?	(12) ELECTRICAL WORK TO BE PERFORMED?	(13) PLUMBING WORK TO BE PERFORMED?
YES ☐ NO ☒	YES ☐ NO ☒	YES ☒ NO ☐	YES ☒ NO ☐

(14) GENERAL CONTRACTOR	ADDRESS	PHONE	CAUF. LIC. NO.	EXPIRATION DATE
C & L CONSTRUCTION	1177 HOWARD S.F.	94103 861-8781	417193	12/31/92

(15) OWNER - LESSEE (CROSS OUT ONE)	ADDRESS	ZIP	PHONE (FOR CONTACT BY BUREAU)
CITY & COUNTY OF SAN FRANCISCO	DPW/BOA 30 VANNESS AVE #4100 S.F.		557-4772

(16) WRITE IN DESCRIPTION OF ALL WORK TO BE PERFORMED UNDER THIS APPLICATION (REFERENCE TO PLANS IS NOT SUFFICIENT)

ALTER EXISTING BOOTROOM TO CREATE NEW WOMEN'S TOILET AND SHOWER ROOM, CONSTRUCT NEW 1. ☐ 2. ☐ 3. ☐

BOOT/LOOKER ROOM AND REPAIR SUSPENDED ACOUSTICAL CEILING, ALTER PLUMBING/ELECTRICAL WORK FOR

NEW SPACES, MISC. PAINTING WORK AS NEEDED.

ADDITIONAL INFORMATION — FORM 3 APPLICANTS ONLY

(17) DOES THIS ALTERATION CREATE ADDITIONAL STORY TO BUILDING?	(18) IF (17) IS YES, STATE NEW HEIGHT AT CENTER LINE OF FRONT	(19) DOES THIS ALTERATION CREATE DECK OR HORIZ. EXTENSION TO BUILDING?	(20) IF (19) IS YES, STATE NEW GROUND FLOOR AREA
YES ☐ NO ☒	FT.	YES ☐ NO ☒	SQ. FT.

(21) WILL SIDEWALK OVER SUB-SIDEWALK SPACE BE REPAIRED OR ALTERED?	(22) WILL BUILDING EXTEND BEYOND PROPERTY LINE?	(23) ANY OTHER EXISTING BLDG. ON LOT? (IF YES, SHOW ON PLOT PLAN)	(24) DOES THIS ALTERATION CONSTITUTE A CHANGE OF OCCUPANCY?
YES ☐ NO ☒	YES ☐ NO ☒	YES ☐ NO ☒	YES ☐ NO ☒

(25) ARCHITECT OR ENGINEER (DESIGN ☐ CONSTRUCTION ☐)	ADDRESS	CAUF. CERTIFICATE NO.
BUREAU OF ARCHITECTURE, DPW	30 VAN NESS AVE., SUITE 4100 S.F. CA 94102 NORMAN M. KARASICK	C-2132

(26) CONSTRUCTION LENDER (ENTER NAME AND BRANCH DESIGNATION IF ANY, IF THERE IS NO KNOWN CONSTRUCTION LENDER, ENTER "UNKNOWN"). ADDRESS

IMPORTANT NOTICES

No change shall be made in the character of the occupancy or use without first obtaining a Building Permit authorizing such change. See San Francisco Building Code and San Francisco Housing Code.

No portion of building or structure or scaffolding used during construction, to be closer than 6'0" to any wire containing more than 750 volts. See Sec. 385, California Penal Code.

Pursuant to San Francisco Building Code, the building permit shall be posted on the job. The owner is responsible for approved plans and application being kept at building site.

Grade lines as shown on drawings accompanying this application are assumed to be correct. If actual grade lines are not the same as shown revised drawings showing correct grade lines, cuts and fills together with complete details of retaining walls and wall footings required must be submitted to this bureau for approval.

ANY STIPULATION REQUIRED HEREIN OR BY CODE MAY BE APPEALED.

BUILDING NOT TO BE OCCUPIED UNTIL CERTIFICATE OF FINAL COMPLETION IS POSTED ON THE BUILDING OR PERMIT OF OCCUPANCY GRANTED, WHEN REQUIRED.

APPROVAL OF THIS APPLICATION DOES NOT CONSTITUTE AN APPROVAL FOR THE ELECTRICAL WIRING OR PLUMBING INSTALLATIONS. A SEPARATE PERMIT FOR THE WIRING AND PLUMBING MUST BE OBTAINED. SEPARATE PERMITS ARE REQUIRED IF ANSWER IS "YES" TO ANY OF ABOVE QUESTIONS (10) (11) (12) (13) (23) or (24). THIS IS NOT A BUILDING PERMIT. NO WORK SHALL BE STARTED UNTIL A BUILDING PERMIT IS ISSUED.

In dwellings all insulating materials must have a clearance of not less than two inches from all electrical wires or equipment.

CHECK APPROPRIATE BOX

☒ OWNER ☐ ARCHITECT ☐ ENGINEER
☐ LESSEE ☐ AGENT WITH POWER OF ATTORNEY
☐ CONTRACTOR ☐ ATTORNEY IN FACT

APPLICANT'S CERTIFICATION

I HEREBY CERTIFY AND AGREE THAT IF A PERMIT IS ISSUED FOR THE CONSTRUCTION DESCRIBED IN THIS APPLICATION, ALL THE PROVISIONS OF THE PERMIT AND ALL LAWS AND ORDINANCES SUBJECTS WILL BE COMPLIED WITH

NOTICE TO APPLICANT

HOLD HARMLESS CLAUSE: The Permittee(s) by acceptance of the permit, agree(s) to indemnify and hold harmless the City and County of San Francisco from and against any and all claims, demands and actions for damages resulting from operations under this permit, regardless of negligence of the City and County of San Francisco, and to assume the defense of the City and County of San Francisco against all such claims, demands and actions.

In conformity with the provisions of Section 3800 of the Labor Code of the State of California, the applicant shall have on file, or file with the Central Permit Bureau, either Certificate (I) or (II) or (III) designated below as shall indicate item (IV) or (V) or (VI) below, whichever is applicable. If however, item (VI) is checked then item (V) must be checked as well. Mark the appropriate method of compliance below:

( ) I. Certificate of Consent to Self-Insure issued by the Director of Industrial Relations.

(X) II. Certificate of Workmen's Compensation Insurance issued by an admitted insurer.

( ) III. An exact copy or duplicate of (I) certified by the Director or (II) certified by the insurer.

( ) IV. The cost of the work to be performed is $100 or less.

( ) V. I certify that in the performance of the work for which this Permit is issued, I shall not employ any person in any manner so as to become subject to the workmen's compensation laws of California. I further acknowledge that I understand, in the event that I should become subject to the workmen's compensation provisions of the Labor Code of California and fail to comply forthwith with the provisions of Section 3800 of the Labor Code, that the Permit herein applied for shall be deemed revoked.

(X) VI. I certify as the owner (or the agent of the owner) that in the performance of the work for which this Permit is issued, I will employ a contractor who complies with the workmen's compensation laws of California and who has on file, or prior to the commencement of any work will file, with the Central Permit Bureau evidence that workmen's compensation insurance is carried.

12/4/92

OFFICIAL COPY

APPROVED
DEPARTMENT OF BUILDING INSPECTION
DEC 21 2000
FRANK Y. OHIU, DIRECTOR

APPROVED FOR ISSUANCE OF
SF FIRE FEE

FORM 3/8

APPLICATION NUMBER 0992106

OSHA APPROVAL NUMBER:

APPLICATION FOR BUILDING PERMIT
ADDITIONS, ALTERATIONS OR REPAIRS.

FORM 3 [X] OTHER AGENCIES REVIEW REQUIRED

FORM 8 [ ] OVER-THE-COUNTER ISSUANCE

2+2 COPIES NUMBER OF PLAN SETS

CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF BUILDING INSPECTION

APPLICATION IS HEREBY MADE TO THE DEPARTMENT OF BUILDING INSPECTION OF SAN FRANCISCO FOR PERMISSION TO BUILD IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS SUBMITTED HEREWITH AND ACCORDING TO THE DESCRIPTION AND FOR THE PURPOSE HEREINAFTER SET FORTH.

▼ DO NOT WRITE ABOVE THIS LINE ▼

FILED	FILING FEE RECEIPT NO.	(1) STREET ADDRESS OF JOB	BLOCK & LOT
11/1/99	City Job	530 Sansome Street	206 & 9 — 206 17

PERMIT NO.	ISSUED	(19) ESTIMATED COST OF JOB	(20) REVISED COST:
9929869	12/21/00	$979,123	BY: DATE:

INFORMATION TO BE FURNISHED BY ALL APPLICANTS

LEGAL DESCRIPTION OF EXISTING BUILDING

(4A) TYPE OF CONSTR.	(5A) NO. OF STORIES OF OCCUPANCY	(6A) NO. OF BASEMENTS AND CELLARS:	(7A) PRESENT USE:	(8A) OCCUP. CLASS	(9A) NO. OF DWELLING UNITS:
I	2 + mezz	1	Fire Station #13	B	0

DESCRIPTION OF BUILDING AFTER PROPOSED ALTERATION

(4) TYPE OF CONSTR.	(5) NO. OF STORIES OF OCCUPANCY	(6) NO. OF BASEMENTS AND CELLARS:	(7) PROPOSED USE (LEGAL USE)	(8) OCCUP. CLASS	(9) NO. OF DWELLING UNITS:
I	2 + mezz	1	Fire Station #13	B (23)	0

(10) IS AUTO RUNWAY TO BE CONSTRUCTED OR ALTERED?	(11) WILL STREET SPACE BE USED DURING CONSTRUCTION?	(12) ELECTRICAL WORK TO BE PERFORMED?	(13) PLUMBING WORK TO BE PERFORMED?
YES [ ] NO [X]	YES [ ] NO [X]	YES [X] NO [ ]	YES [X] NO [ ]

(14) GENERAL CONTRACTOR	ADDRESS	ZIP	PHONE	CALIF. LIC. NO.	EXPIRATION DATE
unknown					

(15) OWNER - LESSEE (CROSS OUT ONE)	ADDRESS	ZIP	BTRC #	PHONE (FOR CONTACT BY DEPT.)
San Francisco Fire Department,	698 Second Street,	94107-2015		558-3320

(16) WRITE IN DESCRIPTION OF ALL WORK TO BE PERFORMED UNDER THIS APPLICATION (REFERENCE TO PLANS IS NOT SUFFICIENT)

Provide disabled access at First Floor Entry, Communication room & toilet, upgrade electrical & mechanical systems. Perform hazardous material abatement, upgrade finishes throughout and perform miscellaneous repairs. NO structural work. RE-ROOFING ON ENTIRE BUILDING

ADDITIONAL INFORMATION

(17) DOES THIS ALTERATION CREATE ADDITIONAL HEIGHT OR STORY TO BUILDING?	(18) IF (17) IS YES, STATE NEW HEIGHT AT CENTER LINE OF FRONT	(19) DOES THIS ALTERATION CREATE DECK OR HORIZ. EXTENSION TO BUILDING?	(20) IF (19) IS YES, STATE NEW GROUND FLOOR AREA
YES [ ] NO [X]	FT.	YES [ ] NO [X]	SQ. FT.

(21) WILL SIDEWALK OVER, SUB-SIDEWALK SPACE BE REPAIRED OR ALTERED?	(22) WILL BUILDING EXTEND BEYOND PROPERTY LINE?	(23) ANY OTHER EXISTING BLDG. ON LOT? (IF YES, SHOW ON PLOT PLAN)	(24) DOES THIS ALTERATION CONSTITUTE A CHANGE OF OCCUPANCY?
YES [ ] NO [X]	YES [ ] NO [X]	YES [ ] NO [X]	YES [ ] NO [X]

(25) ARCHITECT OR ENGINEER (DESIGN ☐ CONSTRUCTION ☐)	ADDRESS	CALIF. CERTIFICATE NO
Tara Lamont	30 VanNess Avenue, Suite 4100	C-20716

(26) CONSTRUCTION LENDER (ENTER NAME AND BRANCH DESIGNATION IF ANY. IF THERE IS NO KNOWN CONSTRUCTION LENDER, ENTER "UNKNOWN") — ADDRESS

N/A

IMPORTANT NOTICES

No change shall be made in the character of the occupancy or use without first obtaining a Building Permit authorizing such change. See San Francisco Building Code and San Francisco Housing Code.

No portion of building or structure or scaffolding used during construction, to be closer than 6'0" to any wire containing more than 750 volts. See Sec. 385, California Penal Code.

Pursuant to San Francisco Building Code, the building permit shall be posted on the job. The owner is responsible for approved plans and application being kept at building site.

Grade lines as shown on drawings accompanying this application are assumed to be correct. If actual grade lines are not the same as shown revised drawings showing correct grade lines, cuts and fills together with complete details of retaining walls and wall footings required must be submitted to this department for approval.

ANY STIPULATION REQUIRED HEREIN OR BY CODE MAY BE APPEALED.

BUILDING NOT TO BE OCCUPIED UNTIL CERTIFICATE OF FINAL COMPLETION IS POSTED ON THE BUILDING OR PERMIT OF OCCUPANCY GRANTED, WHEN REQUIRED.

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THIS IS NOT A BUILDING PERMIT. NO WORK SHALL BE STARTED UNTIL A BUILDING PERMIT IS ISSUED.

In dwellings all insulating materials must have a clearance of not less than two inches from all electrical wires or equipment.

CHECK APPROPRIATE BOX

☐ OWNER ☒ ARCHITECT
☐ LESSEE ☐ AGENT
☐ CONTRACTOR ☐ ENGINEER

APPLICANT'S CERTIFICATION

I HEREBY CERTIFY AND AGREE THAT IF A PERMIT IS ISSUED FOR THE CONSTRUCTION DESCRIBED IN THIS APPLICATION, ALL THE PROVISIONS OF THE PERMIT AND ALL LAWS AND ORDINANCES THERETO WILL BE COMPLIED WITH.

9003-03 (REV. 1/96)

NOTICE TO APPLICANT

HOLD HARMLESS CLAUSE: The permittee(s) by acceptance of the permit, agree(s) to indemnify and hold harmless the City and County of San Francisco from and against any and all claims, demands and actions for damages resulting from operations under this permit, regardless of negligence of the City and County of San Francisco, and to assume the defense of the City and County of San Francisco against all such claims, demands or actions.

In conformity with the provisions of Section 3800 of the Labor Code of the State of California, the applicant shall have coverage under (I), or (II) designated below or shall indicate item (III), or (IV), or (V), whichever is applicable. If however item (V) is checked item (IV) must be checked as well. Mark the appropriate method of compliance below:

I hereby affirm under penalty of perjury one of the following declarations:

( ) I. I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

( ) II. I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier

Policy Number

( ) III. The cost of the work to be done is $100 or less.

(X) IV. I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California. I further acknowledge that I understand that in the event that I should become subject to the workers' compensation provisions of the Labor Code of California and fail to comply forthwith with the provisions of Section 3800 of the Labor Code, that the permit herein applied for shall be deemed revoked.

(X) V. I certify as the owner (or the agent for the owner) that in the performance of the work for which this permit is issued, I will employ a contractor who complies with the workers' compensation laws of California and who, prior to the commencement of any work, will file a completed copy of this form with the Central Permit Bureau.

Tara Lamont — 11.10.99
Signature of Applicant or Agent — Date

OFFICIAL COPY

SAN FRANCISCO DEPARTMENT OF BUILDING INSPECTION

BUILDING ... EMENT
DESCRIPTION
☐ VERTICAL
☐ HORIZONTAL

CELLULAR ANTENNAS

APPROVED Dept. of Building Insp.
AUG 0 8
SFFD INSP. FEES REQ.
FIRE DEPT.
DIRECTOR DEPT. OF BUILDING INSPECTION

APPROVED FOR ISSUANCE

BLDG. FORM 3/8

APPLICATION NUMBER 200306257949

OSHA APPROVAL REQ'D ☐ APPROVAL NUMBER:

APPLICATION FOR BUILDING PERMIT ADDITIONS, ALTERATIONS OR REPAIRS

FORM 3 ☒ OTHER AGENCIES REVIEW REQUIRED

FORM 8 ☐ OVER-THE COUNTER ISSUANCE

2 NUMBER OF PLAN SETS

CITY AND COUNTY OF SAN FRANCISCO DEPARTMENT OF BUILDING INSPECTION

APPLICATION IS HEREBY MADE TO THE DEPARTMENT OF BUILDING INSPECTION OF SAN FRANCISCO FOR PERMISSION TO BUILD IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS SUBMITTED HEREWITH AND ACCORDING TO THE DESCRIPTION AND FOR THE PURPOSE HEREINAFTER SET FORTH.

OFFICE COPY

▽ DO NOT WRITE ABOVE THIS LINE ▽

DATE FILED	FILING FEE RECEIPT NO.	(1) STREET ADDRESS OF JOB	BLOCK & LOT
6-25-03	338565	532 Sansome AKA 530 Sansome	0206-017
PERMIT NO. 1002224	ISSUED 8-8-2003	(2A) ESTIMATED COST OF JOB $70,000	(2B) REVISED COST $70,000 BY: DATE: 7-24-03

BA-003-01

INFORMATION TO BE FURNISHED BY ALL APPLICANTS

LEGAL DESCRIPTION OF EXISTING BUILDING

(4A) TYPE OF CONSTR.	(5A) NO. OF STORIES OF OCCUPANCY	(6A) NO. OF BASEMENTS AND CELLARS	(7A) PRESENT USE	(8A) OCCUP. CLASS	(9A) NO. OF DWELLING UNITS
I	2	1	Fire Station	B-2	NA

DESCRIPTION OF BUILDING AFTER PROPOSED ALTERATION

(4) TYPE OF CONSTR.	(5) NO. OF STORIES OF OCCUPANCY	(6) NO. OF BASEMENTS AND CELLARS	(7) PROPOSED USE (LEGAL USE)	(8) OCCUP. CLASS	(9) NO. OF DWELLING UNITS
I	2	1	Fire Station	B-2	NA

(10) IS AUTO RUNWAY TO BE CONSTRUCTED OR ALTERED? YES ☐ NO ☒
(11) WILL STREET SPACE BE USED DURING CONSTRUCTION? YES ☒ NO ☐
(12) ELECTRICAL WORK TO BE PERFORMED? YES ☒ NO ☐
(13) PLUMBING WORK TO BE PERFORMED? YES ☐ NO ☒

(14) GENERAL CONTRACTOR: Metropolitan Elect. ADDRESS: 2400 Third St. PHONE: 415 641 3000 CALIF.LIC.NO.: 401047 EXPIRATION DATE: 3/31/05

(15) ~~OWNER~~ LESSEE (CROSS OUT ONE): Cingular Wireless ADDRESS: 4420 Rosewood Dr. Bldg 2 3rd Fl Pleasanton CA ZIP: 94588 PHONE (FOR CONTACT BY DEPT.): Misako Hill, agent 415-533-2540

(16) WRITE IN DESCRIPTION OF ALL WORK TO BE PERFORMED UNDER THIS APPLICATION (REFERENCE TO PLANS IS NOT SUFFICIENT)

Cingular Wireless proposes to establish and operate an unmanned wireless tele-telecommunications facility consisting of installing 3 panel antennas in an 11ft high radome on the roof and 4 BTS equipment cabinets on the roof of the building.

ADDITIONAL INFORMATION

(17) DOES THIS ALTERATION CREATE ADDITIONAL HEIGHT OR STORY TO BUILDING? YES ☒ NO ☐
(18) IF (17 IS YES, STATE NEW HEIGHT AT CENTER LINE OF FRONT: 44ft 8in FT.
(19) DOES THIS ALTERATION CREATE DECK OR HORIZ. EXTENSION TO BUILDING? YES ☐ NO ☒
(20) IF (19) IS YES, STATE NEW GROUND FLOOR AREA SQ. FT.
(21) WILL SIDEWALK OVER SUB-SIDEWALK SPACE BE REPAIRED OR ALTERED? YES ☐ NO ☒
(22) WILL BUILDING EXTEND BEYOND PROPERTY LINE? YES ☐ NO ☒
(23) ANY OTHER EXISTING BLDG. ON LOT? (IF YES, SHOW ON PLOT PLAN) YES ☐ NO ☒
(24) DOES THIS ALTERATION CONSTITUTE A CHANGE OF OCCUPANCY? YES ☐ NO ☒

(25) ARCHITECT OR ENGINEER (DESIGN ☒ CONSTRUCTION ☐) ADDRESS CALIF.CERTIFICATE NO.
Diamond Services 3860 Industrial Way Benicia CA 94510

(26) CONSTRUCTION LENDER (ENTER NAME AND BRANCH DESIGNATION IF ANY, IF THERE IS NO KNOWN CONSTRUCTION LENDER, ENTER "UNKNOWN") ADDRESS

IMPORTANT NOTICES

No change shall be made in the character of the occupancy or use without first obtaining a Building Permit authorizing such change. See San Francisco Building Code and San Francisco Housing Code.

No portion of building or structure or scaffolding used during construction, to be closer than 6'0" to any wire containing more than 750 volts See Sec 385, California Penal Code.

Pursuant to San Francisco Building Code, the building permit shall be posted on the job. The owner is responsible for approved plans and application being kept at building site.

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THIS IS NOT A BUILDING PERMIT. NO WORK SHALL BE STARTED UNTIL A BUILDING PERMIT IS ISSUED.

In dwellings all insulating materials must have a clearance of not less than two inches from all electrical wires or equipment.

CHECK APPROPRIATE BOX
☐ OWNER ☐ ARCHITECT
☐ LESSEE ☒ AGENT
☐ CONTRACTOR ☐ ENGINEER

APPLICANT'S CERTIFICATION

I HEREBY CERTIFY AND AGREE THAT IF A PERMIT IS ISSUED FOR THE CONSTRUCTION DESCRIBED IN THIS APPLICATION, ALL THE PROVISIONS OF THE PERMIT AND ALL LAWS AND ORDINANCES THERETO WILL BE COMPLIED WITH.

9003-03 (REV. 1/02)

NOTICE TO APPLICANT

HOLD HARMLESS CLAUSE. The permittee(s) by acceptance of the permit, agree(s) to indemnify and hold harmless the City and County of San Francisco from and against any and all claim, demands and actions for damages resulting from operations under this permit, regardless of negligence of the City and County of San Francisco, and to assume the defense of the City an County of San Francisco against all such claims, demands or actions.

In conformity with the provisions of Section 3800 of the Labor Code of the State of California, the applicant shall have coverage under (I), or (II) designated below or shall indicate item (III), or (IV), or (V), whichever is applicable. If however item (V) is checked item (IV) must be checked as well. Mark the appropriate method of compliance below.

I hereby affirm under penalty of perjury one of the following declarations:

( ) I. I have and will maintain a certificate of consent to self-insure for worker's compensation, as provided by Section 3700 of the Labor Code, for the performance the work for which this permit is issued.

(✓) II. I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:
Carrier: Calco
Policy Number: WC 399-1423-00

( ) III. The cost of the work to be done is $100 or less.

(X) IV. I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California. I further acknowledge that I understand that in the event that I should become subject to the workers' compensation provisions of the Labor Code of California and fail to comply forthwith with the provisions of Section 3800 of the Labor Code, that the permit herein applied for shall be deemed revoked.

(X) V. I certify as the owner (or the agent for the owner) that in the performance of the work for which this permit is issued, I will employ a contractor who complies with the workers' compensation laws of California and who, prior to the commencement of any work, will file a completed copy of this form with the Central Permit Bureau.

Misako Hill 6/25/03
Signature of Applicant or Agent Date

OFFICIAL COPY

SAN FRANCISCO DEPARTMENT OF BUILDING INSPECTION

APPROVED Dept. of Building Insp.

MAY 03 2013

Tom C. Hui

TOM C. HUI, S.E.
ACTING DIRECTOR
DEPT. OF BUILDING INSPECTION

REROOFING

PLEASE CALL THE INSPECTION SERVICES AT 558-6570. FOR A FINAL INSPECTION APPOINTMENT. NEW OR REPLACEMENT SHEATING AND SKYLIGHTS REQUIRES A SEPARATE BUILDING PERMIT.

APPROVED FOR ISSUANCE MAY 03 2013

BLDG. FORM 3/8

APPLICATION NUMBER 201205256

OSHA APPROVAL REQ'D ☐

APPROVAL NUMBER:

OFFICE COPY

APPLICATION FOR BUILDING PERMIT ADDITIONS, ALTERATIONS OR REPAIRS

FORM 3 ☐ OTHER AGENCIES REVIEW REQUIRED

FORM 8 [X] OVER-THE COUNTER ISSUANCE

NUMBER OF PLAN SETS

CITY AND COUNTY OF SAN FRANCISCO DEPARTMENT OF BUILDING INSPECTION

APPLICATION IS HEREBY MADE TO THE DEPARTMENT OF BUILDING INSPECTION OF SAN FRANCISCO FOR PERMISSION TO BUILD IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS SUBMITTED HEREWITH AND ACCORDING TO THE DESCRIPTION AND FOR THE PURPOSE HEREINAFTER SET FORTH.

▼ DO NOT WRITE ABOVE THIS LINE ▼

DATE FILED	FILING FEE RECEIPT NO.	(1) STREET ADDRESS OF JOB	BLOCK & LOT
MAY 03 2013	CITY JOB	530 SANSOME ST.	206-17

PERMIT NO.	ISSUED	(2A) ESTIMATED COST OF JOB	(2B) REVISED COST: BY:	DATE:
1292705	5-3-13	$105,000	$ 105,000	7/20/2012

IEA# RAH130000220

INFORMATION TO BE FURNISHED BY ALL APPLICANTS

LEGAL DESCRIPTION OF EXISTING BUILDING

(4A) TYPE OF CONSTR.	(5A) NO. OF STORIES OF OCCUPANCY:	(6A) NO. OF BASEMENTS AND CELLARS:	(7A) PRESENT USE:	(8A) OCCUP. CLASS	(9A) NO. OF DWELLING UNITS:
TYPE V	2	1	SFFD FIRE STATION #43	B-2	0

DESCRIPTION OF BUILDING AFTER PROPOSED ALTERATION

(4) TYPE OF CONSTR.	(5) NO. OF STORIES OF OCCUPANCY:	(6) NO. OF BASEMENTS AND CELLARS:	(7) PROPOSED USE (LEGAL USE)	(8) OCCUP. CLASS	(9) NO. OF DWELLING UNITS:
TYPE V	2	1	SFFD FIRE STATION #13	B-2	0

(10) IS AUTO RUNWAY TO BE CONSTRUCTED OR ALTERED?	(11) WILL STREET SPACE BE USED DURING CONSTRUCTION?	(12) ELECTRICAL WORK TO BE PERFORMED?	(13) PLUMBING WORK TO BE PERFORMED?
YES ☐ NO [X]	YES ☐ NO [X]	YES [X] NO ☐	YES ☐ NO [X]

(14) GENERAL CONTRACTOR	ADDRESS	ZIP	PHONE	CALIF.LIC.NO.	EXPIRATION DATE
N/A					

(15) OWNER - LESSEE (CROSS OUT ONE)	ADDRESS	ZIP	BTRC#	PHONE (FOR CONTACT BY DEPT.)
SF FIRE DEPARTMENT	698 2ND ST	94107		415-558-3300

(16) WRITE IN DESCRIPTION OF ALL WORK TO BE PERFORMED UNDER THIS APPLICATION (REFERENCE TO PLANS IS NOT SUFFICIENT)

REMOVE EXISTING ROOFING & REPLACE WITH (N) SYSTEM IN-KIND.

ADDITIONAL INFORMATION

(17) DOES THIS ALTERATION CREATE ADDITIONAL HEIGHT OR STORY TO BUILDING?	(18) IF (17 IS YES, STATE NEW HEIGHT AT CENTER LINE OF FRONT	(19) DOES THIS ALTERATION CREATE DECK OR HORIZ. EXTENSION TO BUILDING?	(20) IF (19) IS YES, STATE NEW GROUND FLOOR AREA
YES ☐ NO [X]	FT.	YES ☐ NO [X]	SQ. FT.

(21) WILL SIDEWALK OVER SUB-SIDEWALK SPACE BE REPAIRED OR ALTERED?	(22) WILL BUILDING EXTEND BEYOND PROPERTY LINE?	(23) ANY OTHER EXISTING BLDG. ON LOT? (IF YES, SHOW ON PLOT PLAN)	(24) DOES THIS ALTERATION CONSTITUTE A CHANGE OF OCCUPANCY?
YES ☐ NO [X]	YES ☐ NO [X]	YES ☐ NO [X]	YES ☐ NO [X]

(25) ARCHITECT OR ENGINEER (DESIGN ☐ CONSTRUCTION ☐)	ADDRESS	CALIF.CERTIFICATE NO.
BENITO OLAVIN	30 VAN NESS AVE, STE 4100, S.F.	C-27037

(26) CONSTRUCTION LENDER (ENTER NAME AND BRANCH DESIGNATION IF ANY, IF THERE IS NO KNOWN CONSTRUCTION LENDER, ENTER "UNKNOWN") ADDRESS

IMPORTANT NOTICES

No change shall be made in the character of the occupancy or use without first obtaining a Building Permit authorizing such change. See San Francisco Building Code and San Francisco Housing Code.

No portion of building or structure or scaffolding used during construction, to be closer than 6'0" to any wire containing more than 750 volts See Sec 385, California Penal Code.

Pursuant to San Francisco Building Code, the building permit shall be posted on the job. The owner is responsible for approved plans and application being kept at building site.

Grade lines as shown on drawings accompanying this application are assumed to be correct. If actual grade lines are not the same as shown revised drawings showing correct grade lines, cuts and fills together with complete details of retaining walls and wall footings required must be submitted to this department for approval.

ANY STIPULATION REQUIRED HEREIN OR BY CODE MAY BE APPEALED.

BUILDING NOT TO BE OCCUPIED UNTIL CERTIFICATE OF FINAL COMPLETION IS POSTED ON THE BUILDING OR PERMIT OF OCCUPANCY GRANTED, WHEN REQUIRED.

APPROVAL OF THIS APPLICATION DOES NOT CONSTITUTE AN APPROVAL FOR THE ELECTRICAL WIRING OR PLUMBING INSTALLATIONS. A SEPARATE PERMIT FOR THE WIRING AND PLUMBING MUST BE OBTAINED. SEPARATE PERMITS ARE REQUIRED IF ANSWER IS "YES" TO ANY OF ABOVE QUESTIONS (10) (11) (12) (13) (22) OR (24).

THIS IS NOT A BUILDING PERMIT. NO WORK SHALL BE STARTED UNTIL A BUILDING PERMIT IS ISSUED.

In dwellings all insulating materials must have a clearance of not less than two inches from all electrical wires or equipment.

CHECK APPROPRIATE BOX

☐ OWNER [X] ARCHITECT
☐ LESSEE ☐ AGENT
☐ CONTRACTOR ☐ ENGINEER

APPLICANT'S CERTIFICATION

I HEREBY CERTIFY AND AGREE THAT IF A PERMIT IS ISSUED FOR THE CONSTRUCTION DESCRIBED IN THIS APPLICATION, ALL THE PROVISIONS OF THE PERMIT AND ALL LAWS AND ORDINANCES THERETO WILL BE COMPLIED WITH.

9003-03 (REV. 1/99)

NOTICE TO APPLICANT

HOLD HARMLESS CLAUSE. The permittee(s) by acceptance of the permit, agree(s) to indemnify and hold harmless the City and County of San Francisco from and against any and all claim, demands and actions for damages resulting from operations under this permit, regardless of negligence of the City and County of San Francisco, and to assume the defense of the City an County of San Francisco against all such claims, demands or actions.

In conformity with the provisions of Section 3800 of the Labor Code of the State of California, the applicant shall have coverage under (I), or (II) designated below or shall indicate item (III), or (IV), or (V), whichever is applicable. If however item (V) is checked item (IV) must be checked as well. Mark the appropriate method of compliance below.

I hereby affirm under penalty of perjury one of the following declarations:

( ) I. I have and will maintain a certificate of consent to self-insure for worker's compensation, as provided by Section 3700 of the Labor Code, for the performance the work for which this permit is issued.

( ) II. I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier _____

Policy Number _____

( ) III. The cost of the work to be done is $100 or less.

( ) IV. I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California. I further acknowledge that I understand that in the event that I should become subject to the workers' compensation provisions of the Labor Code of California and fail to comply forthwith with the provisions of Section 3800 of the Labor Code, that the permit herein applied for shall be deemed revoked.

( ) V. I certify as the owner (or the agent for the owner) that in the performance of the work for which this permit is issued, I will employ a contractor who complies with the workers' compensation laws of California and who, prior to the commencement of any work, will file a completed copy of this form with the Central Permit Bureau.

Signature of Applicant or Agent

MAY 03 2013

ORIGINAL

OFFICIAL COPY

SAN FRANCISCO
DEPARTMENT OF BUILDING INSPECTION

APPROVED
Dept. of Building Insp.
NOV 27 2013

Tom C. Hui
TOM C. HUI, S.E.
DIRECTOR
DEPT. OF BUILDING INSPECTION

APPROVED FOR ISSUANCE
NOV 27 2013

BLDG. FORM 3/8

APPLICATION NUMBER: 2013-10-10 8964

APPROVAL NUMBER:

APPLICATION FOR BUILDING PERMIT ADDITIONS, ALTERATIONS OR REPAIRS

FORM 3 ☐ OTHER AGENCIES REVIEW REQUIRED

FORM 8 ☒ OVER-THE COUNTER ISSUANCE

2 NUMBER OF PLAN SETS

CITY AND COUNTY OF SAN FRANCISCO DEPARTMENT OF BUILDING INSPECTION

APPLICATION IS HEREBY MADE TO THE DEPARTMENT OF BUILDING INSPECTION OF SAN FRANCISCO FOR PERMISSION TO BUILD IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS SUBMITTED HEREWITH AND ACCORDING TO THE DESCRIPTION AND FOR THE PURPOSE HEREINAFTER SET FORTH.

▼ DO NOT WRITE ABOVE THIS LINE ▼

NOV 27 2013	FILING FEE RECEIPT NO.	(1) STREET ADDRESS OF JOB	BLOCK & LOT
		530 SANSOME STREET	206-17

PERMIT NO.	ISSUED	(2A) ESTIMATED COST OF JOB	(2B) REVISED COST:
1311084	11-27-13	$132,000	BY: $132,000 DATE: 10/18/13

INFORMATION TO BE FURNISHED BY ALL APPLICANTS

LEGAL DESCRIPTION OF EXISTING BUILDING

(4A) TYPE OF CONSTR.	(5A) NO. OF STORIES OF OCCUPANCY:	(6A) NO. OF BASEMENTS AND CELLARS:	(7A) PRESENT USE:	(8A) OCCUP. CLASS	(9A) NO. OF DWELLING UNITS:
TYPE #1	2	1	SFFD FIRE STATION #13	B (23)	0

DESCRIPTION OF BUILDING AFTER PROPOSED ALTERATION

(4) TYPE OF CONSTR.	(5) NO. OF STORIES OF OCCUPANCY:	(6) NO. OF BASEMENTS AND CELLARS:	(7) PROPOSED USE (LEGAL USE)	(8) OCCUP. CLASS	(9) NO. OF DWELLING UNITS:
TYPE #1	2	1	SFFD FIRE STATION #13	B	0

(10) IS AUTO RUNWAY TO BE CONSTRUCTED OR ALTERED?	(11) WILL STREET SPACE BE USED DURING CONSTRUCTION?	(12) ELECTRICAL WORK TO BE PERFORMED?	(13) PLUMBING WORK TO BE PERFORMED?
YES ☐ NO ☒	YES ☐ NO ☒	YES ☐ NO ☒	YES ☒ NO ☐

(14) GENERAL CONTRACTOR	ADDRESS	ZIP	PHONE	CALIF.LIC.NO.	EXPIRATION DATE
Nicky Job					

(15) OWNER - LESSEE (CROSS OUT ONE)	ADDRESS	ZIP	BTRC#	PHONE (FOR CONTACT BY DEPT.)
SF FIRE DEPARTMENT	698 2ND STREET	94107		415-558-3300

(16) WRITE IN DESCRIPTION OF ALL WORK TO BE PERFORMED UNDER THIS APPLICATION (REFERENCE TO PLANS IS NOT SUFFICIENT)

SHOWER RENOVATION INCLUSIVE OF ENCAPSULATION OF SHOWER STALLS WITH 1/4" SOLID SURFACE SHOWER PAN, WALLS, DIVIDERS, SILLS, & EDGE TRIMMING. REPLACEMENT OF WATER CONTROL VALVES, SHOWER HEADS, FLOOR DRAINS, P-TRAPS, & NEW GLASS DOORS.

ADDITIONAL INFORMATION

(17) DOES THIS ALTERATION CREATE ADDITIONAL HEIGHT OR STORY TO BUILDING?	(18) IF (17) IS YES, STATE NEW HEIGHT AT CENTER LINE OF FRONT	(19) DOES THIS ALTERATION CREATE DECK OR HORIZ. EXTENSION TO BUILDING?	(20) IF (19) IS YES, STATE NEW GROUND FLOOR AREA
YES ☐ NO ☒	FT.	YES ☐ NO ☒	SQ. FT.

(21) WILL SIDEWALK OVER SUB-SIDEWALK SPACE BE REMADE OR ALTERED?	(22) WILL BUILDING EXTEND BEYOND PROPERTY LINE?	(23) ANY OTHER EXISTING BLDG. ON LOT? (IF YES, SHOW ON PLOT PLAN)	(24) DOES THIS ALTERATION CONSTITUTE A CHANGE OF OCCUPANCY?
YES ☐ NO ☒	YES ☐ NO ☒	YES ☐ NO ☒	YES ☐ NO ☒

(25) ARCHITECT OR ENGINEER (DESIGN ☐ CONSTRUCTION ☐)	ADDRESS	CALIF.CERTIFICATE NO.
BENITO OLGUIN	30 VAN NESS AVE, SUITE 4100 S.F.	C-27037

(26) CONSTRUCTION LENDER (ENTER NAME AND BRANCH DESIGNATION IF ANY. IF THERE IS NO KNOWN CONSTRUCTION LENDER, ENTER "UNKNOWN")

IMPORTANT NOTICES

No change shall be made in the character of the occupancy or use without first obtaining a Building Permit authorizing such change. See San Francisco Building Code and San Francisco Housing Code.

No portion of building or structure or scaffolding used during construction, to be closer than 6'0" to any wire containing more than 750 volts See Sec 385, California Penal Code.

Pursuant to San Francisco Building Code, the building permit shall be posted on the job. The owner is responsible for approved plans and application being kept at building site.

Grade lines as shown on drawings accompanying this application are assumed to be correct. If actual grade lines are not the same as shown revised drawings showing correct grade lines, cuts and fills together with complete details of retaining walls and wall footings required must be submitted to this department for approval.

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THIS IS NOT A BUILDING PERMIT. NO WORK SHALL BE STARTED UNTIL A BUILDING PERMIT IS ISSUED.

In dwellings all insulating materials must have a clearance of not less than two inches from all electrical wires or equipment.

CHECK APPROPRIATE BOX

☐ OWNER	☒ ARCHITECT
☐ LESSEE	☐ AGENT
☐ CONTRACTOR	☐ ENGINEER

APPLICANT'S CERTIFICATION

I HEREBY CERTIFY AND AGREE THAT IF A PERMIT IS ISSUED FOR THE CONSTRUCTION DESCRIBED IN THIS APPLICATION, ALL THE PROVISIONS OF THE PERMIT AND ALL LAWS AND ORDINANCES THERETO WILL BE COMPLIED WITH.

9003-05 (REV. 1/08)

NOTICE TO APPLICANT

HOLD HARMLESS CLAUSE. The permittee(s) by acceptance of the permit, agree(s) to indemnify and hold harmless the City and County of San Francisco from and against any and all claims, demands and actions for damages resulting from operations under this permit, regardless of negligence of the City and County of San Francisco, and to assume the defense of the City an County of San Francisco against all such claims, demands or actions.

In conformity with the provisions of Section 3800 of the Labor Code of the State of California, the applicant shall have coverage under (I), or (II) designated below or shall indicate item (III), or (IV), or (V), whichever is applicable. If however item (V) is checked item (IV) must be checked as well. Mark the appropriate method of compliance below.

I hereby affirm under penalty of perjury one of the following declarations:

( ) I. I have and will maintain a certificate of consent to self-insure for worker's compensation, as provided by Section 3700 of the Labor Code, for the performance the work for which this permit is issued.

( ) II. I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier _____

Policy Number _____

( ) III. The cost of the work to be done is $100 or less.

( ) IV. I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California. I further acknowledge that I understand that in the event that I should become subject to the workers' compensation provisions of the Labor Code of California and fail to comply forthwith with the provisions of Section 3800 of the Labor Code, that the permit herein applied for shall be deemed revoked.

( ) V. I certify as the owner (or the agent for the owner) that in the performance of the work for which this permit is issued, I will employ a contractor who complies with the workers' compensation laws of California and who, prior to the commencement of any work, will file a completed copy of this form with the Central Permit Bureau.

Signature of Applicant or Agent: _____ Date: 10/18/13

OFFICE COPY BENITO OLGUIN NOV 27 2013

OFFICIAL COPY

SAN FRANCISCO DEPARTMENT OF BUILDING INSPECTION

APPROVED Dept. of Building Insp.
Robert Gallagher
MAR 07 2014

MAR 07 2014
PLEASE NOTIFY FIRE INSPECTOR AT THE START OF WORK 558-3300

Tom C. Hui
TOM C. HUI, S.E.
DIRECTOR
DEPT. OF BUILDING INSPECTION

FIRE ONLY

APPROVED FOR ISSUANCE 3-7-2014

BLDG. FORM 3/8

APPLICATION NUMBER 2014.0305.0006

OSHA APPROVAL NUMBER: APPROVAL RECD ☐

NV

APPLICATION FOR BUILDING PERMIT ADDITIONS, ALTERATIONS OR REPAIRS

FORM 3 ☐ OTHER AGENCIES REVIEW REQUIRED

FORM 8 ☑ OVER-THE-COUNTER ISSUANCE

2 NUMBER OF PLAN SETS

W/ 3-7-2014

CITY AND COUNTY OF SAN FRANCISCO DEPARTMENT OF BUILDING INSPECTION

APPLICATION IS HEREBY MADE TO THE DEPARTMENT OF BUILDING INSPECTION OF SAN FRANCISCO FOR PERMISSION TO BUILD IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS SUBMITTED HEREWITH AND ACCORDING TO THE DESCRIPTION AND FOR THE PURPOSE HEREINAFTER SET FORTH.

▼ DO NOT WRITE ABOVE THIS LINE ▼

DATE FILED	PLANS FEE RECEIPT NO.	(1) STREET ADDRESS OF JOB	BLOCK & LOT
3-7-2014		530 SANSOME	0206 / 017
PERMIT NO.	ISSUED	(2A) ESTIMATED COST OF JOB	(2B) REVISED COST:
318722	3-7-2014	$1900	$1,500 RH 3-7-14 DATE:

INFORMATION TO BE FURNISHED BY ALL APPLICANTS

LEGAL DESCRIPTION OF EXISTING BUILDING

(4A) TYPE OF CONSTR.	(4B) NO. OF STORIES OF OCCUPANCY:	(4C) NO. OF BASEMENTS AND CELLARS:	(7A) PRESENT USE:	(8A) OCCUP. CLASS	(9A) NO. OF DWELLING UNITS:
I	1	0	FIRE STATION	B (23)	0

DESCRIPTION OF BUILDING AFTER PROPOSED ALTERATION

(6) TYPE OF CONSTR.	(5) NO. OF STORIES OF OCCUPANCY:	(5) NO. OF BASEMENTS AND CELLARS:	(7) PROPOSED USE (LEGAL USE)	(8) OCCUP. CLASS:	(9B) NO. OF DWELLING UNITS:
I	1	0	FIRE STATION	B	0

(10) IS AUTO RAMMAY TO BE CONSTRUCTED OR ALTERED?	(11) WILL STREET SPACE BE USED DURING CONSTRUCTION?	(12) ELECTRICAL WORK TO BE PERFORMED?	(13) PLUMBING WORK TO BE PERFORMED?
YES ☐ NO ☒	YES ☐ NO ☒	YES ☐ NO ☒	YES ☐ NO ☒

(14) GENERAL CONTRACTOR	ADDRESS	ZIP	PHONE	CALIF. LIC. NO.	EXPIRATION DATE
RB PETROLEUM			747		

(15) OWNER - LESSEE (CROSS OUT ONE)	ADDRESS	ZIP	PHONE (FOR CONTACT BY DEPT.)
CITY AND COUNTY OF SAN FRANCISCO	530 SANSOME ST	94111	

(16) WRITE IN DESCRIPTION OF ALL WORK TO BE PERFORMED UNDER THIS APPLICATION (REFERENCE TO PLANS IS NOT SUFFICIENT)

INSTALL NEW SECONDARY CONTAINMENT PIPE OVER EXISTING FUEL SUPPLY PIPING - NO CONCRETE REMOVAL REQUIRED ALL WORK DONE IN EXISTING PIPE ROUTE(S)

ADDITIONAL INFORMATION

(17) DOES THIS ALTERATION CREATE ADDITIONAL HEIGHT OR STORY TO BUILDING?	(18) IF (17) IS YES, STATE NEW HEIGHT AT CENTER LINE OF FRONT: FT.	(19) DOES THIS ALTERATION CREATE DECK OR HORIZ. EXTENSION TO BUILDING?	(20) IF (19) IS YES, STATE NEW GROUND FLOOR AREA: SQ. FT.
YES ☐ NO ☒		YES ☐ NO ☒	

(21) WILL SIDEWALK OVER SUB-SIDEWALK SPACE BE REMOVED OR ALTERED?	(22) WILL BUILDING EXTEND BEYOND PROPERTY LINE?	(23) ANY OTHER EXISTING BLDG. ON LOT? (IF YES, SHOW ON PLOT PLAN)	(24) DOES THIS ALTERATION CONSTITUTE A CHANGE OF OCCUPANCY?
YES ☐ NO ☒	YES ☐ NO ☒	YES ☐ NO ☒	YES ☐ NO ☒

(25) ARCHITECT OR ENGINEER (DESIGN OF CONSTRUCTION ☐)	ADDRESS	CALIF. CERTIFICATE NO.
PETER BROWN	619 24TH ST OAKLAND, CA 94612	

(26) CONSTRUCTION LENDER (ENTER NAME AND BRANCH DESIGNATION IF ANY. IF THERE IS NO KNOWN CONSTRUCTION LENDER, ENTER "UNKNOWN") ADDRESS

IMPORTANT NOTICES

No change shall be made in the character of the occupancy or use without first obtaining a Building Permit authorizing such change. See San Francisco Building Code and San Francisco Housing Code.

No portion of building or structure or scaffolding used during construction, to be closer than 6'0" to any wire conducting more than 750 volts See Sec 385, California Penal Code.

Pursuant to San Francisco Building Code, the building permit shall be posted on the job. The owner is responsible for approved plans and application being kept at building site.

Grade lines as shown on drawings accompanying this application are assumed to be correct. If actual grade lines are not the same as shown, revised drawings showing correct grade lines, cuts and fills together with complete details of retaining walls and wall footings required must be submitted to this department for approval.

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THIS IS NOT A BUILDING PERMIT. NO WORK SHALL BE STARTED UNTIL A BUILDING PERMIT IS ISSUED.

In dwellings all insulating materials must have a classmark of not less than two inches from all electrical wires or equipment.

CHECK APPROPRIATE BOX
☐ OWNER ☐ ARCHITECT
☐ LESSEE ☒ AGENT
☐ CONTRACTOR ☐ ENGINEER

APPLICANT'S CERTIFICATION

I HEREBY CERTIFY AND AGREE THAT IF A PERMIT IS ISSUED FOR THE CONSTRUCTION DESCRIBED IN THIS APPLICATION, ALL THE PROVISIONS OF THE PERMIT AND ALL LAWS AND ORDINANCES THERETO WILL BE COMPLIED WITH.

3/7/2014
Signature of Applicant or Agent — Date

3003-03 (REV. 1/03)

NOTICE TO APPLICANT

HOLD HARMLESS CLAUSE. The permittee(s) by acceptance of the permit, agree(s) to indemnify and hold harmless the City and County of San Francisco from and against any and all claims, demands and actions for damages resulting from operations under this permit, regardless of negligence of the City and County of San Francisco, and to assume the defense of the City and County of San Francisco against all such claims, demands or actions.

In conformity with the provisions of Section 3800 of the Labor Code of the State of California, the applicant shall have coverage under (I), or (II) designated below or shall indicate item (III), or (IV), or (V), whichever is applicable. If however item (V) is checked item (IV) must be checked as well. Mark the appropriate method of compliance below.

I hereby affirm under penalty of perjury one of the following declarations:

( ) I. I have and will maintain a certificate of consent to self-insure for worker's compensation, as provided by Section 3700 of the Labor Code, for the performance the work for which this permit is issued.

X II. I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier: State Fund

Policy Number: 9037112

( ) III. The cost of the work to be done is $100 or less.

( ) IV. I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California. I further acknowledge that I understand that in the event that I should become subject to the workers' compensation provisions of the Labor Code of California and fail to comply forthwith with the provisions of Section 3800 of the Labor Code, that the permit hereto applied for shall be deemed revoked.

(X) V. I certify that the owner (or the agent for the owner) that in the performance of the work for which this permit is issued, I will employ a contractor who complies with the workers' compensation laws of California and who, prior to the commencement of any work, will file a completed copy of this form with the Central Permit Bureau.

3/7/2014
Signature of Applicant or Agent — Date

OFFICE COPY

MAR 07 2014

OFFICIAL COPY

SAN FRANCISCO
DEPARTMENT OF BUILDING INSPECTION

MAHER ORDINANCE - EXTENDED
Disturbance of at least 50 cu. yd. of soil:
☐ Yes ☒ No
If yes, refer to DPH for compliance with Ordinance No. 155-13.
☐ Exempted - Letter from DPH attached

APPROVED
Dept. of Building Insp.
JUN 22 2015
Tom C. Hui
TOM C. HUI, S.E.
DIRECTOR
DEPT. OF BUILDING INSPECTION

APPROVED FOR ISSUANCE
JUN 22 2015

BLDG. FORM 3/8

APPLICATION NUMBER 201506027758

OSHA APPROVAL REQ'D ☐
OSHA APPROVAL NUMBER

N/V

APPLICATION FOR BUILDING PERMIT ADDITIONS, ALTERATIONS OR REPAIRS

FORM 3 ☐ OTHER AGENCIES REVIEW REQUIRED
FORM 8 ☒ OVER-THE-COUNTER ISSUANCE
2 NUMBER OF PLAN SETS

CITY AND COUNTY OF SAN FRANCISCO DEPARTMENT OF BUILDING INSPECTION

APPLICATION IS HEREBY MADE TO THE DEPARTMENT OF BUILDING INSPECTION OF SAN FRANCISCO FOR PERMISSION TO BUILD IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS SUBMITTED HEREWITH AND ACCORDING TO THE DESCRIPTION AND FOR THE PURPOSE HEREINAFTER SET FORTH.

▼ DO NOT WRITE ABOVE THIS LINE ▼

DATE FILED	FILING FEE RECEIPT NO.	(1) STREET ADDRESS OF JOB	BLOCK & LOT
6.22.15		530 SANSOME ST	0206/017
PERMIT NO.	**ISSUED**	**(2A) ESTIMATED COST OF JOB**	**(2B) REVISED COST:**
1361044	6-22-15	$30,000	$30,000 BY: DATE: 6/2/15

INFORMATION TO BE FURNISHED BY ALL APPLICANTS

LEGAL DESCRIPTION OF EXISTING BUILDING

(4A) TYPE OF CONSTR.	(5A) NO. OF STORIES OF OCCUPANCY:	(6A) NO. OF BASEMENTS AND CELLARS:	(7A) PRESENT USE:	(8A) OCCUP. CLASS	(9A) NO. OF DWELLING UNITS:
1	2	1	FIRE STATION # 13	B	0

DESCRIPTION OF BUILDING AFTER PROPOSED ALTERATION (23)

(4) TYPE OF CONSTR.	(5) NO. OF STORIES OF OCCUPANCY:	(6) NO. OF BASEMENTS AND CELLARS:	(7) PROPOSED USE (LEGAL USE)	(8) OCCUP. CLASS	(9) NO. OF DWELLING UNITS:
1	2	1	FIRE STATION #13	B	0

(10) IS AUTO RUNWAY TO BE CONSTRUCTED OR ALTERED?	(11) WILL STREET SPACE BE USED DURING CONSTRUCTION?	(12) ELECTRICAL WORK TO BE PERFORMED?	(13) PLUMBING WORK TO BE PERFORMED?
YES ☐ NO ☒	YES ☐ NO ☒	YES ☐ NO ☒	YES ☒ NO ☐

(14) GENERAL CONTRACTOR	ADDRESS	ZIP	PHONE	CALIF. LIC. NO.	EXPIRATION DATE
PUBLIC BID					

(15) OWNER - LESSEE (CROSS OUT ONE)	ADDRESS	ZIP	BTRC#	PHONE (FOR CONTACT BY DEPT.)
SFFD	698 2nd ST	94107		415-558-3300

(16) WRITE IN DESCRIPTION OF ALL WORK TO BE PERFORMED UNDER THIS APPLICATION (REFERENCE TO PLANS IS NOT SUFFICIENT)

SHOWER REPLACEMENT AT 1 STALL INCLUSIVE OF: TILE REMOVAL & REPLACEMENT, DRAIN & VALVE REPLACEMENT, WIDENING OF (E) STALL OPENING, & NEW GLASS SHOWER DOOR. INSTALLATION OF NEW WATERPROOFING THROUGHOUT.

EXEMPT FROM DISABLED ACCESS UPGRADES PER CBC 11B-202.4, EXCEPTION 7

ADDITIONAL INFORMATION

(17) DOES THIS ALTERATION CREATE ADDITIONAL HEIGHT OR STORY TO BUILDING?	(18) IF (17) IS YES, STATE NEW HEIGHT AT CENTER LINE OF FRONT	(19) DOES THIS ALTERATION CREATE DECK OR HORIZ. EXTENSION TO BUILDING?	(20) IF (19) IS YES, STATE NEW GROUND FLOOR AREA SQ. FT.
YES ☐ NO ☒		YES ☐ NO ☒	

(21) WILL SIDEWALK OVER SUB-SIDEWALK SPACE BE REPAIRED OR ALTERED?	(22) WILL BUILDING EXTEND BEYOND PROPERTY LINE?	(23) ANY OTHER EXISTING BLDG. ON LOT? (IF YES, SHOW ON PLOT PLAN)	(24) DOES THIS ALTERATION CONSTITUTE A CHANGE OF OCCUPANCY?
YES ☐ NO ☒	YES ☐ NO ☒	YES ☐ NO ☒	YES ☐ NO ☒

(25) ARCHITECT OR ENGINEER (DESIGN ☐ CONSTRUCTION ☐)	ADDRESS	CALIF. CERTIFICATE NO.
Vito Vanoni	30 Van Ness # 4100	C-27134

(26) CONSTRUCTION LENDER (ENTER NAME AND BRANCH DESIGNATION IF ANY. IF THERE IS NO KNOWN CONSTRUCTION LENDER, ENTER "UNKNOWN")	ADDRESS
UNKNOWN	

IMPORTANT NOTICES

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In dwellings, all insulating materials must have a clearance of not less than two inches from all electrical wires or equipment.

CHECK APPROPRIATE BOX

☐ OWNER ☒ ARCHITECT
☐ LESSEE ☐ AGENT
☐ CONTRACTOR ☐ ENGINEER

APPLICANT'S CERTIFICATION

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NOTICE TO APPLICANT

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In conformity with the provisions of Section 3800 of the Labor Code of the State of California, the applicant shall have worker's compensation coverage under (I) or (II) designated below, or shall indicate Item (III), (IV), or (V), whichever is applicable. If however Item (V) is checked, Item (IV) must be checked as well. Mark the appropriate method of compliance below.

I hereby affirm under penalty of perjury one of the following declarations:

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( ) II. I have and will maintain worker's compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My worker's compensation insurance carrier and policy number are:

Carrier _____
Policy Number _____

( ) III. The cost of the work to be done is $100 or less.

( ) IV. I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the worker's compensation laws of California. I further acknowledge that I understand that in the event that I should become subject to the worker's compensation provisions of the Labor Code of California and fail to comply forthwith with the provisions of Section 3800 of the Labor Code, that the permit herein applied for shall be deemed revoked.

( ) V. I certify as the owner (or the agent for the owner) that in the performance of the work for which this permit is issued, I will employ a contractor who complies with the worker's compensation laws of California and who, prior to the commencement of any work, will file a completed copy of this form with the Central Permit Bureau.

Vito Vanoni — May 21, 2015
Signature of Applicant or Agent — Date

REV 09/13

OFFICE COPY

JUN 22 2015

OFFICIAL COPY

SAN FRANCISCO DEPARTMENT OF BUILDING INSPECTION

MAHER ORDINANCE - EXTENDED
Disturbance of at least 50 cu. yd. of soil:
☐ Yes ☐ No
If yes, route to DPH for compliance with Ordinance No. 155-13.
☐ Exempted - Approval from DPH attached

SFFD INSP FEES REQ

FIRE

APPROVED
Dept. of Building Inspection
FEB 12 2016

APPROVED FOR ISSUANCE 2/4/2016

BLDG FORM 3/8

APPLICATION NUMBER 201512018601

OSHA APPROVAL REQ'D ☐

OSHA APPROVAL NUMBER

APPLICATION FOR BUILDING PERMIT ADDITIONS, ALTERATIONS OR REPAIRS

FORM 3 ☒ OTHER AGENCIES REVIEW REQUIRED
~~FORM 8, ☐ OVER-THE-COUNTER ISSUANCE~~
2 NUMBER OF PLAN SETS

W 12-27-2016

CITY AND COUNTY OF SAN FRANCISCO DEPARTMENT OF BUILDING INSPECTION

APPLICATION IS HEREBY MADE TO THE DEPARTMENT OF BUILDING INSPECTION OF SAN FRANCISCO FOR PERMISSION TO BUILD IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS SUBMITTED HEREWITH AND ACCORDING TO THE DESCRIPTION AND FOR THE PURPOSE HEREINAFTER SET FORTH.

▼ DO NOT WRITE ABOVE THIS LINE ▼

DATE FILED	FILING FEE RECEIPT NO.	(1) STREET ADDRESS OF JOB	BLOCK & LOT
12/14/15	N1217812	530 SANSOME ST	0206-007

PERMIT NO.	ISSUED	(2A) ESTIMATED COST OF JOB	(2B) REVISED COST
1983144	FEB 12 2016	$ 105,000	$ 105,000 DATE 2/1/16

INFORMATION TO BE FURNISHED BY ALL APPLICANTS

LEGAL DESCRIPTION OF EXISTING BUILDING

(4A) TYPE OF CONSTR.	(5A) NO. OF STORIES OF OCCUPANCY:	(6A) NO. OF BASEMENTS AND CELLARS:	(7A) PRESENT USE:	(8A) OCCUP. CLASS	(9A) NO. OF DWELLING UNITS:
1	3	1	FIRE STATION # 13	B	N/A

DESCRIPTION OF BUILDING AFTER PROPOSED ALTERATION

(4) TYPE OF CONSTR.	(5) NO. OF STORIES OF OCCUPANCY:	(6) NO. OF BASEMENTS AND CELLARS:	(7) PROPOSED USE (LEGAL USE)	(8) OCCUP. CLASS	(9) NO. OF DWELLING UNITS:
1	3	1	~~NO CHANGE~~ FS # 13	~~B~~ B	N/A

(10) IS AUTO RUNWAY TO BE CONSTRUCTED OR ALTERED?	(11) WILL STREET SPACE BE USED DURING CONSTRUCTION?	(12) ELECTRICAL WORK TO BE PERFORMED?	(13) PLUMBING WORK TO BE PERFORMED?
YES ☐ NO ☒	YES ☐ NO ☒	YES ☒ NO ☐	YES ☐ NO ☒

(14) GENERAL CONTRACTOR	ADDRESS	ZIP	PHONE	CALIF. LIC. NO.	EXPIRATION DATE
BECKER ELECTRIC	500 ~~SIXTH~~ SANSOME ST		415 404 8045	909450	6/30/16

(15) OWNER - ~~LESSEE~~ (CROSS OUT ONE)	ADDRESS	ZIP	BTRC#	PHONE (FOR CONTACT BY DEPT.)
CITY AND COUNTY OF S.F.	25 VAN NESS AVE SF	94102		415 264-2511

(16) WRITE IN DESCRIPTION OF ALL WORK TO BE PERFORMED UNDER THIS APPLICATION (REFERENCE TO PLANS IS NOT SUFFICIENT)

INSTALLATION OF CO2 MONITORING SYSTEM
SEE ATTACH

MAHER ORDINANCE - EXTENDED
Disturbance of at least 50 cu. yd. of soil:
☐ Yes ☒ No
If yes, route to DPH for compliance with Ordinance No. 155-13.
☐ Exempted - Approval from DPH attached

ADDITIONAL INFORMATION

(17) DOES THIS ALTERATION CREATE ADDITIONAL HEIGHT OR STORY TO BUILDING?	(18) IF (17) IS YES, STATE NEW HEIGHT AT CENTER LINE OF FRONT	(19) DOES THIS ALTERATION CREATE DECK OR HORIZ. EXTENSION TO BUILDING?	(20) IF (19) IS YES, STATE NEW GROUND FLOOR AREA
YES ☐ NO ☒		YES ☐ NO ☒	SQ. FT.

(21) WILL SIDEWALK OVER SUB-SIDEWALK SPACE BE REPAIRED OR ALTERED?	(22) WILL BUILDING EXTEND BEYOND PROPERTY LINE?	(23) ANY OTHER EXISTING BLDG. ON LOT? (IF YES, SHOW ON PLOT PLAN)	(24) DOES THIS ALTERATION CONSTITUTE A CHANGE OF OCCUPANCY?
YES ☐ NO ☒	YES ☐ NO ☒	YES ☐ NO ☒	YES ☐ NO ☒

(25) ARCHITECT OR ENGINEER (DESIGN ☒ CONSTRUCTION ☐)	ADDRESS	CALIF. CERTIFICATE NO.
DPW	30 VAN NESS, SF, CA 94102	

(26) CONSTRUCTION LENDER (ENTER NAME AND BRANCH DESIGNATION IF ANY. IF THERE IS NO KNOWN CONSTRUCTION LENDER, ENTER "UNKNOWN")	ADDRESS
N/A	

IMPORTANT NOTICES

No change shall be made in the character of the occupancy or use without first obtaining a Building Permit authorizing such change. See San Francisco Building Code and San Francisco Housing Code.

No portion of building or structure or scaffolding used during construction is to be closer than 6'0" to any wire containing more than 750 volts. See Sec 385, California Penal Code.

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CHECK APPROPRIATE BOX

☐ OWNER ☐ ARCHITECT
☐ LESSEE ☐ AGENT
☒ CONTRACTOR ☐ ENGINEER

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REV 09/13

NOTICE TO APPLICANT

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In conformity with the provisions of Section 3800 of the Labor Code of the State of California, the applicant shall have worker's compensation coverage under (I) or (II) designated below, or shall indicate Item (III), (IV), or (V), whichever is applicable. If however Item (V) is checked, Item (IV) must be checked as well. Mark the appropriate method of compliance below.

I hereby affirm under penalty of perjury one of the following declarations:

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(X) II. I have and will maintain worker's compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My worker's compensation insurance carrier and policy number are:
Carrier: HARTFORD
Policy Number: 72 WEC AD0260

( ) III. The cost of the work to be done is $100 or less.

( ) IV. I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the worker's compensation laws of California. I further acknowledge that I understand that in the event that I should become subject to the worker's compensation provisions of the Labor Code of California and fail to comply forthwith with the provisions of Section 3800 of the Labor Code, that the permit herein applied for shall be deemed revoked.

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Signature of Applicant or Agent: [signature] Date: 12/1/15

OFFICE COPY

OFFICIAL COPY

SAN FRANCISCO DEPARTMENT OF BUILDING INSPECTION

APPROVED Dept. of Building Insp.

APR 09 2018

Tom C. Hui

TOM C. HUI, S.E.
DIRECTOR
DEPT. OF BUILDING INSPECTION

MAHER ORDINANCE - EXTENDED
Disturbance of at least 50 cu. yd. of soil:
☐ Yes ☑ No
If yes, route to DPH for compliance with Ordinance No. 155-13.
☐ Exempted - Approval from DPH attached

APPROVED FOR ISSUANCE

BLDG. FORM 3/8

APPLICATION NUMBER 201803284880

OSHA APPROVAL REQ'D ☐

N.V.

APPLICATION FOR BUILDING PERMIT ADDITIONS, ALTERATIONS OR REPAIRS

FORM 3 ☐ OTHER AGENCIES REVIEW REQUIRED

FORM 8 ☐ OVER-THE-COUNTER ISSUANCE

2 NUMBER OF PLAN SETS

CITY AND COUNTY OF SAN FRANCISCO DEPARTMENT OF BUILDING INSPECTION

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DCP DBI FEE

▼ DO NOT WRITE ABOVE THIS LINE ▼

DATE FILED	FILING FEE RECEIPT NO.	(1) STREET ADDRESS OF JOB	BLOCK & LOT
03/28/18		530 Sansome Street, SF, CA 94111	206/017

PERMIT NO.	ISSUED	(2A) ESTIMATED COST OF JOB	(2B) REVISED COST:
1458770	4/9/18	~~$40,000~~	BY: CM 40,000.— DATE: 3/29/18

INFORMATION TO BE FURNISHED BY ALL APPLICANTS

LEGAL DESCRIPTION OF EXISTING BUILDING

(4A) TYPE OF CONSTR.	(5A) NO. OF STORIES OF OCCUPANCY:	(6A) NO. OF BASEMENTS AND CELLARS:	(7A) PRESENT USE:	(8A) OCCUP. CLASS	(9A) NO. OF DWELLING UNITS:
~~1~~ 1	2	1	Fire station	B	0

DESCRIPTION OF BUILDING AFTER PROPOSED ALTERATION

(4) TYPE OF CONSTR.	(5) NO. OF STORIES OF OCCUPANCY:	(6) NO. OF BASEMENTS AND CELLARS:	(7) PROPOSED USE (LEGAL USE)	(8) OCCUP. CLASS	(9) NO. OF DWELLING UNITS:
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(10) IS AUTO RUNWAY TO BE CONSTRUCTED OR ALTERED?	(11) WILL STREET SPACE BE USED DURING CONSTRUCTION?	(12) ELECTRICAL WORK TO BE PERFORMED?	(13) PLUMBING WORK TO BE PERFORMED?
YES ☐ NO ☒	YES ☐ NO ☒	YES ☒ NO ☐	YES ☐ NO ☒

(14) GENERAL CONTRACTOR	ADDRESS	ZIP	PHONE	CALIF. LIC. NO.	EXPIRATION DATE
Owner — Builder					

(15) OWNER - LESSEE (CROSS OUT ONE)	ADDRESS	ZIP	BTRC#	PHONE (FOR CONTACT BY DEPT.)
San Francisco Fire Department	30 Van Ness Ave. Suite 4100			(415)557-4774

(16) WRITE IN DESCRIPTION OF ALL WORK TO BE PERFORMED UNDER THIS APPLICATION (REFERENCE TO PLANS IS NOT SUFFICIENT)

Replacement of (E) apparatus bay door (telescoping door) with (N) coiling door. For Fire Station 13.

ADDITIONAL INFORMATION

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YES ☐ NO ☒		YES ☐ NO ☒	

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YES ☐ NO ☒	YES ☐ NO ☒	YES ☐ NO ☒	YES ☐ NO ☒

(25) ARCHITECT OR ENGINEER (DESIGN ☐ CONSTRUCTION ☐)	ADDRESS	CALIF. CERTIFICATE NO.
Vito Vannoni	30 Van Ness Ave Suite 4100	C-27134

(26) CONSTRUCTION LENDER (ENTER NAME AND BRANCH DESIGNATION IF ANY. IF THERE IS NO KNOWN CONSTRUCTION LENDER, ENTER "UNKNOWN") ADDRESS

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☐ LESSEE ☐ AGENT
☐ CONTRACTOR ☐ ENGINEER

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Policy Number _____

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Signature of Applicant or Agent — Date: 03/28/18

REV 06/13

OFFICE COPY

APPENDIX C.2

Historic Resource Evaluation Response, Part 1, 530 Sansome Street

San Francisco Planning

49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103
628.652.7600
www.sfplanning.org

Historic Resource Evaluation Response

Record No.:	**2019-017481ENV**
Project Address:	**530 Sansome Street**
Zoning:	C-3-O Downtown-Office Zoning District 200-S Height and Bulk District
Block/Lot:	0206/017
Staff Contact:	Jonathan Vimr - 628-653-7319 jonathan.vimr@sfgov.org

PART I: HISTORIC RESOURCE EVALUATION

PROJECT SPONSOR SUBMITTAL:

To assist in the evaluation of the proposed project, the Project Sponsor has submitted a:

☐ Supplemental Information for Historic Resource Determination Form (HRD)

☒ Consultant-prepared Historic Resource Evaluation (HRE)

Prepared by: ESA Consulting (September, 2020)

BUILDINGS AND PROPERTY DESCRIPTION:

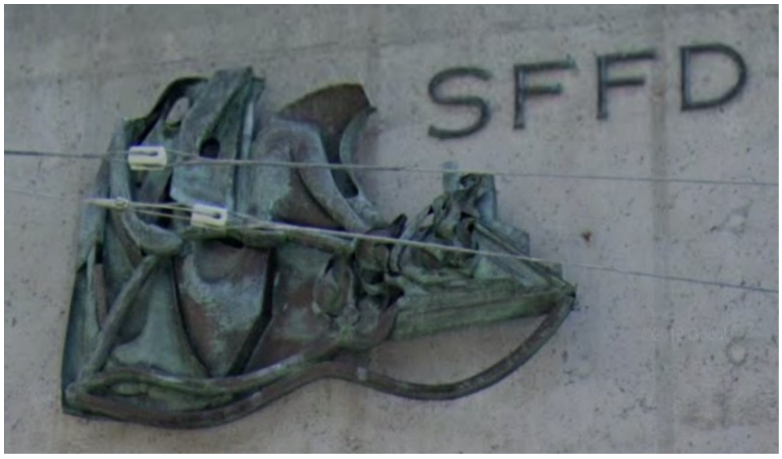
- **Neighborhood:** Financial District
- **Date of Construction**: 1975
- **Construction Type**: Reinforced concrete
- **Architect**: Jonathan C. Portman Jr. (Embarcadero Center), Charles W. Griffith (City Architect)
- **Builder**: San Francisco Bureau of Architecture (Department of Public Works)
- **Stories**: Two with mezzanine
- **Roof Form**: Flat
- **Cladding**: Metal panels, exposed concrete
- **Primary Façade**: Washington Street (North), Sansome Street (West)
- **Visible Facades:** North, south, & west
- **Garage:** N/A
- **Current Use:** Municipal fire station

SCULPTURE DESCRIPTION:

- **Artist:** Henri Marie-Rose
- **Date of Completion**: 1976
- **Material**: Copper

EXISTING PROPERTY PHOTOGRAPH / CURRENT CONDITION:

Source: ESA Consulting, September 2020.



Source: Google Streetview, May 2019.

PRE-EXISTING HISTORIC RATING / SURVEY

☐ Category A – Known Historic Resource, per: _____

☒ Category B – Age Eligible/Historic Status Unknown

☐ Category C – Not Age Eligible / No Historic Resource Present, per: _____

Survey(s): N/A

Adjacent or Nearby Historic Resources: ☐ No ☒ Yes: Jackson Square Historic District; 447 Battery Street (Jones Theirbach Coffee Company Building)

CEQA HISTORICAL RESOURCE(S) EVALUATION:
Step A: Significance

Individual Significance (Building)	Historic District/Context Significance
Property is individually eligible for inclusion in a California Register under one or more of the following Criteria:	Property is eligible for inclusion in a California Register Historic District/Context under one or more of the following Criteria:
Criterion 1 - Event: ☐ Yes ☒ No **Criterion 2** - Persons: ☐ Yes ☒ No **Criterion 3** - Architecture: ☐ Yes ☒ No **Criterion 4** - Info. Potential: ☐ Yes ☒ No	**Criterion 1** - Event: ☐ Yes ☒ No **Criterion 2** - Persons: ☐ Yes ☒ No **Criterion 3** - Architecture: ☒ Yes ☐ No **Criterion 4** - Info. Potential: ☐ Yes ☒ No
Period of Significance: N/A	**Overall Period of Significance: 1971-1982 (Embarcadero Center HD)** ☒ Contributor ☐ Non-Contributor ☐ N/A

Individual Significance (Sculpture)	Historic District/Context Significance
Property is individually eligible for inclusion in a California Register under one or more of the following Criteria:	Property is eligible for inclusion in a California Register Historic District/Context under one or more of the following Criteria:
Criterion 1 - Event: ☐ Yes ☒ No **Criterion 2** - Persons: ☐ Yes ☒ No **Criterion 3** - Architecture: ☒ Yes ☐ No **Criterion 4** - Info. Potential: ☐ Yes ☒ No	**Criterion 1** - Event: ☐ Yes ☒ No **Criterion 2** - Persons: ☐ Yes ☒ No **Criterion 3** - Architecture: ☒ Yes ☐ No **Criterion 4** - Info. Potential: ☐ Yes ☒ No
Period of Significance: 1976	**Overall Period of Significance: 1971-1982 (Embarcadero Center HD)** ☒ Contributor ☐ Non-Contributor ☐ N/A

Analysis:
The following evaluation is primarily based on the Historic Resource Evaluation prepared by ESA Consulting (dated September 2020); the Modern Architecture and Landscape Design 1935-1970 Historic Context Statement by the San Francisco Planning Department (dated January 2011); additional information found in the Planning Department's files; and other public records such as newspapers, city directories, and federal censuses. This evaluation will first assess the subject building for individual eligibility, the sculpture mounted on the building's north façade for individual eligibility, and then consider eligibility for each as part of a historic district(s).

The subject property at 530 Sansome Street is developed with a three-story (or two-story-with-mezzanine) municipal fire station. Located in the Financial District immediately southeast of Jackson Square, it was designed by master architect John C. Portman Jr. alongside City Architect Charles W. Griffith and constructed by the San Francisco Bureau of Architecture (Department of Public Works). Permitted exterior alterations to the building are limited to re-roofing (1999, 2012), providing accessibility upgrades at a first-floor entry (1999), and replacing the apparatus bay doors with new, rolling doors (2019).

No known historic events occurred at the subject property and by itself it does not represent a significant development in its neighborhood (Criterion 1). To be eligible under the event criterion, the building cannot merely be associated with historic events or trends but must have a specific association to be considered significant. Prior to the construction of 530 Sansome Street in 1975, the Fire Department already had a presence in this part of downtown with a station located at 115 Drumm Street. As part of the broader urban renewal movement that occurred during the second half of the 1900s, the San Francisco Redevelopment Agency released its *Redevelopment Plan for the Golden Gateway* in 1959. One phase of this plan involved the Embarcadero Center, which would occupy five city blocks and replace a collection of stores, warehouses, and mercantile establishments with a complex of five mixed-use, interconnected structures. Though 115 Drumm Street was sited on the parcel planned for Embarcadero Center 3 (one of the five Embarcadero Center structures), it was intended to be retained in both the initial redevelopment plan and through much of the 1960s. In 1969, however, the station was found to be too great of an impediment to Embarcadero Center and the developer (David Rockefeller and Associates) both purchased 115 Drumm Street from the Redevelopment Agency and paid for the construction of a new fire station on the nearby city-owned lot at 530 Sansome Street. This site was one block west of the overall redevelopment area. John C. Portman, Jr., the architect behind the Embarcadero Center complex, was commissioned alongside Charles W. Griffith, then City Architect, to design the fire station. While linked to the development history of the Embarcadero Center, in isolation the construction of 530 Sansome represents the replacement of a single civic structure essential to the normal operation, infrastructure, and safety of the city. It is one of 45 fire stations operating in the city and does not appear to be individually significant or important in the overall organization or history of the San Francisco Fire Department. It is one of numerous fire stations built over the years (including several that remain extant in the downtown area) and was built out of unanticipated necessity rather than part of any Fire Department comprehensive plan. Therefore, 530 Sansome does not rise to the level of a significant individual contribution to the broad patterns of local or regional history.

There are no specific occupants associated with the property that have been identified as having made lasting contributions to local, state, or national history or cultural heritage in direct association with the subject property (Criterion 2).

The subject property was designed by master architect John C. Portman, Jr. in collaboration with the then City Architect, Charles W. Griffith. It is a purpose-built structure designed in the Brutalist style, the name of which was derived from the French béton brut ("raw concrete"). With its origins in 1950s Europe, Brutalism became prevalent in the United States the following decade and lasted into the 1980s. Commonly seen on university campuses or for civic structures, Brutalism espoused architecturally honest buildings that expressed their structure at the exterior. Designs typically had a simple cubic form with rigid, repeated geometries and an absence of any applied ornamentation. Brutalist buildings were physically and visually heavy, with concrete being the material they are most generally associated with (though other masonry materials are also seen). When utilized the concrete would be left exposed, with its formwork and expansion joints granting texture and a sort of natural detailing to the exterior of the building. Other materials like wood, metal, stone, and brick were implemented in some designs to provide targeted contrast and visual interest. The San Francisco Modern Architecture and Landscape Design 1935-1970 Historic Context Statement (hereafter "HCS") includes a host of character-defining features for the style, some of which are reflected in the design of 530 Sansome Street. Given that the HCS was completed in 2011 and has not yet been updated, 530 Sansome (constructed 1974-75) was not specifically analyzed within it, though the HCS does establish

that Brutalist structures in city were constructed within a condensed time frame (1960s-70s) and that they are relatively rare in San Francisco.

As discussed in the HRE, 530 Sansome does possess a number of character-defining features common to Brutalist designs, but is overall not an exceptional or distinguished example of the style or Portman's work. Portman is best known for his grand, large-scale structures that are often components of a broader complex. Examples include the AmericasMart and Peachtree Center in Atlanta, the Westin Bonaventure in Los Angeles, the Renaissance Center in Detroit, international sites like the Shanghai and Beijing Yentai Centers, and of course the Embarcadero Center. While the other buildings that comprise the Embarcadero Center exhibit this monumental character, 530 Sansome in contrast is a relatively small building befitting its role as a civic support structure. Although initially unanticipated in the overall development of the Embarcadero Center, the building possesses a similar aesthetic as that used for the broader complex but is more restrained and limited in its architectural expression. It lacks the deeply shadowed fenestration common to more evocative examples of Brutalism, which can also serve to establish repeated geometric patterns as opposed to the lone, cubic form of 530 Sansome. These characteristics are shared by the exemplary examples of Brutalism discussed in the HRE, as well as other notable works like SF General Hospital Building Five and the SF Art Institute Chestnut Street Campus (800 Chestnut Street). The sheer, hulking mass seen in these various buildings and also embodied by the PG&E Embarcadero Substation (405 Folsom Street) is another attribute missing in the design of 530 Sansome. Given this and the additional analysis contained in the HRE, 530 Sansome appears to be more of a utilitarian version of Brutalism as opposed to a high-style interpretation; per the HCS these utilitarian versions should not be considered as individually architecturally significant. Finally, although 530 Sansome appears to be the only fire station Portman designed this alone does not rise to the level of individual significance and the building remains undistinguished in relation to Portman's body of work and exceptional examples of Brutalism. The subject property therefore does not appear to be individually eligible under Criterion 3.

Based upon a review of information in the Planning Department's records, the subject property is not significant under Criterion 4 since this criterion typically applies to rare construction types when involving the built environment. The subject reinforced concrete building is not an example of a rare construction type. Assessment of archeological sensitivity is undertaken through the Planning Department's Preliminary Archeological Review process and is outside the scope of this review.

The sculpture mounted on the building's north façade, *Untitled*, does not appear to be eligible under Criterion 1 as it is not identified as emblematic a specific artistic movement or broader pattern of history. It also does not appear to be eligible under Criterion 2 as its association with Henri Marie-Rose is best addressed under a Criterion 3 evaluation.

The sculpture mounted to the fire station appears to be individually eligible under Criterion 3 as an object given that it is a distinctive example of a master artist's work, has high artistic merit, and was designed specifically for a fire station. Created by Henri Marie-Rose, the sculpture was commissioned by the San Francisco Arts Commission as a site-specific artwork in 1967 (the same year it would be completed and installed). It has been in place continuously since its installation, with the copper sculpture naturally becoming covered in verdigris over the decades. Depicting three abstract figures spraying a blaze adjacent to the letters "SFFD," its content is directly tied to the use of the building to which it is attached. Marie-Rose was born in 1922 in Martinique, obtaining a scholarship to attend the École des Beaux-Arts in Paris in 1945. During his proceeding 8-year residency there he would exhibit

his work throughout Europe, obtaining numerous awards. Moving to San Francisco in 1953, he would within his first decade there have a solo exhibition at the de Young Museum, host a multi-month art series televised on KQED, and be presented with the Emanuel Walter Purchase Prize by the San Francisco Museum of Art. He would continue to exhibit both within the US and Brazil throughout the later 1900s, and would act as a teacher, mentor, and artist-in-residence at Recology San Francisco. *Untitled* is believed to be his last surviving public artwork in San Francisco and was also his highest-earned public commission in the city.

As discussed above, the construction of 530 Sansome is inextricably linked to that of the Embarcadero Center complex. Though not part of the Embarcadero Center's initial plan, it would become necessary due to complications with the site of Embarcadero Center 3. Given that the Embarcadero Center developer would be covering costs and its direct association with the Center, John Portman designed 530 Sansome in collaboration with the City Architect. Though distinct from the Embarcadero Center office towers and the Hyatt Regency Hotel (EC 5) in its scale, fenestration, and horizontality, 530 Sansome is nonetheless of a similar architectural language. While the various structures that compose the Embarcadero Center have their differences, they were all designed in the Brutalist style and are typified by rough, exposed concrete, massive cubic forms, and windows reading as voids. The hulking, concrete level that tops 530 Sansome is strikingly reminiscent of the largely solid bands that transition from the architectural base to the upper levels of Embarcadero Centers 1-5. As detailed in the HRE, John Portman & Associates published a firm profile and portfolio of completed projects in 2019. In it the firm lists 530 Sansome as "San Francisco Fire Station, Embarcadero Center, 1976," thereby demonstrating the firm's belief in the fire station as part of the overall complex (note that other records confirm 1975 as the fire station's completion date). The Planning Department previously found that Embarcadero Center 1-5 was eligible for listing as a complex, based largely on the HCS and a history/context document prepared by Page & Turnbull. Though the Department did not assess the fire station at that time, given its inseparable link to the development of the overall Embarcadero Center, shared architect, and common embodiment of Brutalism, 530 Sansome appears to be contributory to a discontiguous Embarcadero Center Historic District eligible under Criteria 3. Such a district would be composed of EC 1-5 and 530 Sansome, all of which would be contributory, with a period of significance ranging from 1971-1982 (representing the completion of the first structure through the last). The boundaries of this discontiguous district would include the 530 Sansome parcel, as well those for EC 1-5.

Given that 530 Sansome is contributory to the Embarcadero Center Historic District and that the site-specific sculpture attached to the structure is inextricably tied to the development and function of the fire station, the sculpture similarly appears to be contributory to the historic district.

In addition to noting that the fire station could be considered contributory to an Embarcadero Center historic district, the HRE mentions that 530 Sansome may also be considered as contributory to a broader Golden Gateway Redevelopment historic district but researching and establishing such a district is outside the parameters of the HRE. The Department concurs that a broader, potentially eligible Golden Gateway historic district may well exist; the Golden Gateway Redevelopment Plan embodied the aims of the redevelopment era in the United States (which has been understandably and extensively critiqued), and reshaped a substantial portion of San Francisco's downtown along the Embarcadero. The Golden Gateway typifies the idea of creating a city within a city, and the structures and parks that compose its various phases were designed by a multitude of master architects, landscape architects, and artists including, among others: Portman Architects; Skidmore, Ownings and

Merrill (SOM); Wurster, Bernardi and Emmons (WBE); Sasaki, Walker Associates (SWA); De Mars and Reay, Architects; and Lawrence Halprin. Outside of the aforementioned Embarcadero Center, examples of properties that would appear to contribute are, among others, the Alcoa Building (1 Maritime Plaza), Justin Herman Plaza and Sydney G. Walton Square, and the collection of residential towers and townhouses designed by WBE and bounded by Jackson, Drumm, Washington, and Battery streets. With that said, further investigation and research appears necessary in order to fully establish such a district's boundaries, period/themes of significance, and character-defining features. This may come through future project reviews or as part of the Department's citywide survey efforts. Although the fire station was closely tied to the construction of the Embarcadero Center, it was never part of the Redevelopment Agency's plan for the Golden Gateway Redevelopment Area and is not within the borders the Redevelopment Agency established for the Golden Gateway. Further, it is a civic support structure distinct from the commercial and residential buildings that make up the redevelopment area. As such, the Department finds that 530 Sansome would not be included in any potentially eligible Golden Gateway historic district.

530 Sansome does not appear to contribute to any eligible fire station historic district as it is one of a smattering of stations constructed between 1960-1980 and was designed/built as part of a single project, rather than a broader program like those stations constructed via the 1952 Firehouse Bond Act.

Therefore, Planning Department Preservation staff have determined the subject building at 530 Sansome Street is eligible for listing in the California Register as a district contributor to an eligible Embarcadero Center historic district, with the *Untitled* sculpture attached to the building being individually eligible and contributory to said district. The sculpture is individually eligible under Criterion 3, while the Embarcadero Center historic district also appears eligible under Criterion 3.

Step B: Integrity

The subject property has retained or lacks integrity from the period of significance noted in Step A:

Location:	☒ Retains	☐ Lacks	**Setting:**	☒ Retains	☐ Lacks
Association:	☒ Retains	☐ Lacks	**Feeling:**	☒ Retains	☐ Lacks
Design:	☒ Retains	☐ Lacks	**Materials:**	☒ Retains	☐ Lacks
Workmanship:	☒ Retains	☐ Lacks			

Analysis:

In order to be determined eligible for the CRHR, the subject building as a contributing building and artwork as both an individual and contributing object must be found to retain sufficient integrity to each convey their historic significance under Criterion 3. The only notable alteration to the exterior of the building appears to be the replacement of the original bay doors with new, metal rolling doors in the same openings. Given that the new doors are comparable to those that were historically present, and the remainder of the structure remains in its original condition, it reads virtually unchanged from its completion date in 1975. The *Untitled* artwork has been similarly untouched since its placement on 530 Sansome in 1976. Given that the subject building and artwork retain integrity, the sculpture is eligible for the CRHR as an individual resource under Criterion 3, and both the fire station and sculpture are eligible as contributors to an eligible historic district under Criterion 3.

Step C: Character Defining Features

The character-defining features of the subject property include the following:
While the Embarcadero Center historic district has not been fully analyzed, this document assumes that its period of significance (POS) is 1971-1982. The subject building's character-defining features that retain enough integrity to convey its significance and relation to the Embarcadero Center are: • Massive cubic form • Vertically oriented metal panels • Darkened windows • Blank, exposed concrete band at the upper level • Apparatus bays • Circular, metal SFFD sign • Flat roof The Department concurs with the HRE regarding the sculpture's individual period of significance (1976) and its character-defining features: • Visually prominent position on a building occupying a corner location • Visually prominent position on the exterior of Fire Station No. 13, with which the sculpture is historically associated • Copper construction • Verdigris (patina) • Overall design that includes abstract figures and typographic elements

CEQA HISTORIC RESOURCE DETERMINATION:

☒ Individually-eligible Historical Resource Present (sculpture)
☒ Contributor to an eligible Historical District / Contextual Resource Present (building and sculpture)
☐ Non-contributor to an eligible Historic District / Context / Cultural District
☐ No Historical Resource Present

NEXT STEPS:

☒ HRER Part II Review Required
☐ Categorically Exempt, consult:
  ☐ Historic Design Review
  ☐ Design Advisory Team
  ☐ Current Planner

PART I: PRINCIPAL PRESERVATION PLANNER REVIEW

Signature: Allison Vanderslice Date: 12/3/2020

Allison Vanderslice, *Principal Preservation Planner*
CEQA Cultural Resources Team Manager, Environmental Planning Division

CC: Alana Callagy, *Senior Planner*
Environmental Planning Division
Claudine Asbagh, *Principal Planner*
Northeast Team, Current Planning Division

APPENDIX C.3

Historic Resource Evaluation Response, Part 2, 530 Sansome Street

San Francisco Planning

49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103
628.652.7600
www.sfplanning.org

PART II HISTORIC RESOURCE EVALUATION RESPONSE

Record No.:	**2019-017481ENV**
Project Address:	**530 Sansome St**
Zoning:	C-3-O DOWNTOWN- OFFICE Zoning District 200-S Height and Bulk District
Block/Lot:	0206/017
Staff Contact:	Jonathan Vimr – 628-652-7319 jonathan.vimr@sfgov.org

PART I: Historic Resource Summary

In a Historic Resource Evaluation Response ("HRER") Part 1 issued December 3, 2020, the Planning Department determined that two contributors to the California Register of Historical Resources-eligible Embarcadero Center Historic District ("ECHD") are located on the subject property. The ECHD is significant under Criterion 3. The first of these is the existing fire station, which was built as part of the overall construction of the Embarcadero Center and was designed by master architect John Portman. Given its intrinsic ties to the development of the Embarcadero Center, and its related architectural character, the fire station was found to be a contributor to the ECHD. *Untitled*, the sculpture designed by Henri Marie-Rose and attached to the fire station (to which its content is closely related) is similarly contributory to the ECHD. *Untitled* was also identified as being individually eligible to the California Register of Historical Resources as an object under Criterion 3. The HRER Part 1 identified the following character-defining features:

Fire Station

- Massive cubic form
- Vertically oriented metal panels
- Darkened windows
- Blank, exposed concrete band at the upper level
- Apparatus bays
- Circular, metal SFFD sign
- Flat roof

Sculpture

- Visually prominent position on a building occupying a corner location
- Visually prominent position on the exterior of Fire Station No. 13, with which the sculpture is historically associated
- Copper construction
- Verdigris (patina)
- Overall design that includes abstract figures and typographic elements

PART II: Project Determination:

Based on the Historic Resource Evaluation in Part I and the assessment below, the project's scope of work:

☒ Will cause a significant impact to the individual historic resource as proposed.
☐ Will cause a significant impact to a historic district / context as proposed.

☐ Will not cause a significant impact to the individual historic resource as proposed.
☒ Will not cause a significant impact to a historic district / context as proposed.

PART II: Project Evaluation

Proposed Project:		Per Drawings Dated:
☒ **Demolition / New Construction**	☒ **Alteration**	September 22, 2020

PROJECT DESCRIPTION

- Removal and reinstallation of the existing sculpture on the exterior of the new, proposed fire station
- Complete demolition of the existing fire station
- Construction of a 17-story mixed-use hotel and office tower that will also include retail space and a new, approximately 28,000 square-foot fire station for the City and County of San Francisco Fire Department

PROJECT EVALUATION

As noted on the site plan seen in project plans (Sheet 12) and the Project Description, the sculpture found to be individually eligible as an object is proposed to be removed from its location on the existing fire station and reinstalled partway down (easterly) the block along Washington Street at the exterior of the new fire station, or along the Merchant Street elevation of the new mixed-use building. This would follow demolition of the existing 530 Sansome building and new construction of the overall project. Pursuant to guidance from the California Office of Historic Preservation and its State Historical Resources Commission, the relocation of historic resources from their existing site and setting is discouraged but is recognized as occasionally necessary in order to prevent the destruction of a resource. As such, a resource eligible as an object would remain a historic resource if it is moved to prevent its demolition at its former site and reinstalled at a new location compatible with the original character and use of the historic resource. The resource "should retain its historic features and compatibility in orientation, setting, and general environment."[1]

Proposed for potential reinstallation further east along the subject block of Washington Street, the sculpture would likely be relocated to a primary façade of a fire station; one that will have a cubic form and largely opaque exterior akin to that of 530 Sansome. Moved only partway down the block and continuing to be located at the exterior of a fire station, the sculpture would retain its integrity of setting, association, materials, workmanship,

[1] "Technical Assistance Series #7," California Office of Historic Preservation, accessed December 15, 2020, https://ohp.parks.ca.gov/pages/1056/files/07_TAB%207%20How%20To%20Nominate%20A%20Property%20to%20California%20Register.pdf

and feeling with its placement at the façade of a structure with a compatible character and use in compliance with Secretary of the Interior Standard No. 9. However, while the project's intent is for secure removal and reinstallation of the sculpture, current plans and supporting documentation fail to confirm the definite location of the sculpture and fail to identify the methods by which the sculpture can be safely removed, stored, and reinstalled in a manner and location that would not result in irreparable damage to its distinctive materials, features, and setting. Given this and the potential for irreversible damage to the sculpture, the proposal does not meet Secretary of the Interior Standard Nos. 1, 2, 5, and 10 and has the potential to result in a significant impact to the individually eligible sculpture.

In the event it is discovered that locating the sculpture at the exterior of the proposed fire station is infeasible, the Project Sponsor shall coordinate with the Planning Department to determine an equally appropriate, prominent and publicly-accessible location that is compatible with the existing orientation, setting, and general environment of the sculpture as outlined in the Mitigation Measures below.

Mitigation Measures

Although the proposed removal and relocation of the sculpture has the potential to cause a significant impact to the sculpture, it appears this impact could be mitigated. Mitigation measures related to impacts to historic architectural resources for this project will include the following:

1. Interpretation: The project sponsor shall facilitate the development of an interpretive program focused on the history and design of the *Untitled* sculpture. The interpretive program should be developed and implemented by a qualified professional with demonstrated experience in displaying information and graphics to the public, such as a museum or exhibit curator. The primary goal of the program is to educate the public about the sculpture, the work of artist Henri Marie-Rose, and the historical association of the sculpture with the Embarcadero Center and Fire Station 13.

   This program shall be initially outlined in a proposal for an Historic Resources Public Interpretive Plan (HRPIP) subject to review and approval by Planning Department Preservation staff. The HRPIP will lay out the various components of the interpretive program that shall be developed in consultation with an architectural historian who meets the Secretary of the Interior's Professional Qualification Standards, and approved by Planning Department staff prior to issuance of a site permit or demolition permit.

   The interpretative program shall include the installation of permanent on-site interpretive displays. All interpretative material shall be publicly available. For physical interpretation the plan shall include the proposed format and accessible location of the interpretive content, as well as high-quality graphics and written narratives. The interpretative plan may also explore contributing to digital platforms that are publicly accessible, such as the History Pin website or phone applications. Interpretive material could include elements such as virtual museums and content, such as oral history, brochures, and websites. The interpretative program should also coordinate with other interpretative programs currently proposed or installed in the vicinity or for similar resources in the city, such as the San Francisco Fire Department Museum.

   The HRPIP shall be approved by Planning Department Preservation staff prior to issuance of the architectural addendum to the site permit. The detailed content, media and other characteristics of such interpretive program shall be approved by Planning Department Preservation staff prior to issuance of a Temporary Certificate of Occupancy.

2. Relocation Plan. Prior to issuance of the architectural addendum to the site permit the project sponsor shall provide a relocation plan to be reviewed and approved by the Planning Department to ensure that the sculpture will be removed from the building, transported, and stored during construction in a manner that will protect the historic resource. The relocation plan will identify the storage location for the sculpture and report on its condition during construction. The relocation plan will also include a prominent publicly accessible location on the project site for reinstallation of the sculpture which will be finalized in consultation with Planning Department preservation staff, preferably on the exterior of the proposed fire station. The relocation plan will also include an initial reinstallation plan and maintenance plan for the sculpture and schedule for reviewing and finalizing those plans in consultation with Planning Department preservation staff prior to issuance of Temporary Certificate of Occupancy.

The final mitigation measures will be included in the Mitigated Negative Declaration. Planning staff believes that implementation of these mitigation measures would reduce the project's impact to historic resources to a less than significant level.

DISTRICT COMPATIBILTY AND IMPACTS ANALYSIS

As detailed in the HRER Part 1, the fire station is tied to the overall development of the Embarcadero Center and was designed by Portman to incorporate design elements from the Center. However, while both the subject building and the sculpture contribute to and are part of the Embarcadero Center, they are not elements of its design as initially conceived, which consisted of four interconnected mixed-use towers and a hotel. While demolition of 530 Sansome and relocation of the sculpture will remove this example of Portman's work and this complication in the implementation of the Embarcadero Center, the removal of the fire station will not significantly impact the remaining five contributing buildings. The remaining contributors will continue to express Portman's vision of the Center. Additionally, the sculpture will be relocated within the proposed development, likely on the exterior of the proposed fire station.

As noted above, the proposed new construction is not directly adjacent to the remaining contributing buildings of the ECHD. The new building would be compatible with the district in massing and scale, featuring a base architecturally distinct from its upper levels (as with the EC towers) and a strict, mostly uniform exterior parti, another nod to Portman's design of the ECHD. While more heavily fenestrated and visually lighter than the concrete/tinted glass EC buildings, as noted, the new construction will not be immediately adjacent to the remaining EC buildings and these design elements will not impact the district.

The Planning Department has therefore determined that demolition of the subject building and relocation of the sculpture will not cause an adverse impact resulting in material impairment to the eligible Embarcadero Center Historic District.

CUMULATIVE IMPACTS ANALYSIS

The most recent work to publicly accessible character defining features completed at the Embarcadero Center entailed the remodel of all four office tower lobbies; these alterations were found to be consistent with the Secretary of the Interior's Standards for Rehabilitation. Other than the proposed project, there are no past, current, or future foreseeable projects that could significantly impact the character of the district. Given this and the analysis above, the project would not result in any cumulative impacts to the eligible Embarcadero Center Historic District.

PART II: Approval

Signature: Allison Vanderslice Date: 12/18/2020

Allison Vanderslice, *Principal Preservation Planner*
CEQA Cultural Resources Team Manager, Environmental Planning Division

CC: Claudine Asbagh, Principal Planner
Northeast Team, Current Planning Division

Alana Callagy, Senior Planner
Environmental Planning Division

APPENDIX C.4

Historic Resource Evaluation, Part 1,
447 Battery Street

447 BATTERY STREET, SAN FRANCISCO
HISTORIC RESOURCE EVALUATION (HRE), PART I [16074]

PREPARED FOR:
447 PARTNERS LLC

PAGE & TURNBULL
imagining change in historic environments through design, research, and technology

OCTOBER 6, 2017

REVISED

TABLE OF CONTENTS

I. INTRODUCTION

This Historic Resource Evaluation (HRE) Part 1 has been prepared for Rob Canepa at 447 Partners LLC to inform the proposed demolition of the subject property and development of a 19-story hotel at 447 Battery Street (APN 0206/002) in San Francisco's Financial District. The subject property is located on the west side of Battery Street across from One Maritime Plaza, between Washington Street on the north and Merchant Street alleyway on the south **(Figure 1)**. Originally constructed by an unknown architect in 1907, following the 1906 San Francisco Earthquake and Fire, the city water department's listing for 431-447 Battery Street has record of its tap hook-up in 1865, signed by J.B. Stewart.[1] The building was originally occupied by a small Bay Area coffee and tea wholesale supplier and roastery from 1907 through 1966; the company changed its name from Thierbach & Co. to the Jones-Thierbach Co. in 1912 and continued to operate as such until its closing in 1966.[2] After this company vacated, the property was converted to an office building in 1967 and occupied by a variety of tenants and retailers from 1968 until the present. Evaluated in previous surveys and rated as a Category 'A' resource (historic resource present) for the San Francisco Planning Department, a preponderance of new evidence regarding past alterations to the exterior façade of 447 Battery Street has led to a different conclusion regarding significance under the National Register of Historical Places and California Register of Historical Resources criteria.

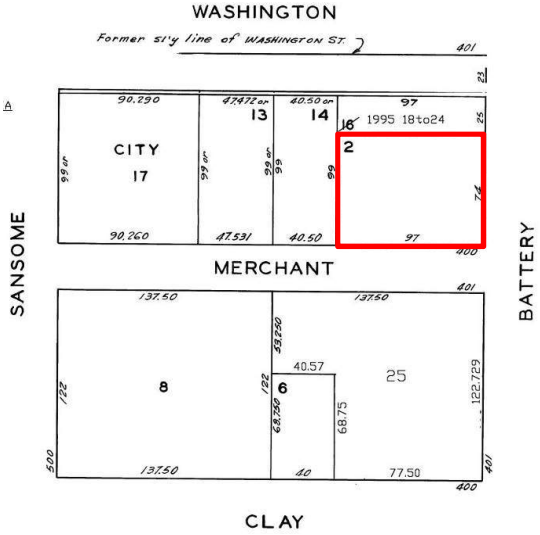


Figure 1. Parcel map of 447 Battery Street (outlined in red). Edited by Page & Turnbull, July 2016. Source: San Francisco Planning, Assessor's block map (last revision 1995).

METHODOLOGY

This Historic Resource Evaluation provides a summary of previous historical surveys and ratings, site description, historic context statement, and an evaluation of the property's individual eligibility for listing in the National Register of Historic Places and the California Register of Historical Resources. Page & Turnbull prepared this report using research collected by previous historic evaluation reports and surveys, as well as various local repositories, including the San Francisco Planning Department, San Francisco Assessor's Office, San Francisco Public Library and History Room/Photo Desk, Online Archive of California, and various other online sources. A number of historical materials such as maps, newspaper articles, and photographs were provided by ESA, who conducted historic research and prepared preliminary reports in 2015. Page & Turnbull conducted a site visit in July 2016 to review the existing conditions of the property and formulate the descriptions and assessments included in this report.

[1] Junior League Property Records. Recorded by Mary Franck. SFPL History Room, pg. 2, March 1968.
[2] San Francisco city directories.

II. CURRENT HISTORIC STATUS

The following section examines the national, state, and local historical ratings currently assigned to the building at the 447 Battery Street. The property has been evaluated in six listings and surveys, including the California Historical Resource Status Code Information (CHRIS), the Junior League of San Francisco Architectural Survey (1968), Department of City Planning Architectural Quality Survey (1976), San Francisco Architectural Heritage Survey, (1977-78), the Unreinforced Masonry Building Survey (1990), and the San Francisco Planning Department's Parcel Information Map.

NATIONAL REGISTER OF HISTORIC PLACES

The National Register of Historic Places (National Register) is the nation's most comprehensive inventory of historic resources. The National Register is administered by the National Park Service and includes buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level.

The property at 447 Battery Street has been rated "3S" as appearing eligible for the National Register as an individual property through a survey evaluation. It is not currently listed in the National Register of Historic Places individually or as part of a registered historic district.[3]

CALIFORNIA REGISTER OF HISTORICAL RESOURCES

The California Register of Historical Resources (California Register) is an inventory of significant architectural, archaeological, and historical resources in the State of California. Resources can be listed in the California Register through a number of methods. State Historical Landmarks and National Register-listed properties are automatically listed in the California Register. Properties can also be nominated to the California Register by local governments, private organizations, or citizens. The evaluative criteria used by the California Register for determining eligibility are closely based on those developed by the National Park Service for the National Register of Historic Places.

The property at 447 Battery Street has not been evaluated under the California Register criteria and is therefore not currently listed in the California Register of Historical Resources individually or as part of a registered historic district.

CALIFORNIA HISTORICAL RESOURCE STATUS CODE (CHRIS)

Properties listed by, or under review by, the State of California Office of Historic Preservation are assigned a California Historical Resource Status Code (Status Code) between "1" and "7" to establish their historical significance in relation to the National Register of Historic Places (National Register or NR) or California Register of Historical Resources (California Register or CR). Properties with a Status Code of "1" or "2" are either eligible for listing in the California Register or the National Register, or are already listed in one or both of the registers. Properties assigned Status Codes of "3" or "4" appear to be eligible for listing in either register, but normally do not require additional research or evaluation to support this rating. Properties assigned a Status Code of "5" have typically been determined to be locally significant or to have contextual importance. Properties with a Status Code of "6" are not eligible for listing in either register. Finally, a Status Code of "7" means that the resource either has not been evaluated for the National Register or the California Register, or needs reevaluation.

The property at 447 Battery Street has not been assigned a California Historical Resource Status Code (CHRIS) in the database.

[3] Office of Historic Preservation, 2012.

JUNIOR LEAGUE OF SAN FRANCISCO ARCHITECTURAL SURVEY, 1968 (HERE TODAY)

The Junior League of San Francisco, a volunteer women's organization, conducted one of San Francisco's first architectural surveys during the mid to late 1960s, known as *Here Today: San Francisco's Architectural Heritage*. The survey was published in a book of the same title in 1968. Although the survey did not assign specific ratings to buildings, it generally described building conditions and historic significance, based on what the authors believed from visual observation and minimal historical research. The findings of this survey were adopted by the Board of Supervisors in the San Francisco on May 11, 1970 (Resolution No. 268-70).

The property at 447 Battery Street was evaluated in the survey. The documentation stated that the exterior façades of the building were "sandblasted." The small photograph attached to the report shows the brick façades generally as they appear today. The report also notes that there was a "moderate amount of exterior desecration of the original design" and that the building was "recently modernized, keeping only its style – but plate glass windows on front."[4] **(Appendix)**.

DEPARTMENT OF CITY PLANNING ARCHITECTURAL QUALITY SURVEY, 1976

In 1976, the Department of City Planning in San Francisco embarked on a "reconnaissance" or "windshield" survey to evaluate City and County buildings and identify which were thought to be the top 10% of historically and architecturally significant resources. Approximately 10,000 buildings and structures were evaluated and ranked on a scale of -2 (detrimental to urban fabric) to +5 (extremely significant), along with summary ratings of 0 to 5 that were assigned overall. Those buildings that were graded 3 or higher in this survey were thought to represent the top 2% of San Francisco's built environment in terms of architectural significance. Ratings of 0-1 were used to indicate a building's contextual importance, such as to a neighborhood, adjacent building, or historic district.

The property at 447 Battery Street has a Department of City Planning's Architectural Quality Survey rating of '1,' indicating that it contains a degree of contextual importance **(Appendix)**.

SAN FRANCISCO ARCHITECTURAL HERITAGE SURVEYS, 1977-78

San Francisco Architectural Heritage is the oldest not-for-profit organization with the intention to increase awareness about the city's architectural heritage in the city and advocate for continued preservation of its unique architecturally historical resources. The city commissioned the organization to conduct surveys of several districts, including the Downtown District. This survey was completed in 1977-78 by Michael Corbett and published in 1979 in *Splendid Survivors*. This survey was one of the earliest and most influential, contributing significantly to the formation of San Francisco's Downtown Plan. The survey's methodology was more thorough than past surveys of the district, including both intensive fieldwork and in-depth archival research. A group of impartial, outside reviewers analyzed the survey forms and findings, and assigned ratings to each pre-1945 property under the following criteria: 'A' (highest importance), 'B' (major importance), 'C' (Contextual Importance), and 'D' (minor or no importance).

The property at 447 Battery Street has a San Francisco Architectural Heritage rating of 'B' (major importance). The publication *Splendid Survivors* includes this historical information about the building:

[4] Junior League Property Records. Recorded by Mary Franck. San Francisco Public Library History Room. Pg. 1, March, 1968.

Jones-Thierbach Coffee Co., 1907, architect unknown

A handsome post-fire brick warehouse building indistinguishable from much earlier buildings of the same type. Originally the Jones-Thierbach Coffee Co. and recently refurbished as office space. In composition, a two-part small commercial block with a strictly structural expression. A cornice has evidently been removed, and the walls may have been stuccoed originally (Corbett, 1978).

UNREINFORCED MASONRY BUILDING SURVEY (UMB), 1990

The Unreinforced Masonry Building (UMB) Survey and accompanying Context Statement was undertaken by the San Francisco Planning Department (1990) in response to the destruction following the 1989 Loma Prieta Earthquake. The goal of the survey was to record the existence of all unreinforced masonry buildings that are considered historical resources, and therefore should be eligible for seismic retrofit work. This survey categorized buildings by type A (small area) through O (assembly), and designated ratings of 1(landmark) to 16 (not rated).[5]

The UMB Survey evaluated the 447 Battery Street property and determined it to be a Prototype G (2- and 3-story, small area, office and commercial building) with a rating of '9', which indicated that it had been listed in the DCP 1976 Survey.

SAN FRANCISCO PROPERTY INFORMATION MAP

The San Francisco Property Information Map, maintained by the San Francisco Planning Department, catalogues a variety of current and historical information about every property in San Francisco. The Preservation tab of this online directory indicates that the 447 Battery Street property has been identified as a Category 'A' resource (historic resource present), which was determined as a result of its age (1907), as well as from the survey evaluations described above. The map indicates that the property is not located in an Article 10 designated historic district or landmark. In San Francisco Municipal Code's Article 11, the property was assigned a Category V "Unrated building" designation.[6]

[5] San Francisco Planning Department, Historic Preservation Commission, *San Francisco UnreinforcedMasonry Building Survey and Historic Context*, 1990.
[6] San Francisco Planning Dept. Property Information Map. 447 Battery Street Historic Resource Status.

III. ARCHITECTURAL DESCRIPTION

DOWNTOWN SAN FRANCISCO – SURROUNDING PROPERTIES

The subject property is located in San Francisco's downtown Financial District on the west side of Battery Street between Washington Street on the north and Merchant Street alleyway on the south. This downtown area north of Market Street consists primarily of multi-story commercial buildings, hotels, restaurants, and city government buildings **(Figure 2)**. Directly east of the subject property across Battery Street are the large multi-use commercial complexes known as One Maritime Plaza, constructed in 1967, and the Embarcadero Center, of which construction began in 1971. The historic U.S. Customs and Border Protection building, constructed in 1900, is located across Washington Street to the north of the property. The subject block, like others in the area, is fully developed with commercial and mixed-use buildings, most with zero lot-lines.

Across Clay Street to the south is 425 Battery Street (street level retail and hotel at the upper stories), which was constructed to resemble its current form in the early 2000s, based on historic aerial photographs. The north-adjacent commercial building, 423 Washington Street, was constructed in 1983. The two west-adjacent buildings, 425 Washington Street/424 Merchant Street and 339-445 Washington Street/440 Merchant Street, were both constructed the same year as the subject property, in 1907, during the city's post-fire reconstruction period. The blocks in this area also feature mid-block service alleys, such as Merchant Street, paralleling the east-west streets **(Figure 3)**. Street trees line Battery Street on the east side, and the area has wide sidewalks. Several buildings feature awnings that extend over the sidewalk.

Figure 2. Adjacent office building to north and Customs building, view looking northwest.
(Page & Turnbull, May 2016.)

Figure 3. Merchant Street alleyway, view looking west.
(Page & Turnbull, May 2016.)

SITE CONTEXT

The subject property contains a three-story brick and timber commercial building with a rectangular plan and a flat roof. It is located on a 7,180 square-foot lot at the southeast corner of Battery and Merchant streets **(Figure 4)**. Constructed in 1907, the building replaced a storage warehouse that burned down in the 1906 Earthquake and Fire. Though it is not particularly representative of a specific architectural style, 447 Battery features vernacular design elements of a typical industrial/commercial-style building of the period, including its two-part vertically-oriented façade and repetitive fenestration pattern. The building contains ground level retail (furniture store) with primary access off Battery Street, a bar called the Hidden Vine on ground level in the rear, as well as office space on the upper levels (access from Battery Street). The following section provides a brief architectural description of the exterior façades of the property at 447 Battery Street, which were

surveyed during a site visit on July 22, 2016. Exterior conditions of the property were confirmed to remain unchanged since this visit and photographs provided below were taken, unless otherwise noted. Visible alterations to the property are also discussed. A brief description of the visible interior from the sidewalk was included from the most recent site visit and the previous evaluation by ESA.

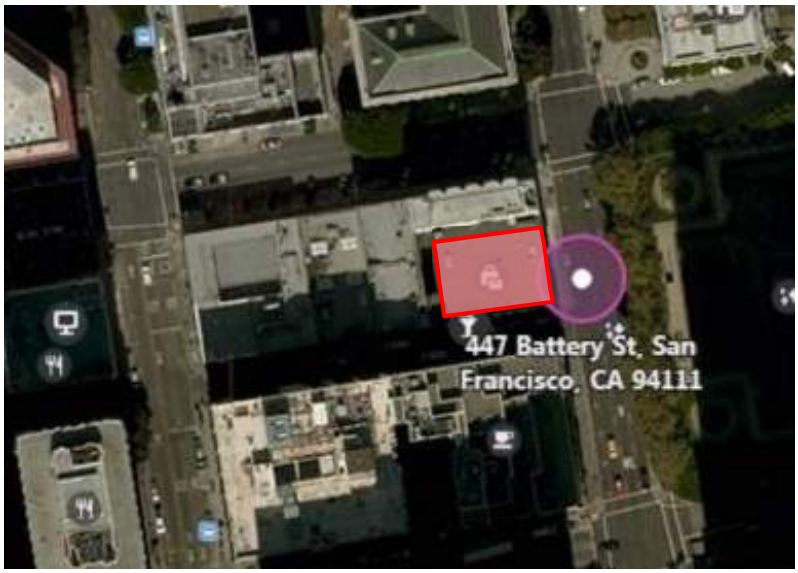


Figure 4. 447 Battery Street is shown shaded in red.
Source: Bing Maps, 2016; edited by Page & Turnbull.

EXTERIOR OF 447 BATTERY STREET

Primary (east) Façade

The primary, Battery Street-fronting façade features a symmetrical composition consisting of three openings at the ground level and seven, evenly spaced windows on each of the upper levels **(Figures 5 & 6)**. From left to right, the ground level contains a recessed, anodized black aluminum framed storefront with full-height windows flanking a fully glazed double door, followed by a storefront opening containing three full-height windows set on a brick base **(Figure 7)**. The rightmost storefront, recessed about six feet from the wall plane, contains the main entrance to the second and third level offices. It features full-height sidelites flanking a fully glazed double door, similar to the other storefronts. Both of the entry storefronts are paved with square stone tiles. All three openings feature contemporary, vertical cloth awnings supported by a metal frame, and the rightmost awning projects out over the sidewalk a few feet **(Figure 8)**. The storefront windows on the street level feature square lintels, while the upper level windows feature arched brick lintels and slightly projecting brick sills. The upper level windows consist of fixed and casement steel sashes, each consisting of three lites (single horizontal lite above two vertical lites). A stepped, triple-course of brick, a remnant of the original cornice, runs the length of the façade beneath the parapet, where deteriorated brick, steel rods, and concrete patching are now visible **(Figures 9 & 10)**. The cornice corbeling is still discernible on both façades, but sections of the brick were heavily damaged when the stucco cladding was removed.

Figure 5. 447 Battery Street primary (east) façade, View from Battery Street looking northwest.

Figure 6. 447 Battery Street primary (east) façade, View from Battery Street looking west.

Figure 7. 447 Battery Street retail storefronts (south side), View from sidewalk looking southwest.

Figure 8. 447 Battery Street office storefront (north side), view from sidewalk looking southwest.

Figure 9. 447 Battery Street, primary façade upper level windows.

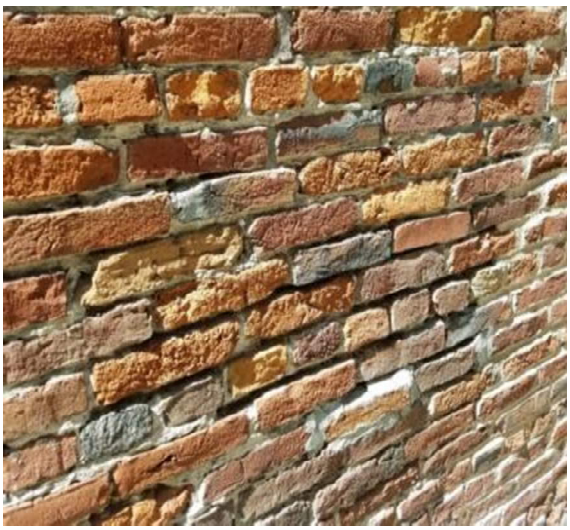


Figure 10. Close-up of brick and grout variation.

Figure 11. 447 Battery Street primary façade, close-up of street level brick variation and patching.

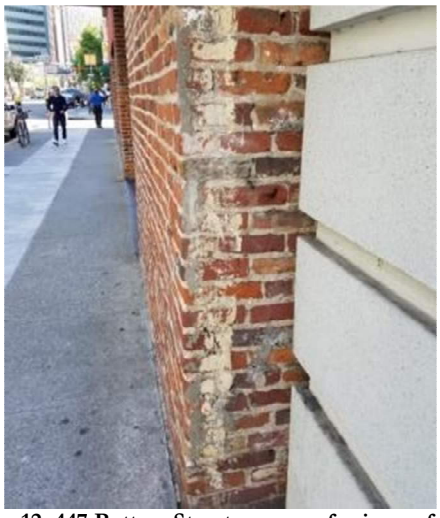


Figure 12. 447 Battery Street, corner of primary façade and north façade which abuts the adjacent building. Patched concrete and former painted sign visible.

Side/Rear (south) Façade

The south façade continues the same rhythm of evenly spaced windows from the primary façade. However, the ground level here also contains windows with arched lintels. They are partial height and feature fixed, tri-lite windows similar to those of the primary façade (single horizontal lite above two vertical lites). The upper level windows each consist of steel-sash casement windows (12-lites) below fixed steel sash windows (9-lites) **(Figures 13 & 14)**. The triple-course brick belt line and parapet also continue around from the primary façade. Here as well, steel anchor bolts are visible at the cornice level, but they do not follow a straight line across on the Merchant Street side, and instead descend gradually to the level of the belt line on the west end of the façade. The western side of the façade at ground level features one brick infilled door and one more recently widened doorway **(Figures 16 & 17)**. This widened entry contains a recessed contemporary fully glazed, wood frame door with transom and a right sidelite. On the far left, another opening appears to have been cut in the brick wall and contains a steel door. Overall, the brick cladding on this façade, even more than the Battery Street side, is mismatched and appears to be in varying states of deterioration **(Figures 11-16)**. The grouting was reapplied on the east side of the Merchant Street façade but discontinued after the first line of windows.

The exterior north and west façades of 447 Battery Street are not visible since they abut the adjacent buildings and are therefore not described in this report.

Figure 13. Rear/side (south) façade,
View from Merchant Street looking northeast.

Figure 14. Rear/side (south) façade,
View of upper level windows on the west side.

Figure 15. 447 Battery Street, close-up of brick belt line and steel-sash windows.

Figure 16. Close-up view of filled-in brick doorway.

Figure 17. Rear/side (south) façade, View of doorways on west side.

Figure 18. Rear/side (south) façade widened doorway.

INTERIOR OF 447 BATTERY STREET

Though there are no publicly-accessible areas of the building interior, the following is a brief description of that which was visible during the site visit or described by the owner. The interior of the upper-level offices consist of exposed brick walls and internal wood columns. They feature drop acoustic ceilings with contemporary light fixtures and flooring in a primarily open floor plan layout. The elevator entry lobby, visible from the Battery Street sidewalk, is a contemporary remodel containing drywall and acoustic ceilings **(Figure 8)**.

IV. HISTORIC CONTEXT

EARLY SAN FRANCISCO HISTORY

European settlement of what is now San Francisco occurred in 1776, with the simultaneous establishment of the Presidio of San Francisco by representatives of the Spanish Viceroy and the founding of Mission San Francisco de Asis (Mission Dolores) by Franciscan missionaries. The Spanish colonial era lasted until 1821, after Mexico earned its independence from Spain, taking with it the former Spanish colony of Alta California. During the Mexican period, the region's economy was based primarily on cattle ranching, and a small trading village known as Yerba Buena grew up around a plaza (today known as Portsmouth Square) located above Yerba Buena cove in San Francisco Bay. The cove was a small inlet that extended from Clarks Point on the north to Rincon Hill on the south. In 1839, a few streets were laid out around the plaza and cove, and the settlement began to gradually expand up the slopes of current Nob Hill.

During the Mexican-American War in 1846, the village of Yerba Buena was occupied by U.S. military forces and was renamed San Francisco the following year. Around the same time, a surveyor named Jasper O'Farrell extended the original street grid, while also laying out Market Street from what is now the Ferry Building to Twin Peaks. Blocks north of this line were laid out in small 50-*vara* square blocks, whereas blocks south of Market were laid out in larger 100-*vara* blocks.[7]

The discovery of gold at Sutter's Mill in 1848 brought explosive growth to San Francisco, with thousands of would-be gold-seekers making their way to the isolated outpost on the edge of the North American continent. Between 1846 and 1852, the population of San Francisco mushroomed from less than one thousand people to almost 35,000. The lack of level land for development around Portsmouth Square soon pushed development south to Market Street, eastward onto filled tidal lands, and westward toward Nob Hill. At this time, most buildings in San Francisco were concentrated downtown near Market Street and the Bay, and the outlying portions of the peninsula remained unsettled throughout much of the late nineteenth century.

Initially San Francisco's central business district pushed north from Portsmouth Square to Jackson Square, but within a few years this trend reversed as commercial development spread southward toward Market Street, along Montgomery, Kearny and Sansome Streets. By the late 1850s, the intersection of Montgomery, Post, and Market Streets had become one of the most important intersections in the city. With the decline of gold production in 1855, San Francisco's economy diversified to include agriculture, manufacturing, shipping, construction, and banking.[8] Prospering from these industries, a new elite class of merchants, bankers, and industrialists arose to shape the development of the city as the foremost financial, industrial, and shipping center of the West.

GROWTH OF DOWNTOWN SAN FRANCISCO

By the early 1900s, San Francisco was the fourth largest city in the United States, with a number of skyscrapers that rivaled those in New York and Chicago, per capita.[9] The downtown business district had continued its shift south and southwest of Portsmouth Square; the Financial District was concentrated around Montgomery and California streets, with the shopping district on Grant Avenue and produce market district along the Embarcadero south of Market.

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[7] *Vara* is derived from an antiquated Spanish unit of measurement.
[8] Rand Richards, *Historic San Francisco. A Concise History and Guide* (San Francisco: Heritage House Publishers, 2001), 77.
[9] Charles Hall Page, *Splendid Survivors*, 23-30.

The 1906 earthquake and subsequent fires interrupted a downtown building boom and devastated the entire city. Within hours of the initial shock, eleven fires sparked by broken gas mains swept first through the South of Market district, and later through the downtown Financial and produce market districts, consuming nearly everything the earthquake had spared **(Figures 19 & 20)**. The fires raged for three days, and after the catastrophe, most of downtown San Francisco lay in ruins. Only a few buildings survived mostly intact, including the Old Mint, the U.S. Post Office, the upper floors of the Kohl Building, the U.S. Customs House (on the block north-adjacent of the subject property), as well as a portion of nearby Jackson Square. In addition, although their interiors burned, the shells of a small number of office buildings in the Financial District survived as well, including the Call Building, the Folgers Building, the Mills Building, the Aronson Building, and the Mutual Savings Bank Building.[10]

Figure 19. Battery Street, looking north from California Street, 1906. San Francisco Public Library Photo Desk.

Figure 20. Northeast corner of Battery and Clay; former eight-story building at 447 Battery Street in background, left of center, 1906. San Francisco Public Library Photo Desk.

Following the disaster, San Francisco's produce market and Financial District faced the need for rapid reconstruction. Hefty insurance settlements, combined with an influx of Eastern capital and architects, made the post-1906 era the most important period of construction in downtown San Francisco until the 1960s. Certain areas of the city were rebuilt more rapidly than others, including the expanded produce market district, the Italian quarter of North Beach, the fire's western boundary at Van Ness Avenue, the working waterfront along the Embarcadero, and the Financial District, which was substantially rebuilt by 1909. Many of the new buildings closer to Market Street were high-rises: large, steel-frame, masonry office buildings over ten stories in height, while new buildings closer to the produce market district were three- to four-story, brick masonry buildings, such as the subject property and two extant west-adjacent commercial buildings, all constructed in the year following the earthquake.[11] During the recovery period, San Francisco's shopping district developed around Union Square, while manufacturing and warehouses concentrated south of Market Street. Many businesses moved to East Bay cities or west to the Fillmore District. The business district had continued its shift south and southwest of Portsmouth Square; the financial district was concentrated around Montgomery and California streets, and the produce market district around Jackson Square (with its western boundary at Battery Street).

[10] Jackson Square Historic Context, Page & Turnbull Historic Context, last revised 2016.
[11] "1906 Fire and Aftermath, Historical Essay." Accessed at Foundsf.org

By 1915, the rebuilt downtown covered fifty percent more area than it had before the fire, concentrated in enclaves of commercial office buildings on New Montgomery Street in SOMA and further north on Montgomery Street around California Street. The majority of new downtown buildings broke with their predecessors' Victorian-era styles in favor of the Beaux-Arts style espoused by the City Beautiful movement, of which the subject property was a modest example.[12] In 1915, the Panama Pacific International Exposition took place, celebrating the opening of the Panama Canal. The completion of the Canal was significant for San Francisco both in that it created a much shorter water route to the city from the East Coast, rather than sailing around the southern tip of South America, and that it gave the city an opportunity to showcase its recovery from the disaster nine years prior and its emerging successful industries, earning San Francisco the moniker of "The City That Knows How."[13] For example, the subject property housed a successful coffee and tea roastery and wholesale supply company, known as the Jones-Thierbach Company, at the time of the 1915 Exposition, which was invited to showcase at the "Palace of Food Products" **(Figure 21)**. Further information about the company's history is provided in the following section. City-wide preparations for the Exposition included considerable upgrades in city transit, and architects raced to complete iconic additions to the downtown skyline. Over 18 million visitors came over the course of ten months to see the 630-acre wonderland, which was located in today's Marina District. [14]

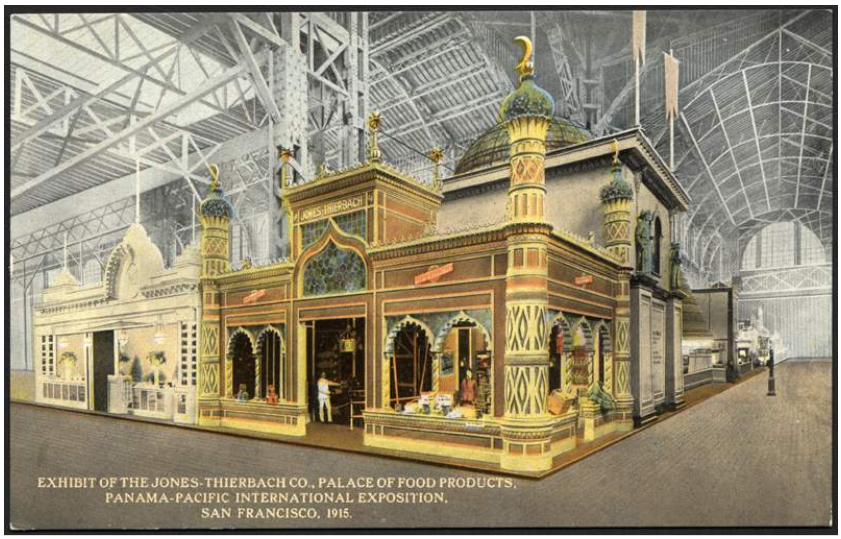

Figure 21. Jones-Thierbach Exhibit at the Panama-Pacific International Exposition (1915), Source: San Francisco Public Library.

Dense downtown development continued into the early 1930s with the construction of new office blocks and large office towers. By the time the Depression halted construction in 1931, downtown San Francisco had extended from the Embarcadero to west of Union Square. In the immediate post-World War II period, construction in downtown San Francisco did not pick up dramatically; nevertheless, those buildings that did rise in the downtown landscape at this time began to show the influence of modernism, particularly the Interionational Style. By the late 1950s, new construction clearly signalled a shift towards modern architectural styles and urban planning principles, with several office towers introduced to the city's downtown that deviated from established development patterns. The John Hancock Building (255 California Street), Bethlehem Steel Building (100 California Street), and the Crown Zellerbach Building (1 Bush Street) were high-profile examples of

[12] Charles Hall Page, *Splendid Survivors*, 32-33.
[13] "PPIE: The City That Knows How." Accessed https://sfpl.org/?pg=2000141201 July 12, 2017.
[14] Ibid.

radically simplified designs that were largely new to the commercial core. As described in *Splendid Survivors*:

> [F]or the first time in San Francisco's history, new buildings were not built to lot lines, and the traditional street walls created by buildings built shoulder-to-shoulder over the previous 50-odd years were lost. While previous post-war buildings had been just as Modern, these were the first to abandon the lot lines and follow the newly stylish, anti-urban image of the tower-in-the-park which had been put forth by Le Corbosier in the 1920s and first executed in New York only in 1958 with Mies van der Rohe and Philip Johnson's Seagram Building.[15]

These early International Style office towers were harbingers of a downtown building boom that took place between 1963 and 1973, during which time a series of new skyscrapers successively assumed the title of the city's tallest building: the Bank of America Center (1969), the Hartford Building at 650 California (1965), 44 Montgomery Street (1967), One Maritime Plaza (1968) directly east across Battery Street, and finally the Transamerica Pyramid (1972), just one block to the west of the subject property. The corner buildings on the subject block, including 423 Washington Street and 530 Sansome Street, in addition to the south-adjacent building at 425 Battery Street across Merchant Street, were all built in the 1980s through early 2000s. The substantial redevelopment of the subject block and adjacent blocks created a detached cluster of post-earthquake reconstruction buildings that are visually and physically separated from similar-era and style buildings further north on Battery Street and to the southeast on Front Street. These isolated buildings include the subject property at 447 Battery Street, west-adjacent 425 Washington Street and 339-445 Washington Street, as well as the south-adjacent block's two-story 432 Clay Street, constructed in 1912. By the 1980s, the immense scale and thoroughly modern architectural styles of the new high-rise buildings heralded the ascendancy of San Francisco's financial sector in the place of its traditional industry- and maritime-based economy.

Produce Market District

Throughout the first half of the twentieth century, the rising towers in San Francisco's business core stood in stark contrast to the city's sprawling wholesale produce market that was located immediately to the northeast, alongside the Embarcadero and the city's active waterfront piers. The market district had its roots in the Italian-American communities that settled in this part of San Francisco during the second half of the nineteenth century. Many Italian immigrants worked the farms that surrounded the city, and they brought wagons loaded with their produce to Sansome Street between Washington and Clay streets to sell to grocers and hotel owners, among others (one block to the immediate west of the subject block). In 1874, the San Francisco and San Mateo Ranchers' Association (a Genoese organization) constructed the Colombo Market, which supplanted the earlier open-air marketplace. This enclosed market contained over 70 stalls and filled an entire city block between Front and Davis north of Jackson Street. Independent sellers rented the stalls and hawked their produce to consumers. Within the course of the following decades, the Colombo Market became one of the city's commercial landmarks.[16]

The district's immediate access to the waterfront supported many additional one and two-story brick masonry market buildings and storage warehouses, which received perishable goods directly from ships that docked at the piers. When rebuilt after the 1906 earthquake, the produce district (also known as the commission district, for the organization that oversaw the market activities and

[15] Charles Hall Page, *Splendid Survivors*,43.
[16] Gary Kamiya, "Odd Arch is Last Remnant of Bustling Produce Market Built in 1874," *San Francisco Chronicle*, February 27, 2015, accessed November 17, 2015, http://www.sfchronicle.com/bayarea/article/Odd-arch-is-last-remnant-of-bustling-produce-6106142.php.

certified merchants) retained its earlier function.[17] Moreover, it extended its boundaries, expanding from the waterfront to fill the area between the Embarcadero on the east, Jackson Street on the north, Clay Street on the south, and Battery Street on the west. Its many one- to three-story brick buildings, including the subject property, contained open stalls and awning-covered storefronts at street level **(Figure 22)**.[18] Originally part of the Barbary Coast, the neighborhood was known to contain bustling markets during the early part of the day and a mix of bars, dance halls, prostitution houses, and crime at night, until the neighborhood was substantially rebuilt and cleaned up in 1911.[19] The subject building was constructed originally in 1907 as a warehouse, coffee roastery, and wholesale supply company on the western border of the produce district. The company expanded and assumed its long-term name of the 'Jones-Thierbach Co.' in 1912, around the time of the neighborhood's revitalization.

Figure 22. Subject property with stalls and awning at street level (TEAS on south façade). September 1918. San Francisco Public Library Photo Desk, DPW # 5606.

During the 1910s through 1940s, the district's daily schedule and bustling character were described in the following manner:

> A district of narrow streets lined with roofed sidewalks and low brick buildings, it is the receiving depot for the fresh produce that finds its way into the kitchens, restaurants, and hotels of the city. Long before daybreak—in the summer, as early as one o'clock—trucks large and small begin to arrive from the country with fruits and vegetables **(Figure 23)**. From poultry houses come the crowing and cackling of fowls aroused by the lights and commotion. The clatter of hand-trucking and a babel of dialects arise. About six o'clock the light delivery trucks of local markets begin to arrive. By this time a pedestrian can barely squeeze past the crates, hampers, boxes, and bags along the sidewalks. The stacks of produce dwindle so rapidly that by nine o'clock the busiest part of the district's day is over. […] By afternoon this district is almost deserted.[20]

[17] "Produce Market." http://www.foundsf.org/index.php?title=Produce_Market Accessed July 12, 2017.
[18] Michael R. Corbett, *Port City: The History and Transformation of the Port of San Francisco, 1848-2010* (San Francisco: San Francisco Architectural Heritage, 2011), 196.
[19] "Thieves' Highway – Produce Market." Citysleuth@reelsf.com December 3, 2010, Accessed July 12, 2017.
[20] Federal Writers Project of the Works Progress Administration, *San Francisco in the 1930s: The WPA Guide to the City by the Bay* (Berkeley: University of California Press, 2011), 262.

Figure 23. Typical view of streets and market buildings within the produce district, 1945.
Source: San Francisco Public Library Historical Photograph Collection, AAC-0526

Although the produce market district was economically active well into the twentieth century, many policy makers viewed the entire area as a longtime chaotic urban nuisance: cramped, unsanitary, crime-ridden, and full of unpleasant smells. Given this perspective, the market simply did not live up to the economic potential of its central location. The district's negative reputation was not helped by its proximity to manufacturing and distribution areas near the port, along with a large population of transient longshoremen and other laborers who sought lodging throughout the area. By the 1940s, the area was beginning to show signs of decay, especially as many wholesalers moved to less expensive areas south and east of the city. The Jones-Thierbach Co. was one of a few food product wholesale suppliers to remain in the district until the mid-1960s. Also during the late 1940s, the industrial waterfront began to experience a reduction of shipping, which also moved elsewhere in the Bay where storage space and land was cheaper. Though still dense and active in the mid-1950s, areas of the old produce market district appeared congested and blighted and became the focal point for urban redevelopment and Financial District expansion. The mayor and other municipal officials began to actively discuss how—and to where—the district could be moved in order to allow the Financial District to further expand its boundaries.[21] By 1963, the market was moved to Islais Creek to make way for the expansive Golden Gateway Redevelopment project, which modernized and transformed the whole neighborhood into an extension of the city's Financial District.[22]

Postwar Urban Renewal and The San Francisco Redevelopment Agency

During the post-World War II era in the United States, governmental urban development policies brought about a series of sweeping changes in cities throughout the country. As suburbanization accelerated in American metropolitan areas in the years after World War II, urban cores drastically diminished in importance as commercial, residential, and business centers. Crowded and unsanitary housing conditions of central neighborhoods in most American cities from the late nineteenth and early twentieth century galvanized progressive reformers to push for "slum clearance," and the situation worsened with the lack of investment and neglect during the Great Depression and World War II.[23] In California, the state legislature passed the California Redevelopment Act in 1945 to provide state funds for local improvement projects. The Act allowed a municipality to acquire property deemed "blighted," clear it, and sell or lease it to a private developer to create new uses that

[21] "Christopher Announces His Program," *San Francisco Chronicle*, October 2, 1951, 9; "Relocation of S.F. Produce Market is Recommended," *San Francisco Chronicle*, September 9, 1953, 9.
[22] "Thieves' Highway – Produce Market." Citysleuth@reelsf.com December 3, 2010, Accessed July 12, 2017.
[23] R. Allen Hays, *The Federal Government & Urban Housing* (Albany: Sate University of New York Press, 2012), 166-167.

complied with the community's general plan and remained in the public interest.[24] Cities throughout the state subsequently established municipally affiliated agencies to oversee large-scale redevelopment projects. This act occurred simultaneous to a wave of activities—such as housing surveys and master planning—that led city governments to identify economically underperforming, or "blighted," neighborhoods where redevelopment appeared necessary.[25]

These developments set the stage for California municipalities, including San Francisco, to act quickly following the passage of the Housing Act of 1949, a major federal catalyst for governmental intervention in American cities. Given the availability of the federal "urban renewal" funds, policymakers quickly began to make plans to transform neighborhoods near city cores—particularly areas that had been identified as "blighted," such as the produce market district in San Francisco. Residents and commercial tenants of these "blighted" central neighborhoods were predominantly poor and/or racial minorities. Historians have argued that bias against minority residents motivated officials' plans to redevelop particular neighborhoods of the city—and that the presence of racial minorities itself invited a "blighted" designation. The Housing Act required that relocation plans be developed for existing residents, but this provision was not always enforced.[26] Despite the large-scale displacement of these inner-city minority populations and businesses, municipal officials largely felt that the more critical goal was to redesign areas of their cities by introducing new and in vogue urban planning schemes.

The agency that oversaw redevelopment projects in the city was the San Francisco Redevelopment Agency (SFRA), which had formed a few years after World War II as the first such municipally affiliated agency in California. The SFRA began the process of designating redevelopment areas throughout the city, securing funds, and receiving approvals from the Board of Supervisors. Pushed forward by support from the city's Planning Department, the first redevelopment plans to take shape were the Western Addition—where thousands of African-American and Japanese-American lived—the industrial South of Market (SoMa) neighborhood, and the produce market district adjacent to downtown. Yet, by the late 1950s, none of the projects had broken ground, and observers warned that without quick action blighted areas would only spread into adjacent neighborhoods—including into the commercial core.[27]

In an effort to provide momentum to urban renewal projects, Mayor George Christopher named M. Justin Herman executive director of the SFRA in 1959. During his tenure, which lasted until 1971, Herman oversaw the use of more than $120 million in federal redevelopment money. Projects that were completed or that advanced under his leadership include the following: the Western Addition (multiple phases); the Diamond Heights residential development in central San Francisco; the Yerba Buena Project in SoMa; the Chinese Cultural Center and hotel located across from Portsmouth Square; and the Golden Gateway project, which was adjacent to the Financial District and extended to the east side of Battery Street.[28] These completed projects testified to the SFRA's large-scale and enduring impact on San Francisco's urban landscape and the setting of the subject property.[29]

[24] Ken Lastufka, *Redevelopment of Sacramento's West End, 1950-1970: A Historical Overview with an Analysis of the Impact of Relocation* (MA thesis, California State University, Sacramento, 1985), 24-25.
[25] Richard Brandi, *A Reevaluation of Urban Renewal in San Francisco* (MA thesis, Goucher College, 2008), 26-28.
[26] Fogelson, *Downtown*, 377-378.
[27] Brandi, *A Reevaluation of Urban Renewal*, 31-47.
[28] Brandi, *A Reevaluation of Urban Renewal*, 47-52.
[29] Ibid.

SAN FRANCISCO COFFEE INDUSTRY

Coffee, originally harvested and produced in Yemen in the 1400s, is one of the world's most exported commodities. After achieving popularity in Europe in the seventeenth century, coffee spread to America, soon replacing beer as the preferred breakfast beverage. By the Mexican-American war, it was included as a ration for soldiers. By the eighteenth and nineteenth centuries, traders spread coffee production to other hot climate fertile areas, including Central America and the East and West Indies, from which it was shipped to the United States and Europe. By the 1840s, San Francisco had become the center of the commercial coffee roasting business in the country, and California Street was "something of a coffee row," due to the city's largest port on the West Coast. In addition, for much of the twentieth century, coffee was the highest value import into the city, and two of the largest national coffee brands of the century were established in San Francisco – Folger's and Hills Brothers.[30]

William Bovee, who ran a coffee roasting business in New York, decided to join the Gold Rush in 1849 after his business was destroyed in a fire. After settling in San Francisco in 1850, he noticed there were no coffee businesses and decided to build a coffee mill called the Pioneer Steam Coffee and Spice Mill, located on Powell Street between Broadway and Pacific streets. Bovee's hand-ground coffee rapidly gained popularity and one of his early employees was James Folger, originally from the island of Nantucket off the coast of Massachusetts. Folger began selling coffee to miners in small California towns and soon bought out Bovee's brand and changed the name by 1872. Folger's son, James, assumed ownership after his father's death and created one of the earliest premium coffee brands in the city, Golden Gate Coffee.[31]

In 1863, the Hills brothers, Austin Herbert and Reuben Wilmarth, arrived in San Francisco from the East Coast and purchased the Arabian Coffee Mills on Fourth Street **(Figure 24)**. While selling butter during the Spanish American Civil War, the brothers were disappointed with the unpleasant aftertaste. Reuben borrowed a vacuum packing technique from a Chicago coffee distributor to use instead, which significantly improved the flavor and sealed moisture out of ground-coffee-filled cans to improve shelf life. By 1900, the Hills brothers were credited as the first to use this method for packaging coffee in San Francisco, which allowed for the rapid expansion of national brands selling coffee in tins, a packaging method that would dominate the coffee industry in the twentieth century. The Hills Brothers were also thought to pioneer the "cupping" technique, the process of tasting the coffee multiple times throughout the production and distribution process in order to ensure the consistency of quality (previously the beans were eyeballed to assess quality, though bean size does not influence the taste of the coffee).[32]

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[30] "Coffee" a history of San Francisco coffee from the podcast, Containers. Available https://medium.com/containers/episode-4-coffee-78ac6571caea Accessed July 17, 2017.
Also sourced from a book by William H. Ukers, *All About Coffee* published in 1920. New York: The Tea and Coffee Trade Journal Company, 1922.
[31] "A Bay Area Coffee History." Shanna Farrell. *Edible East Bay.* February 12, 2016. http://edibleeastbay.com/online-magazine/spring-2016/the-right-blend/ Accessed July 17, 2017.
[32] Lenihan, V.M. "San Francisco Fills Nation's Coffee Cup." *Sausalito News,* Number 12, March 22, 1951. Available https://cdnc.ucr.edu/cgi-bin/cdnc?a=d&d=SN19510322.2.56 Accessed July 14, 2017.

Figure 24. Customers pose in front of the Hills Bros. original store, c.1880s.
Source: "San Francisco's Coffee History: Timeline." ***News in Context.*** **2015.**

In 1899, Max Brandenstein, the son of a Gold Rush immigrant, arrived in San Francisco at age seventeen to avoid the German military draft, and founded the city's third most prominent early coffee business, the M.J. Brandenstein Company (later MJB Coffee). The 1906 earthquake and fires destroyed many of the city's coffee roasteries, including MJB's warehouse and others on Market Street and in the South of Market district. The Folger building, however, survived. The Hills Brothers constructed a new factory in 1926 and MJB continued to operate out of the South of Market District. The city's Panama Pacific International Exposition of 1915 was organized to celebrate the city's post-disaster successes and growing industries, of which coffee was central.[33] Several emerging successful roasteries emerged during reconstruction and were showcased at the Exposition, including the Jones-Thierbach Co., with its roastery and manufacturing warehouse at 447 Battery Street in the city's produce market district.

Following World War I and the disruption of global trade trends, San Francisco bankers and importers began financing smaller Guatemalan coffee producers, as opposed to the more traditional Brazilian varieties. In 1906, at the time of the earthquake, approximately 250,000 bags of coffee beans were being imported into the city. By 1914-15, imports had risen to 400,000 bags. By 1918, San Francisco's coffee industry was exploding – nearly one million bags were being imported and sold in the city, or roughly 150 million pounds of coffee for a net population of around 500,000 people.[34] As the result of such significant growth, the San Francisco Green Coffee Association was organized in 1918, which joined the already established National Coffee Roasters Association. The two groups merged by 1932 and included 25 of San Francisco's earliest and most established roasteries at that time as members, including Wellman Peck & Co. (1849), J.A. Folger & Co. (1850), the Jones-Thierbach Co. (originally Jones-Paddock Co. in 1856), the Hills Bros. Coffee, Inc. (1878), and MJB Co. (1881). Folgers, Hills, and MJB companies were continuously family-owned until the latter half of the twentieth century, at which time the Hills Brothers was purchased by Proctor and Gamble in 1962 and then by Nestle, which also later bought MJB Coffee. Folger's was sold to Proctor and Gamble in 1963 and then to the J.M. Smucker Co. Production for each brand was moved outside of San Francisco by the early 1990s.

[33] "San Francisco's Coffee History," Timeline *News in Context.* https://m-staging.timeline.com/stories/san-francisco-coffee November 2015. Accessed July 17, 2017.
[34] Ibid.

Considered the second largest industry in the city after printing/publishing, the coffee business continued to innovate during the 1950s when Alfred Peet, son of a coffee roaster from Holland, arrived in the Bay Area and continued in the trade of coffee importing.[35] Disappointed with the standard quality of beans arriving from Brazil and Central America, and proud of his unique roasting techniques, Alfred Peet opened Peet's Coffee & Tea in Berkeley in 1966, which was one of the first to influence modern micro roasting culture (Peet also initially trained the founders of Starbucks). Peet's coffee shop, the attention to the quality and source of the product, and his specialized knowledge of the business paved a new path in the coffee industry nationwide during the 1960s through 1990s.[36]

Coffee's "third wave" began in the early 2000s outside of San Francisco (including Stumptown and Intelligentsia in Chicago), but the City today has caught up and remains a hub of the industry's continued growth and evolution. Specialty coffee has become a valuable commodity worldwide and the roasting process an art form, much in the way of fine wine, with companies sourcing and importing exceptionally high-quality coffee beans from "micro-lots" and building relationships with small farmers around the world. Roasters such as Flying Goat, Equator, Sightglass, Blue Bottle, Philz, and Ritual, among many others, have led this wave in San Francisco, where a proliferation of small cafes and micro-roasteries have emerged and are continuing to succeed in an ever-changing economic climate.[37]

SAN FRANCISCO TEA INDUSTRY

The history of tea begins in China in c. 1500 B.C., likely as a medical drink. It became a daily drink in China by c. 300 A.D. Tea was first introduced to Portuguese priests and merchants in China during the sixteenth century, and drinking tea had become popular in Britain and the British colonies by the seventeenth century. The British introduced tea production and consumption to India, in order to compete with China's established monopoly on the tea market. The drinking of tea in the U.S. was largely influenced by the passage of the Tea Act and its subsequent boycott during the American Revolution, causing a significant decrease in tea consumption nationwide during and after the Revolution. As a result, many Americans switched from drinking black tea to coffee, considering tea to be unpatriotic.[38] Following the Revolution, tea sales steadily increased again. As early as the mid-nineteenth century in San Francisco, tea from China was one of the most common imported goods into the city, along with tobacco from Cuba and coffee from Central and South America.[39]

Tea remained a major imported commodity in San Francisco, given the port's size and access to Chinese and other Asian suppliers. Large tea-packing and storage warehouses were constructed in the early twentieth century to manage the large quantities of tea arriving from overseas. For example, a *San Francisco Examiner* article from May 1918 stated that a large tea-packing plant was going to be built for Lipton that year, and mentioned that the company's relocation of its western hemisphere business and distribution facilities to San Francisco at this time was due to a major growth in sales.[40] Based on advertisements and labels from the late-nineteenth and early twentieth centuries, it appeared fairly common for coffee wholesale suppliers, such as the Jones-Thierbach Co., to also purchase and distribute teas, since such large quantities were imported into the city and resale value

[35] Lenihan, V.M. "San Francisco Fills Nation's Coffee Cup." *Sausalito News,* Number 12, March 22, 1951. Available https://cdnc.ucr.edu/cgi-bin/cdnc?a=d&d=SN19510322.2.56 Accessed July 14, 2017.
[36] Ibid.
[37] "A Bay Area Coffee History." Shanna Farrell. *Edible East Bay.* February 12, 2016. http://edibleeastbay.com/online-magazine/spring-2016/the-right-blend/ Accessed July 17, 2017.
[38] "History of Tea." Available at https://en.wikipedia.org/wiki/History_of_tea Accessed July 26, 2017.
[39] "San Francisco's Culinary History: Part 1 of 12." Available https://tableagent.com/article/san-franciscos-culinary-history-part-1-of-12/ Accessed July 26, 2017.
[40] "Tea Packing Plant to be Built in S.F." *San Francisco Examiner*, May 4, 1918, pg. 4.

was high. The increase in the national popularity of tea-drinking as an alternate to coffee continued steadily through the mid-twentieth century. By World War II, however, the worldwide tea trade changed significantly. In the name of "modern convenience," the tea bag was ubiquitously accepted throughout postwar America and overall quality decreased. A few firms continued to supply the old-style loose tea leaves, including Freed Teller Freed in San Francisco; however, few businesses of this kind survived past the late 1950s and 1960s. Tea at this point was typically mass-distributed and merchandised as an indistinct brown beverage called "black tea" and the market leaders of the tea industry of the time, including Tetley, Lipton, and Red and White Rose, lost sight of any differences that may have once set them apart from one another.[41]

The U.S. tea industry persisted in this way which had been established in the 1940s through the 1980s. One of the first companies to kickstart a new wave of tea in the country was a leading importer of fine teas based in the Bay Area, known as the G.S. Haly Company. This company, in addition to a handful of others nationwide, were typically dismissed by the National Tea Association as dealers in "specialty tea," comprising about one or two percent of the U.S. tea industry. Snapple is credited as the first to have produced a "ready to drink" tea that caught on nationwide by 1985.[42] The American tea market quadrupled from the early 1990s through 2008, and similar to the trend of micro-coffee roasting, consumers today appreciate refined varietals of tea and are willing to pay more for higher quality products. Similar to coffee shops, specialty tea houses and retailers have become increasingly popular during the 2000s and 2010s.[43]

INDUSTRIAL/COMMERCIAL BUILDING TYPOLOGY IN SAN FRANCISCO

Warehousing involves the storage, processing and distribution of goods, as well as occasional light manufacturing. For most of its history as a building type, the warehouse functioned primarily as a storeroom for surplus material. Even before the Industrial Revolution, large Victorian-style warehouse structures were increasingly constructed in mercantile cities of Northern Europe, such as London or Rotterdam. By the Industrial Revolution, the warehouse began to evolve into more of a commercial necessity as increasing amounts of regional and international trade transformed local independent economies into components of the larger world economy. By 1900, the largest ports in the world were mostly located in Europe and North America and included: London, Liverpool, Manchester, Bristol, Rotterdam, Hamburg, Marseilles, New York, Boston, and San Francisco, to name a few.[44]

As a building type in San Francisco, the industrial/commercial warehouse dates back to the years immediately following the Gold Rush, when the increasing amounts of imported manufactured goods coupled with growing domestic agricultural output caused a need for these goods to be segregated from trading and retail functions. Warehouses, originally large, wood-frame, barn-like buildings, were constructed along the piers and wharves of the waterfront just to the east of Portsmouth Square in what would become the city's produce market district. Physical proximity to the waterfront and the cost of the land were the primary considerations behind the location of early warehouses but as the cost of prime waterfront land began to increase, warehouses were dispersed away from the original core area to North Beach, the expanded produce market district, and as far south as Steamboat Point. This pattern of development led to the formation of two separate warehouse districts – the Northeast Waterfront and the South End.[45]

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[41] Pratt, James. "The U.S. Tea Renaissance and How It Happened." *The Atlantic.* August 5, 2010. Available at https://www.theatlantic.com/health/archive/2010/08/the-us-tea-renaissance-and-how-it-happened/60895/ Accessed July 26, 2017.
[42] Ibid.
[43] Ibid.
[44] "Commercial Building Typology." Page & Turnbull Historic Context database. Last updated 2016.
[45] Ibid.

Both districts continue to contain examples from every period of construction in San Francisco. These buildings, which range in height from one to seven stories, were designed in a variety of styles and employed different structural systems. The earliest warehouses in San Francisco were built between 1848 and 1870, and were usually of wood-frame construction and consequently often destroyed by fire. Those built between 1870 and 1912, and especially in the reconstruction years (1906-1912) were typically one- to three-story brick buildings with load-bearing brick walls, heavy timber frames and open-web wood truss roofs. Due to the use of load-bearing masonry construction, openings were usually deeply set and small.[46] The design of these buildings was largely determined by the economics, advances in construction technology, and fire insurance ratings, especially after the earthquake and fires.[47] Other important factors included the amount of storage area per square foot and the structural strength of a building designed to hold many tons of goods or produce.

The defining features of the style are heavy load-bearing brick masonry walls with flat parapets and roofs and facades defined largely by evenly-spaced, wood or steel sash fenestration. Other design characteristics typically include large loading docks or openings for commercial stalls in a center or corner bay, hoists, and typically two or more floors, in order to take advantage of high land values. Often constructed with red or blonde-colored brick, these buildings featured little ornamentation other than some decorative brickwork along a beltline, cornice, or parapet. Detailing was typically limited to that which could be easily executed in brick and later, concrete, including Neoclassical and Renaissance Revival-style brick corbelling, jack arches, dentil course moldings and pilasters. These buildings also often retained some elements more typical of nineteenth century commercial buildings, including recessed entrances, clerestories, and transoms.[48]

Many of the reconstruction-era buildings in San Francisco's Financial District, produce market district, and South of Market district went up quickly in the period following the earthquake and fires and needed to serve a dual commercial and industrial purpose to accommodate displaced offices, retail, and warehouse spaces. Many of these buildings contained storefronts, open stalls, offices, and loading on the ground level, while storage, offices, warehouse, and/or manufacturing space was housed in the upper stories. Brick masonry construction allowed for the heavy loading potential of these floors. These building interiors typically featured a rectilinear floorplate, a symmetrical arrangement of columns, and interiors as unobstructed as possible, in order to allow for maximum storage and large machinery capacity.

By the early twentieth century, the introduction of steel framing, as well as the widespread adoption of the mechanized elevator, allowed buildings to be constructed taller, and with larger window openings and fewer interior supports. By the time of the opening of the Panama Canal in August 1914, advancing concrete construction techniques led to larger buildings with larger window and door openings, thinner walls and greater spans, which allowed more light into the buildings, as well as larger areas of unobstructed space.[49]

Comparative Industrial/Commercial Building Survey

Page & Turnbull noted several similar-scale, two to four-story brick masonry industrial/commercial buildings in the vicinity of the subject property, which appear to be representative examples from the immediate period of post-fire reconstruction (1906-1912), based on exhibiting higher levels of historic integrity, architectural merit, and character-defining features of the typology described above. These buildings are discussed more specifically in the Criterion C/3 Evaluation section of this report.

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[46] "Commercial Building Typology." Page & Turnbull Historic Context database. Last updated 2016.
[47] San Francisco Landmarks Preservation Advisory Board, "South End Historic District," Draft Case Report, 1990, p. 5.
[48] Ibid.
[49] "Commercial Building Typology." Page & Turnbull Historic Context database. Last updated 2016.

The following table also includes images, construction dates, and survey ratings of these buildings **(Figure 25)**.

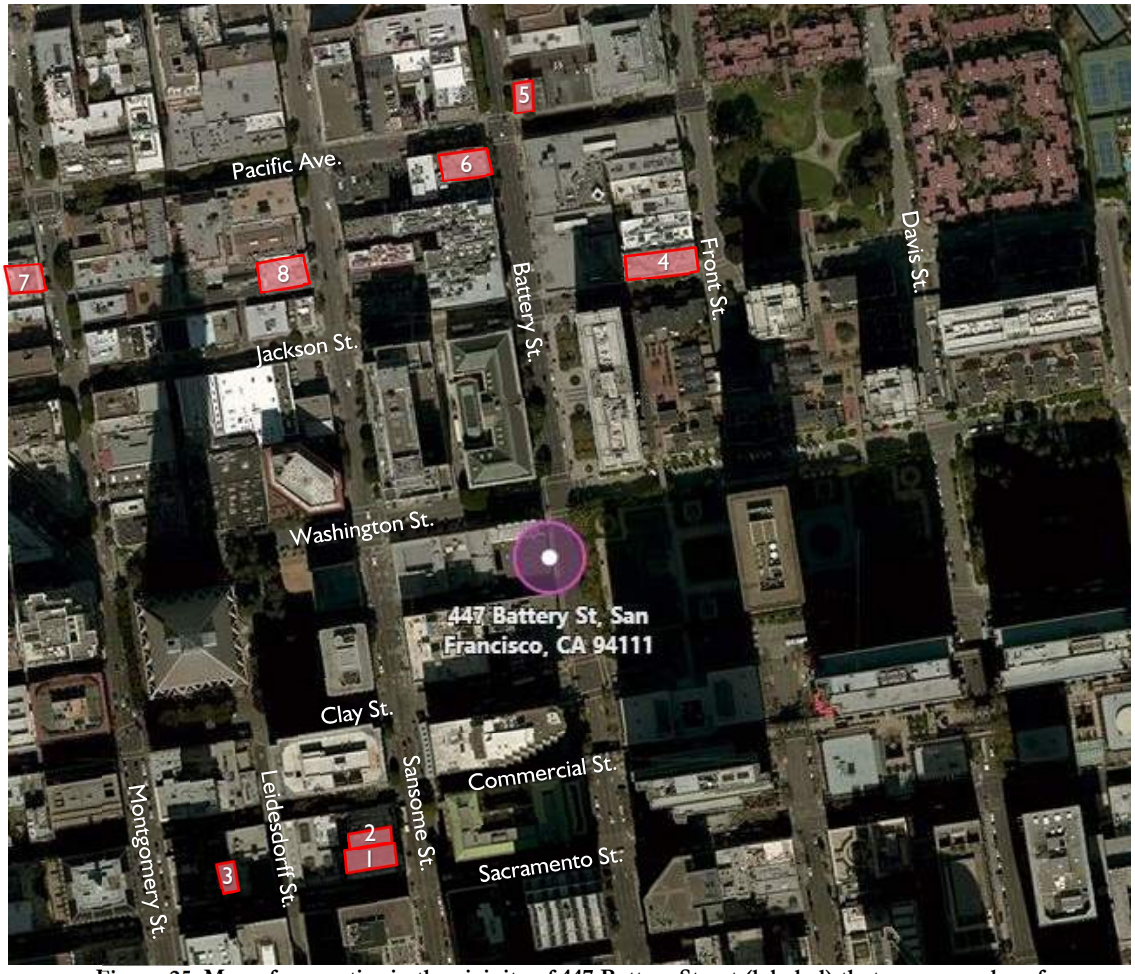


Figure 25. Map of properties in the vicinity of 447 Battery Street (labeled) that are examples of commercial/industrial buildings from the post-1906 reconstruction period (shaded red with numbers). Source: Bing Maps, 2017; edited by Page & Turnbull.

Address	Photograph & Character Defining Features	Property Information
1 405 Sansome Street "National Building"	 ▪ Two to four stories, three-part composition ▪ Exposed brick façade ▪ Façade details include brickwork, arches, decorated spandrels, projecting cornices and belt courses, pilasters, and rustication ▪ Ornament is derived from Renaissance sources	APN: 0228/004 Year Built: 1906 Style: Renaissance Revival Historic Status: A – Historic Resource Present NR: 2S2 SF Heritage: C – Contextual Importance DCP 1976 Survey: 3
2 407 Sansome Street	 ▪ Two to four stories, three-part composition ▪ Exposed brick façade ▪ Façade details include brickwork, projecting cornices and belt courses, pilasters, and rustication	APN: 0228/003 Year Built: 1909 Style: Commercial/Industrial with Neoclassical features Historic Status: A – Historic Resources Present CR/NR: 2S2 SF Heritage: C – Contextual Importance DCP 1976 Survey: 1

3 568 Sacramento Street "PG&E Substation"	 ▪ Two to four stories, three-part composition ▪ Exposed brick façade ▪ Façade details include brickwork, projecting cornices and belt courses, pilasters, and rustication, wide bay	APN: 0228/011 Year Built: c.1907 Style: Commercial/Industrial with Neoclassical features Historic Status: A – Historic Resources Present; Contributor to Commercial-Leidesdorff Conservation District NR/CR: 3S SF Heritage: B – Major Importance DCP 1976 Survey: 1
4 200 Jackson Street/ 601 Front Street	 ▪ Two to four stories, three-part composition ▪ Exposed brick façade ▪ Façade details include brickwork, projecting cornices and belt courses, pilasters, and rustication	APN: 0173/006 Year Built: 1911 Style: Commercial/Industrial with Renaissance Revival features Historic Status: B-Unknown/Age-Eligible SF Heritage: C – Contextual Importance DCP 1976 Survey: 2

5 298 Pacific Ave "Old Ship Saloon"	 ▪ Two to four stories, three-part composition ▪ Exposed brick façade ▪ Façade details include brickwork, arched windows, projecting ornamented cornice	APN: 0166/005 Year Built: 1907 Style: Commercial/Industrial with Neoclassical features Historic Status: A – Historic Resource Present SF Heritage: B – Major Importance DCP 1976 Survey: 1
6 601-615 Front Street "Legallet Building"	 ▪ Two to four stories, three-part composition ▪ Exposed brick façade ▪ Façade details include brickwork, arched windows, projecting ornamented cornice and beltline	APN: 0174/001 Year Built: 1907 Style: Commercial/Industrial with Neoclassical features Historic Status: A – Historic Resource Present CR/NR: 5S2 SF Heritage: C- Contextual importance
7 843-851 Montgomery Street "Hotel European"	 ▪ Two to four stories, three-part composition ▪ Exposed brick façade with stone accents ▪ Façade details include brickwork, projecting ornamented parapet, cornice, belt line, concrete ornamental features	APN: 0176/030 Year Built: 1910-11 Style: Renaissance Revival Historic Status: A – Historic Resource Present SF Heritage: C- Contextual importance DCP 1976 Survey: 1 Contributor to Jackson Square Historic District

8 705 Sansome Street	  ▪ Two to four stories, three-part composition ▪ Exposed brick façade with accents ▪ Façade details include brickwork, projecting ornamented cornice, belt line, arched paired windows, pilasters, corbelling, wide bays	APN: 0175/003 Year Built: 1906 Style: Renaissance Revival Historic Status: A – Historic Resource Present SF Heritage: B – Major Importance DCP 1976 Survey: 3 Contributor to Jackson Square Historic District

V. PROJECT SITE HISTORY

The earliest available Sanborn Fire Insurance Company map, dating from 1887, indicates that the 447 Battery Street lot was developed at least by 1887 for a variety of commercial and light industrial commercial and warehouse uses, including produce shops, cigar manufacturers, construction- and industry-related uses, such as wood yards, and other businesses. The buildings on the surrounding city blocks were typically one to three stories in height and densely developed; each block face accommodated ten or more separate commercial establishments. The narrow alleyway, Merchant Street, cut through the center of the western block, providing access to secondary market stalls and rear access loading areas, while a similar backstreet named Cedar Street connected Clay and Washington streets through the eastern side of the block.

The 1887 map shows a row of five small stores or manufacturing facilities on the Battery Street side of the subject parcel between Washington and Merchant streets **(Figure 26)**. The map indicates that each building was three or more stories in height and constructed of brick. Businesses there included two cigar manufacturers, a macaroni drying store, and a liquor store. Other businesses visible on the map in the immediate vicinity included tobacco drying, printing and lithography, as well as coffee and spice milling. The 1905 Sanborn map portrays the same configuration of buildings on the site, but also indicates office space on the ground floor and storage on the second and third floors (liquor, hops, candy factory) **(Figure 27)**. After the 1906 Fire destroyed the properties on the 447 Battery Street site, reconstruction efforts resulted in the nearly immediate redevelopment of two to three-story, industrial/commercial brick masonry-constructed buildings, including the 1907 construction of the subject building and two west-adjacent extant buildings at 425 Washington Street/424 Merchant Street and 339-445 Washington Street/440 Merchant Street. Adjacent to the Financial District to the south and west, 447 Battery Street was located at the western edge of the bustling produce market district, especially following the district boundaries' expansion during reconstruction.

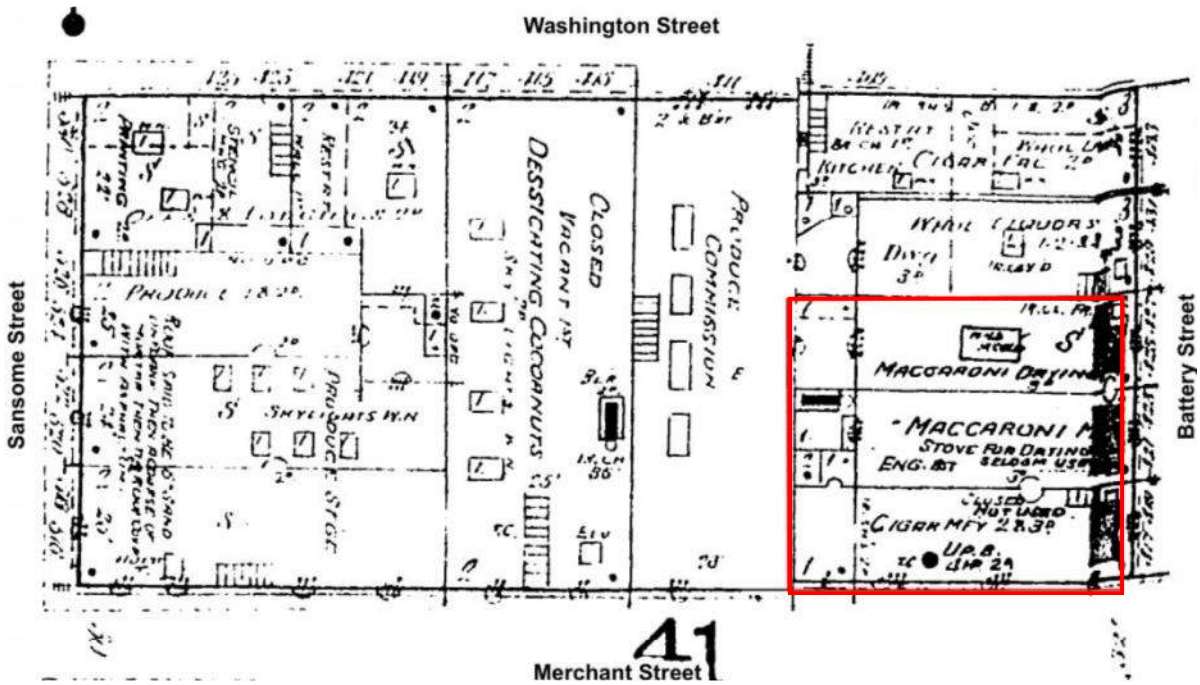


Figure 26. Sanborn Fire Insurance Map, 1887. 447 Battery Street outlined in red.
Edited by ESA and Page & Turnbull, 2016.

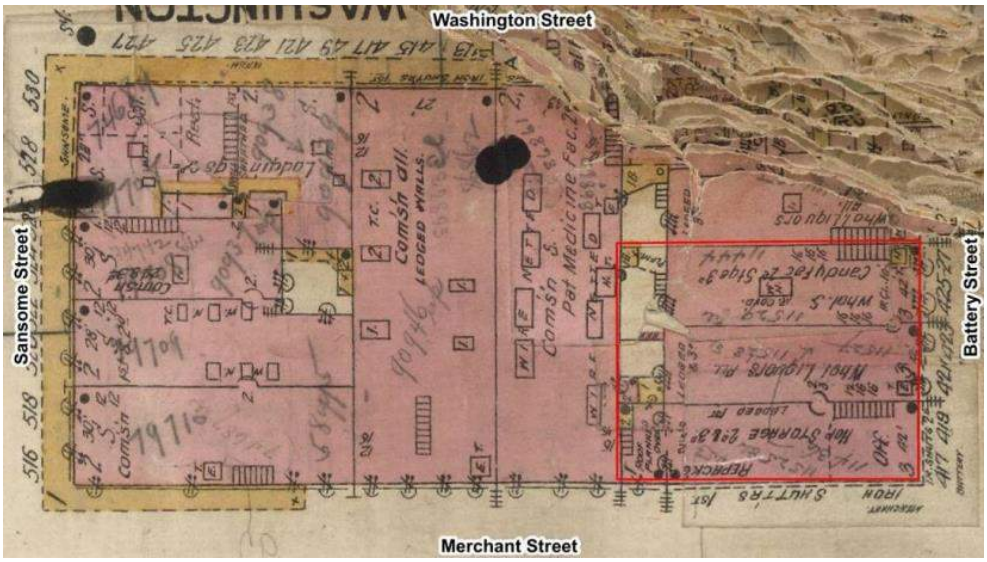


Figure 27. Sanborn Fire Insurance Map, 1905. 447 Battery Street outlined in red.
Edited by ESA and Page & Turnbull, 2016.

The architect of 447 Battery Street is unknown. Like other similar buildings of this period, the subject building originally contained at least one storefront and an office at the street level, while the upper floors were engineered to withstand heavy loads, ideal for manufacturing, storage, and roasting machinery, as well as flexible, open warehouse space for the wholesale coffee, tea, and spice business housed there when the building opened in 1907. The 1913 Sanborn map first indicates that three of the five stores previously on the subject parcel were replaced with the current three-story brick building and labeled 'Coffee roasting' **(Figure 28)**. It appears that a store on the ground level ran the length of the Merchant Street façade, while a small office was centered on the Battery Street side. An awning extended from the facade over the far north storefronts as early as 1917 **(Figures 29 to 31)**. By this time, the street addresses were labeled as 431 through 447 on Battery Street and 400 on Merchant Street. At that time, the building adjacent on the north at the corner of Battery and Washington streets was a two-story building with stucco siding containing a restaurant and five storefronts. The 1913 map also shows newly constructed, reinforced concrete buildings across from the subject property's Merchant Street side containing a candy factory and a creamery (not shown on in Figure 27). Across Washington Street to the north is the United States Customs House.

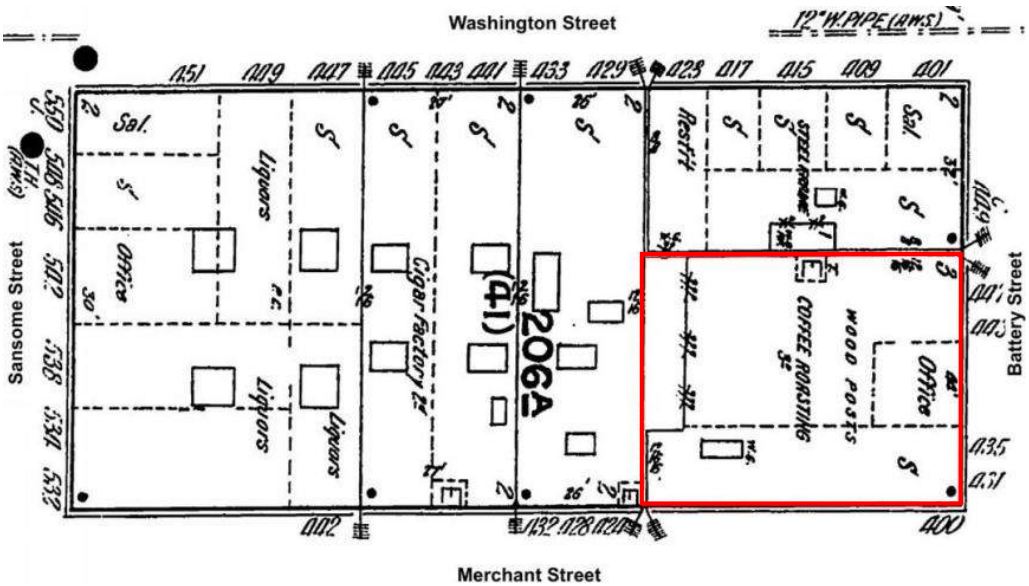


Figure 28. Sanborn Fire Insurance Map, 1913. 447 Battery Street outlined in red.
Edited by ESA and Page & Turnbull, 2016.

While the maps indicate the brick and timber construction of the subject building, it is clear from historic photographs that 447 Battery Street originally featured painted stucco siding on the primary east and south façades. The photographs included below are dated from the period of Jones-Thierbach Co.'s tenancy in the building (1912-1966), and thus prior to the Junior League's evaluation in 1968 and other surveys on record. The earliest photograph found of the building at 447 Battery Street was part of the Department of Public Works (DPW) collection documenting road and other infrastructure improvements in the city **(Figure 29)**. The view was taken in February 1917, nearly a decade after the building's construction, looking south on Battery Street between Jackson and Washington streets. The subject property is visible on the right side, across the intersection from the Customs Building and adjacent to the two-story corner building at Washington Street. The difference in cladding between the north façade (the name 'Chase' is visible) and the Battery-facing primary façade is evident despite the image's overexposure, as the primary façade appears nearly white in contrast with the side façade's darker coloring.

Figure 29. DPW # 4086 Road repair at Battery Street and Washington Street; subject property faintly visible to right of center and indicated with arrow, view looking south. February 1917.
San Francisco Public Library History Room Photo Desk. Edited by Page & Turnbull.

Figure 30. DPW # 5606 at Battery & California Streets, View looking north. Subject property marked. Sept. 1918. San Francisco Public Library Photo Desk. Edited by Page & Turnbull.

Figure 31. DPW # 5606 at Sacramento Streets, View looking north. September 1918. San Francisco Public Library Photo Desk. Edited by Page & Turnbull.

The DPW archives also contain two photographs taken the following year in September 1918, each showing the subject property to the left of center **(Figures 30 & 31).** While the building is most visible in the photograph taken at Sacramento Street looking north, it is faintly visible in the other image taken at California Street, also looking north. The building's east and south façades are visible and the southeast corner features "TEAS" in large painted lettering down the side, an advertisement for the Jones-Thierbach Co., which also distributed teas. Additional information about the company and owners is provided in the following section. Here again, the contrast is distinct between the darker tones of the painted belt line and lettering with the lighter tone of the painted stucco façade.

The 1950 Sanborn map labels the subject property as 'Coffee Roasting, Teas, Coffee & Spices.' By 1950, the store along the Merchant Street side of the building still existed, and the office on Battery Street still remained at primary façade center. The two-story building to the immediate north is still shown, labeled as having two restaurants and three storefronts on the ground floor **(Figure 32)**. The west side of the block also illustrates the same buildings as the 1913 map, showing several commercial establishments, including two restaurants, a cigar factory, and several small retail stores.

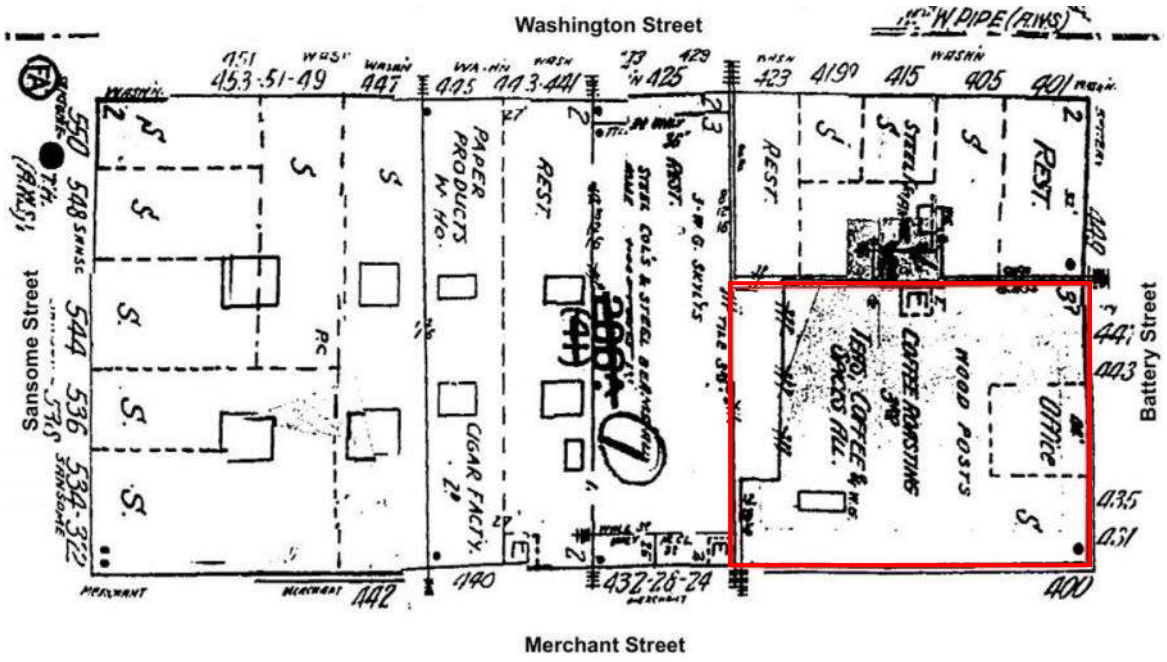


Figure 32. Sanborn Fire Insurance Map, 1950. Subject property outlined in red.
Edited by Page & Turnbull, 2016.

Given that the western boundary of the San Francisco Redevelopment Agency's area extended only to the eastern side of Battery Street, the subject property was spared in the post-war round of urban renewal during the late 1950s and 1960s. However, by the mid-1960s, the block and surrounding neighborhood were transformed as it was incorporated into the Financial District. Wholesale warehouse and manufacturing space, such as at 447 Battery Street, was no longer economically viable in such valuable real estate, and most similar businesses relocated to the warehouses in the SOMA district. In the specific case of 447 Battery Street, the building was converted to retail and office use; the exterior significantly altered, and the interior fully remodeled to accommodate a computer consultant firm and their heavy equipment in 1967.

CONSTRUCTION CHRONOLOGY

As previously mentioned, the earliest architectural evaluation on record of the property at 447 Battery Street by the Junior League (1968) described the exterior façades of the building as "sandblasted." The small photograph attached to the survey shows the brick façades, generally as they appear today. The report notes that there was a "moderate amount of exterior desecration of the original design" and that the building was "recently modernized, keeping only its style – but with plate glass windows on front."[50] However, the alterations associated with the modernization are not described. Furthermore, there are no corroborating building permits to illustrate the exact level of work involved in the subject property's modernization, or what caused the significant deviation from its original exterior design. The San Francisco Architectural Heritage Survey (1977-78) similarly mentioned exterior alterations, specifically the "removal of the cornice" and potential removal of original stucco siding.

[50] Junior League Property Records. Recorded by Mary Franck. San Francisco Public Library History Room. Pg. 1, March 1968.

A review of buildings permits on file at the San Francisco Department of Building Inspection identified no original building permits or plans for 447 Battery Street prior to 1967. The available information is shown in the table below.

447 Battery Street: Building Permit Construction Chronology

Date	Permit #	Architect/Builder	Work
2/20/1967 5/1/1967	339923 342618	Plant Bros. Corp.	Construct offices on 3rd floor; install suspended ceilings, partitions, lighting, flooring, and steel-framed wire glass windows in public lobby
6/19/1968	354806	Plant Bros. Corp.	First and second floors- Install interior partitions, floating floors, raise acoustical ceilings, electrical for computers
8/7/1975	449709	Plant Builders, Inc.	Repair damage to slab and brick walls caused by broken water main; replace bricks sections where mortar weakened
7/29/1977	7707412	Anderson/Culley Plant Builders, Inc.	Reinforce 45' of first floor joists with 8" x 8" posts and 8" x 10" beams
9/21/1982	8206577	Fee+Munson Herrero Bros.	Foundation underpinning at NW corner of building
3/18/1986	8603094	Plant Builders, Inc.	Parapet reinforcement
10/24/1986	8613481	Adersey	Interior remodel; add additional entrance to ground floor space
4/17/1988	8906297	Lawson Roofing	Remove excess roofing down to original; new asphalt and gravel roof
4/15/1997	09610935	Unknown	Seismic retrofit, anchor bolts, window bracing, cross wall extension, parapet bracing
5/4/1998	9807960	NA	Install Cort Furniture sign 2' x 16'/$3,000
2/17/1999	9824233	Vendani Co.	Seismic retrofit, moment frame east wall
6/6/2011	201011154938	Narrowback Constr.	Bar and prep kitchen, rebuild exterior deck, HVAC, sprinkler work

In lieu of early building permits, the construction chronology prior to 1967 relies on observations from the aforementioned Sanborn Fire Insurance Maps and the historic photographs. In addition to the 1917 and 1918 photographs of the subject properties, three additional photographic negatives were found that illustrate the original stucco cladding. A police record negative capturing the scene of

a crash at Battery and Washington Streets in March 1956 shows, when inverted, the painted stucco on the primary façade with the "Jones-Thierbach Co." name painted in dark lettering across the center of the façade **(Figure 33)**. As with the image from 1917, the difference in cladding material and tone is evident between the brick masonry of the north façade and the stucco of the east façade. Similar to this police record negative, two inverted Assessor's negatives of the property, taken the following year in July 1957, confirm the existence of the stucco, at least up until this date **(Figures 34 to 35)**. These views from 1957, both from Battery Street, were taken closer to the subject building and depict most clearly the smooth texture of the stucco and reasonable condition of both the south and primary façades. As in the 1917 photograph, the visible portion of the north façade reads as brick masonry. Both of these 1957 photographs also show the recessed storefronts of the primary façade, with bases similarly clad in stucco, but which are painted a darker color.

Figure 33. City Assessor's Negatives. View of primary façade at Battery Street, July 1957.
San Francisco Public Library History Room Photo Desk.
Negative inverted by Page & Turnbull.

Figure 34. City Police Records Negatives. View at Battery & Washington Streets, March 1956.
San Francisco Public Library Photo Desk.

Figure 35. City Assessor's Negatives. View of corner at Washington Street, July 1957.
San Francisco Public Library Photo Desk.

In the 1967 remodel (Permits #339923 and #342618) the coffee warehouse was converted to office space for the owners Kahn, Kaufman, & Oshrow (later Ron Kaufman Company). No permits or plans were found which identified any changes to the exterior walls, such as the removal of the stucco and paint on the east and south façades, the damage to the cornice, sandblasting, or the

doorway alterations on the Merchant Street façade. These changes likely occurred during the transition to an office building in 1967. It is also probable that the original wood frame windows on the Battery Street façade, and most likely Merchant Street façade, were replaced with the metal frame windows at this time, though it is not explicitly stated in the permit. Additional interior alterations occurred in 1968 (Permit #354806) to provide sufficient support for a computer consulting and data processing company, known as Recording and Statistical Data Processing, Inc. and later the Burroughs Corporation. By nature of the building's solid brick and timber construction, it was already nearly sufficient to carry the load of the heavy computer equipment typical of the late 1960s through 1970s. In 1975, Permit #44709 indicates that repairs were necessary due to water damage and reinforcement of the first floor joints was requested by then owners, the Burroughs Corporation. Further seismic reinforcements were required in the 1980s and 1990s, especially of the foundation and parapet, as well as an addition of another ground floor entrance. Potentially the 1986 "add entrance on ground floor" is when the storefront windows and doors were replaced on the Battery Street façade, as well as the parapet anchor bolts.

According to the property owner (2007-current), the Battery Street exterior façade and a portion on the Merchant Street (east) façade had been sandblasted both at the time of the 1967 remodel, as well as more recently in the 1990s. The mixture used for sandblasting more recently contained salt which caused the bricks to disintegrate, especially at the cornice, and so the operation was halted on the Merchant Street façade about ten feet back from the building corner **(Figure 36)**. It also appears that the original bricks were not fired properly (procured more cheaply) and so the sandblasting only exacerbated their already poor condition. Moreover, it was typical during the rapid reconstruction following the 1906 earthquake that salt water was mixed in with the mortar, which further contributed to the original bricks' deterioration. As a result, the building contains a patchwork of bricks of different types, qualities, and time periods, as well as concrete and wood patching in areas of spalling and cracks. Grout was added haphazardly in the sandblasted areas to further prevent or mask the deterioration.[51] This division between the two areas of the Merchant Street façade is visible below in **Figure 37**.

Figure 36. Close-up of patched bricks at belt course where cornice was damaged.

Figure 37. Close-up of bricks showing areas that were recently sandblasted (right) and not (left).

[51] Personal communication, Rob Canepa, 447 Battery, LLC, with Cassie Rogg, Page & Turnbull, July 22, 2016.

OWNERS AND OCCUPANTS

Owners

The following owner information was accessed through available records at the San Francisco Assessor's Office, ranging from 1967 to 2007. According to the information listed, the building was owned by Charles Thierbach as a coffee roasting and wholesale company called Thierbach & Co. from 1907-1912 and assumed the name of the Jones-Thierbach Co., from 1912-1966. At this point, it was purchased by the Ron Kaufman Company in 1967, who later sold it to the Bedford Properties in 1986. This company, as well as other property management companies, owned the building from this point on. The most recent owner of 447 Battery Street is the Montgomery Realty Group, who purchased the building in 2007.

Date	Owner	Notes
1907-1912	Thierbach & Co.	Coffee wholesale business
1912-1966	Jones-Thierbach Company	Charles Thierbach partnered with M.P. Jones to start the new company
1967-1978	Kahn, Kaufman & Oshrow	
1978-1986	Ron Kaufman Company	
1986-1994	Bedford Properties	
1994-1998	Pine-Battery Properties, Inc.	
1998-2006	Richcom, Inc.	
2006-2007	Woodflame, Inc.	
2007-current	Montgomery Realty Group	

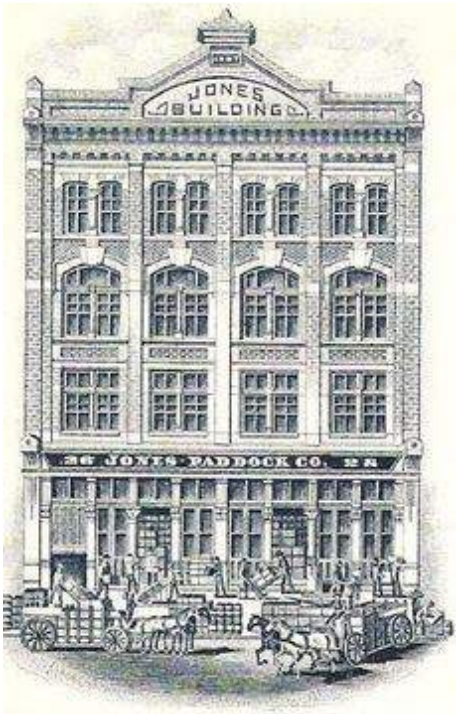
Occupants

The following information for 447 Battery Street was accessed through available records in the San Francisco city directories, ranging from 1907-1982. The original and long-time tenant of the building was Charles Thierbach, who later partnered with the Jones-Paddock Co. to form the Jones-Thierbach Co. A coffee roastery and wholesale business operated out of the building when it opened in 1907 and remained in operation in the building for nearly 60 years (1912-1966), at which point the business ceased to exist and the building was sold and remodeled to become office space for a computer consulting company. Several data consulting companies occupied the building in the ensuing decades, including the Recording and Statistical Co., Information Management, Inc., and the Burroughs Corporation. No additional company history or ownership information was found about these technology consultancies occupying the property in the 1970s through early 1980s. The building currently contains the Cort Furniture store on the Battery-facing street level, the Hidden Vine wine bar on the Merchant Street side, and offices on the upper floors.

Date	Occupant	Notes
1907-1912	Charles F. Thierbach	Coffee Wholesale
1912-1967	Jones-Thierbach Co.	Coffee, Teas & Spices
1968-1970	Recording and Statistical Co.	Computer Consultants
1970-1972	Recording and Statistical Co. and Information Management, Inc.	Computer Consultants
1972 - 1974	Information Management, Inc. Burroughs Corporation Information Equities, Inc.	Computer Consultants & Business Machines Data Processing
1975 - 1982	Burroughs Corporation	Business Machines
1982-c.2000	Unknown	
c. 2000-current	Cort Furniture	

Charles F. Thierbach and the Jones-Thierbach Company

Born in Germany in 1847, Charles Frederick Thierbach immigrated to San Francisco around 1867. According to census records, he married a German woman who had also recently immigrated, Emma Kuhlmeyer (1866-1927). Thierbach spent his first years in the city working as a salesman; city directories have record of him working at Ghirardelli in 1875 and living at 930 Folsom Street. Thierbach and his wife had two sons, Charles F. Thierbach, Jr. and George Thierbach. The first record of Thierbach's involvement in the coffee industry was in 1881 when he began to work for an established importing and wholesale company that started its life as Randall & Jones (1856), with whom he would later merge to form the Jones-Thierbach Co.[52] The firm's president at that time, Michael P. Jones, was known as one of the pioneer merchants of San Francisco. He began an importing business in 1858 at which time he partnered with Frank Randall. Randall retired shortly after and Jones continued the business under the name of Jones & Co. The business began as one of the first and largest importers of sugar from Hawaii, owning several vessels before steamship lines were established. By the early 1880s, when Thierbach joined, the company had shifted its focus to the import and manufacturing of tea, spice, and coffee under the name of the Jones-Paddock Company, located at 28 Fremont Street before the earthquake and 230 Fremont Street by 1910 **(Figure 38)**.[53]



Figures 38. Illustration of the Jones-Paddock Co. Importers office building at 26-28 Fremont Street, 1900.
Source: Receipt at http://www.coinmine.com/inventory/Ephemera/JonesPaddockBillHead.htm

As described in the previous section, the coffee import and wholesale business was one of San Francisco's earliest and most profitable industries in the late nineteenth through mid-twentieth centuries. While many of the city's earliest coffee companies did not survive the economic turmoil following the 1906 earthquake and fire, Charles Thierbach was fortunate enough to be involved in one of the few coffee companies that remained afloat and resumed business following the destruction in a nearby location also in the South of Market district. City directories show that Thierbach left the Jones-Paddock Co. in 1907 and began his own coffee wholesale business and

[52] Ancestry.com, accessed July 2016 and The Tea and Coffee Trade Journal Company, 1935.
[53] "Death of M.P. Jones." *San Francisco Call.* September 2, 1899.

roastery at 447 Battery Street called Thierbach & Co. Though M.P. Jones had died in 1899, records indicate that Thierbach's new company and the Jones-Paddock Co. merged by 1912, changing the name of Thierbach's company to the Jones-Thierbach Co.[54] No further information about the merger was found, such as whether one of Jones's sons, Webster or Milton, may have also been involved in the company at that time.

While it appears that the Jones-Thierbach Co. was not known to pioneer new techniques or products in the early years of the industry, the company maintained a profitable mid-size roastery and manufacturing facility out of which they produced several popular wholesale brands of canned coffee. Records indicate only a few companies were industry competitors in the immediate post-fire years, including the Ceylon Tea Company (1909 Mission Street), Columbia Coffee and Spice Company (423 Jackson Street), and Eagle Coffee and Spice Mills (520 Washington Street). Other larger companies, such as Folger's (520 Washington Street) and Hill's Brothers Coffee also continued to operate in downtown San Francisco in their multi-story manufacturing and roasting facilities.[55] In 1915, the year of the Panama Pacific Exposition, city directories identify Charles Thierbach as the Vice President of the Jones-Thierbach Co.

Several articles from the 1910s advertise the Jones-Thierbach Co. for their high-quality coffees and teas. However, one article from 1912 (the year of the company merger) describes a legal case in which the Jones-Thierbach Co. was reported by the U.S. Secretary of Agriculture for misbranding a shipment of coffee beans. According to the case summary, a quantity of bags was inaccurately labeled "Arab Coffee with Chicory" (including a picture of an Arab man at center) with a description of the contents containing ground coffee and chicory. In reality, the coffee was found to contain 90 percent South American coffee, about 10 percent chicory, and none of the higher quality Arabic coffee. Thierbach pleaded guilty and the company was fined $25 for deceiving the purchaser.[56]

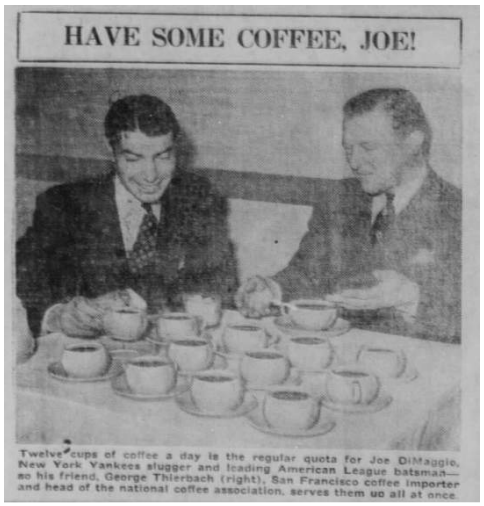
Despite this negative press, the Jones-Thierbach Co. was selected a few years later to exhibit in the Food Products Building at the 1915 PPIE, in addition to other well-known consumer brands, including Folgers, Ghirardelli (chocolate), McCormick (spices), Heinz (ketchup), and Morton's (salt).[57] Though Jones-Thierbach was known principally for its 'Alta' brand of coffee by this time, the company had branched out its product base to include spices, extracts, tea, and baking powder. The photos below of the PPIE portray the interior with the typical coffee bean grinding equipment used at that time. They also marketed the brand by giving out free samples of the Alta coffee with its 'Gold Medal' award. A trade journal in 1915 remarked that the company had received the award at the PPIE for their entire Alta line, "a line of exceptional merit as far as quality is concerned" **(Figures 39 to 41)**.[58]

[54] "Two Large Firms Consolidate." *California Grocers Advocate,* Volume 17, Issues 1-26. 1912.
[55] San Francisco city directories, 1905 – 1908.
[56] U.S. National Library of Medicine. Case Number #4815 "Misbranding of coffee. U.S. v. The Jones-Thierbach Co., a corporation. Plea of guilty. Date issued, September 18, 1917. https://ceb.nlm.nih.gov/fdanj/handle/123456789/39796 Accessed July 17, 2017.
[57] Moore, Charles C. Official Catalogue of Exhibitors, Panama-Pacific International Exposition, San Francisco, California, 1915.
[58] Phyfe, James, Simmon's Spice Mill, Devoted to the Interests of the Coffee, Tea, and Spice Trades, Vol. 38, January 1915.

Figures 39-41. Jones-Thierbach Showroom Interior and Advertising Letterhead (1917). Typical vacuum-packed Alta coffee grounds jar (1920). Source: UC Davis, Special Collections (photographs), Ebay (letterhead and jar).

Census records list Thierbach as a San Francisco "merchant" and "importer of wholesale coffee," and later of tea and spices (likely expanded product base following the merger though no exact record was found), for every decade from 1907 through 1930. Little additional information was found about Charles or the company after the 1930s. Thierbach continued working until the age of 83, soon before he died in 1931, at the age of 84. One of Thierbach's sons, George, assumed ownership of the company following his father's death, where he had begun working as superintendent, according to city directories, since the 1920s. George Thierbach was also the head of the National Coffee Association for several years, particularly during the 1930s through mid-1940s.[59] George traveled often to promote the brand, featured below in an image with Joe DiMaggio, performing a "cupping" flavor test **(Figure 42)**.

[59] "Coffee Unit Reelects." *The Salt Lake Tribune.* October 17, 1943. Pg. 13.



Figures 42. New York Yankee, Joe DiMaggio, and friend George Thierbach (right), tasting coffee in Indiana (1940) Source: The Edinburg Daily Courier, Indiana. February 29, 1940. Pg. 4.

George Thierbach died in 1952, after which time it is not clear who assumed ownership of the company, though it remained listed in city directories as the Jones-Thierbach Co. until 1967. At this time, the subject building was sold and the company ceased to exist. No other employees were discovered in public records or articles to have made particular contributions to the company over its nearly 60-year tenancy at 447 Battery Street.

VI. EVALUATION

NATIONAL REGISTER OF HISTORIC PLACES

The National Register of Historic Places is the nation's most comprehensive inventory of historic resources. The National Register is administered by the National Park Service and includes buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level. Typically, resources over fifty years of age are eligible for listing in the National Register if they meet any one of the four criteria of significance and if they sufficiently retain historic integrity. However, resources under fifty years of age can be determined eligible if it can be demonstrated that they are of "exceptional importance," or if they are contributors to a potential historic district. National Register criteria are defined in depth in *National Register Bulletin Number 15: How to Apply the National Register Criteria for Evaluation*.

The California Register follows nearly identical guidelines to those used by the National Register, but identifies the Criteria for Evaluation numerically. The four basis criteria under which a structure, site, building, district, or object can be considered eligible for listing in the National or California registers are:

- *Criterion A/1 (Event):* Properties associated with events that have made a significant contribution to the broad patterns of our history;
- *Criterion B/2 (Person):* Properties associated with the lives of persons significant in our past;
- *Criterion C/3 (Design/Construction):* Properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant distinguishable entity whose components lack individual distinction; and
- *Criterion D/4 (Information Potential):* Properties that have yielded, or may be likely to yield, information important in prehistory or history.

A resource can be considered significant on a national, state, or local level to American history, architecture, archaeology, engineering, and culture. The following section examines the eligibility of 447 Battery Street for listing in the National and California Registers.

Criterion A/1 (Event)

The building at 447 Battery Street is associated with the period of post-earthquake redevelopment in the city and specifically, with that of the produce market district and redevelopment of the wholesale coffee and roasting industries in San Francisco. The district was an epicenter of mercantile activity with constant deliveries and transactions of foodstuffs to markets and warehouses that supplied the city. Industrial/commercial buildings in the district typically had wide, publicly accessible merchant stalls, shop windows, or loading areas on the street level. Although 447 Battery Street was located just within the western boundary of the district, it does not appear to be a particularly representative example of a typical commercial/industrial building that characterized the produce market district with open merchant stalls or loading areas on the street level. Sanborn maps and early photographs indicate that 447 Battery Street featured one storefront with an awning, but otherwise did not feature open stalls, and contained a single private office space. Two other storefronts are recorded on the map, though only one is shown in the photograph to be publicly accessible. Thus, 447 Battery Street is not individually significant in association with the post-earthquake redevelopment period or the produce market.

The subject building also housed the coffee roastery, storage warehouse, offices, packaging, and manufacturing facility of the Jones-Thierbach Co., and was therefore historically associated with the post-earthquake redevelopment of the coffee industry in San Francisco. In the nineteenth century, the majority of coffee roasters were located along California Street in the Financial District. While the Folgers multi-story brick masonry building survived the fires, most of the city's other coffee roasteries and manufacturing facilities were forced to relocate and rebuild, including Jones-Thierbach's parent company, the Jones-Paddock Co., Hills Brothers, MJB, and many other smaller operations. During reconstruction, most of these businesses relocated to commercial warehouse buildings going up rapidly in the South of Market District, while others, including the Jones-Thierbach Co. at the subject property, relocated to buildings in the expanding produce market district and Financial District.

There is record of Jones-Thierbach Co.'s early successes in the industry during the decade following reconstruction and the merger with the well-established Jones-Paddock Co. in 1912, including the release of their "Alta" coffee brand and the pavilion at the 1915 Exposition. The Alta ground coffee was jarred and later canned using the Hills' Bros. new vacuum-packing technique, which improved the coffee's shelf-life and flavor, contributing to its quick popularity. Shortly after the merger in 1912, Thierbach was accused of mislabeling South American coffee to sell it for more as Arabian coffee, and he pleaded guilty to the charge later that year. Little additional information was found about the company or its products after the 1920s, except for a listing in 1932 in the National Coffee Roasters Association, which at that point included twenty-five other competing large and mid-size roasteries of similar or greater repute. Charles's son, George, assumed leadership of the company in the early 1930s, and though he was active in the National Coffee Association, there was no information found regarding the company's contributions to any notable product or industry policy innovations. Despite Jones-Thierbach's early growth, which appears partially due to the successes of the more established Jones-Paddock Co., no later records indicate that the company was known to be particularly unique or innovative in the coffee and tea roasting and wholesale supply industries.

Overall, 447 Battery Street is not particularly representative of the redevelopment period and appears to lack significance in association with San Francisco's coffee roasting and tea wholesale industries. Thus, the building does not appear to be individually eligible for listing in the California Register under Criterion 1.

Criterion B/2 (Persons)

The building at 447 Battery Street does not appear to have been associated with persons important to the produce market district or greater history of San Francisco to the extent that the building would be considered individually eligible for listing in the California Register under Criterion 2. Charles Thierbach's first involvement in the coffee industry began in 1881 at the Jones-Paddock Company. The company survived the 1906 disaster; however, Thierbach left to start his own roastery and wholesale operation in 1907 at 447 Battery Street called Thierbach & Co. The Jones-Paddock Company merged with Thierbach's roastery and wholesale business in 1912, changing the name at that time to the Jones-Thierbach Co. This merger was the beginning of the mid-size local coffee roastery and wholesale supplier that would occupy the building for nearly 60 years. Although M.P. Jones is regarded as a respected, early pioneer merchant of San Francisco and the partial namesake of the Jones-Thierbach Co., he died in 1899, eight years before Thierbach started his company at 447 Battery Street, and thus is not directly associated with the subject property. No further information was found about Charles Thierbach or his employees at the Jones-Thierbach Company.

Charles Thierbach's son, George, assumed ownership of the brand in the early 1930s and was active throughout his career in local and national coffee organizations, but as mentioned, neither father nor son was found to be associated with any major innovations in the coffee roasting or coffee and tea wholesale supply industries. After the Jones-Thierbach Co.'s tenancy at 447 Battery Street ended in

1966, the building housed several different businesses, including two computer consultancies known as the Recording and Statistical Co. and the Burroughs Corporation. Research did not reveal further information about these companies or their owners to evaluate whether any employees would be considered historically influential in association with the building. Thus, 447 Battery Street does not appear to rise to a level of significance such that the building would be eligible for listing under Criterion B/2 (Persons).

Criterion C/3 (Architecture/Design)

The building at 447 Battery Street does not appear to be individually significant under Criterion 3 (Architecture/Design). Though it is an example of a multi-story, brick masonry-constructed industrial/commercial building typical in San Francisco during the post-earthquake period of reconstruction, 447 Battery Street is not a particularly rare example of this typology. Nearby properties were surveyed for this report (see IV. Historic Context) and appear to be better representatives of the typology. All of these buildings were built during the period of the subject property's construction or shortly after (1906-1911), and are located within two-and-a-half blocks of 447 Battery Street in the northeast, northwest, and southwest directions. Based on the character-defining features of the typology, those buildings with a similarly restrained, yet higher level of architectural merit include: 405 Sansome Street, 407 Sansome Street, 568 Sacramento Street, 843-851 Montgomery Street, 298 Pacific Avenue, and 705 Sansome Street. These buildings feature more refined ornamental Neoclassical-style brickwork, arched openings, highly decorative cornices, beltlines, dentils, and pilasters at the primary and secondary façades. The identified buildings at 200 Jackson Street, 601-615 Front Street, and 705 Sansome Street, appear to feature original windows and/or doors, intact brickwork and other architectural detailing, and less compromised surrounding environments. In general, all of these properties were found to feature an overall higher level of architectural merit and/or to exhibit more character-defining features of the industrial/commercial building typology. Therefore, 447 Battery Street does not appear individually significant in association with the brick building typology from the post-earthquake period.

447 Battery Street is also not a noteworthy example of its building typology, largely due to alterations that have occurred over time. Aside from 447 Battery Street's original three-story and two-part vertical massing, brick and timber construction, arched openings, and three-course brick belt line, the building contains no original features or characteristics that would make it architecturally significant as an example of an industrial/commercial style building of the early-twentieth century, nor as an example of any observable architectural style. Overall, the building does not appear to be a representative example of the type, period, or method of construction, nor does it feature high artistic merit. Therefore, the building does not appear to be individually significant under this criterion.

Criterion D/4 (Information Potential)

"Properties that have yielded, or may be likely to yield, information important in prehistory or history" or the "potential to yield information important to the prehistory or history of California" relates to archeological resources, rather than built resources. When Criterion D/4 does relate to built resources, it is for cases when the building is the principal source of important construction-related information. Based on research, Criterion D/4 is not applicable to 447 Battery Street.

INTEGRITY

In order to qualify for listing in the National Register of the California Register, a property must possess significance under one of the aforementioned criteria and have historic integrity. The process of determining integrity is similar for both the California Register and the National Register. The same seven variables or aspects that define integrity—location, design, setting, materials, workmanship, feeling and association—are used to evaluate a resource's eligibility for listing in the

California Register and the National Register. According to the *National Register Bulletin: How to Apply the National Register Criteria for Evaluation*, these seven characteristics are defined as follows:

> Location is the place where the historic property was constructed.
>
> Design is the combination of elements that create the form, plans, space, structure and style of the property.
>
> Setting addresses the physical environment of the historic property inclusive of the landscape and spatial relationships of the building(s).
>
> Materials refer to the physical elements that were combined or deposited during a particular period of time and in a particular pattern of configuration to form the historic property.
>
> Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history.
>
> Feeling is the property's expression of the aesthetic or historic sense of a particular period of time.
>
> Association is the direct link between an important historic event or person and a historic property.

Although the subject property was found to possess no individual significance under any of the Criteria for listing, the following provides a brief discussion of the building's integrity:

The building at 447 Battery Street retains its integrity of location, having never been moved from its original location on Battery and Merchant streets. However, 447 Battery Street does not retain overall integrity of setting, given that the surrounding neighborhood is no longer characterized by one- to three story industrial/commercial buildings. Beginning as early as the mid-1960s, the expansion of the Financial District led to the construction of several high-rise modern office buildings directly adjacent to the subject property on the north, west and south sides, as well as the Golden Gate Redevelopment project across the street. 447 Battery Street also has compromised integrity of design, workmanship, and materials given that it has undergone significant alterations to the building interior and exterior façades, including the removal of the original stucco cladding, repeated sandblasting of the brick, as well as several modifications to the Battery Street storefronts, door openings on the Merchant Street façade, and replacement of the original wood frame windows. Closer examination of the exterior brick also demonstrates the extent to which original masonry elements had been damaged or removed and haphazardly patched with varying types of brick, pieces of wood, concrete, and grout, impacting further the integrity of materials and workmanship.

Although the primary Battery Street storefront and window openings have not been altered and the overall building massing maintained, the original design intent of 447 Battery Street was significantly compromised by the aforementioned alterations, including the removal of the stucco cladding and cornice damage on the visible façades of the building. It is important to note that it was not perceived as a brick masonry building during its existence as the Jones-Thierbach Co. building, but instead as a stucco-clad building with painted signage through the mid-1960s. Given these exterior alterations and interior remodel in 1967 to convert the original use of the building, the building has significantly compromised integrity of feeling and association as it no longer conveys its original commercial and warehouse uses significant to the produce market district or any visible remnants of the Jones-Thierbach Co.

HISTORIC DISTRICT ANALYSIS

Existing Potential Historic Districts

This section evaluates 447 Battery Street as a potential contributor to both the neighboring Front-California Downtown Conservation District, a few blocks to the southeast and the Commercial-Leidesdroff Conservation District, one block to the southwest **(Figure 43)**.

The Front-California Downtown Conservation District consists of one- to eleven-story commercial office buildings, many of which date from the post-earthquake period of reconstruction (completed by the 1930s) and were built to serve the produce market district with offices and retail on the street level and storage on the upper stories. The following text is included in Appendix H to *Article 11, Front-California Conservation District*, and sets forth the following justification for the Conservation District:

> Located to the east of the financial district on filled land, this District was outside of the major downtown growth corridors in the nineteenth and early twentieth centuries. The location of the Federal Reserve Bank on Battery Street and the construction of several office buildings (Southern Pacific, Matson) in the 1920s, linked the financial district with port-oriented buildings on lower California and Market Streets. While office uses have been located on California Street since 1906, the area east of Battery Street was not fully integrated into the financial district until 1920, when the street assumed its present character. The development of Front Street proceeded at a slower pace and was not complete until the 1930s. Front Street was redeveloped after the fire, with warehouses and industrial buildings serving the produce district to the north and office support services serving the office core to the west and on California Street. Buildings on Front Street commonly contained stores and offices at the ground level while upper stories were used for stock purposes and general storage. Several offices and printers were also located on the street.

Character-defining features of the Front-California Conservation District include:

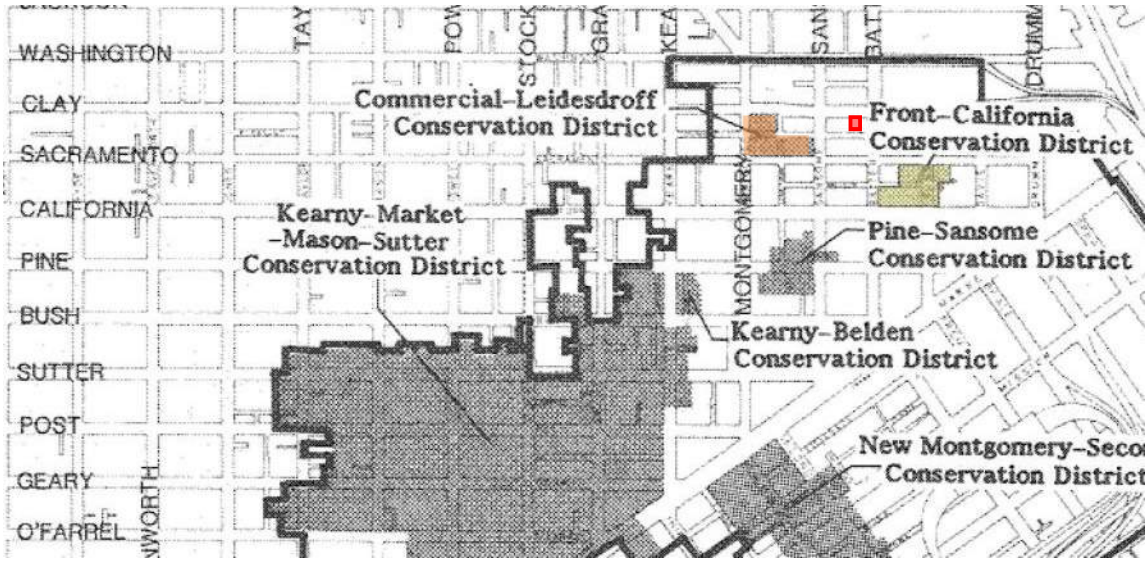
- Varied street wall height, from one to 11 stories
- Façade materials include exposed brick, stucco, metal and terra cotta panels
- Façade details include glazed brickwork, arches, decorated spandrels, projecting cornices and belt courses, pilasters, and rustication
- Building styles vary from utilitarian brick industrial with decorative brickwork to ornate Renaissance Revival
- Ornament is generally derived from Renaissance sources
- Buildings employ similar scale, height, fenestration, texture, and materials
- The District forms a coherent entity. Outside the boundary, the older buildings become larger and are interspersed with more modern structures. The similar character and scale of the buildings unify the District.

The Commercial-Leidesdorff Conservation District to the north of the subject property consists of narrow parcels and small-scale, two- to six-story buildings (excluding one high-rise), largely reconstructed in the post-earthquake years and completed in the early 1920s. It also traditionally contained a wide variety of businesses, which enjoyed the convenience of proximity to the Financial District. The following text is included in Appendix H to *Article 11, Commercial-Leidesdorff Conservation District*, and sets forth the following justification for the Conservation District:

While Montgomery Street has historically been the preferred address for major banks and offices, Commercial and Leidesdorff Streets contained a wide variety of uses which found it convenient to be located near the office district. In the 19th century, Leidesdorff Street connected the A. Paladini Fish Market on Clay Street with the San Francisco Chamber of Commerce on Pine. In the 1920s, these streets boasted several printers and binderies, a cigar factory (554 Commercial), photoengravers, a chemical storage warehouse as well as a paints, oils and varnish business. The special character of this block is created by the intersection of Commercial and Leidesdorff Streets, dividing the block into quadrants. The northeast quadrant of the block has been developed by a highrise of insensitive scale and design and was therefore excluded from this District. The remaining three quadrants of the Conservation District remain intact. The small size of the parcels determines narrow width of the buildings. Focusing on the intersection of the two alleys, the District is a quiet area contrasting with the intensity of the Financial District.

Character-defining features of the Commercial-Leidesdorff Conservation District include:

- Small-scale (two to four story) masonry buildings on narrow parcels
- District focused around the intersection of Commercial and Leidesdorff streets creating a concentration of rich visual interest and a dense pedestrian environment
- Variety of architectural styles but overall, the buildings display outstanding merit and a relatively high quality of Classically derived detailing and historic character



Figures 43. Relationship of the subject property (shaded red) to the Front-California Conservation District (shaded yellow) and the Commercial-Leidesdorff Conservation District (shaded orange). Source: SF Planning Department, Downtown Area Plan. Edited by Page & Turnbull.

Survey Area

At the request of the San Francisco Planning Department, Page & Turnbull has conducted a windshield survey of 16 total buildings in the vicinity of the subject building **(Figure 44).** Surveyed parcels include the surrounding buildings of the 400 block of Battery Street and the buildings on the

east and west faces of Battery Street between California Street (south) and Washington Street (north) in order to determine if a potential extension of the Front-California Conservation District should include the subject property. In addition to the district survey, several comparative examples of other buildings in the neighborhood are noted, which are representative examples of multi-story, brick masonry-constructed industrial/commercial buildings built during the post-fire period. These properties are shown in a map, table, and discussed in greater detail at the end of this section.

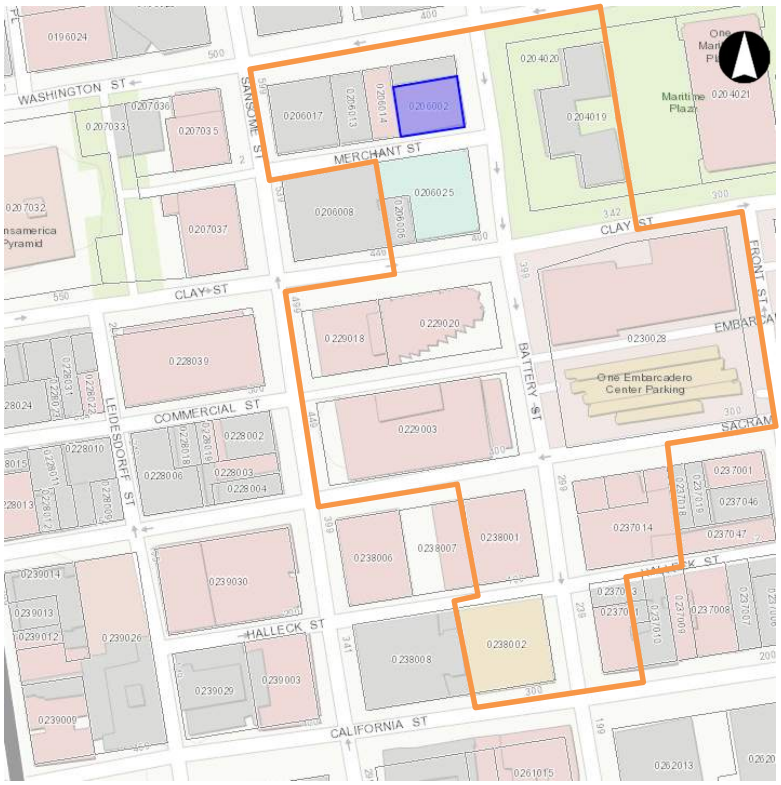
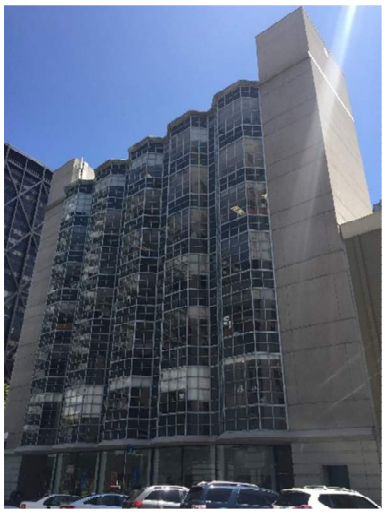


Figure 44: Surveyed buildings in vicinity of 447 Battery Street (shaded blue) are outlined in orange. Source: San Francisco Planning Department, Property Information Map. Edited by Page & Turnbull.

Inventory

The following inventory for the survey area, organized by side of the block face, includes relevant information from the online San Francisco Property Information Map; Sanborn Fire Insurance Company maps; and photographs taken by Page & Turnbull in July 2017.

400 Block of Battery Street

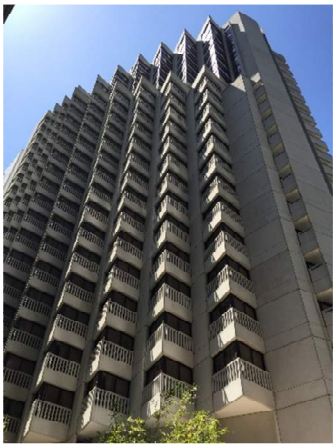
Address	Photograph	Property Information
1 447 Battery Street (subject property)		APN: 0206/002 Year Built: 1907 Style: Commercial/Industrial with Neoclassical features Historic Status: A-Historic Resource Present (SF Planning) "1" rating – Rated 0-5 with 1 as lowest architectural rating (Department of City Planning, 1976)
2 423 Washington Street		APN: 0206/019 Year Built: 1983 Style: Postmodern Historic Status: C-No Historic Resource Present / Not Age Eligible

Address	Photograph	Property Information
3 425 Washington Street and 424 Merchant Street	 	APN: 0206/014 Year Built: 1907 Style: Commercial/Industrial with Neoclassical features Historic Status: B – Unknown / Age Eligible

Address	Photograph	Property Information
4 339-445 Washington Street and 440 Merchant Street	 	APN: 0206/013 Year Built: 1907 Style: Commercial/Industrial with Italian Renaissance Revival features Historic Status: B-Unknown/Age-Eligible
5 530 Sansome Street		APN: 0206/017 Year Built: 1975 Style: Brutalist Historic Status: B-Unknown/Age-Eligible

Battery Street – Between Washington Street and California Street

Address	Photograph	Property Information
6 444 Battery Street (Parking garage of One Maritime Plaza)	 	APN: 0204/019 Year Built: 1967 Style: International Style Historic Status: B-Unknown/Age-Eligible
7 425 Battery Street		APN: 0206/025 Year Built: 2000* Style: Vernacular with Edwardian façade features Historic Status: B-Unknown/Age-Eligible (requires updating on PIM) * Date of construction not listed in Property Information Map; date taken from building permits for demolition and new construction

Address	Photograph	Property Information
8 365 Battery Street	  	APN: 0229/020 Year Built: 1989 Style: Neofuturist Historic Status: C – No Historic Resources Present / Not Age Eligible

Address	Photograph	Property Information
9 361 Battery Street (Embarcadero Center 1 Podium)	 	APN: 0230/028 Year Built: 1970 Style: Late Modern Historic Status: B-Unknown/Age-Eligible
10 334 Battery Street (Embarcadero Center 1 Tower and Garage)		APN: 0230/028 Year Built: 1970 Style: Late Modern Historic Status: B-Unknown/Age-Eligible

Address	Photograph	Property Information
11 322 Battery Street		APN: 0229/003 Year Built: 1919; 1989 Style: Greek Revival Historic Status: A – Historic Resource Present Planning App. No: 2004.0943E Date: 7/1/2016 Decision: A – Historic Resources Present
12 292 Battery Street and 353 Sacramento Street (tower portion connected at interior to 292 Battery Street)	 	APN: 0237/015 Year Built: 1922 and 1982 (tower) Style: Classical Revival and Postmodern, respectively Historic Status: B-Unknown/Age-Eligible and C- Not Age Eligible, respectively

Address	Photograph	Property Information
13 275 Battery Street	 	APN: 0238/001 Year Built: 1988* Style: Late Modern Historic Status: Listing for this parcel in the Property Information Map is for 241 Battery Street (the Eastman Kodak building) * Date of construction not listed in Property Information Map; date taken from building permits for new construction
14 220 Battery Street		APN: 0237/013 Year Built: 1913 Style: Vernacular with commercial/industrial features Historic Status: A – Historic Resources Present* *A contributor to the Front-California Conservation District

Address	Photograph	Property Information
15 215 Battery Street		APN: 0237/011 Year Built: 1910 Style: Neoclassical Historic Status: A – Historic Resources Present* *A contributor to the Front-California Conservation District
16 211 Battery Street		APN: 0238/002 Year Built: 1946 Style: Modern Historic Status: C – No Historic Resources Present / Not Age Eligible

Conservation District Discussion

Construction Dates & Alterations

The buildings in the survey area were built during a wide range of construction periods, between 1907 and early 2000s. Based on information available in San Francisco's Property Information database, including available permits, seven buildings were constructed within the early twentieth century (1907-1922) or (41%), five buildings during the mid-twentieth century (1946-1970) or (29%), and four buildings during the late twentieth century (1983-c.2000) or (24%). Though about half of the properties were constructed during the period of reconstruction following the earthquake, several appear to have been significantly altered, including 220 and 292 Battery streets, while the other half dates from a wide range of periods in the second half of the twentieth century, resulting in the neighborhood's lack of architectural cohesion and compromised integrity of setting.

Building Types & Massing

Buildings within the survey area are mostly commercial office buildings exhibiting a range of heights, styles, and massing. The earliest buildings within the surveyed area are smaller scale with rectilinear footprints, and feature stores or restaurants at the street level with office space on the upper stories. Mid- and late-twentieth century buildings are mostly high-rise and modern office towers with lobbies, restaurants, or retail at the street level. Massing styles vary, though most are rectilinear on large half or full block parcels.

Architectural Styles

As mentioned, approximately half of the buildings within the survey area were originally constructed between 1907 and 1922, which spans the period of reconstruction following the 1906 earthquake and fires. These buildings are typically constructed of brick masonry and exhibit a variety of Classical Revival styles that were prominent between the 1880s and 1930. The mid-century buildings, including 211 Battery, 334-444 Battery, 530 Sansome, and 361 Battery streets, feature several common architectural styles of the time, including International Style, Modern, Brutalist, and Late Modern, respectively. The later buildings, including 275 Battery, 292 Battery, and 365 Battery, largely feature a variety of popular design styles of those decades, including Late Modern, Postmodern, and Neofuturist, respectively. This results in a relatively heterogeneous stylistic inventory of buildings in the survey area, which spans ten decades of development (1907- 2000). Despite small clusters of similar age/style buildings, such as that of the subject block, there are not enough of the same type or style to exhibit an overall sense of architectural cohesion in terms of shared chronology and character-defining features.

Conservation District Analysis

Potential Contributors to the Front-California Conservation District

Based on this windshield survey of the east and west faces of Battery Street between California and Washington streets, there appear to be a cluster of similar masonry-constructed, post-fire reconstruction era buildings (1907-1913) that are not already contributors to the Front-California Conservation District: two buildings west-adjacent of the subject property (425 Washington Street/424 Merchant Street and 339-445 Washington Street/440 Merchant Street) and one building on the south-adjacent block (432 Clay Street). Despite the similar construction era, scale, and Category 'B' (age-eligible) rating, these buildings neither appear sufficiently visually cohesive with the nearby district or with each other, nor representative of the building typology and era of construction to warrant an expansion of the existing Conservation District, or eligibility to form their own historic district inclusive of the subject property. While 292 Battery Street's corner Neoclassical-style portion fits within the period of construction of the Conservation District and is located on the north-adjacent block, the intervening modern tower has significantly compromised the integrity of design and setting of this building such that it also does not appear visually connected with the nearby district. Similarly, the late redevelopment-era building at 322 Battery Street (1919) is visually disconnected from the Conservation District and thus does not appear to be eligible as a contributor to this coherent entity. Moreover, its Greek Revival design and stone cladding does not align with the character-defining features of the Front-California Conservation District.

Similarly, while the subject property's historic use and massing fit the criteria of the Front-California Conservation District, the contributing buildings of the district were generally larger in scale and many were constructed more slowly, not reaching completion until the 1930s. Unlike the Commercial-Leidesdorff Conservation District, this district spans a couple blocks along Front Street; however, one of the character-defining features of the district is maintaining the "coherent entity of the district". As a result, 447 Battery Street does not appear to be an eligible contributor to the district due to several blocks of intervening modern redevelopment, such that the physical connection with the Conservation District no longer exists and therefore, the property is not directly associated with the coherent entity of the Front-California Conservation District.

447 Battery Street as a Contributor to the Commercial-Leidesdorff Conservation District

447 Battery Street lies just outside the eastern boundary of the Commercial-Leidesdorff Conservation District. Although the subject building's date, scale, and historic use as a coffee roastery and wholesale supplier align with the building type and variety of commercial uses of the Commercial-Leidesdorff Conservation District's contributors, the primary features of this district are its

orientation around one street intersection and a relatively high level of architectural merit exhibited by the buildings. Therefore, the subject property would not be considered an eligible contributor to this district given its two-and-one-half block distance from the intersection and pedestrian alleyway, as well as its compromised integrity of design and setting, and relatively lower level of architectural merit.

Therefore, although 447 Battery Street still retains its original scale, massing, structure, and fenestration pattern, and was likewise constructed in the post-earthquake period, the building is surrounded by substantial intervening modern development and is not close enough to either of the nearby Conservation Districts to warrant its inclusion in either district.

VII. CONCLUSION

Constructed in 1907, 447 Battery Street was built on the site of former commercial and warehouse properties following the 1906 earthquake and fires in San Francisco on the western edge of the city's produce market district. The first tenant of the building was a small coffee roastery and coffee, tea, and spice wholesale company, called the Jones-Thierbach Co. by 1912. The company operated at this property for nearly sixty years, vacating the property in 1966. Though the building does maintain some associations with the post-fire period of reconstruction, the produce market district, and the redevelopment of the city's coffee wholesale industry, 447 Battery Street does not appear to be particularly representative of these periods, events, or design typology to the extent that it should be found to be individually significant under Criteria 1 or 3. Furthermore, while the company's namesakes, M.P. Jones, Charles Thierbach and his son, George, were fairly well-known and active in the city's coffee industry, they do not appear to have been responsible for particular innovations or advancements in the field, especially in association with the subject property. Thus, 447 Battery Street does not appear to be significant under Criteria 2 and not applicable to D/4.

Though the building was determined in some past surveys to be a known historic resource, new evidence discovered for the purpose of this report has led to a reconsideration of its status as a resource. It has been confirmed that several of the building's original features were removed or replaced without documentation, including the stucco façades and the original wood frame windows of the primary, and most likely, south façades. As a result, 447 Battery Street has significantly compromised integrity of design, materials, workmanship, association, and setting due to the removal and haphazard repairs of these original exterior design elements, the complete remodeling of the building interior and conversion of its use from commercial/industrial to office, and the surrounding development of the Financial District. Based on these findings of significance and integrity, 447 Battery Street was found not to be eligible for listing in the California Register. Due to its relatively low level of architectural merit and compromised integrity of design and setting, the building was also not found to be an eligible contributor to a potentially expanded Front-California Conservation District. According to CEQA guidelines, 447 Battery Street should not be considered a historical resource for the purposes of CEQA.

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IX. APPENDIX

Appendix

The Ron Kaufman Companies 529 Commercial

Waterfront-telegraph Hill

HISTORIC BUILDING DATA SHEET

Junior League of San Francisco, Inc.

AREA #3
Section

1. Street and Number	Block	Lot	Zoning	Year Built
BATTERY 431-447	206	2	C-3	1907

2. Present Owner and/or Occupant — Present Use
Ostrow Kahn & Kaufman

3. Interim Owner (s) — Interim Use (s)

4. Original Owner — Original Use

5. Architect — Builder

6. Architecture:
- A. Contruction Material
- B. Number Stories 3
- C. Style of Architecture
- D. Physical Condition
  - Excellent ✓ Fair ____
  - Good ____ Poor ____
- E. Exterior Desecreation of Original Design
  - None or Little ____
  - Moderate Amount ✓
  - Considerable ____

F. Notable Features (Continue, Second Sheet)

G. Architectural Significance as example of its style
- Exceptional ____ Fair ____
- Excellent ____ Poor ____
- Good ____

H. Future
- Secure ____ Desperate ____
- Holding ____ Unknown ____
- Threatened ____

7. Neighborhood Information:
- A. Compatibility With Neighborhhod
  - Structure Yes ____ No ____
  - Use Yes ____ No ____
- B. Importance to Neighborhood
  - Great ____
  - Moderate ____
  - Minor ____

C. Architecturally Strong Neighborhood
- Entire Block ____
- Both Sides of Street ____
- Row of Houses ____
- Number in Row ____
- Comments:

8. Historical Information:
- A. Significance
  - National or State ____ Community ____

B. Facts (Continue, Attach Second Sheet)
recent modernized, keeping only style - but plate glass added in front

9. Open to Public/Hours

10. Special Research Sources
- Name/Item
- Where

11. Screening (Date)
- Community Consultants: Accept ____ Reject ____
- Comments

12. Cross Street Reference

13. Number of Photos Attached 1

Revised 2/25/64
10/20/64 - 8th Printing

14. Surveyor Signature ____

Junior League Property Survey Form for 431-447 Battery Street. Recorded by Mary Franck. 1968. Page 2. San Francisco Public Library History Room Archives.

447 Battery (400-410 Merchant) | 206 | 2 | 1
street address | block number | lot number | summary

C-3
building type/use/number of floors | landmark number

RELATIONSHIP WITH SURROUNDING BUILDINGS
Relationship of setting to building: -2 -1 0 (1) 2 3 4 5
Importance as contribution to a cluster/streetscape: -2 -1 0 (1) 2 3 4 5

ARCHITECTURAL DESIGN VALUATION
Facade proportions: -2 -1 0 (1) 2 3 4 5
Richness/Excellence of detailing/decoration: -2 -1 0 (1) 2 3 4 5
Unique visual feature of interest: (0) 1 2 3 4 5
Example of a rare or unusual style or design: (0) 1 2 3 4 5
Overall architectural quality: -2 -1 0 (1) 2 3 4 5

☐ PROPOSED FOR FURTHER INVESTIGATION

☐ CORNICE, PARAPET, APPENDAGE
Importance of cornice to building design: -2 -1 0 1 2 3 4 5
Cornice contribution to streetscape: -2 -1 0 1 2 3 4 5

FACADE CONDITION
Physical condition: -2 -1 0 1 2 (3) 4 5
Paint/Material color: -2 -1 0 1 2 (3) 4 5

☐ REMODELING
Appropriateness of improvements: -2 -1 0 1 2 3 4 5

Evelyn 4.30.74
date

279-8

Field Notes

Review Notes

Junior League Listing
☐ text ☐ index ☐ file
☐ Northern California Guide
☐ Other Listing _____

photo 279-8

F1

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APPENDIX C.5

Historic Resource Evaluation Response, Part 1, 447 Battery Street

SAN FRANCISCO
PLANNING DEPARTMENT

Historic Resource Evaluation Response

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

Reception:
415.558.6378

Fax:
415.558.6409

Planning
Information:
415.558.6377

Date	December 18, 2017
Case No.:	**2014-1036ENV**
Project Address:	**447 Battery Street**
Zoning:	C-3-O (Downtown Office) 200-S Height and Bulk District
Block/Lot:	0206/002
Date of Review:	December 18, 2017 (Parts 1 & 2)
Staff Contact:	Rachel Schuett (Environmental Planner) (415) 575-9030 rachel.schuett@sfgov.org Jørgen G. Cleemann (Preservation Planner) (415) 575-8763 jorgen.cleemann@sfgov.org

PART I: HISTORIC RESOURCE EVALUATION

Buildings and Property Description

447 Battery Street, known as the Jones-Thierbach Coffee Company Building, is located at the northwest corner of the intersection of Battery and Merchant Streets, within San Francisco's Financial District neighborhood, the Downtown-Office Zoning District, and a 200-S Height and Bulk District. Sitting on a rectangular lot measuring 74 feet along Battery Street and 97 feet along Merchant Street, the subject building is three stories and 48 feet tall, with exterior load-bearing walls of exposed brick masonry construction and a heavy timber internal structural framework. The subject building fills all of its rectangular lot except for a notch at the northwest corner that creates a narrow light court at the rear.

Along its primary Battery Street elevation, the subject building contains two large storefront openings and a recessed building entry at the ground story. These openings currently contain modern metal and glass storefront and door systems and are covered at the lintel-level with fabric-clad box awnings. Dimensional letter signage advertising the storefront tenant has been installed in the spandrel area between the ground and second stories. At both the second and third stories on the primary facade, the subject building features seven identical window openings, with projecting brick sills and segmental arch lintels. Each opening contains a pair of metal casement windows under a single fixed sash. Above the third story, the subject building is capped with a brick cornice consisting, from bottom to top, of a projecting bandcourse, a flat frieze, several courses of corbeling, and projecting coping.

The secondary Merchant Street façade is similar to the primary façade, with the following differences: the secondary façade contains eight bays of windows compared to the primary façade's seven; all bays are evenly spaced except for the two westernmost bays, which are closer together; at the ground story, six of the secondary façade's eight bays feature short segmental arch openings containing metal casements under fixed lights; the westernmost two bays at the ground story feature a bricked-in door opening and an altered door opening into which a wooden entry door has been installed; a small rectangular metal

door has been installed to the west of the westernmost bay; in the second- and third-story window openings, the metal windows have multi-light configurations that differ from the primary façade's simple casement-under-fixed-sash design.

The subject building's brick west elevation looks onto a narrow light court and is not visible from the public way. Behind the raised parapets, the subject building has a flat roof.

Construction and Alteration History

Designed by architect Frank S. Van Trees in a simple store-and-warehouse style typical of late nineteenth and early twentieth century industrial and commercial buildings, 447 Battery Street was constructed in 1907 on a lot that the 1906 earthquake and fires had cleared of earlier buildings. Historic photos taken approximately ten years after initial construction show the subject building's street-facing facades clad in a light-colored coating—likely painted stucco—and featuring painted wall signage, with awnings installed over the street-level storefronts. Later photos show traditional wood-frame storefront infill in the ground-story openings and one-over-one windows in the upper-story openings.

The subject building's permit history contains very few instances of significant exterior alterations. However, an analysis of historic photos and narrative descriptions from historic surveys (see "Pre-Existing Historic Survey/Rating," below) indicate that between 1957 and 1968 the stucco cladding was removed (possibly through sandblasting) and the windows and storefronts were replaced. These and other unrecorded alterations (e.g., the doorway alterations at the westernmost end of the Merchant Street façade) may be linked to the building's 1967 conversion from warehouse to office space. Subsequent exterior alterations include parapet reinforcement (1986, 1997), the installation of the existing tenant signage (1998), and the undated installation of the existing storefront, building entry, and awnings on Battery Street. The current building owner states that, in addition to the ca. 1967 campaign, the building was sandblasted again in the 1990s, but that the treatment was determined to be harmful to the building and was halted after having completed the entire Battery Street façade and the easternmost ten feet of the Merchant Street façade. The extent of this more recent treatment is said to correspond to the repointing with a light-colored mortar that has occurred on the Battery Street façade and part of the Merchant Street façade.

Pre-Existing Historic Rating / Survey

The subject building, known as the Jones-Thierbach Coffee Company Building, was evaluated in the 1968 Junior League survey and included in the *Here Today* book, which was adopted by the Board of Supervisors in 1970 as "the official City-wide survey and inventory of historically and architecturally significant structures." The subject building was evaluated again in several subsequent surveys, including the 1976 Architectural Quality Survey, for which it was given a rating of "1" for "contextual importance"; and the 1978 Architectural Heritage Survey, for which it was given a rating of "B," for "Major Importance." Under Article 11 of the San Francisco Planning Code, the subject building is listed as a "Category V - Unrated" building, meaning that it has not been assigned a rating for the purposes of that code section. Based on the findings of the previous surveys, in particular the adopted 1968 Junior League survey, the subject building is considered a "Category A" property (Known Historical Resource) for the purposes of the Planning Department's California Environmental Quality Act (CEQA) review procedures.

Neighborhood Context and Description

447 Battery Street is located at the northwest corner of Battery Street and Merchant Street. (Merchant Street, which does not conform to the North of Market area's predominant 50-vara grid, is more of a mid-block alley.) The subject block is built on landfill that sits beyond the natural shoreline of San Francisco, in the middle of the historical Yerba Buena Cove. Currently considered part of the Financial District, until the mid-twentieth century this area hosted a wide range of stores, warehouses, and other mercantile establishments associated with the nearby produce market and working waterfront. Starting in 1959, much of this historic marketplace neighborhood was razed in connection with the Golden Gateway Redevelopment Project, a massive urban renewal scheme that was completed over the course of the subsequent decades. The results of this project are visible today as the collection of apartment towers, townhouses, office buildings, hotels, parks, plazas, parking garages, and shopping areas that occupy the blocks to the immediate east of the subject property.

The blocks on the west side of Battery Street, including the subject block, have been absorbed into the Financial District, and include many buildings constructed in the late twentieth century, although there is nothing on the massive urban scale of the Golden Gateway Project to the east. The Transamerica Pyramid, San Francisco's tallest building from the time of its construction in 1972 until 2017, stands less than two blocks west of the subject building. The subject block and the block to the south across Merchant Street include several buildings constructed in the aftermath of the 1906 earthquake and fires (447 Battery Street, 1907; 439 Washington Street, 1907; 425 Washington Street, 1907 (altered); 432 Clay Street, 1912), a 1920s office building (500 Sansome Street, 1929), a modernist fire station (530 Sansome Street, date unknown), and a contemporary hotel building (425 Battery, early 2000s). Nearby historic buildings include the 1911 U.S. Customs House (555 Battery Street), the 1944 U.S. Appraisers Building (630 Sansome Street), and 545 Sansome Street, built in 1930. The identified historic district that is closest to the subject building is the Article 10 Jackson Square Historic District, known for its nineteenth century commercial buildings. Other nearby historic districts include the Article 11 Commercial-Leidesdorff and Front-California Conservation Districts, which contain commercial buildings from the early twentieth century.

CEQA Historical Resource(s) Evaluation

Step A: Significance

Under CEQA section 21084.1, a property qualifies as a historic resource if it is "listed in, or determined to be eligible for listing in, the California Register of Historical Resources." The fact that a resource is not listed in, or determined to be eligible for listing in, the California Register of Historical Resources or not included in a local register of historical resources, shall not preclude a lead agency from determining whether the resource may qualify as a historical resource under CEQA.

Individual	Historic District/Context

Property is individually eligible for inclusion in a California Register under one or more of the following Criteria:	Property is eligible for inclusion in a California Register Historic District/Context under one or more of the following Criteria:
Criterion 1 - Event: ☒ Yes ☐ No	Criterion 1 - Event: ☐ Yes ☒ No
Criterion 2 - Persons: ☐ Yes ☒ No	Criterion 2 - Persons: ☐ Yes ☒ No
Criterion 3 - Architecture: ☒ Yes ☐ No	Criterion 3 - Architecture: ☐ Yes ☒ No
Criterion 4 - Info. Potential: ☐ Yes ☒ No	Criterion 4 - Info. Potential: ☐ Yes ☒ No
Period of Significance: 1907-1967	Period of Significance: ☐ Contributor ☐ Non-Contributor

Preservation staff finds that the subject building is individually eligible for inclusion in the California Register of Historical Resources (CRHR) under Criteria 1 and 3, but that it does not contribute to an eligible historic district. The subject building's period of significance extends from the time of its original construction in 1907 until 1967, when it ceased to be used for the manufacture and warehousing of coffee. These findings are based on information found in the Planning Department and in the Historic Resource Evaluation provided by the consultant, Page & Turnbull. Preservation staff does not concur with the consultant's conclusion that the subject building is not a historic resource.

Criterion 1: Property is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
To be eligible under the event Criterion, the building cannot merely be associated with historic events or trends but must have a specific association to be considered significant. Staff finds that the subject building is individually eligible for inclusion on the California Register under Criterion 1 due to its associations with reconstruction following the 1906 earthquake and fires, and with the development of the San Francisco coffee industry.

Regarding the association with post-1906 reconstruction, the subject building's specific association with this citywide historical phenomenon relates to its status as one of the most prominent of a small number of buildings from this era that survive in a part of the Financial District that underwent massive change in the second half of the 20th century. Historical photographs and maps confirm that the area surrounding the subject property was devastated in the 1906 earthquake and fires. In the subsequent frenzy of activity, developers reconstructed these blocks with generally low-scale buildings devoted to the manufacture, warehousing, and sale of commercial goods. Sanborn maps from 1913-1915 show most of the area surrounding the subject property rebuilt, with only a few isolated vacant lots. Nearby businesses trafficked in a wide range of products, including barrels, brooms, candy, cigars, flour, liquor, milk, paint, paper, printed material, paste, spices, and syrup. Also present were the numerous open stalls and marketplaces dedicated to the sale of produce, for which the larger district was known.

Maps dating to 1950 show few changes to the largely commercial and industrial character of the area to the east of Battery Street, where produce sales remained prominent. West of Battery Street, more offices and banks had spread north from the Financial District core around California Street. The larger North of Market district also hosted a number of small- to medium-scale coffee roasteries at this time: in addition

to the subject building, roasteries were present at 901 Battery Street (the roastery, warehouse, and offices for the popular Manning's cafeteria chain; extant) and 306 Sacramento Street (demolished).

However, within ten years of the publication of the 1950 map, the blocks to the west of Battery Street were razed in connection with the Golden Gateway Redevelopment Project (see "Neighborhood Context and Description," above). Historical concept drawings indicate that at least one version of the project included a "panhandle" that extended between Washington and Clay Streets up to Montgomery Street, connecting the redevelopment area to the present site of the Transamerica Pyramid. Had this concept been realized, the subject building would have been demolished. In addition to the Golden Gateway project, other changes taking place in this district in the mid- to late-twentieth century included the slow decline of the nearby working waterfront and the construction of the Embarcadero Freeway. Taken together, these changes erased much of the physical fabric linking this area to its industrial and blue-collar past, and effectively integrated it into the expanding Financial District.

Within this context, the subject building stands as one of the last surviving connections to this earlier history. The City of San Francisco has identified a number of buildings in the North of Market area as historically significant for their associations with pre-World War II history. Specifically, the Commercial-Leidesdorff and Front-California Conservation Districts have been recognized under Article 11 of the Planning Code for their "concentration of early 20th Century architecture" (Commercial-Leidesdorff) and retention of their "post-fire appearance, [with] most of the architecturally significant buildings constructed in the short period from 1907 through 1918" (Front-California). The Jackson Square Historic District, designated under Article 10 of the Planning Code, represents a generally earlier phase of development. Although the subject building is physically separated from these districts by swaths of more modern historic fabric that prevent it from contributing to their historic character, it nonetheless conveys many of the same historical associations. Furthermore, the subject building's location in an area that saw so much mid- to late-twentieth century redevelopment makes it one of the very last vestiges within its immediate context of the neighborhood's earlier history, and thereby elevates these associations to a level of specificity such that a finding of individual eligibility for the CRHR can be supported.

Regarding the subject building's association with the development of the San Francisco coffee industry, the building's specific association with this historical phenomenon relates to its status as the only known building with the original use of coffee roasting and warehousing to remain in the historic center of this highly significant local industry. In the wake of the Gold Rush, a number of different importers and manufacturers of coffee established themselves in San Francisco. Some of these businesses—e.g., Folger's, Hills Brothers, MJB—eventually grew into large firms with a significant presence in regional and national markets. By the second half of the twentieth century, such firms employed armies of laborers and office workers in large, modern facilities that were centrally located in or near San Francisco's downtown. According to the 1996 National Register of Historic Places nomination form for the Folger Coffee Company Building (101 Howard Street, extant),

> as early as 1882 San Francisco was the largest importer and processor [of coffee] on the West Coast, and with the advent of World War I and the opening of the Panama Canal, became the

third largest in the United States after New York and New Orleans; by the late 1940s, coffee was San Francisco's fourth largest industry.[1]

In addition to the larger companies listed above, San Francisco also hosted dozens of small and medium-sized roasters—such as that which operated out of the subject building—that contributed to the industry's prominence.

The subject building is located in an area that was the center of the San Francisco coffee industry for the entire nineteenth century and the early years of the twentieth century. San Francisco's first major coffee producer was William Bovee, who set up his first roastery near the intersection of Broadway and Stockton Street upon his arrival in 1850. By 1860 Bovee had relocated to 123 Front Street (and had taken on James Folger as a junior partner). The City Directory at this time lists three other "Coffee Factories." One, like Bovee's firm, was located in the North of Market area; the remaining two were located just south of Market. By the early 1870s, however, the industry had concentrated in the North of Market area: Of the seventeen coffee "importers" and "factories" listed in the 1873 directory, ten are located in the North of Market area, four are located in the South of Market (SoMa) area, and the locations of four are unknown.[2] This trend accelerated through the 1880s: of the 33 firms listed in the 1880 directory, all but seven were located north of Market. And although many coffee businesses had established themselves in SoMa by 1905, more than half were still located north of Market. The proportion of coffee-related businesses in the North of Market area steadily declined in the years following the 1906 earthquake and fires, although as late as 1920 the area still contained twelve separate firms. By 1955, however, on the eve of the implementation of the Golden Gate Redevelopment project, the industry was concentrated almost entirely in SoMa.[3]

The City of San Francisco has identified two other buildings associated with the coffee industry as historically significant: the Hills Brothers Coffee Plant at 2 Harrison Street (1924-26; an Article 10 landmark), and the J.A. Folger & Company Building at 101 Howard Street (1904-06; an Article 11 Significant Building). Both buildings are quite large and are located in SoMa. The subject building, on the other hand, is comparatively small and is located to the north of Market, in an area that served as the center of the coffee manufacturing business through the nineteenth century and into the early twentieth century. Although the industry had begun to shift slowly into SoMa around the time of the subject

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[1] National Register of Historic Places, The Folger Coffee Company Building, San Francisco, California, National Register #96000679, Section 8, Page 6.

[2] Starting in the late nineteenth century, directories distinguish between coffee "importers" and coffee "factories" or "mills." Later directories further divide the industry into "wholesalers," "roasters," "brokers," etc. Although in some cases the addresses for the "importers" or "brokers" clearly refer to offices that were separate from the industrial operations, at other times the organization is less obvious. The 1920 directory, for instance, lists the business in the subject building as an "importer," even though it is known to have housed other functions such as warehousing and roasting. Therefore, unless a listing clearly refers to a non-industrial office use, it was counted as the location of a coffee-related business.

[3] Directories consulted to determine the historical distribution of coffee businesses include: A.W. Morgan & Co.'s San Francisco City Directory, 1852; Langley's San Francisco Directory, 1860; Langley's San Francisco Directory, 1873; Langley's San Francisco Directory, 1880; Crocker-Langley San Francisco Directory, 1905; Crocker-Langley San Francisco Directory, 1908; Crocker-Langley San Francisco City Directory, 1920; Polk's San Francisco City Directory, 1955-56.

building's construction in 1907, the North of Market area remained important to the coffee industry for decades to come. The subject building appears to be the only remaining building in this area with the original use of roasting and warehousing coffee. Furthermore, the subject building's smaller size—relative to the large industrial complexes that are preserved in SoMa—helps to convey the fact that this highly significant local industry comprised many smaller concerns in addition to the massive corporations with recognizable names.

As noted above, the subject building shares some characteristics with buildings in nearby historic districts that have been found significant for their associations with post-1906 reconstruction, but does not appear capable of contributing to these districts' historical significance due to intervening swaths of more recent development that create a physical barrier between the subject building and the districts. The block on which the subject building is located (which, for the purposes of this analysis, classifies Merchant Street as a mid-block alley and therefore takes in the area bounded by Battery, Clay, Sansome, and Washington Streets) does contain a number of other buildings that date to the post-1906 period of reconstruction. However, this block does not appear to contain a sufficiently high concentration of historical buildings to qualify as a district that can be found significant for its association with historic events. Therefore the subject building does not appear to contribute to a historic district eligible for listing in the CRHR under Criterion 1.

Criterion 2: Property is associated with the lives of persons important in our local, regional or national past.

Records indicate that the lot at 447 Battery Street was owned by Henry E. Bothin at the time of the subject building's construction. Ownership was transferred almost immediately to Thierbach & Co., the coffee roasting and wholesale company helmed by Charles Thierbach. Thierbach & Co. owned the building until 1912, at which point they partnered with M.P. Jones to form the Jones-Thierbach coffee company, which owned and occupied the building until 1966. The Ron Kaufman Company acquired the subject building in 1967 and, renovating it for office use, held the property until 1986. Subsequently the building changed hands among a number of different companies and ownership entities, none of whom owned it for more than eight years. The current owner, Montgomery Realty Group, acquired the subject building in 2007. Occupied exclusively by the Thierbach & Co./Jones-Thierbach coffee company for the first sixty years of its existence, the subject building was occupied by a number of different businesses and retailers following its conversion to office use in 1967/68.

None of the owners or occupants of the subject building has been identified as historically important such that a finding of significance under Criterion 2 could be supported. Although Henry Bothin was a prominent Bay Area industrialist, real estate developer, and philanthropist, he does not appear ever to have been associated with the subject property outside of his capacity as temporary owner during the construction phase. As the owners of a medium-size coffee company, Charles Thierbach and his heirs do not appear sufficiently distinguished within their field to justify a finding of significance under Criterion 2. Later owners and occupants also do not appear important in our local, regional, or national past.

Therefore, 447 Battery Street is not eligible for listing in the CRHR under Criterion 2.

Criterion 3: Property embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values.

447 Battery Street has been found individually eligible for listing in the CRHR under Criterion 3 as a notable example of the brick store-and-warehouse type that was common during the nineteenth and early twentieth centuries, but that has become increasingly rare in this part of San Francisco.

As San Francisco emerged as the United States' principal West Coast port in the years following the Gold Rush, the number of buildings devoted to the production, refinement, and warehousing of bulk trade goods proliferated along the waterfront and in developing industrial areas. Originally constructed of wood, post-1870 warehouse buildings had load-bearing masonry walls and heavy timber internal structural frameworks. These features were intended both to prevent (or at least slow) the spread of fires and also to carry heavy loads. As the limited amount of property became more expensive, the economic imperative to house more floor area on smaller plots of land became stronger, and warehouse buildings accordingly grew taller, occasionally appearing with as many as seven stories. Other character-defining features of this type include storefronts or loading bays at the ground story, upper floors with a regular rhythm of window openings, and restrained ornamentation that emphasizes the buildings' utilitarian function.

The subject building was constructed in 1907 to the designs of architect Frank S. Van Trees. Although Van Trees was a prominent Bay Area architect responsible for several notable buildings (e.g., the Koshland residence at 3800 Washington Street; the National Register-listed Hearst Free Library in Anaconda, MT; numerous residences and other buildings throughout San Francisco and the Bay Area), the subject building actually appears to conform to the more vernacular style of warehouse architecture described above.[4] Referring to it as "[a] handsome post-fire brick warehouse building," architectural historian Michael Corbett described the subject building as "indistinguishable from much earlier buildings of the same type."[5] The design of the subject building may therefore be seen as a continuation and a notably late example of an architectural tradition that extends far back into the nineteenth century. In the haste to rebuild after the 1906 earthquake and fires, the Classically trained Van Trees may have resorted to replicating a simple design with a proven track record of adequately performing its intended industrial purpose. Regarding the rarity of this type, Planning staff notes that although the broader North of Market area does contain a number of brick loft and warehouse style buildings built in the aftermath of the earthquake and fires, most of these buildings (e.g., 405, 407, and 705 Sansome St., 568 Sacramento St.) were designed in more exuberant architectural styles that feature a profusion of ornamental features. Relatively few buildings can match the subject building's minimalist aesthetic and simple, repetitive pattern of fenestration. (The Legallet Building at 601 Battery Street is one other example of such a building, although even here the detailing is less restrained.) Within the subject building's immediate context, dominated as it is by mid- to late-twentieth century redevelopment, there is nothing similar.

Therefore the subject building has been determined individually eligible for listing in the CRHR as an outstanding example of a late nineteenth/early twentieth century store-and-warehouse building. Although architect Frank S. Van Trees could be considered a master architect, the subject building does

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[4] By definition, vernacular buildings do not have named architects.

[5] *Splendid Survivors: San Francisco's Downtown Architectural Heritage*, prepared by Charles Hall Page & Associates, Inc., for the Foundation for San Francisco's Architectural Heritage, text by Michael R. Corbett (San Francisco, CA: California Living Books, 1979), 190.

not represent his broader body of work; for this reason the subject building has not been found significant under Criterion 3 as the work of a master architect.

As noted above, the subject building does not appear to contribute to any previously identified historic districts, nor does it appear to be located in an area that coheres visually or thematically into a heretofore unidentified historic district. Therefore the subject building does not contribute to a historic district eligible for listing in the CRHR under Criterion 3.

Criterion 4: Property yields, or may be likely to yield, information important in prehistory or history.
The subject property does not appear eligible for listing in the CRHR under Criterion 4 as it applies to buildings and structures. This significance Criterion typically applies to rare construction types when involving the built environment. The subject property is not an example of a rare construction type. The archeological significance of the site, as opposed to the building, is not addressed in this document.

Step B: Integrity
To be a resource for the purposes of CEQA, a property must not only be shown to be significant under the California Register of Historical Resources criteria, but it also must have integrity. Integrity is defined as "the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's period of significance." Historic integrity enables a property to illustrate significant aspects of its past. All seven qualities do not need to be present as long the overall sense of past time and place is evident.

The subject property has retained or lacks integrity from the period of significance noted in Step A:

Location:	☒ Retains	☐ Lacks	**Setting:**	☐ Retains	☒ Lacks
Association:	☒ Retains	☐ Lacks	**Feeling:**	☒ Retains	☐ Lacks
Design:	☒ Retains	☐ Lacks	**Materials:**	☐ Retains	☒ Lacks
Workmanship:	☒ Retains	☐ Lacks			

447 Battery Street retains integrity. The subject building lacks the quality of "setting" due to the redevelopment of the surrounding neighborhood; and it partially lacks the quality of "materials" due to the removal of the stucco, the windows, and the storefronts. Regarding "materials," Planning staff notes that all of the removed elements are features that are often repaired and replaced over the course of a building's lifespan. Stucco in particular may be regarded as an almost sacrificial material, such as paint, that is expected to steadily wear away as it is exposed to the elements, requiring reapplication. Windows have a similarly limited lifespan. Overall the subject building retains sufficient integrity to convey its significance as a historic resource individually eligible for the CRHR under Criteria 1 and 3.

Step C: Character Defining Features
If the subject property has been determined to have significance and retains integrity, please list the character-defining features of the building(s) and/or property. A property must retain the essential physical features that enable it to convey its historic identity in order to avoid significant adverse impacts to the resource. These essential features are those that define both why a property is significant and when it was significant, and without which a property can no longer be identified as being associated with its significance.

The character-defining features of the subject property include the following:
- Three-story height and roughly rectangular footprint;

- Exterior walls constructed of brick masonry;
- Openings for storefronts and a building entry on Battery Street;
- Regular, evenly spaced rhythm of window openings on the first (Merchant Street only), second and third stories; the westernmost two bays on Merchant Street are slightly closer together;
- Slightly projecting brick sill and a segmental arch head at window openings;
- Brick cornice consisting, from bottom to top, of a projecting bandcourse, a flat frieze, several courses of corbeling, and projecting coping.

CEQA Historic Resource Determination

☒ Historical Resource Present
- ☒ Individually-eligible Resource
- ☐ Contributor to an eligible Historic District
- ☐ Non-contributor to an eligible Historic District

☐ No Historical Resource Present

PART I: SENIOR PRESERVATION PLANNER REVIEW

Signature: _____ Date: 12/29/17

Pilar LaValley, *Acting Senior Preservation Planner*

PART II: PROJECT EVALUATION

Proposed Project ☒ Demolition ☐ Alteration

Per Drawings Dated: 2/26/2016

Project Description

The proposal is to demolish the existing building and construct a new 18-story hotel and residential building. The proposed new building will have approximately 144 hotel rooms, 9 residential units, hotel and residential lobbies, ground-floor retail, a loading dock, and below-grade parking.

Project Evaluation

If the property has been determined to be a historical resource in Part I, please check whether the proposed project would materially impair the resource and identify any modifications to the proposed project that may reduce or avoid impacts.

Subject Property/Historic Resource:

☐ The project will not cause a significant adverse impact to the historic resource as proposed.

☒ The project will cause a significant adverse impact to the historic resource as proposed.

California Register-eligible Historic District or Context:

☐ The project will not cause a significant adverse impact to a California Register-eligible historic district or context as proposed.

☐ The project will cause a significant adverse impact to a California Register-eligible historic district or context as proposed.

Demolition

The proposed project at 447 Battery Street will have a significant impact on the historic resource, which would be demolished. Demolition would remove all character-defining features of the individually eligible building and would materially impair its ability to convey its historic significance.

New Construction

Due to the highly compromised integrity of the subject property's historical setting, the project is not expected to have an impact on offsite historic resources.

PART II: SENIOR PRESERVATION PLANNER REVIEW

Signature: _____ Date: 12/29/17

Pilar LaValley, *Acting Senior Preservation Planner*

cc: Rachel Schuett, Environmental Planner
Claudine Asbagh, Project Planner

Figure 1. 447 Battery Street. Screenshot of 2017 Google Street View.

APPENDIX C.6

Historic Resource Evaluation Response, Part 2, 447 Battery Street

SAN FRANCISCO
PLANNING DEPARTMENT

Historic Resource Evaluation Response

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

Reception:
415.558.6378

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415.558.6409

Planning
Information:
415.558.6377

Date	July 31, 2020
Case No.:	**2014-1036ENV**
Project Address:	**447 Battery Street**
Zoning:	C-3-O (Downtown Office) 200-S Height and Bulk District
Block/Lot:	0206/002
Date of Review:	December 18, 2017 (Part 1) July 31, 2020 (Part 2)
Staff Contact:	Rachel Schuett (Environmental Planner) (415) 575-9030 rachel.schuett@sfgov.org Jørgen G. Cleemann (Preservation Planner) (415) 575-8763 jorgen.cleemann@sfgov.org

PART II: PROJECT EVALUATION

Proposed Project ☒ **Demolition** ☐ **Alteration**

Per Drawings Dated: 7/1/2020

Part 1 Summary

In the Historic Resource Evaluation Response, Part 1 (dated December 18, 2017), Planning staff determined that the existing three-story, brick-clad building at 447 Battery Street is eligible for individual listing in California Register of Historical Resources under Criterion 1, for its associations with post-1906 reconstruction and the historically significant San Francisco coffee industry, and under Criterion 3, as a notable example of the early 20th century store-and-warehouse building type. The period of significance is 1907-1967.

Part 2 Revision

The current document is a revision of an earlier Historic Resource Evaluation Response, Part 2 (dated September 20, 2019) that was prepared by Planning staff. The HRER Part 2 has been revised to reflect the current project design and to incorporate an expanded analysis under the Secretary of the Interior's Standards for Rehabilitation. The determination from the original HRER Part 2—that the project will result in an impact to the individually eligible historic resource at 447 Battery—has not changed.

Project Description

The project proposes to demolish the existing building and construct a new 18-story hotel building. The new building will be clad in stone, glass, and metal and will rise out of the retained street facades of the existing building.

Project Evaluation

If the property has been determined to be a historical resource in Part I, please check whether the proposed project would materially impair the resource and identify any modifications to the proposed project that may reduce or avoid impacts.

Subject Property/Historic Resource:

☐ The project will not cause a significant adverse impact to the historic resource as proposed.

☒ The project will cause a significant adverse impact to the historic resource as proposed.

California Register-eligible Historic District or Context:

☒ The project will not cause a significant adverse impact to a California Register-eligible historic district or context as proposed.

☐ The project will cause a significant adverse impact to a California Register-eligible historic district or context as proposed.

Under CEQA, a project that conforms to all of the Secretary of the Interior's Standards for Rehabilitation (the Standards) benefits from the presumption that it will not result in an impact to historic architectural resources (CEQA Guidelines 15064.5(b)(3)). If a project fails to meet the Standards, then it must be analyzed further to determine if the project will "materially impair" the significance of a historic resource. Material impairment occurs when a project "[d]emolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources" (CEQA Guidelines 15064.5(b)(2)(B)).

Staff finds that the proposed project does not meet the Secretary of the Interior's Standards for Rehabilitation and would result in a significant adverse impact to historic resources.

The project does not meet the following Standards:

Standard 1. *A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.*

The project proposes to construct a new hotel building on the project site. In order to do so, the north and west exterior walls will be removed, openings will be created in the partially retained street facades, and a large new building will be constructed on the site. Although the proposed project will retain some character-defining features, the conversion to hotel use will result in the removal of most of the building's exterior walls and entire roof and internal structure, effectively negating its status as a building. Furthermore, the size, scale, and architectural character of the new construction will fundamentally alter the physical appearance of the historic resource's site and environment. Therefore, the proposed project does not meet Standard 1.

Standard 2. *The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features that characterize a property shall be avoided.*

The project proposes to remove large sections of the facade at the ground story of the south facade in order to allow for the installation of two storefronts, an exit door, and a loading bay. On the ground story of the east façade, the sill would be removed from the central display window. The building's roof and entire internal structure—including all walls, vertical supports, and floor plates—would be removed in order to allow for excavation and new construction. Although the interior does not contribute to the building's historic significance, the complete removal of the interior, along with the roof, effectively negates the property's status as a building, which is integral to its historic significance. Because the proposed project would remove 100 percent of the internal structure and floor plates, Preservation staff has determined that the amount of removal of interior elements is sufficiently large to meet a standard definition of demolition. Finally, because the existing building's 3-story height has been identified as a character-defining feature, the proposal to construct a new 18-story building will damage the historic character that is tied to the building's existing massing and scale. In sum, the proposal to undertake substantial façade removal, demolition, and a drastic change in massing and scale does not meet Standard 2.

Standard 5. *Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.*

As noted, the proposed project will effectively demolish the subject building by removing most of its exterior walls, roof, and entire internal structure. Although some character-defining features on the street facades would be retained, they would no longer be able to convey their full historic significance due to the loss of the building itself. Furthermore, by constructing a large new building within the footprint of the historic building, the proposed project would fail to preserve the subject building's character-defining three-story height. Therefore, the proposed project does not meet Standard 5.

Standard 9. *New additions, exterior alterations or related new construction will not destroy historic materials, features and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.*

The project proposes to construct an 18-story tower that will rise out of the existing building's retained facades. This construction necessitates the demolition of the subject building's entire internal structure (see Standard 2 above). When completed, the new construction will read as a 15-story addition to an existing building. Although the new construction will be differentiated from the old through the use of modern cladding materials, window configurations, and a two-story setback "hyphen" over the existing building; and although the new construction will gesture toward the historic building through the use of masonry materials and a design that abstractly references brick construction; overall, the size, scale and proportion, and massing of the new construction is too large to be considered compatible under Standard 9. According to the *Preservation Brief 14*, a publication of the National Park Service that provides guidance on designing compatible and appropriate exterior additions to historic buildings, a "new addition

should be smaller than the historic building—it should be subordinate in both size and design to the historic building."[1] Referring specifically to rooftop additions, *Preservation Brief 14* states, "Generally, a rooftop addition should not be more than one story in height."[2] Because it is not subordinate in size to the historic building, and because it far exceeds the one-story standard for rooftop additions, the new construction proposed in this project does not meet Standard 9.

Standard 10. *New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.*

If the new construction were removed in the future, the only remnants of the historic building would be the retained facades. Because no interior elements would remain and sections of the south façade would have been removed, the essential form and integrity of the property would be impaired.

In sum, the proposed project would not meet Standards 1, 2, 5, 9, and 10. Additionally, it is staff's determination that the project would result in a material impairment to the historic resource. Because the project would essentially negate the property's status as a building through the demolition of sections of the façade, the entire roof, and internal structure, and because the new construction would be incompatible in size and scale and would overwhelm the remnants of the historic building, Preservation staff has determined that the proposed project would result in a material impairment to the individually-eligible historic resource at 447 Battery Street.

Impacts to Offsite Historic Resources

The subject property's setting is characterized by a diversity of building types and styles constructed at various points throughout the twentieth century. Due to the highly compromised integrity of the subject property's historic setting, the project is not expected to have an impact on offsite historic resources.

EIR and Mitigation Measures

Because the project will result in a significant and unavoidable impact to a historic resource, CEQA requires the preparation of an Environmental Impact Report (EIR) in order to disclose impacts, evaluate alternatives, and describe required mitigation measures. Mitigation measures related to impacts to historic architectural resources for this project will likely include the following:

- Documentation: Documentation typically includes Historic American Building Survey (HABS)-level architectural photography, measured drawings, and a historical narrative, as well as video recordation and the preparation of a print-on-demand softcover booklet containing the relevant historical documentation in an easily accessible format.
- Interpretation: The sponsor will be required to develop an interpretive program for the purpose of communicating the subject building's historic significance to the general public. Examples of

[1] Anne E. Grimmer and Kay D. Weeks, *Preservation Brief 14: New Exterior Additions to Historic Buildings: Preservation Concerns*, National Park Service, Technical Preservation Services, https://www.nps.gov/tps/how-to-preserve/briefs/14-exterior-additions.htm , accessed 21 August 2019.

[2] Ibid.

interpretive materials include publicly accessible building signage, multimedia displays, walking tour itineraries, and interactive websites.

The final mitigation measures will be included in the Environmental Impact Report. Planning staff notes that while these and other mitigation measures may reduce the impact of the proposed project, they will not reduce it to a less than significant level. Therefore, the impact of the proposed project would remain significant and unavoidable with mitigation.

PART II: PRINCIPAL PRESERVATION PLANNER REVIEW

Signature: Allison Vanderslice Date: 8/13/2020

Allison Vanderslice, *Principal Preservation Planner*

cc: Rachel Schuett, Environmental Planner
Christy Alexander, Project Planner

Figure 1. 447 Battery Street. Screenshot of 2017 Google Street View.

APPENDIX C.7

Historical Evaluation of 425 and 439–445 Washington Street

HISTORICAL EVALUATION of
425 and 439-445 WASHINGTON STREET, SAN FRANCISCO

According to California Register Criteria

Top row: 425 and 439-443 Washington Street in 1957
Bottom row: 425 and 439-445 Washington Street in 2016

Block/lot: 425 Washington:206/14
439-445 Washington: 206/13

by

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May 2017

Summary

The properties at 425 and 439-445 Washington Street lie between Battery and Sansome streets in San Francisco's Financial district. The two buildings were built for different owners in 1906-1907 as two-story brick masonry commercial buildings. The architect of each was S. H. Woodruff, and the construction was by the Woodruff Company. A third story was added to 425 Washington in 1928.

The buildings were occupied by numerous businesses over the years. During its first sixty years 425 Washington was occupied by an assayer and chemist (1907-1910), wholesale poultry businesses (1916-1940), and wholesale fisheries (1942-1965). During the same period, 439-445 Washington was occupied by wholesale grocers (1910-1931), a cigar factory (ca. 1913-1943), the Fulton Paper Company (1936-1965), and a series of restaurants (1944-2015). These buildings' uses as wholesale groceries, poultry, and fish businesses were very similar to the uses in the Produce district that once stood in blocks to the east.

In 1967 the front parts of both buildings were removed to allow for the widening of Washington Street, and new brick facades were built. The new front of #425 was designed by architects Harada and Meu and engineer Russell H. Fuller; while that of #439-445 was designed by architect Gilbert L. Oliver. After the new fronts were built, #425 was occupied by a lithography business (1967-1972) and audio sales (1973-1982), among others; while #439-445 was occupied by restaurants (1967-2015) and a photography studio (1968-1993).

Because these have always been separate properties, each building is being evaluated separately under the criteria of the California Register in this report. Due to loss of integrity neither building appears to be eligible for the California Register under criteria 1, 2 or 3. They also do not fall within a potential California Register historic district. Finally, it does not appear that the the nearby Jackson Square historic district could be extended to include this property. Please see a discussion of these issues in the "Evaluation" section of this report, on pages 16-20.

Description

<u>The general vicinity</u>

This property lies at the northernmost edge of the city's Financial district. Within a block radius are buildings of very diverse types. They include:

* The Golden Gateway Center, occupying several blocks to the east and northeast of the subject property. This is a collection of high-rise and low-rise apartment buildings developed during the 1960s on the site of the former Produce district.

* U. S. Custom House (built during 1906-1911) and the Appraiser's Building (1940-1941). These monumental U. S. government buildings are located directly north of the subject property,

in the block bounded by Washington, Jackson, Battery and Sansome streets. The granite-clad Custom House at 555 Battery is five stories in height and is a landmark example of Beaux-Arts classicism. It was listed on the National Register of Historic Places in 1975. The Appraiser's Building at 630 Sansome is a spare, Moderne style high-rise.

* Jackson Square, an official city historic district occupying several blocks to the northwest of the subject property. This is a collection of two or three story brick masonry buildings built during the 19th and early 20th centuries.

* Three tall office buildings in the block to the west, bounded by Sansome, Montgomery, Clay and Washington streets. These include the nine-story California Ink Building at 545 Sansome (Willis Polk and Company; 1930), the Transamerica Pyramid at 600 Montgomery (1971) and its redwood grove, and a high-rise at 505 Sansome Street (1978). Also in this block are a one-story retail building, 501-505 Washington Street (1977), and a paved lot with the preserved remnants of an old brick building.

<u>The square block containing the subject property</u>

This block is bisected by an alley, Merchant Street. Its early, pre-World War II character was greatly diminished in 1967, when Washington Street was widened by 23 feet to facilitate traffic from the Embarcadero Freeway. When the street was widened, two buildings, those at the southwest corner of Washington and Battery and at the southwest corner of Washington and Sansome, were demolished, and the fronts of two others, 425 and 439-445 Washington, were removed and were given new facades. Another change occurred in ca. 2001, when three old buildings were replaced by a hotel at the corner of Clay and Sansome. Now only three pre-World War Two buildings remain with good integrity. The eight buildings on this block include:

* 401-423 Washington Street (1983). This glassy office mid-rise was built on the narrow sliver of land that remained after Washington Street was widened. Its large windows are divided by muntins into many lights.

* 425 Washington Street (1906-1907). One of the subject properties; described below.

* 439-445 Washington Street (1906-1907). One of the subject properties; described below.

* The Jones-Thierbach Coffee Co. building, 447 Battery Street (1907). Three stories, brick masonry construction, with segmental arched window heads; its window sash has been removed. It is rated "B" in the book *Splendid Survivors*.

* SFFD Fire Station 13, 530 Sansome Street (John Portman, architect, ca. 1974). The plain exterior consists of metal panels and concrete. It was built to replace a fire station demolished when Portman's Embarcadero Center was built.

* Club Quarters Hotel, 424 Clay Street/425 Battery (ca. 2001). Seven to ten stories in height, its bay windows faintly evoke San Francisco's Edwardian-era architecture.

* 432 Clay Street (1912). Two stories in height, of reinforced concrete with restrained classical ornamentation. Rated "C" in *Splendid Survivors*.

* The Printers' Building, 500 Sansome Street (Frederick H. Meyer, 1929). Eight stories, of reinforced concrete. It features an ornate Romanesque entrance and a restrained Art Deco top, and is otherwise plain. It was not listed in *Splendid Survivors* due to its altered window sash and possible loss of ornament. However, the present writer, in his 2007 evaluation of a nearby building, noted its history: "Probably the largest printing building ever built in San Francisco. It was built expressly for the printing industry and held thirteen printers plus seven associated businesses in 1936. Many printers remained here at least through 1953."

Description of 425 Washington Street

This brick masonry building is three stories in height and fills its lot, which measures 40'-6" by 99 feet in depth. The first floor contains a chiropractic office (on the Washington Street side) and a restaurant (on the Merchant Street side); and the upper floors contain offices. The front is clad in olive-colored bricks dating to 1967, while the rear is clad variously in original (1907) bricks and stucco, also painted olive.

The symmetrical front facade is divided into two window and entrance bays. In each, the openings rise from the ground floor entrance to the third floor window and terminate in an arched window head. Each bay is surrounded by a single course of bricks that projects three inches beyond the wall plane. Corresponding brick piers near the east and west sides of the facade rise from the ground to a plain cornice that stretches across the top of the building.

Each bay is filled by recessed entrances with polished steel doors and transoms in the first story; windows of steel that is painted red in the upper stories; and spandrels of plaster, painted beige.

The 424 Merchant Street facade is clad in original bricks only at the second story level. Here, three windows are now filled with advertising, while three others have been filled with bricks. A shallow cornice of layered bricks stretches across the top of the second story and is reinforced with tie rods and plates. Both the first and third stories are clad in stucco. Windows in both of these stories have steel frames that are painted red. Those in the first story storefront are large, while those in the third story are small. Two entrances in the first story, both at left, are recessed. They contain steel doors, that to the restaurant with full-length glazing.

Description of 439-445 Washington Street

This building is two stories in height and fills its lot, which measures 47'-5" in width by 99 feet in depth. The construction type is brick masonry. The building contains two ground floor

storefronts, 439 Washington and 441 Washington; plus upstairs offices at #445. While the Washington Street facade is made of new red bricks, the Merchant Street facade is still principally composed of original bricks.

A cornice of three layers stretches across the top of the Washington Street facade. At each layer projecting bricks alternate with narrow recesses, adding texture to the facade. Shallow horizontal courses run along the top and bottom of this cornice composition.

Below, most of the facade is devoted to three large bays, each rising two stories from the ground to a segmental arched head defined by brick courses and dentils. Raised bricks around the perimeters of these bays create the impression of brick piers between them. These bays are filled by windows, entrances to the storefronts and offices, and signage. They are described below:

In the second story, each opening is filled by a window whose metal sash is divided by muntins into smaller lights. The frieze area between the stories is devoted to signage.

In the first story, the bay at left is filled by a door, transom, and a window, all of glass set in metal frames. These serve the storefront at #439. The middle bay is devoted to signage. The bay at right has paired wooden doors opening into the storefront at #441, and a wooden door with full-length glazing serving the second floor offices (#445). The entrances are slightly recessed within the building envelope and have concrete floors.

By stepping into these recessed entrances, one may observe the contrast between the original bricks of 1906-1907 and the newer bricks of 1967. The newer bricks of the facade are smooth, while the older bricks, in the visible side walls, have rougher texture and a darker hue.

The rear facade appears to be made of older red bricks, many or most of which show clear evidence of having been sandblasted. An extremely shallow cornice of layered bricks stretches across the top. In the second story six rectangular windows -- a group of three at left and a group of three at right -- pierce the wall. Each is topped by a rectangular panel colored bright blue-green. Panels such as these are unique to this building in San Francisco, and they may be an alteration. The sash within each window is made of the same metal as those in the Washington Street facade.

The first story is pierced by four large, evenly-spaced openings, each with segmental arched heads. Three of them have low sills and are now filled with flat stucco; they must have originally been windows or loading docks. The fourth opening, at far left, has a recessed entrance protected by a steel grille. Within, a glazed wooden door leads to the second floor offices and paired solid wooden doors serve the storefront at 441 Washington.

A non-original covering of unknown material spans the width of the building at the second floor area.

History

The Produce district, and the 400 block of Washington Street (south side)

San Francisco's Produce district was along Sacramento, Clay, and Washington streets, and on the adjacent blocks of Front, Davis, and Drumm. It was present before the earthquake and fire of 1906, was rebuilt in the same locale afterward, and persisted until it was demolished in 1963 to make way for the Golden Gateway Center. It then moved to new buildings in the Bayview district.

Dozens of growers of produce and other food items, wholesale buyers and sellers, and commission merchants occupied the two and three-story brick buildings in these blocks for about fifty-six years. The streets were congested by trucks that parked in front of buildings to deliver and pick up produce. Because of the demand for space, some produce dealers and commission merchants overflowed onto adjacent blocks to the west, to Battery and even to Sansome streets.

The south side of the 400 block of Washington Street was also composed of two and three story brick buildings, and during the first half of the 20th century these also housed a small number of wholesale meat and produce businesses. They also housed many other kinds of businesses, including manufacturing, dealers in supplies, and restaurants. General retail shopping (including stores of dry goods, clothing, furniture, and other household items) and offices were typically not located here.

The uses in this area changed little until the 1960s. In that decade the Produce district was replaced by the Golden Gateway Center, and Washington Street was widened to facilitate traffic from the Embarcadero Freeway (which had on and off-ramps at Clay and Washington streets). Widening Washington Street along its north side, where the Custom House and the Appraiser's Building were, was probably never considered. Instead, about eighteen feet were removed from the fronts of buildings along the south side of Washington Street, including from the two subject buildings.

History of 425 Washington Street

Construction and early ownership

This building was built during 1906-1907 for owner Rudolph Jordan. The architect was S. H. Woodruff, and the contractor was the Woodruff Company, which also built 439-445 Washington at the same time.

Rudolph Jordan came to California in 1849 and proceeded to Tuolumne County, where according to his obituary he mined gold successfully and "had many exciting adventures." He then opened a commission business in Sacramento, next moved to San Francisco, then went abroad, and returned to San Francisco permanently in 1875. By this time, it appears, he lived mainly off of

real estate investments. He owned several properties in San Francisco before the earthquake and fire of 1906, including at least two downtown, one on the site of 425 Washington Street. He also co-founded a mining company, and in 1891 was sued by an investor for fraud concerning a supposed gold mine in British Columbia. During the 1870s he was a vice-president of the German Hospital, and he was otherwise active in German social life in San Francisco.

In 1906-1907 he rebuilt on the site of his pre-earthquake building at 425 Washington. He died in 1910, aged 92, after years of illness. His estate continued to own this building until 1922.

Description of the building in 1957

An Assessor's photograph at the San Francisco Public Library, taken in 1957, shows what the facade of this building looked like before it was truncated ten years later. The surface bricks were painted. A simple, layered cornice stretched across the top. Second story windows were rectangular and were arranged as two groups of three. The ground floor had been generally remodeled in stucco, with large plate glass storefront windows, by 1957. At far left was an entrance leading to the staircase to the second floor. This entrance had a variation of an ogee arch at the top. The storefront entrance was recessed, with paired doors.

The third story, which had been added in 1928, was recessed from the front by a foot or two. It had a stepped parapet and two large windows divided by muntins into many lights.

Addresses of this building

The original address of this building was 425 Washington Street, which it remained through 1910. From 1913 to 1919 the address was 429-433 Washington, but from 1920 on it has always been 425 Washington.

Uses and occupants of the building

1907-1910: This was the laboratory of Abbot A. Hanks, assayer and chemist. Hanks was the son-in-law of Rudolph Jordan, his landlord. His father, Henry G. Hanks, founded the Pacific Chemical Works in 1866; it was a business that supplied chemicals and also served as an assayer. Henry Hanks also was the first State Mineralogist of California, founded the State Mineral Collection (still in existence), and was head of the State Mining Bureau from 1880-1886, among many other accomplishments. His son Abbot began working for him in 1888 and took over the chemistry and assaying business in 1896. From 1888 to 1899 the laboratory was at 718 Montgomery Street, a building that still stands in Jackson Square (now numbered 716-720 Montgomery). He next moved to 531 California, which was destroyed in 1906, hence Hank's need for a new laboratory at 425 Washington in 1907. His business incorporated in 1924, becoming owned mainly by his employees, and continued in existence at least into the 1960s.

1911-1915: Unknown occupants

1916-1919: Casini Poultry Company, New California Poultry Company, San Francisco Poultry Company. This wholesale poultry business was owned by Antonio Casini under different names during these years. It also dealt in butter, cheese, and eggs.

1920-1928: Harbaugh Poultry Company. Owned by Van O. Harbaugh (president), G. Odell Harbaugh (vice-president), and Florence Harbaugh (secretary), this wholesale firm sold whole, live, and dressed poultry, and eggs. The Harbaughs purchased the building from Rudolph Jordan's estate in 1922 and continued to own it through 1942. They added the third story in 1928.

1929-1940: Corriea Brothers, wholesale eggs and live and dressed poultry. In the early 1930s Charles Corriea was the president, and George Corriea was the vice-president and secretary. In 1940 the officers were Charles Corriea, Charles Corriea, Jr., and C. J. Ward.

Thus, this building held wholesale poultry firms for 24 years (1916-1940).

1942-1959: Consolidated Fisheries. This wholesale and retail fish business was owned by Ignacio Alioto (president), Salvatore Alioto (vice-president), and L. F. Hubbard (secretary-treasurer) during these seventeen years. The 1950 Sanborn map labels this building as a restaurant, and the 1957 Assessor's photograph shows signage for seafood cocktails, as well as Hamm's, Pabst, Lucky Lager, and Burgermeister beers, so evidently a lunch counter was part of this business then.

Ignacio Alioto and his wife owned the building from 1942 to 1969, and many other family members were part owners from then to 1998.

1960-1965: Tom Lazio Fish Company. Previous to 1960 Lazio had been the vice-president of the F. Alioto Fish Company at 440 Jefferson Street. This Alioto was no known relation to Ignacio Alioto of 425 Washington, nor to the Aliotos who owned the famous restaurant at 8 Fisherman's Wharf.

Thus, this building held wholesale fish firms for 23 years (1942-1965).

After this building was truncated for the widening of Washington Street, and its front was rebuilt, in 1966-1967, occupants included:

1967-1972: Copy Cats Lithographers.

1973-1974: Vacant

1975-1982: Sound Systems and Audio Excellence, two audio sales businesses.

History of 439-445 Washington/440 Merchant

Construction and early ownership

This building was built during 1906-1907 for owner Helen Stanford. The contractor was the Woodruff Company, and while the building permit did not list an architect, the building must have been designed under the supervision of S. H. Woodruff.

Helen Stanford (1830-1909) was the widow of Josiah Stanford, who was the brother of the "Big Four" railroad magnate Leland Stanford. For about forty years she had lived in Warm Springs, now a part of Fremont, where she and Josiah had extensive land holdings. They also owned property in downtown Oakland. Clearly, 439-445 Washington Street was merely one of her real estate investments.

She had also owned the building on this site before the earthquake and fire of 1906. It was also a two-story brick building and in 1899 it was occupied by commission merchants. There is no doubt that the current building on this site was a replacement for the pre-1906 building, instead of being a survivor. Maps showing the burned area in 1906 clearly show that Washington Street was the dividing line between the area that burned (to the south) and buildings that survived the fire (today's Jackson Square and the Appraiser's Building, to the north).

Helen M. Stanford's estate continued to own and rent out this building until 1927. Owners over the next seventeen years were the Commercial Center Realty Co. (1927-1930) and James Basch (1930-1944). Basch managed and lived in the Bertram Apartments at 632 Hyde Street. He seems to have owned this building solely for income.

Description of the building in 1957

An Assessor's photograph at the San Francisco Public Library, taken in 1957, shows what the facade of this building looked like before it was truncated ten years later. It was similar in appearance to its neighbor at 425 Washington, which had had the same architect and builder. The surface bricks were painted (or perhaps clad in stucco). A simple, layered cornice stretched across the top. Second story windows were rectangular and were arranged as two groups of three. Instead of a lintel, it appears that an incised recess could be found over each window. In all likelihood shallowly-projecting brick lintels once existed but had been shaved away at some time.

There were two storefronts, one at left for the Rainbow Club (#439) and one at right for the Fulton Paper Company (#441). The Rainbow Club's storefront windows had clearly been altered before 1957, while the storefront of the paper company was closer to intact, with a great deal of glassy area. At far right was a narrow, recessed entrance (#445) leading to the second story loft.

The flanking buildings to the east (#425) and west (#447-453) were very similar to this one -- brick buildings with simple cornices, narrow upper story windows, and minimal or no ornament. Farther east, the corner building at 401-423 Washington was more architectural in its appearance, with a classical cornice and a shaped parapet. In brief, this was a typical block of small, unpretentious brick commercial buildings similar to those in the nearby Produce district, in parts of Jackson Square, and in other areas just north of the city's Financial district.

Addresses of this building

This building has usually had two ground floor storefronts and a second floor loft space. The address during 1907-1908 was 435-445 Washington. Through the 1910s and most or all of the 1920s the storefront addresses were 441 and 443, while afterward they were 439 and 441. The entrance and staircase to the loft space was always at 445 Washington, and during 1927-1947 the loft also had the address 440 Merchant.

Uses and occupants of the building

1907-1908: Cerruti Mercantile Company (Edward and Peter Cerruti) rented the storefront at 435 Washington. The city directory does not say what the firm sold then, but a later newspaper story on Edward Cerruti reveals this Italian immigrant sold cigars and wines at other locations before and after these years; so he probably did here, too.

1907: Paul Rieger and Company, manufacturers of flavoring extracts and perfumery, rented the other storefront in this building. He later moved his business to First Street and worked as a clerk in 1910.

1907-1909. Charles O'Connor, notary public, occupied a portion of the loft at #445 as his office. He seems to have leased the entire second floor and sub-let the balance of it to the shirt factory listed below.

1908: Quong Lung, shirt factory, in the second floor loft. In June the loft was divided into four rooms and a kitchen, with a new skylight and furnace, for this use. It appears likely that Chinese workers lived in this space.

1910-1923: Schiaffino, Musante, and Company (later, Schiaffino and Co.), wholesale groceries, at #443.

1924-1931: Vittorio Traverso and Co., wholesale groceries (first at #441, later at #443).

1913-1943. A cigar factory occupied the second floor loft at 445 Washington/440 Merchant. It was known as the Nevada Cigar Company and the proprietor was Doo Lee (sometimes listed as Lee Doo) during 1927-1943. The proprietor's name before 1927 is unknown. It appears that some Chinese workers lived in this space. This cigar business never advertised in the classifieds

of city directories and so must have sold its product to an established clientele of retail dealers. The 1950 Sanborn map lists the same use here, but it is not certain that the business lasted past 1943.

1936-1964. Fulton Paper Company, proprietor Renaldo J. Olivi, at #441. This wholesale firm sold wrapping papers. Its primary customers may have been the produce and poultry dealers in the nearby Produce district. It did not remain much past the closing of this district in 1963.

1944-1968. The Rainbow Club, a restaurant, at #439. The first owners were Alf Barsotti and Samuel Ferroni. In 1953 the owners were Louis Columbano and Joseph Luccese. A newspapers search reveals only that this restaurant served continental cuisine in 1961. It survived the truncating and construction of a new facade in 1967, though only by two years. (Note: The Barsotti family owned this property during 1944-1992, and the Columbanos owned it during 1992-2015).

1953-1954. Alfred L. and Edna A. Lemos, bookbinders, at #445. Lemos also sold paper rulers from the printers' building at 500 Sansome Street nearby.

1968-1993. Sansome Photos, photographers, at #439; proprietor Herbert H. Simmons (1921-2011). Simmons' obituary on the SF Gate website gives an account of his dramatic survival and travels as a Jewish refugee from Nazi Germany. Its mention of his photography business is brief: "Given his mechanical aptitudes, Herbert apprenticed himself in a photography business on Sansome Street, which he later bought and owned until he retired." No references to Simmons as a fine arts photographer could be found.

1970-1971. 441 Restaurant, at #441.

1973-1981. The European Farmer, a restaurant, at #441.

1982-1989. The Iron Pot, a restaurant, at #441. Because this restaurant was well-known at its previous location, it is discussed at some length below.

1993-2015. Il Massimo del Panino, an Italian restaurant, at #441.

1993. Wells Fargo Bank occupied the storefront at #439 in that year, and probably did so for some time thereafter.

1969-present. Office use of the second floor. A building permit that documents the remodeling of this space for office use is dated 1969. Multiple businesses have usually occupied this space at a given time, and the occupants changed frequently. They included Carrol and Reed, Inc. (1971), Trafco Freight Consultants (1971), Richard J. Smart and Associates (1971), Advance Systems Consultants, computer consultants (1971), Rockey-Peterson Public Relations (and its successor firm, 1976-1978), Chiat-Day Advertising (1976), California Association of Utilities

(1978), Rivkens Mal Advertising (1978), CIS Equipment Leasing Company (1980-1982), immigration lawyers (present) and Hispanic defense lawyers (present).

The widening of Washington Street and the shortening of these buildings in 1967

Several years after the Embarcadero Freeway was completed, Washington Street and Clay Street were widened in order to accommodate traffic to and from its on and off-ramps. The south side of Washington Street, between Sansome and Battery, was widened by 23 feet in 1967. To accomplish this widening, the two buildings at the corners were demolished, and two other buildings, 425 and 439-445 Washington, were shortened. The fronts were sliced off, and new facades were built onto these two buildings.

The architect for the new work at 425 Washington was Harada and Meu and the engineer was Russell H. Fuller, both of San Francisco. The architect for the new work at 439-445 Washington was Gilbert L. Oliver. These architects are profiled below.

<u>The architects of these buildings</u>

S. H. Woodruff, the original architect of 425 and 439-445 Washington Street

Sidney H. Woodruff (1876-1961) worked as an architect and builder in Buffalo, New York before moving to San Francisco immediately after the earthquake and fire of 1906 to participate in the rebuilding of the city. He provided complete services, including architectural design and engineering, under his name as architect; and construction, as the Woodruff Company. For two years, 1906-1908, he and his staff were busy in the design and construction of commercial buildings.

His works included the Santa Marina Building, at the northeast corner of California and Drumm (1906-1907; demolished); 33 Sutter Street (1906-1907); the Dividend Building at 348-354 Pine Street (1907); 77 Battery Street (1907); the New Mission Bank, 3060 Sixteenth Street (1907); the First United Presbyterian Church at 1455 Golden Gate Avenue (1907); and the Bellevue Hotel, 505 Geary Street (1908). The default style for all of these was Classical Revival, and it was occasionally carried out with conviction. The lower two floors of the Dividend Building, designed in a Doric order, is the best of these. The mansard roof of the Bellevue Hotel, and the pediment of the New Mission Bank, are also pleasing. Mostly, though, Woodruff's work was uninspired.

During these two years Woodruff was involved in lawsuits that severely questioned his ability, experience, and honesty. The owner of the Bellevue Hotel charged that Woodruff had estimated the cost of its construction at half the true cost in order to get the commission to build it.

In 1911 Woodruff headed a group that wanted to resume blasting at the former Gray Brothers' quarry at 26th and Douglass streets, and met vigorous opposition from nearby residents. In 1912

he moved to New York to accept a new position that did not work out and that led to another lawsuit. He next moved to Arizona, where he hoped to bring underground water at the Gila River to the surface for irrigation. He moved to Los Angeles in 1918, and there met with some success. In 1923 he was part of a syndicate that developed Hollywoodland, a tract of fine houses designed by architect John DeLario in French Norman, Tudor, Mediterranean and Spanish styles. The original "Hollywoodland" sign was erected to advertise these houses. (The sign became deteriorated, the last four letters were removed, and in 1978 it was reconstructed as today's famous Hollywood sign.) The Dana Point (Orange County) development began well, but only thirteen houses were built before construction stopped due to the stock market crash. Woodruff and his Dana Point partners limped on for a decade before going bankrupt in 1939. No work of his after that date is known.

Harada and Meu, architects of 425 Washington Street's new facade

George Meu graduated with a B. Arch. from the University of California in 1938, worked briefly for Richard Neutra in the same year, became registered as an architect in 1948, and had his own architectural office from 1952 to 1958. In the latter year he became partners with Walter Harada, who had previously worked as a designer and architect. They remained together as Harada and Meu at 575 Mission Street until 1968, after which George Meu worked on his own again through at least the 1980s. The firm is still in existence as George Meu and Associates, under principal Lester Meu, in Oakland.

No references to their work could be found in several architectural guides to San Francisco that include modern-era buildings. However, an internet search does identify several works by Harada and Meu. The largest was an expansion of the Nugget casino in Sparks, Nevada, in 1961-1962. This expansion included a 500-seat theater and restaurant plus Roof Garden "roomettes." Other known works by this firm were restaurants -- the Blue Fox and Yamato Suki-Yaki House in San Francisco, and the Coral Reef Restaurant in Hawaii. One residence by Meu, at 561 Marina Boulevard (1957) is known.

Gilbert L. Oliver, the architect of 439-445 Washington Street's new facade

Gilbert Lee Oliver (b. 1933) served in the U. S. Navy, attained a bachelor of architecture degree from Stanford University in 1956 and a graduate degree from the University of Oklahoma in 1959, and worked in San Francisco as an architect for the firm of Knorr and Elliot in 1961. He began working on his own in 1962 and was last listed in telephone directories in 1998. For many years his office was in the Mechanics' Institute building.

No references to him or his work could be found in several architectural guides to San Francisco that include modern-era buildings. An internet search lists one house that was designed by him, at 101 Maple Street (1971). The internet also lists these commercial works by Oliver (in San Francisco, unless otherwise indicated):

Coffee Cantata (1967)
Patisserie Edelweiss (1968)
Trans-World Airlines ticket office (1968-1969). Note: TWA had four ticket offices in downtown San Francisco in 1971. Which one was by Oliver is unknown.
Perry's restaurant (1969)
San Mateo Mutual Savings and Loan building, in Burlingame (1969)

It seems likely that most of these were remodelings within existing buildings.

<u>The Iron Pot restaurant, at 441 Washington during 1982-1989</u>

The Iron Pot was founded as the Florence Restaurant in 1928 at 639 Montgomery Street. From the beginning, and continuing into the 1980s, the proprietors were Italian or Italian-American and served mainly Italian cuisine. The change in name to The Iron Pot was gradual. Certainly by 1946, and probably earlier, that name was commonly used. A 1940s or 1950s menu (viewable on the internet) used both the "Florence" and "Iron Pot" names. The restaurant then served Italian food, seafood, beef and pork dishes, wine, and cocktails. City directories continued to use the Florence Restaurant name until 1948-1949 and switched to The Iron Pot only in 1951.

The restaurant became a hangout for Bohemian or artist types, just as other Italian restaurants -- Sanguinetti's, Campi's, and Coppa's -- had a generation earlier. In his book *Baghdad-by-the-Bay* (1951), Herb Caen mentioned The Iron Pot along with the Black Cat and No. 12 Adler Place as the city's three "arty" restaurants. At The Iron Pot this came about when the French entrepreneur Henri Lenoir, for a salary plus a one-third cut of the sale price, organized shows and sales of modern paintings by local artists. This was during 1941-1946. Among the artists that Lenoir promoted, and who later became well-known, were Hilaire Hiller, Charles Surrendorf, Dong Kingman, and Hassel Smith. Once "outsiders" began to visit the place to see the art and the artists, the menu posted this information: "Notice to tourists: The bohemian atmosphere here is strictly phony. For real bohemian atmosphere go to Bohemia. The male customers who need haircuts are not artists. The paintings here are for sale. Limit: one dozen to a customer. But don't ask the help to explain them to you. They don't understand them either."

Much later, in 1980, Allan Temko wrote an article about Lenoir and mentioned The Iron Pot, which was then still at 639 Montgomery: "The present owners, serving a new clientele, prefer photographs of baseball players to avant-garde paintings. The murkily lit dining room seems as remote from the vanished Iron Pot…."

As the result of a proposed new high-rise, the proprietors of The Iron Pot moved the restaurant from 639 Montgomery to the subject building, re-opening in April 1982.

Despite a search of historic literature on San Francisco and the internet, only one reference to The Iron Pot at 441 Washington Street could be found: in his column of May 16, 1984 Herb

Caen mentioned that it was the latest hang-out of Joe DiMaggio. No other references regarding its atmosphere, events, or cuisine could be found.

Regarding commercial buildings that evoke Bohemian or artists' hangouts in San Francisco from the 1940s-1950s, the best examples may be 708 Montgomery Street (where the Black Cat was located); Vesuvio's, at 255 Columbus Avenue; Spec's, at 12 Adler Place; and Caffe Trieste, at 609 Vallejo Street. The last three of these are still in business as bars and a coffee house.

Integrity

Because these buildings would have potential for historic significance if their early appearances were retained, their integrity is being discussed here.

For the period 1907-1966:

Both buildings retain integrity of location. Both have lost integrity of design, materials, workmanship, feeling, association, and setting as a result of the widening of Washington Street and the construction of new facades in 1967. Regarding the rear facades on Merchant Street, only the second story of 425 Washington remains intact, and three windows in that story have been filled in. At 439-445 Washington, the Merchant Street facade also remains partially intact, but its second story window sash has been altered, three of the first story openings have been filled in, and doors in the remaining opening have been altered. The lintels above the second story windows also do not appear to be original. Thus, for each building, the Merchant Street facade, which was a secondary facade to begin with, is not intact enough to overcome the complete remodeling of the Washington Street side and to thus convey the pre-1967 aspects of each building's history.

For the period 1967:

For both buildings, the Washington Street facades are probably mostly intact as built in 1967. At 425 Washington, the polished steel doors and transoms may, or may not, be original, but the balance of the facade, including the brickwork and spandrels, probably is.

At #439-445, the brickwork also remains unchanged. Whether its metal window sash (in the second story) and metal storefront frames (in the bay at left) also date to 1967 is unknown, but it seems likely that they do. The coloration and materials of the signage in the middle bay and along the second floor level have most likely been changed frequently. The doors in the bay at right (a pair of solid doors and a wooden door with glazing) are dissimilar, and at least one of these is probably the result of a change since 1967.

On balance, the 1967 facades of both buildings should probably be considered to retain integrity in all areas -- location, design, materials, workmanship, feeling, association, and setting -- though integrity of materials in the openings may be somewhat diminished.

Evaluation of 425 Washington Street

Evaluation under Criterion 1 of the California Register: Resources that are associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.

This building housed wholesale poultry and fish businesses for 50 years, from 1916 through 1965, and thus was related to the wholesale Produce district to the east, which was demolished in 1963. Because the Produce district was very important in San Francisco's history, and because 425 Washington is one of the few buildings in downtown San Francisco that shares that history, this building would be eligible for the California Register if it retained integrity. However, its integrity is extremely low for the period it held such businesses, and thus this building is not eligible for the California Register under this theme.

This building was one of many small brick commercial buildings that were built north of the Financial district during the several years after 1906. The great majority of such buildings that once stood have been demolished since the 1950s. A moderate number still stand to the southwest (around Commercial, Leidesdorff, Clay, and Sansome streets), to the northwest (in Jackson Square), and to the north (in the block bounded by Jackson, Battery, Sansome, and Pacific streets). Because a fair number still stand, and because this building lacks integrity for the period before 1967, it is not eligible for the California Register under this theme.

No other historical themes related to this building come to mind. Thus, the building does not appear to be eligible for the California Register under Criterion 1.

Evaluation under Criterion 2 of the California Register: Resources that are associated with the lives of persons important to local, California, or national history.

One person of some note had a business in this building: Abbot A. Hanks, a chemist and assayer whose laboratory was in this building during 1907-1910. His father, Henry G. Hanks, however, had a statewide reputation and was much more important in this field. A building in Jackson Square at 716-720 Montgomery, where their laboratory was located during 1888-1899, retains good integrity and represents their history in ways that the heavily altered subject building cannot. Thus, this building cannot be eligible for the California Register under this theme.

The owners of the various poultry and fish businesses at this address do not appear to have been especially important in their fields, and at any rate this building has lost integrity for the period they were here. Post-1967 occupants are unknown by name, and at any rate their history here is only fifty years old or less.

For these reasons, this building does not appear to be eligible for the California Register under Criterion 2.

Evaluation under Criterion 3 of the California Register: Resources that embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of a master, or possess high artistic values.

The original facade of this building lacked distinction, and at any rate has been removed. The mostly surviving rear facade also lacks distinction. Thus, the building is not eligible for the California Register under this criterion for its original architecture.

The 1967 facade survives mostly intact. Its best features are 1) the original second story cornice of layered bricks on the Merchant Street facade, and 2) on the main facade of 1967, the tall bays outlined by a course of bricks. These are fairly minor design elements; other notable features are lacking; and overall, the design lacks distinction.

For these reasons, and because the architects of the 1967 re-design, Harada and Meu, are very little-known in San Francisco's architectural history, this property does not appear to be individually eligible for the California Register under this criterion.

Evaluation of 439-445 Washington Street

Evaluation under Criterion 1 of the California Register: Resources that are associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.

This building housed wholesale groceries businesses for 21 years, from 1910 to 1931, and thus could have been considered part of the Produce district to the east, which was demolished in 1963. It also housed a Chinese-owned cigar factory for over thirty years, a wholesale paper business (for 28 years), and shorter-lived businesses.

It was thus a typical small brick commercial building housing wholesale and light-manufacturing businesses, one of many that were built north of the Financial district during the several years after 1906. The great majority of such buildings that once stood have been demolished since the 1950s. A moderate number still stand to the southwest (around Commercial, Leidesdorff, Clay, and Sansome streets), to the northwest (in Jackson Square), and to the north (in the block bounded by Jackson, Battery, Sansome, and Pacific streets).

Because buildings of this type once occupied a large percentage of downtown San Francisco, and are now few in number; and because they housed most of the city's wholesale and many of its light industrial businesses; survivors with high integrity have a strong potential for historical significance under this criterion. The Period of Significance would be wide, from the 19th century through the 1930s. This building, however, has very low integrity for the period before 1967. Thus, it does not appear to be eligible for the California Register under this theme.

This building also housed many restaurants from 1944 through 2015. The longest lasting was the Rainbow Club, which was not renowned and which at any rate lasted for only two years after the front of the building was rebuilt. It also housed The Iron Pot from 1982 through 1989. This restaurant had been renowned at its original location on Montgomery Street, but was not nearly as well-known at its Washington Street location. At any rate, that history is fairly recent. Thus, this building does not appear to be eligible for the California Register for its restaurant-related history.

The longest-lasting business in this building after the front was changed was Sansome Photos, here from 1968 to 1993. This business was not known for fine art photography nor historically important in other ways. Thus, this building does not appear to be eligible for the California Register for its photography-related history.

No other historical themes related to this building come to mind. Thus, the building does not appear to be eligible for the California Register under Criterion 1.

Evaluation under Criterion 2 of the California Register: Resources that are associated with the lives of persons important to local, California, or national history.

No historically-significant persons are associated with this building in meaningful ways. Herb Caen once wrote that Joe DiMaggio had made The Iron Pot his "latest" hang-out in 1984, but many places in San Francisco are associated with DiMaggio, most significantly his various residences. Thus, this building does not appear to be eligible for the California Register under this criterion.

Evaluation under Criterion 3 of the California Register: Resources that embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of a master, or possess high artistic values.

The original facade of this building lacked distinction, and at any rate has been removed. The mostly surviving rear facade also lacks distinction. Thus, the building is not eligible for the California Register under this criterion for its original architecture.

The 1967 facade survives mostly intact. Its best features are 1) the layered cornice where projecting bricks alternate with recesses, and 2) the raised course of bricks that line the perimeter of each large bay, and which creates an impression of piers between each bay. On the other hand, the areas within the openings -- containing windows, storefronts, signage, and entrances -- are poorly done, of inexpensive materials. These areas make up a large percentage of the overall facade.

For this reason, and because the architect, Gilbert L. Oliver, is essentially unknown in San Francisco's architectural history, this property does not appear to be individually eligible for the California Register under this criterion.

Investigation of a potential historic district in the vicinity

In November 2016 the author of this report walked the area surrounding the subject building and to the east of the Jackson Square historic district. The purpose was to determine whether 439-445 Washington should be considered to fall within a historic district; more specifically, whether Jackson Square could be extended to include the building. The discussion below is arranged by square block. Recommended additions to the Jackson Square historic district are in red. (Please see a map of the area that illustrates the findings, below.)

* *The block bounded by Jackson, Pacific, Battery and Sansome streets*. This block should qualify as an extension of Jackson Square. Eight of the ten buildings in this block would be contributors to the district. At least two of the contributing buildings are important: The O. W. Nordwell warehouse at 633 Battery (Sutton and Weeks, 1906), and the Legallet Building at 603-615 Battery (Albert Pissis, 1906).

* *The block bounded by Pacific, Broadway, Battery, and Sansome streets*. Most of this block should qualify as an extension of Jackson Square. Only the northernmost lot (along Broadway) and 735-749 Battery should be excluded.

* *The block bounded by Pacific, Broadway, Front and Battery streets*. Only one building, the Old Ship Saloon at 298 Pacific, should be included within an extension of Jackson Square.

* *The block bounded by Jackson, Pacific, Front, and Battery streets*. It is possible, but doubtful, that Jackson Square should be extended to include this block. Four of the six buildings on Front Street could qualify as contributors to the district. Wrapping around them, however, is a lightly-ornamented, two-story reinforced concrete building at 600-650 Battery/653 Front (1927) that occupies half the block. Unless the character-defining features of Jackson Square are broadened to include reinforced concrete buildings from the 1920s, this building should not count as a possible contributor, and the block should be excluded from the district.

* *The block bounded by Washington, Jackson, Battery and Sansome streets*. This block contains two buildings owned by the Federal government: the five-story Beaux Arts-styled Custom House (1906-1911) and the high-rise Moderne-style Appraiser's Building (Gilbert Stanley Underwood, 1940). The Appraiser's Building acts as a major visual barrier between Jackson Square and the Custom House. Additionally, the Custom House is a major civic building that itself is out of scale with the smaller commercial buildings in Jackson Square. It is already listed individually on the National Register. For these reasons, it seems best to exclude this block from an extension of Jackson Square.

* *The block bounded by Clay, Washington, Sansome, and Montgomery streets*. The four buildings on this block include the Transamerica Pyramid (1971), another high-rise at 505 Sansome (1978), and 501-505 Washington (one-story; 1977). Thus, Jackson Square could not be extended to include this block. The only older building here is a reinforced concrete mid-rise lacking in ornamentation, the California Ink Company Building at 545 Sansome Street (Willis Polk and Company, 1930). In a 2007 evaluation this writer found it to be eligible for the California Register for its printing history. It would not, however, be a contributor to Jackson Square.

* *The block bounded by Clay, Washington, Battery, and Sansome streets*, which includes the subject building, 439-445 Washington. Of the eight buildings in this block, only two could qualify as contributors to an extended Jackson Square district: 447 Battery Street and 432 Clay Street. These two are so far separated from Jackson Square that they could not be plausibly included in that district. The same is true for a handsome, reinforced concrete mid-rise at 500 Sansome Street (Frederick H. Meyer, 1929). It could be considered historic in its own right, for its printing industry history (see its description on page 4 above), but probably could not be considered as a contributor to Jackson Square.

To summarize:

The only way the Jackson Square historic district could be extended to include part of the subject block would be to include the block containing the Appraiser's Building and the Custom House in Jackson Square; and then to extend the district further south to include 401-423 Washington (as a non-contributor) and 447 Battery (as a contributor). Since the Appraiser's Building and the Custom House should probably not be included in Jackson Square, such extension of the district seems implausible. Even if this was done, the altered buildings at 425 and 439-445 Washington would not be in the enlarged district.

In sum, the subject building cannot plausibly be considered to lie within an extended Jackson Square. It is, however, across the street from the U. S. Custom House, which is on the National Register.

References

1894, 1901, 1906, 1909 block books, at the San Francisco History Center, Main Library. The owners' name are given as Rud Jordan and Helen M. Stanford, respectively, for each year.

Sales Ledgers 1914-1999 for sales of these properties. At the Recorder's Office, City Hall.

San Francisco city directory listings 1907-1982 for occupants and owners of these buildings, and for the Florence Restaurant and The Iron Pot at 639 Montgomery.

San Francisco city directories 1850s-1960 for Henry G. Hanks, Abbot A. Hanks, and their businesses at various locations in San Francisco.

1899 Sanborn insurance map, volume 1, page 18.

1913, 1929, and 1950 Sanborn insurance maps, volume 1, page 24.

Building permits for 425 Washington Street. At the Department of Building Inspection, 1660 Mission Street.

Permit #4111, October 1906. Original permit to build. Owner: R. Jordan. Architect: S. H. Woodruff. Contractor: The Woodruff Company. $15,000.
Permit #68253, March 1916. Replace flooring, remove partitions, repair glass, plaster, and roof. Owner: Jordan Estate.
Permit #72438, October 1916. Change window glass in #s 429 and 435. Put doors in entrance.
Permit #169721, April 1928. Add third story. Owner: Harbaugh Company. Contractor: A. Legault. $6,000.
Permit #32818, Feb. 1938. Fill all openings in partition walls with brick.
Permit #67919, Feb. 1942. Interior alterations for use as a fish market. Owner: I. Alioto.
Permit #71680, May 1943. Reinforce floor, build refrigerator ceiling. Owner: Consolidated Fisheries.
Permit #165773, June 1954. Install steel beams. Engineer: L. F. Robinson.
Permit #328676, April 1966. Remove all interior partitions.
Permit #337733, Dec. 1966. Remove northerly 23' of building. Add new floor structures; brick veneer and plaster front; new freight elevator. Owner: Joe Alioto. Design: Harada and Meu. Structural engineer: Russell H. Fuller. Use: Vacant. Proposed use: blueprinter.
Permit #348876, October 1967. Interior partitions for Copy Cat.
Permit #8500225, Jan. 1985. Interior improvements (ceilings, partitions, mechanical, etc.)
Permit #8505100, June 1985. Brace parapets.
Permit #8507857, Sept. 1985. Same as January 1985, above.

Note: The owner in December 1966 was listed as Joe Alioto. There were multiple Joseph Aliotos in San Francisco at the time. Per a title search, this was Joseph I. Alioto, not the future mayor of the city, Joseph L. Alioto.

Building permits for 439-445 Washington Street. At the Department of Building Inspection, 1660 Mission Street. All permits in this address range were searched.

Permit #17469, June 1908. Partition loft into four rooms for a shirt factory. Add a kitchen, skylight, and furnace. Owner: Quong Lung, of 445 Washington.
Permit #77899, October 1944. Two new entrances (for the Rainbow Club).
Permit #214539, August 1958. Remove sidewalk door.

Permit #78871, Jan. 1949. Neon sign for Rainbow Club.
Permit #241449, October 1960. Sign for Rainbow Club.
Permit #254069, August 1961. Remodel dining room of Rainbow Club.
Permit #344202, June 1967. Remove and set back front of building to make way for widening of Washington Street. Convert top floor from loft to offices. Expand restaurant to occupy all of ground floor. Owners: Mr. and Mrs. Alfredo Barsotti. Architect: Gilbert Oliver. Contractors: Lambert and Wells. (Permit attached.)
Permit #356449, May 1968. New partitions for dark room (Sansome Photos). Owner: H. H. Simmons.
Permit #362413, October 1968. Sign for Sansome Photo.
Permit #355333, January 1969. Partitions in second floor.
Permit #377111, November 1969. Bar and restaurant fixtures, kitchen plumbing, etc. (for the 441 Restaurant).
Permit #377948, December 1969. $500 of work (illegible) for second floor offices.
Permit #382198, October 1974. Sign for European Farmer restaurant.
Permit #781673, November 1978. Interior work for second floor offices.
Permit #8404509, April 1984. Partitions for second floor offices.
Permit #8507892, October 1985. Brace existing parapet walls.
Nine permits in 1993. Sign and interior work for Massimo restaurant, sign and ATMs for Wells Fargo Bank, "URM upgrade," re-roofing, more signage, replace sheetrock.

Articles pertaining to 425 Washington Street:

"Another Pioneer Summoned by Death." *San Francisco Chronicle*, July 27, 1919, p. 10. Obituary of Rudolph Jordan.

"An Alleged Mining Swindle." *San Francisco Chronicle*, August 19, 1891. Rudolph Jordan is sued for $5,000 over a fraudulent British Columbia mine.

San Francisco Call, May 11, 1908, and other issues: Advertisements for Abbot A. Hanks, assayer and chemist, at 425 Washington Street.

San Mateo Times, October 13, 1961; and *Reno Gazette-Journal*, July 2 and September 8, 1962. Articles on the expansion of the Nugget casino by Harada and Meu. Their other works are also mentioned.

Mary Brown. *San Francisco Modern Architecture and Landscape Design, 1935-1970, Historic Context Statement*. San Francisco Department of City Planning, 2010. For information on George Meu and Associates.

Articles pertaining to 439-445 Washington Street:

San Francisco Examiner, September 28, 1906, page 5. Building contract for this 443-445 Washington. The owner was Helen M. Stanford, the contractor was the Woodruff Company, and the construction cost was $5,000.

Edward's Abstracts from Records, April 1 and 13, 1907, documented the completion of #439-445.

"An Italian Boy's Successful Struggle…." *San Francisco Chronicle*, January 6, 1914, p. 22. On Edward Cerruti, of the Cerruti Mercantile Company.

"Mrs. Helen M. Stanford is Called by Death." *San Francisco Call*, May 21, 1909.

"Herbert Simmons." Obituary, SF Gate website. From the *San Francisco Chronicle*, December 11, 2011.

George Green. "The Enduring Henri Lenoir." *California Living*, in *San Francisco Examiner*, March 19, 1972.

"Herb Caen." *San Francisco Chronicle*, December 10, 1946, mentions Henri Lenoir being fired as promoter of art at The Iron Pot.

"Herb Caen." *San Francisco Chronicle*, December 16, 1981 and March 9, 1982, mention that The Iron Pot will close at 639 Montgomery and re-open on Washington Street.

"Herb Caen." *San Francisco Chronicle*, May 16, 1984, mentions that The Iron Pot is Joe DiMaggio's latest hang-out.

Rand Richards. *Historic Walks in San Francisco* (2001), pp. 341-342, mentions that artifacts from the old Iron Pot are on display at 655 Montgomery Street.

About S. H. Woodruff:

"Barron Estate Gets Reversal of Action." *San Francisco Call*, August 21, 1912. Regarding the Bellevue Hotel at 505 Geary Street.

Joseph B. Pecora. *The Storied Houses of Alamo Square*. Norfolk Press, pp. 138-140.

Michael Corbett. *Splendid Survivors*. A California Living Book, 1979. Lists the Dividend Building by Woodruff.

Photographs of the south side of the 400 block of Washington Street in 1957
(All three photos from SFPL Assessor's Negatives, Block 206)

At left: 425 Washington Street. Its third story is slightly recessed from the lower two stories. Consolidated fisheries is the occupant.

Below: 439-445 Washington. Occupants include the Rainbow Club and the Fulton Paper Co. At far right is 447-453 Washington, where SFFD Station 13 now stands.

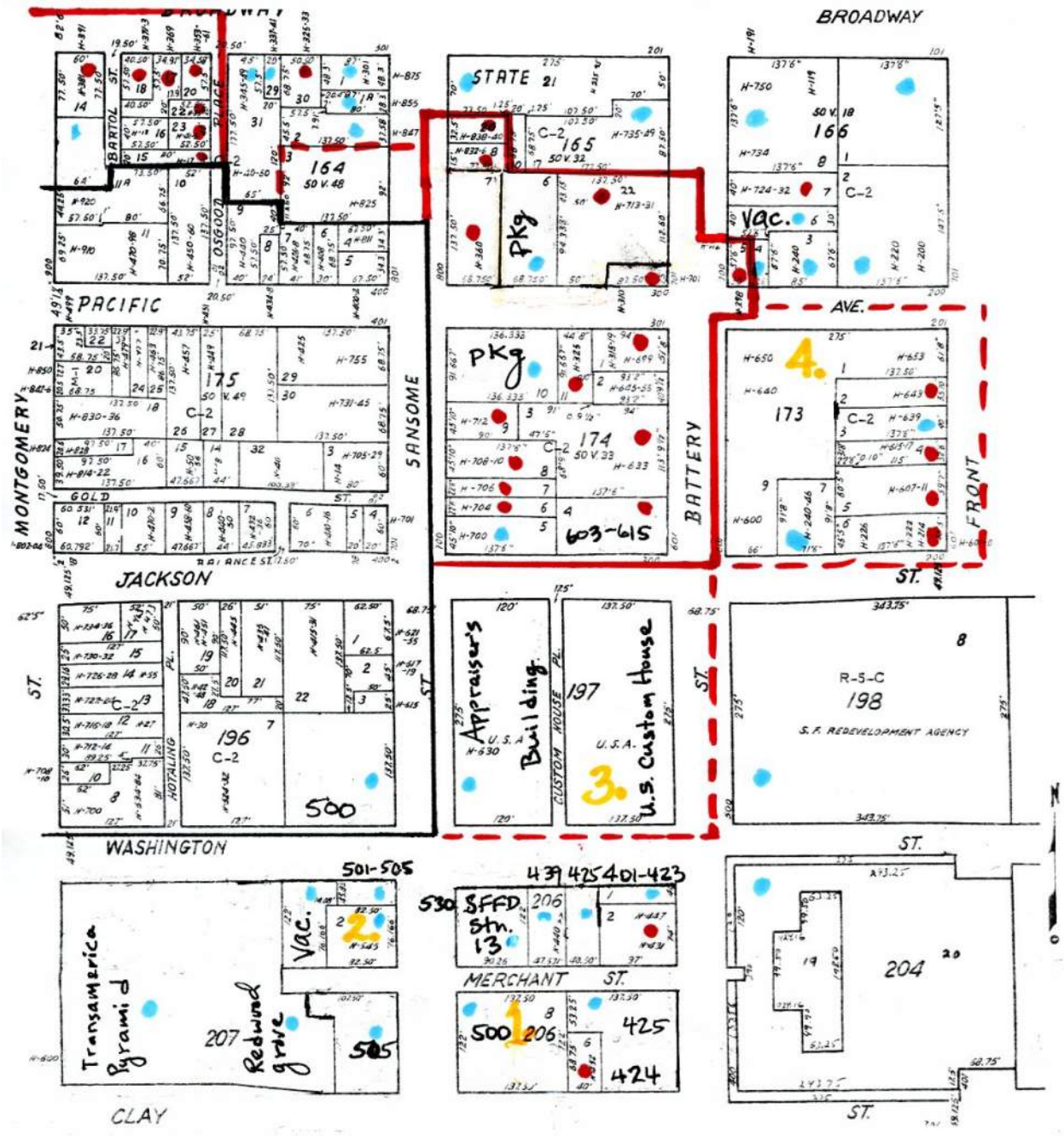
Both buildings were reduced in depth when Washington Street was widened.

View looking SW at 401-423 Washington Street. It was demolished in 1967 when Washington Street was widened. The Jones-Thierbach Coffee Co. building, at 447 Battery, is at far left.

Photograph of the Produce District in 1938

SFPL photo AAD-5456

Map showing possible extensions of the Jackson Square historic district



Original north, south, and east boundaries of Jackson Square

Likely extensions of Jackson Square

Doubtful or uncertain extensions of Jackson Square

Notations re: Jackson Square map:

● These buildings would be contributors in an extended Jackson Square.
● These buildings would not be contributors in an extended Jackson Square.

The U. S. Custom House and three buildings built in the 1920s-1930 are noted on the map above and are discussed below, in order to help determine whether they should be counted as contributors in an extended Jackson Square.

1. The Printers' Building, 500 Sansome (1929) and **2.** The California Ink Building, 545 Sansome (1930) are both fairly old, but as reinforced concrete mid-rises probably could not qualify as contributors to Jackson Square, if one considered extending that district to include these blocks.

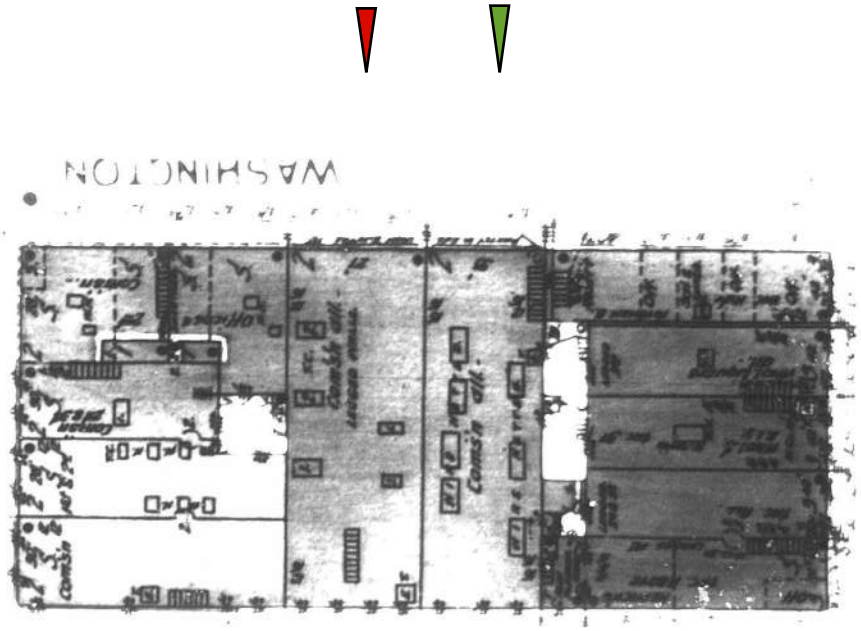
3. The U. S. Custom House is old (1906-1911), and ornate, but at five stories in height and a half-block in area it is out of scale with buildings in Jackson Square. It is already protected with National Register status. The adjacent Appraiser's Building high-rise "hides" the Custom House from the current Jackson Square. For these reasons, the block containing these two buildings probably should not be included in Jackson Square.

4. At two stories in height, 600-650 Battery/653 Front (1927) matches the height of most Jackson Square buildings. However, it is built of reinforced concrete, is extremely spare in its ornamentation, and covers half a block, more area than any Jackson Square building does. If it is not considered to be a contributor to an extended Jackson Square, then the entire block probably should not be included in Jackson Square.

Jackson Square should probably be extended to include the buildings along Broadway, Osgood, and Montgomery Street. (This extension is not discussed in the text above.)

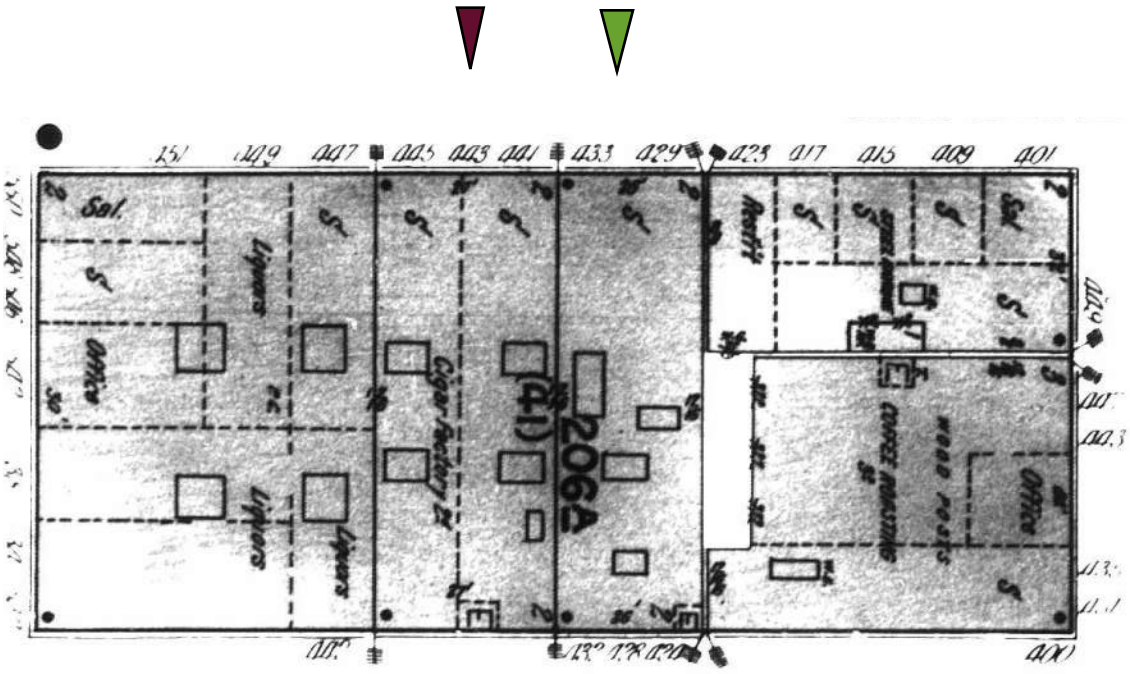
From this map, one can see that it would not be plausible to extend Jackson Square to include the subject building, and it would be very difficult to extend the district to include any part of the block it is in.

Sanborn insurance maps

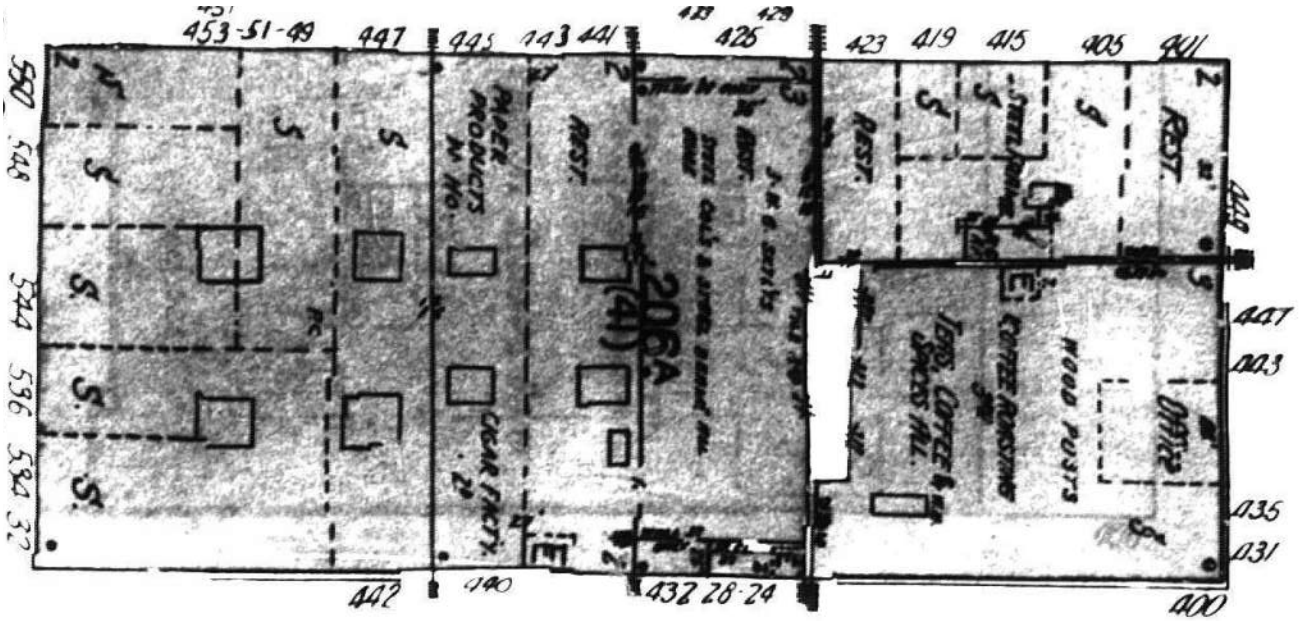


1899 Sanborn map. The red arrow points to the pre-earthquake building at today's 439-445 Washington Street, and the green arrow points to the building where 425 Washington now stands. Both were occupied by commission merchants then.

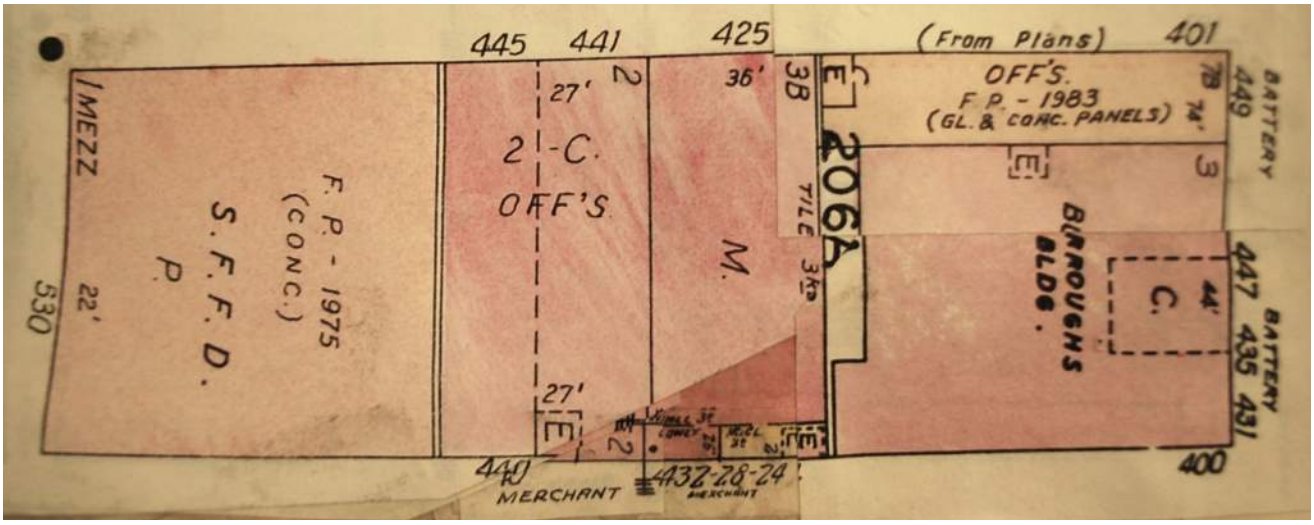
Neither building survived the earthquake and fire of 1906. A building permit and a published building notice for the 1906-1907 buildings both indicate new construction.



1913 Sanborn map. 441-445 Washington is occupied by two ground floor storefronts and a second story cigar factory. 429-433 Washington (now #425) is labeled simply as a "store."

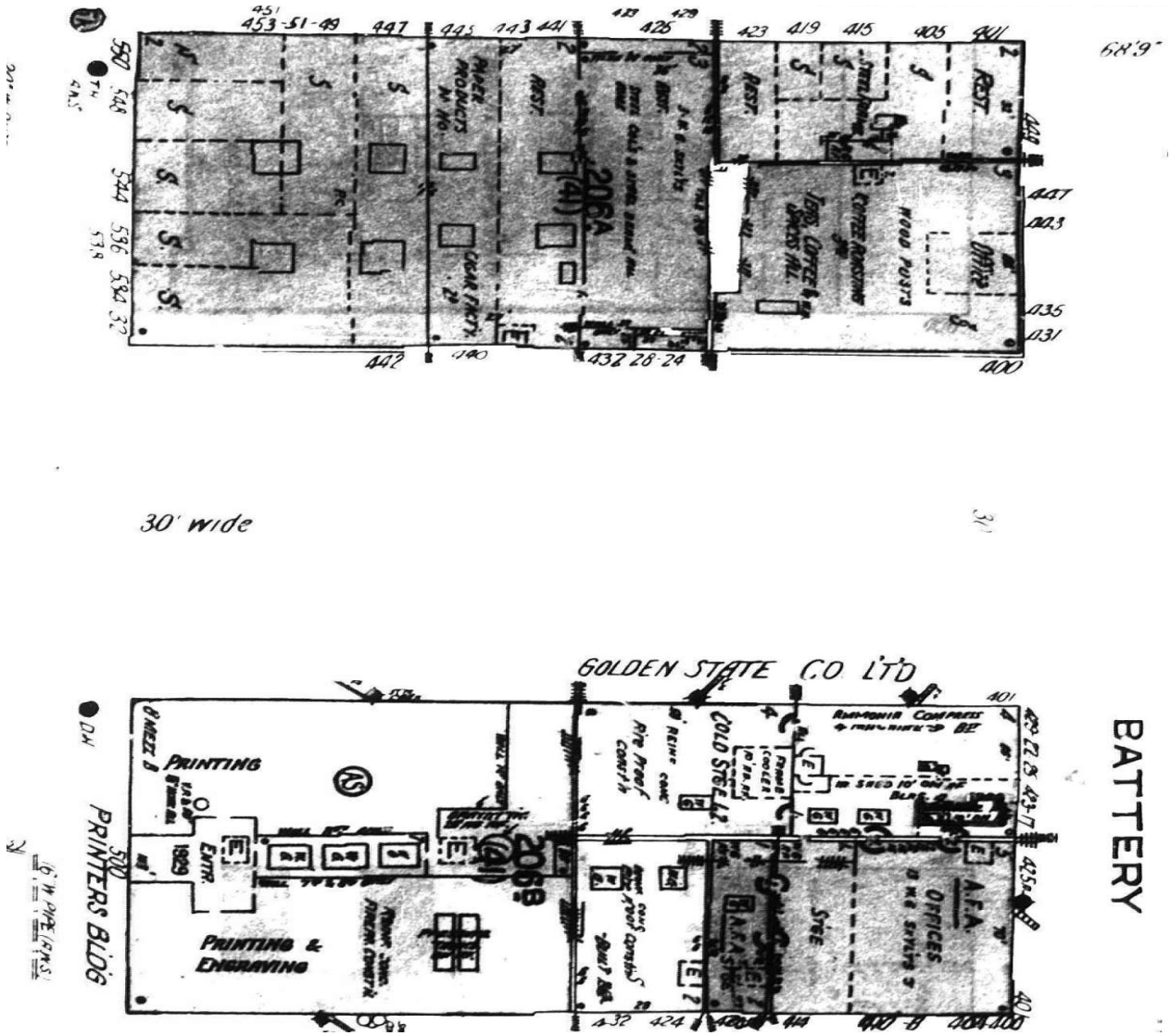


1950 Sanborn map. 425 Washington is occupied by a "restaurant" -- actually, Consolidated Fisheries, which must have had a lunch counter then. 441-445 Washington is occupied by a restaurant (Rainbow Club), paper products (Fulton Paper Company), and a cigar factory in the loft.



1980s Sanborn map, showing 425 and 441-445 Washington after they had been shortened. A seven story office building stands at #401, on the sliver of land where the old 401-423 Washington once stood. SFFD Station #13 is at far left.

WASHINGTON STREET



The 1950 Sanborn map (again), showing the full block. Merchant Street runs through the middle of the block.

Photographs of 425 Washington Street

At left: The top of the building, including its plain cornice.

At right: Second and third story windows, within the arched bay formed by a single course of bricks.

At left: second story steel-sash window. At right: Second floor spandrel.

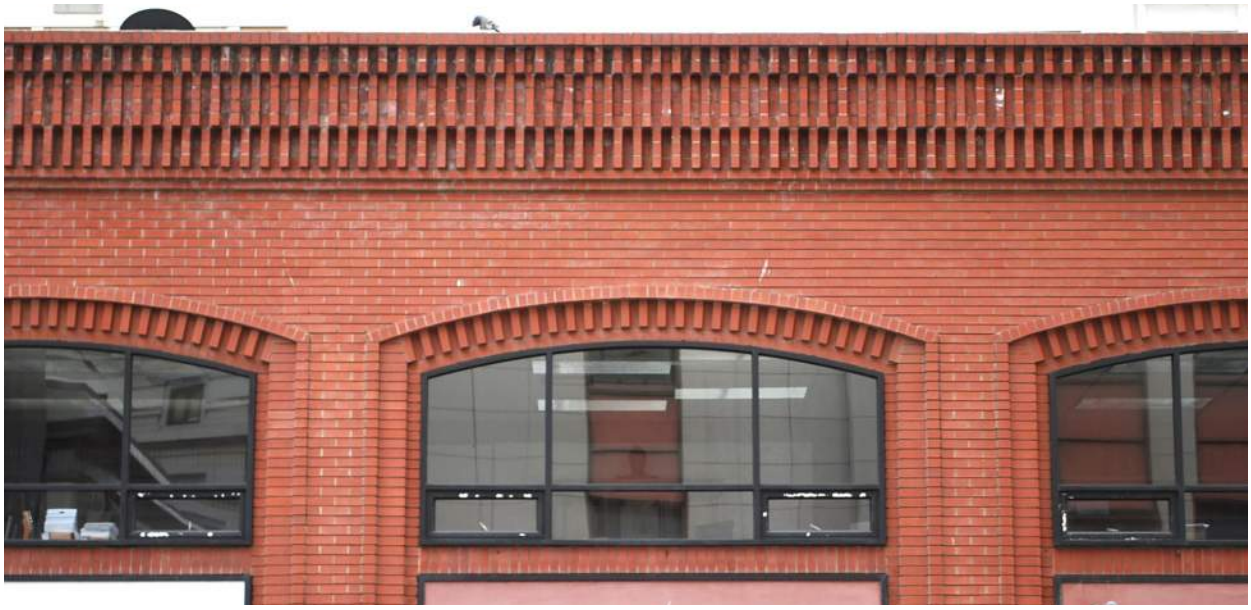
At left: Doors, transom, and sidelights in the west entrance. The east entrance is identical, save that it lacks sidelights.

The Merchant Street facade. Above: The third story windows and the cornice above the second story. Below: detail of the cornice.

Above and at right: The steel-framed restaurant entrance and storefront window.

Photographs of 439-445 Washington Street

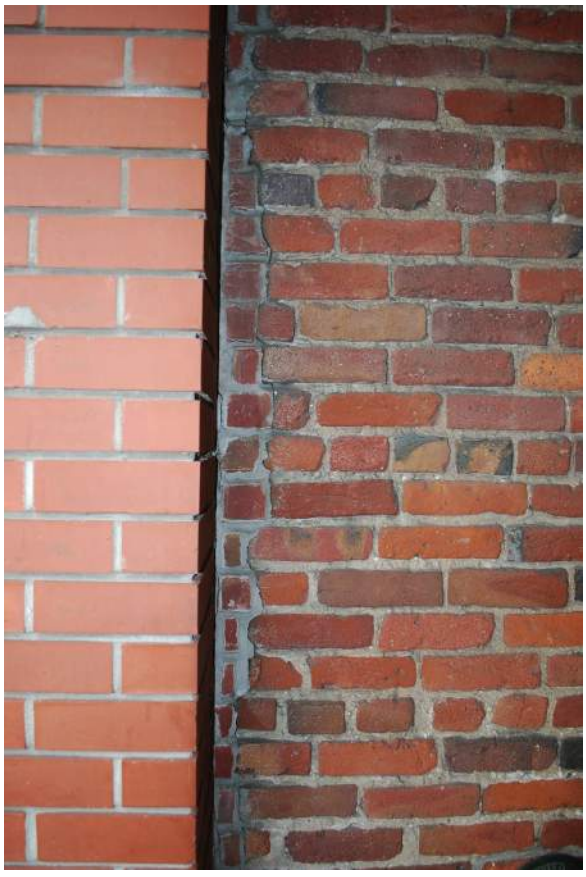
Top: The main facade, on Washington Street. Above: Cornice detail.



The top of the building, centered on the second story window with its metal sash.

Left to right, each of the three bays, showing predominance of signage and entrances.

At left: The metal-framed door, transom, and windows to the storefront at #439. Center: Doors to the restaurant at #441. At right: Door to the second floor offices at #445.



A comparison between the new brick of 1967 (far left) and the old brick of 1906-1907 (at right). This view is in one of the recessed entrances of the main facade.

Above: Rear (Merchant Street) facade

Below: Rear facade, closer. The blue-green lintels are unusual, and are probably not original.

Top left: Rear facade, cornice detail, with added steel reinforcing beam

Middle left: Second through fourth bays, all now filled in

Middle right: Sandblasted brick in the rear facade

Bottom row: Doors and metal-sash window in the rear facade.

Other buildings in the block of Washington, Clay, Battery and Sansome streets

Top: South side of the 400 block of Washington. From left to right: 401-423, 425, and 439-445 Washington; and SFFD Station #13, 532 Sansome, by architect John Portman, ca. 1974.

At left: 401-423 Washington, built in 1983.

At left: Jones-Thierbach building, 447 Battery Street, built in 1907. The north side of the 400 block of Merchant Street is seen at left.

Middle row, at left: Club Quarters Hotel, 424 Clay/ NW corner Battery (2001)

Middle row, at right: 432 Clay (1912)

Bottom row: The Printers' Building, 500 Sansome Street, with entrance (Frederick H. Meyer, architect, 1929)

Other buildings in the environs

Block of Jackson, Washington, Battery and Sansome streets

Appraiser's Building, 630 Sansome Street, with Moderne entrance

This building stands between the Custom House (to the east) and Jackson Square (to the west).

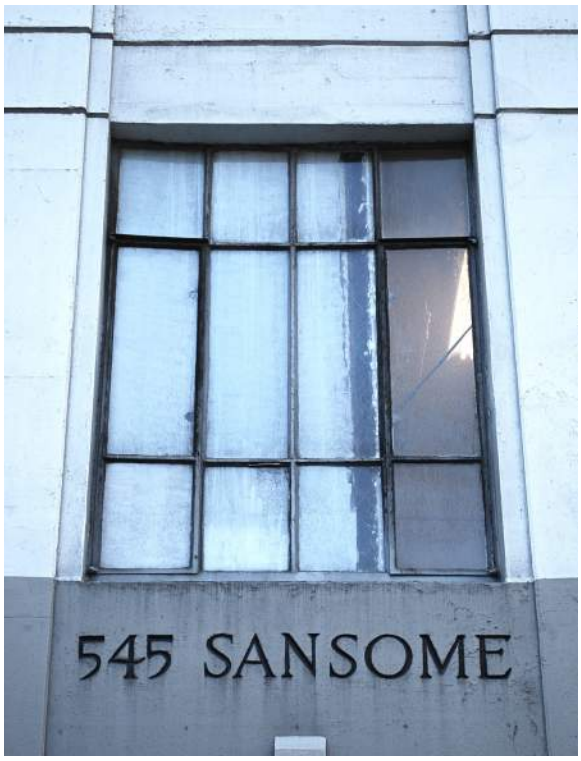
U. S. Custom House, 555 Battery Street

Block of Clay, Washington, Sansome and Montgomery streets

Left to right: The Transamerica Pyramid, 600 Montgomery; 505 Sansome Street; the California Ink Company building, 545 Sansome Street.

At right: Window of the California Ink Company building, 545 Sansome Street

Below: 501 Washington Street



Block of Jackson, Pacific, Battery and Sansome streets

Jackson Square could be extended to include this square block, most of the block to the north (not shown here), and the Old Ship Saloon, at 298 Pacific Avenue (also not shown).

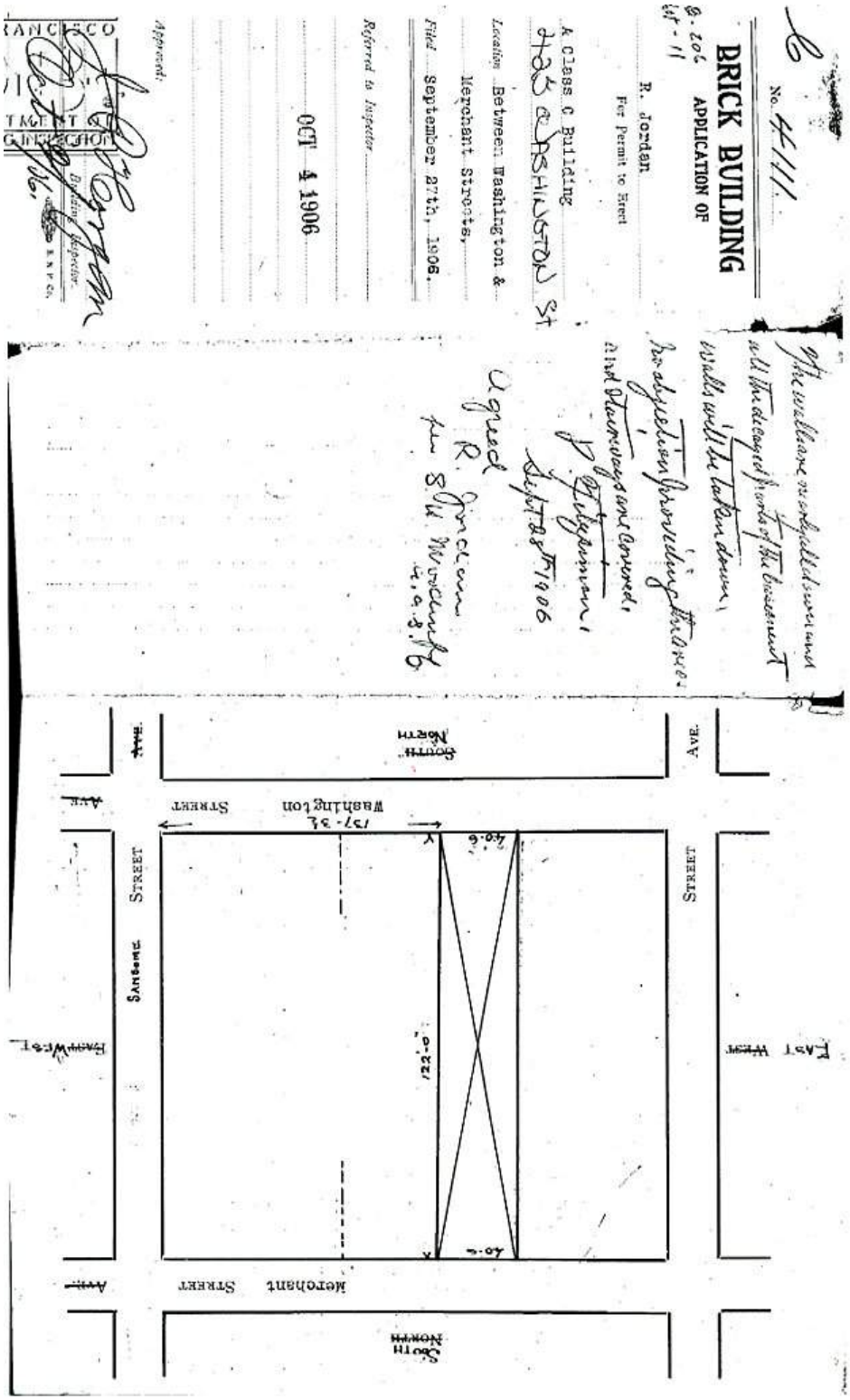
At left: The east side of Sansome Street, from Jackson to Pacific. The corner building is modern, but the four buildings to the north are old and would be contributors to an extended Jackson Square.

The four older buildings are shown again here. Left to right: 712, 710, 706, and 704 Sansome.

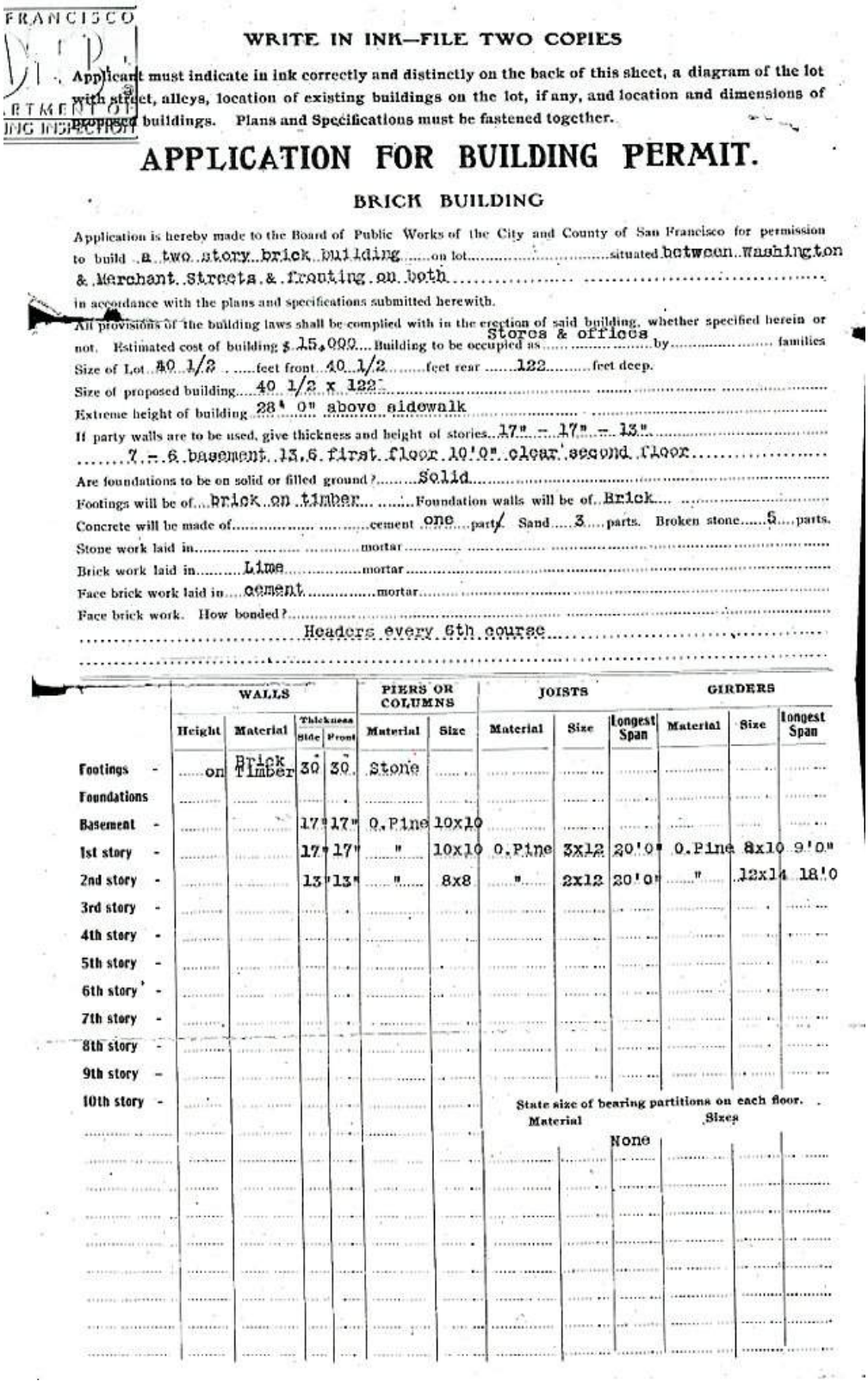
At left: The Legallet Building at 603-615 Battery (Albert Pissis, 1906), and to its right, the O. W. Nordwell warehouse at 633 Battery (Sutton and Weeks, 1906).

Buildings on this square block that are not shown: 645-655 Battery (uncertain historic status), 699 Battery (contributor), and 325 Pacific (contributor).

Building Permits for 425 Washington Street



The original permit to build, page 1 of 3. Dated October 1906.



FRANCISCO
DEPARTMENT OF
BUILDING INSPECTION

WRITE IN INK—FILE TWO COPIES

Applicant must indicate in ink correctly and distinctly on the back of this sheet, a diagram of the lot with street, alleys, location of existing buildings on the lot, if any, and location and dimensions of proposed buildings. Plans and Specifications must be fastened together.

APPLICATION FOR BUILDING PERMIT.

BRICK BUILDING

Application is hereby made to the Board of Public Works of the City and County of San Francisco for permission to build a two story brick building on lot situated between Washington & Merchant Streets & fronting on both in accordance with the plans and specifications submitted herewith.

All provisions of the building laws shall be complied with in the erection of said building, whether specified herein or not. Estimated cost of building $ 15,000 Building to be occupied as Stores & offices by families

Size of Lot 40 1/2 feet front 40 1/2 feet rear 122 feet deep.

Size of proposed building 40 1/2 x 122

Extreme height of building 28' 0" above sidewalk

If party walls are to be used, give thickness and height of stories 17" - 17" - 13"

7 - 6 basement 13.6 first floor 10'0" clear second floor

Are foundations to be on solid or filled ground? Solid

Footings will be of brick on timber Foundation walls will be of Brick

Concrete will be made of cement one part Sand 3 parts. Broken stone 5 parts.

Stone work laid in mortar

Brick work laid in Lime mortar

Face brick work laid in cement mortar

Face brick work. How bonded?

Headers every 6th course

	WALLS				PIERS OR COLUMNS		JOISTS			GIRDERS		
	Height	Material	Thickness Side	Thickness Front	Material	Size	Material	Size	Longest Span	Material	Size	Longest Span
Footings	on	Brick Timber	30	30	Stone							
Foundations												
Basement			17"	17"	O.Pine	10x10						
1st story			17"	17"	"	10x10	O.Pine	3x12	20'0"	O.Pine	8x10	9'0"
2nd story			13"	13"	"	8x8	"	2x12	20'0"	"	12x14	18'0
3rd story												
4th story												
5th story												
6th story												
7th story												
8th story												
9th story												
10th story												

State size of bearing partitions on each floor.

Material: None Sizes

The original permit to build, page 2 of 3.

Floor construction.....Timbers, Girders & Joists.....

Flat roof, construction of.....as above..... Covered with...3 Ply Tar Gravel Roof.....

Steep roof, construction of..... Covered with.....

Walls coped with..Rowlock brick in cement.....Cornices of.....Cement.....

Partition, of...2 x 4 studs & plaster.....Stair partitions, of.....Studs & plaster.....

Light court walls, of.....

Exterior columns, of.....reinforced concrete..... Protected with.....

Interior columns, of.....wood posts..... Protected with.....

.....

Trusses supporting roofs, if of iron, describe.....

.....

.....

Flue linings, of..... height of chimneys above roof.....

Boiler flue of.....lined with..... height of flue above roof.....

No. of stairways, width and construction..Two basement to 1st floor 3.6 wide - wood.....

.....Two first floor to 2nd 4.0 wide - wood.....

Boiler-room location..... walls of boiler-room:.....

Ceiling and floor over boiler-room..... doors to boiler-room.....

Fire-shutters.....

Bay windows, covered with.....

.....

Towers, domes or spires, size and extreme height above..... level.....

.....

Sky-lights, material, number and size.....

No. of elevators.....one.....where located...adjacent to exterior wall of Merchant St.....

Elevator enclosures, of.....2 x 4 studs & plaster.....

Vaults under sidewalk.....

.....

Retaining walls of.....height.....thickness at bottom.....thickness at top.....

Areas, coal holes, etc., state if any, and where.....

.....

.....

.....

.....

.....

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.....

.....

.....

.....

I hereby agree to save, indemnify and keep harmless the City and County of San Francisco against all liabilities, judgments, costs and expenses which may in anywise accrue against said city and county in consequence of the granting of this permit, or from the use or occupancy of any sidewalk, street or sub-sidewalk place by virtue thereof and will in all things strictly comply with the conditions of this permit.

Architect.....S. H. Woodruff..... Owner.....R. Jordan.....

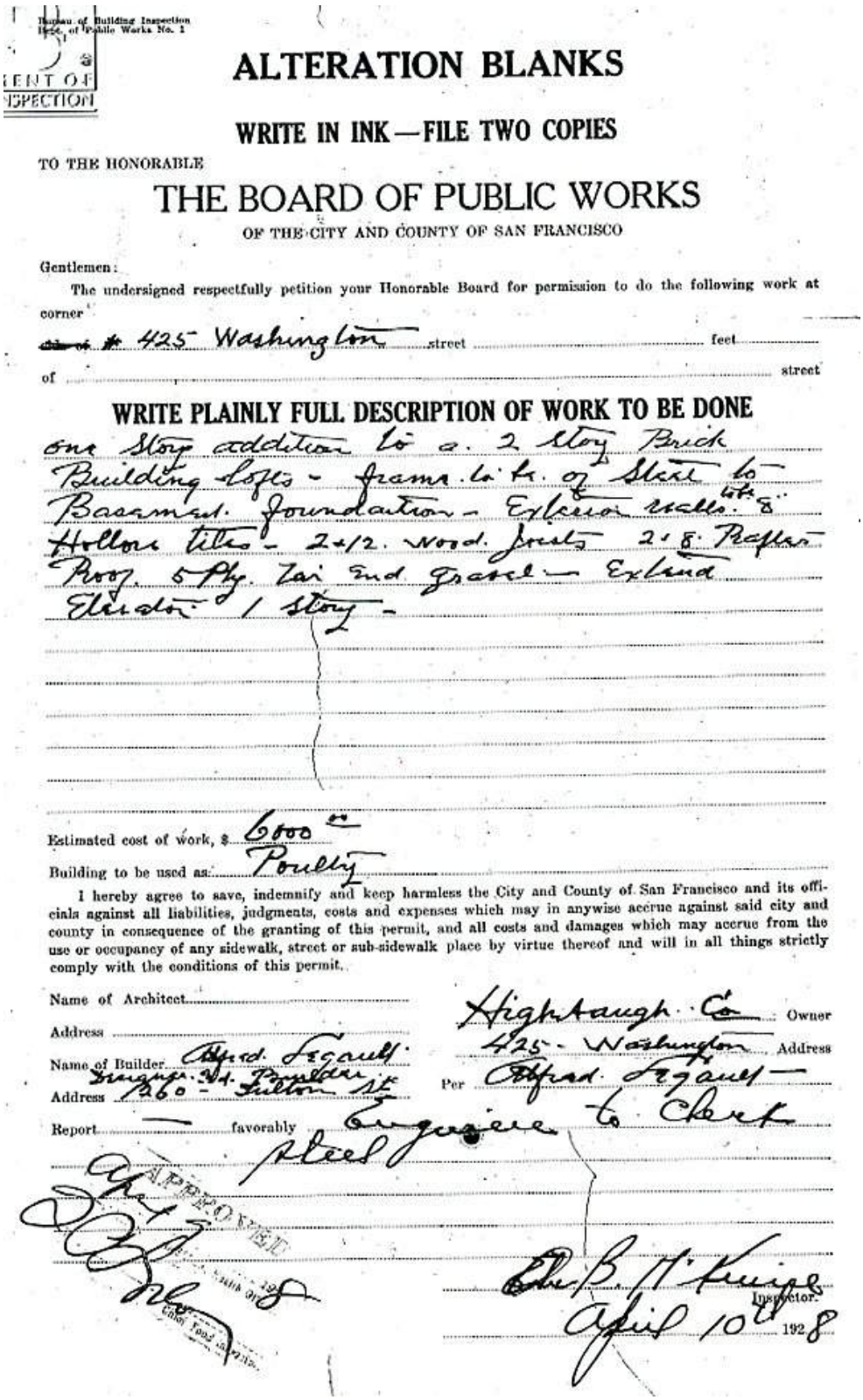
Address.....1557 Franklin Street, City..... Address 2563 Washington Street, City.....

Builder .....The Woodruff Co.:.....

Address.....1557 Franklin Street, City..... By.....

[NOTE—*The owner's name must be signed by himself, or by his Architect or authorized Agent.*]

The original permit to build, page 3 of 3.



Bureau of Building Inspection
Dept. of Public Works No. 1

ENT OF
SPECTION

ALTERATION BLANKS

WRITE IN INK—FILE TWO COPIES

TO THE HONORABLE

THE BOARD OF PUBLIC WORKS

OF THE CITY AND COUNTY OF SAN FRANCISCO

Gentlemen:

The undersigned respectfully petition your Honorable Board for permission to do the following work at corner

~~of~~ # 425 Washington street ..... feet .....

of ..... street

WRITE PLAINLY FULL DESCRIPTION OF WORK TO BE DONE

one Story addition to a 2 Story Brick Building Lofts - frame to fr. of Store to Basement. foundation - Excavation walls 4ft 8" Hollow tiles - 2x12. Wood. Joists 2x8. Rafter Roof. 5 Ply. Tar and Gravel - Extend Elevator 1 Story -

Estimated cost of work, $ 6000 ~~00~~

Building to be used as: Poultry

I hereby agree to save, indemnify and keep harmless the City and County of San Francisco and its officials against all liabilities, judgments, costs and expenses which may in anywise accrue against said city and county in consequence of the granting of this permit, and all costs and damages which may accrue from the use or occupancy of any sidewalk, street or sub-sidewalk place by virtue thereof and will in all things strictly comply with the conditions of this permit.

Name of Architect .....

Address .....

Name of Builder Byrd. Legault

Address 260 - 31st Fulton St

Highstaugh Co Owner

425 - Washington Address

Per Alfred Legault

Report — favorably Engineer to Chart

Steel

APPROVED

Chas B. H. Kruse Inspector.

April 10th 1928

1928 permit to add a third story.

CENTRAL PERMIT BUREAU F455

Write in Ink—File Two Copies

CITY AND COUNTY OF SAN FRANCISCO

DEPARTMENT OF PUBLIC WORKS

BLDG. FORM **3**

CENTRAL PERMIT BUREAU

APPLICATION FOR BUILDING PERMIT

ADDITIONS, ALTERATIONS OR REPAIRS

9 December 10.66

Application is hereby made to the Department of Public Works of San Francisco for permission to build in accordance with the plans and specifications submitted herewith and according to the description and for the purpose hereinafter set forth:

(1) Location 425 Washington Street, San Francisco, California

(2) Total Cost ($) ~~75,000.00~~ 125 m ft (3) No. of Stories 3 (4) Basement or Cellar Yes (yes or no)

(5) Present Use of building Empty (6) No. of families

(7) Proposed Use of building Blueprinter (8) No. of families

(9) Type of construction 3 1Hr (1, 2, 3, 4, or 5) (10) 1 6 2 (Proposed Building Code Classification)

(11) Any other building on lot no (yes or no) (must be shown on plot plan if answer is yes.)

(12) Does this alteration create an additional story to the building? no (yes or no)

(13) Does this alteration create a horizontal extension to the building? no (yes or no)

(14) Does this alteration constitute a change of occupancy (yes or no)

(15) Electrical work to be performed separate contract (yes or no) (16) Plumbing work to be performed yes (yes or no)

(17) Automobile runway to be altered or installed no (yes or no)

(18) Sidewalk over sub-sidewalk space to be repaired or altered see below (yes or no)

(19) Will street space be used during construction? yes (yes or no)

(20) Write in description of all work to be performed under this application:
(Reference to plans is not sufficient)

Removed northerly 23'-0" of building facing Washington Street; add new floor structure (steel and wood) 1st and 2nd floors; new toilet rooms and partitions; new steel frame, plaster and brick veneer front (North) wall; new steel stud wall and wood frame roof at 3rd floor rear; new steel stairs (2); new freight elevator, new plumbing system and fixtures; reinforce existing structural steel frame. Interior office partitions and all electrical work by tenant - not in this contract.

(21) Supervision of construction by Harada & Meu Address 553 Mission St., S.F.

(22) General Contractor Not selected California License No.

Address

(23) Architect or Engineer (for design) Harada & Meu California Certificate No. C-1098

Address 553 Mission St., San Francisco, California

(24) Architect or Engineer (for construction) Russell H. Fuller Structural Engineer California Certificate No. S-602

Address 171 Second St., San Francisco, Calif.

(25) I hereby certify and agree that if a permit is issued for the construction described in this application, all the provisions of the permit and all laws and ordinances applicable thereto will be complied with. I further agree to save San Francisco and its officials and employees harmless from all costs and damages which may accrue from use or occupancy of the sidewalk, street or subsidewalk space or from anything else in connection with the work included in the permit. The foregoing covenant shall be binding upon the owner of said property, the applicant, their heirs, successors and assignees.

(26) Owner Joe Alioto c/o Architect, Harada & Meu (Phone 434-4911) For contract by Bureau

Address 553 Mission Street, San Francisco, California

By John M. McWilliams Address 553 Mission Street, San Francisco

Owner's Authorized Agent to be Owner's Authorized Architect, Engineer or General Contractor.

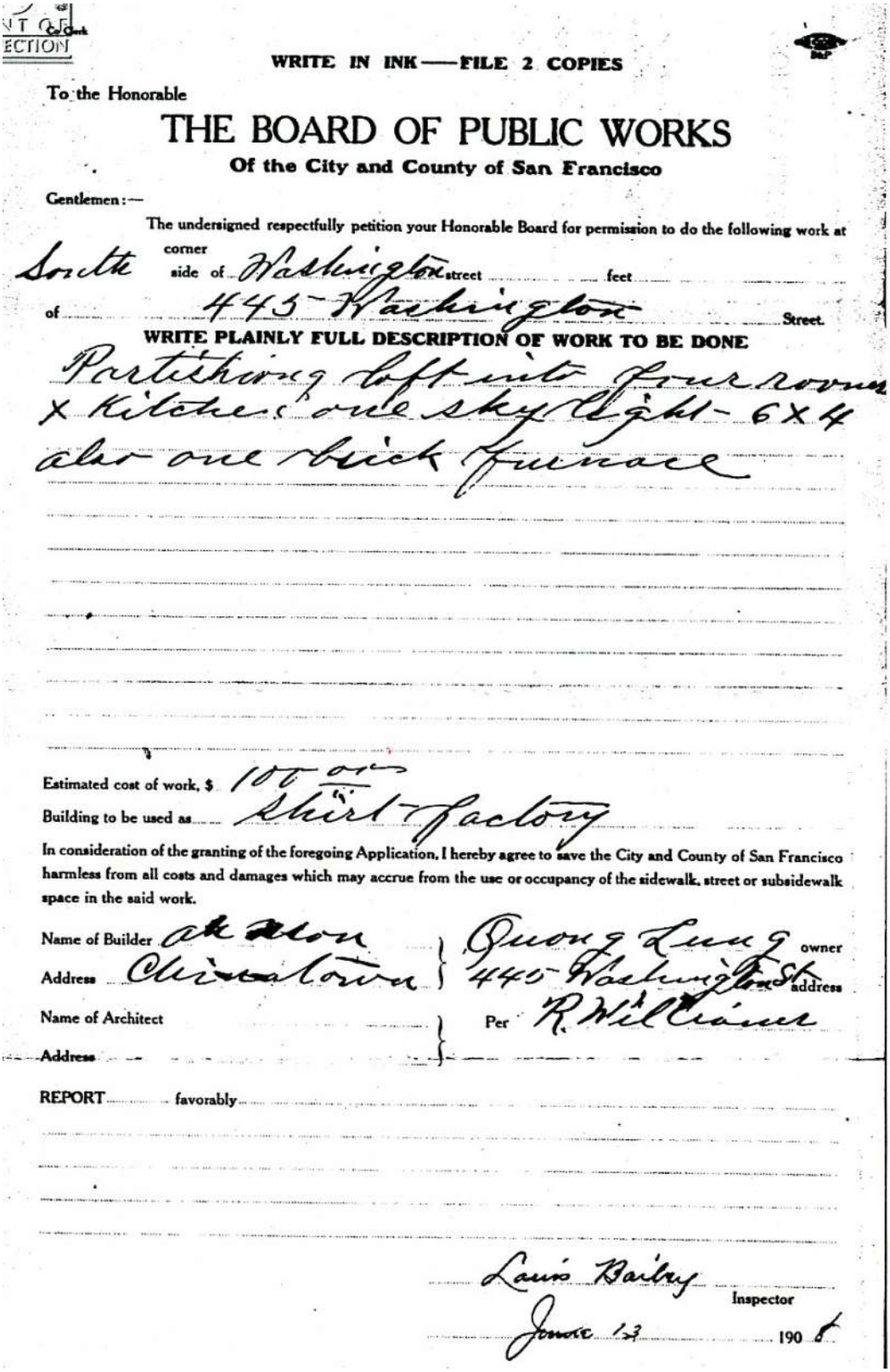
CERTIFICATE OF FINAL COMPLETION AND/OR PERMIT OF OCCUPANCY MUST BE OBTAINED ON COMPLETION OF WORK OR ALTERATION INVOLVING AN ENLARGEMENT OF THE BUILDING OR A CHANGE OF OCCUPANCY PURSUANT TO SEC. 808 AND 809, SAN FRANCISCO BUILDING CODE, BEFORE BUILDING IS OCCUPIED.

Pursuant to Sec. 304, San Francisco Building Code, the building permit shall be posted on job. Owner is responsible for approved plans and application being kept at building site.

APPROVAL OF THIS APPLICATION DOES NOT CONSTITUTE AN APPROVAL FOR THE ELECTRICAL WIRING OR PLUMBING INSTALLATIONS. A SEPARATE PERMIT FOR THE WIRING AND PLUMBING MUST BE OBTAINED.

THIS IS NOT A BUILDING PERMIT. NO WORK SHALL BE STARTED UNTIL A BUILDING PERMIT IS ISSUED.

December 1966 permit to remove the original front 23 feet and add a new plaster and brick front. The architects were Harada and Meu, and the structural engineer was Russell H. Fuller.



WRITE IN INK — FILE 2 COPIES

To the Honorable

THE BOARD OF PUBLIC WORKS

Of the City and County of San Francisco

Gentlemen:—

The undersigned respectfully petition your Honorable Board for permission to do the following work at

corner side of Washington street ..... feet .....

of 445 - Washington Street.

WRITE PLAINLY FULL DESCRIPTION OF WORK TO BE DONE

Partitioning loft into four rooms & kitchen one sky light - 6 x 4 also one brick furnace

Estimated cost of work, $ 100 00

Building to be used as Shirt Factory

In consideration of the granting of the foregoing Application, I hereby agree to save the City and County of San Francisco harmless from all costs and damages which may accrue from the use or occupancy of the sidewalk, street or subsidewalk space in the said work.

Name of Builder Ah Hon } Quong Lung owner

Address Chinatown } 445 - Washington St address

Name of Architect } Per R. Williamer

Address }

REPORT ..... favorably .....

Louis Bailey Inspector

June 13 1908

Building Permits for 425 Washington Street

June 1908 building permit for partitioning the second floor loft as a shirt factory.

CENTRAL PERMIT BUREAU F. NO. 628 — Write in Ink—File Two Copies

CITY AND COUNTY OF SAN FRANCISCO

DEPARTMENT OF PUBLIC WORKS — **CENTRAL PERMIT BUREAU**

BLDG. FORM **3**

APPLICATION FOR BUILDING PERMIT

ALTERATION

10/25/44 19

Application is hereby made to the Department of Public Works of the City and County of San Francisco for permission to build in accordance with the plans and specifications submitted herewith and according to the description and for the purpose hereinafter set forth:

(1) Location 439 Washington St

(2) For what purpose is present building now used? Storage house

(3) For what purpose will building be used hereafter? Saloon and Restaurant

(4) Total Cost $ 200.00

(5) Description of work to be done The two entrance fronts to be new as shown on plans and new mens toilet and ladies toilet to be Builted on 2x4 Studs. Button Board and ciment Plaster on the inside of them, an Plaster outside

(6) APPLICANT MUST FILL OUT COMPENSATION INSURANCE DATA ON REVERSE SIDE.

(7) Supervision of construction by J. Barsotti

Address 2029 Stockton St

I hereby certify and agree, if a permit is issued, that all the provisions of the BUILDING LAW, THE BUILDING ZONE ORDINANCES, SET BACK LINE REQUIREMENTS AND THE FIRE ORDINANCES OF THE CITY AND COUNTY OF SAN FRANCISCO and the STATE HOUSING ACT OF CALIFORNIA will be complied with, whether herein specified or not; and I hereby agree to save, indemnify and keep harmless the City and County of San Francisco against all liabilities, judgments, costs and expenses which may in anywise accrue against said city and county in consequence of the granting of this permit, or from the use or occupancy of any sidewalk, street or sub-sidewalk placed by virtue thereof, and will in all things strictly comply with the conditions of this permit.

(8) Architect

Certificate No. State of California — License No. City and County of San Francisco

Address

(9) Engineer

Certificate No. State of California — License No. City and County of San Francisco

Address

(10) Plans and specifications prepared by Other than Architect or Engineer Dante Ferroni

Address 3110 Laguna St

(11) Contractor Days work

License No. State of California — License No. City and County of San Francisco

Address

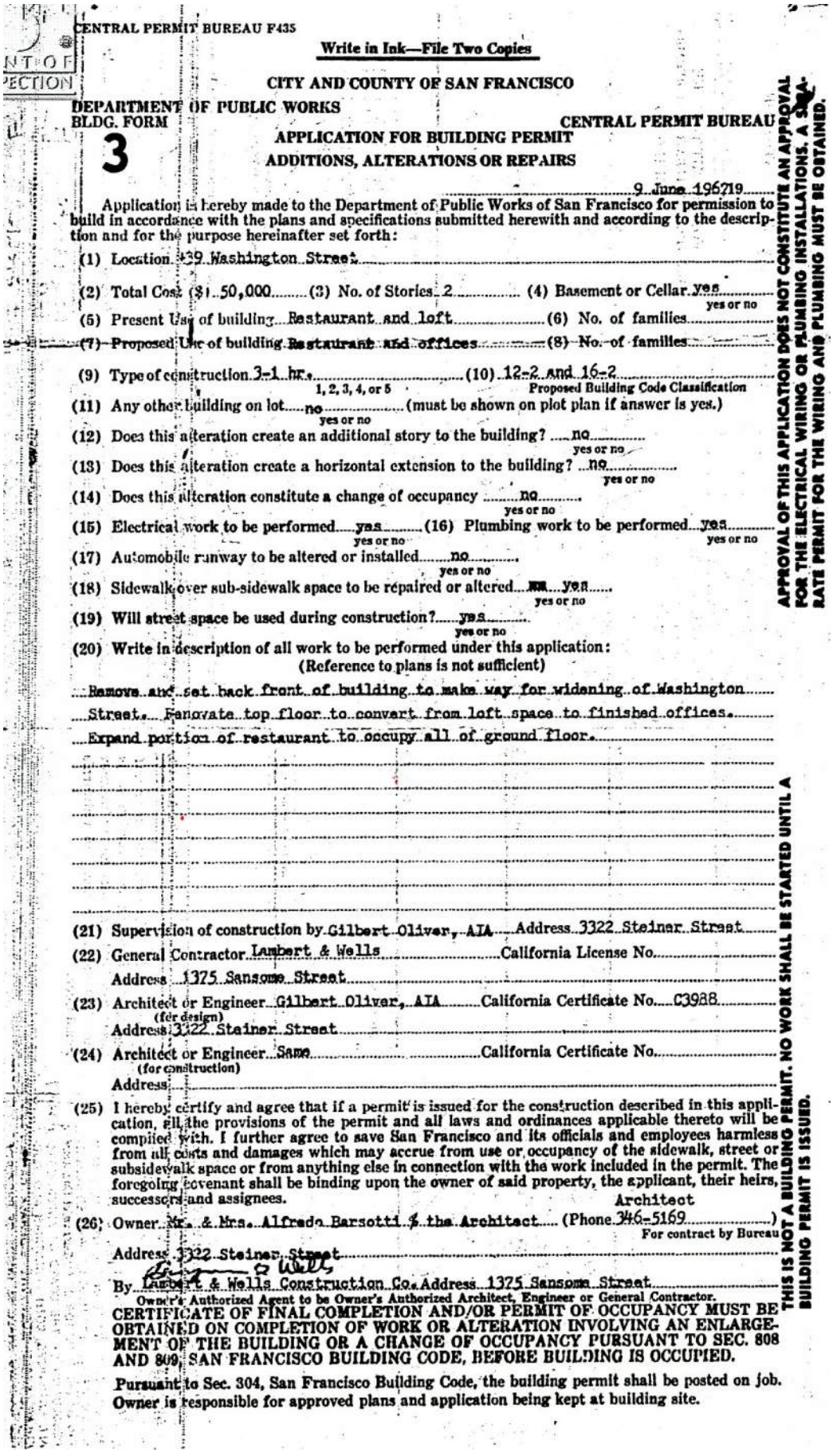
(12) Owner J. Barsotti

Address 2029 Stockton St

By Dante Ferroni — Owner's Authorized Agent.

THE DEPARTMENT WILL CALL UP TELEPHONE NO. Web 1541
IF ANY ALTERATIONS OR CHANGES ARE NECESSARY ON THE PLANS SUBMITTED.

Alf Barsotti purchased this building in 1944 and opened his Rainbow Club restaurant later the same year. This is his October 1944 building permit to build two new entrances and perform interior work.



CENTRAL PERMIT BUREAU F435

Write in Ink—File Two Copies

CITY AND COUNTY OF SAN FRANCISCO

DEPARTMENT OF PUBLIC WORKS

BLDG. FORM 3

CENTRAL PERMIT BUREAU

APPLICATION FOR BUILDING PERMIT

ADDITIONS, ALTERATIONS OR REPAIRS

9 June 19671

Application is hereby made to the Department of Public Works of San Francisco for permission to build in accordance with the plans and specifications submitted herewith and according to the description and for the purpose hereinafter set forth:

(1) Location 439 Washington Street

(2) Total Cost $1.50,000 (3) No. of Stories 2 (4) Basement or Cellar yes (yes or no)

(5) Present Use of building Restaurant and loft (6) No. of families

(7) Proposed Use of building Restaurant and offices (8) No. of families

(9) Type of construction 3-1 hr. (1, 2, 3, 4, or 5) (10) 12-2 and 16-2 (Proposed Building Code Classification)

(11) Any other building on lot no (yes or no) (must be shown on plot plan if answer is yes.)

(12) Does this alteration create an additional story to the building? no (yes or no)

(13) Does this alteration create a horizontal extension to the building? no (yes or no)

(14) Does this alteration constitute a change of occupancy no (yes or no)

(15) Electrical work to be performed yes (yes or no) (16) Plumbing work to be performed yes (yes or no)

(17) Automobile runway to be altered or installed no (yes or no)

(18) Sidewalk over sub-sidewalk space to be repaired or altered no yes (yes or no)

(19) Will street space be used during construction? yes (yes or no)

(20) Write in description of all work to be performed under this application:
(Reference to plans is not sufficient)

Remove and set back front of building to make way for widening of Washington Street. Renovate top floor to convert from loft space to finished offices. Expand portion of restaurant to occupy all of ground floor.

(21) Supervision of construction by Gilbert Oliver, AIA Address 3322 Steiner Street

(22) General Contractor Lambert & Wells California License No.
Address 1375 Sansome Street

(23) Architect or Engineer (for design) Gilbert Oliver, AIA California Certificate No. C3988
Address 3322 Steiner Street

(24) Architect or Engineer (for construction) Same California Certificate No.
Address

(25) I hereby certify and agree that if a permit is issued for the construction described in this application, all the provisions of the permit and all laws and ordinances applicable thereto will be complied with. I further agree to save San Francisco and its officials and employees harmless from all costs and damages which may accrue from use or occupancy of the sidewalk, street or subsidewalk space or from anything else in connection with the work included in the permit. The foregoing covenant shall be binding upon the owner of said property, the applicant, their heirs, successors and assignees.

Architect

(26) Owner Mr. & Mrs. Alfredo Barsotti % the Architect (Phone 346-5169) For contract by Bureau

Address 3322 Steiner Street

By Lambert & Wells Construction Co. Address 1375 Sansome Street
Owner's Authorized Agent to be Owner's Authorized Architect, Engineer or General Contractor.

CERTIFICATE OF FINAL COMPLETION AND/OR PERMIT OF OCCUPANCY MUST BE OBTAINED ON COMPLETION OF WORK OR ALTERATION INVOLVING AN ENLARGEMENT OF THE BUILDING OR A CHANGE OF OCCUPANCY PURSUANT TO SEC. 808 AND 809, SAN FRANCISCO BUILDING CODE, BEFORE BUILDING IS OCCUPIED.

Pursuant to Sec. 304, San Francisco Building Code, the building permit shall be posted on job. Owner is responsible for approved plans and application being kept at building site.

APPROVAL OF THIS APPLICATION DOES NOT CONSTITUTE AN APPROVAL FOR THE ELECTRICAL WIRING OR PLUMBING INSTALLATIONS. A SEPARATE PERMIT FOR THE WIRING AND PLUMBING MUST BE OBTAINED.

THIS IS NOT A BUILDING PERMIT. NO WORK SHALL BE STARTED UNTIL A BUILDING PERMIT IS ISSUED.

June 1967 permit application to "remove and set back front of building to make way for widening of Washington Street." The architect was Gilbert Oliver, A.I.A.

APPENDIX C.8

Preservation Alternatives Memorandum

ESA

575 Market Street
Suite 3700
San Francisco, CA 94105
415.896.5900 phone
415.896.0332 fax

esassoc.com

memorandum

date	December 30, 2024, revised February 27, 2025
to	Rich Sucre and Jonathan Vimr, San Francisco Planning Department
cc	Sherie George, Environmental Coordinator, San Francisco Planning Department Susan Yogi, Project Manager, ESA
from	Becky Urbano, Architectural History Program Manager, ESA
subject	447 Battery and 530 Sansome Street Project – Preservation Alternatives Analysis

1. Introduction

This Preservation Alternatives Memorandum has been prepared at the request of the San Francisco Planning Department for the proposed project at 447 Battery and 530 Sansome streets. The project site is located on Block 0206 and encompasses four lots (002, 013, 014, and 017) (**Figure 1**). The 24,830-square-foot project site is bound by Sansome Street to the west, Washington Street to the north, Battery Street to the east, and Merchant Street to the south. The project site is currently occupied by four buildings that include San Francisco Fire Department (SFFD) Station 13 (530 Sansome Street) and three brick masonry commercial buildings (425 and 439–445 Washington Street and 447 Battery Street).

530 Sansome Street (Block/Lot 0206/017) is an 18,626-square-foot concrete building constructed in 1975 to serve as a fire station. The 3-story, 17,800-square-foot brick masonry building commercial building at 425 Washington Street (Block/Lot 0206/014) and the 12,862-square-foot, 2-story commercial building at 439–445 Washington Street (Block/Lot 0206/013) were both constructed ca. 1908. The building at 447 Battery Street (Block/Lot 0206/002) is a 20,154-square-foot, 3-story, brick masonry commercial building constructed in 1907 and was occupied by the Jones-Thierbach Coffee Company.

Fire Station 13 at 530 Sansome Street has been determined ineligible for listing on the National Register of Historic Places (National Register) and California Register of Historical Resources (California Register), and is not a designated City of San Francisco Article 10 resource. It has been determined to be a contributor to the potential Embarcadero Center Historic District. The sculpture *Untitled*, located on the building's primary (west) façade, has been determined to be individually eligible for listing in the California Register. The buildings at 425 and 439–445 Washington Street have been determined ineligible for listing on the National and California registers and are not designated as City and County of San Francisco Article 10 resources. Only the building at 447 Battery Street is considered an individual historical resource. This building was first identified in the 1968 Junior League survey and it was included in *Here Today*, which was adopted by the Board of Supervisors in 1970

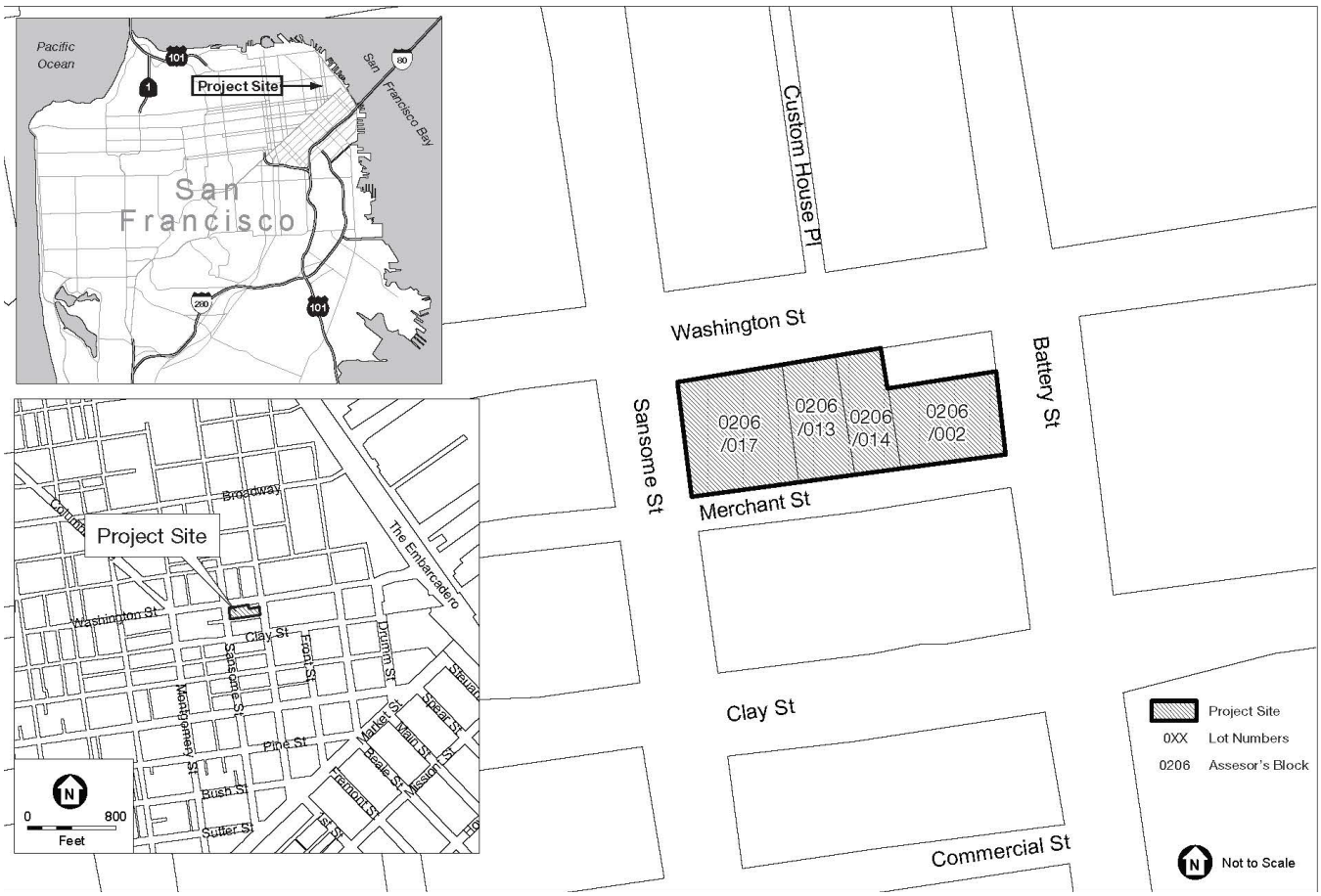


Figure 1 Project Location

to become the first official list of San Francisco's "historically and architecturally significant structures." The building was subsequently surveyed in the 1976 Architectural Quality Survey and the 1978 Architectural Heritage Survey. In 2017, San Francisco Planning Department Staff prepared an updated evaluation of the property using current criteria and professional standards. At that time, the building was determined to be individually eligible for listing in the California Register under both Criteria 1 (Events) and 3 (Design) with a period of significance of 1907–1967, corresponding to the date of construction through the end of building's association with the Jones-Thierbach Coffee Company.[1] In 2022, the City's Board of Supervisors designated the building as an Article 10 landmark. As such, the building is a historic resource for the purposes of compliance with the California Environmental Quality Act (CEQA).

1.1 Project Background

The San Francisco Fire Department, the San Francisco Bureau of Real Estate, and EQX JACKSON SQ HOLDCO LLC (project sponsors) propose to redevelop the 24,830-square-foot project site located on the block bound by Sansome Street to the west, Washington Street to the north, Battery Street to the east, and Merchant Street to the south. The proposed project would involve demolition of the existing 17,800-square-foot, 3-story commercial building at 425 Washington Street (Block/Lot 0206/014), and the 12,862-square-foot, 2-story

[1] San Francisco Planning Department, *Historic Resource Evaluation Response for 447 Battery Street, Part I*, December 2017, p. 3.

commercial building at 439–445 Washington Street (Block/Lot 0206/013); the 20,154-square-foot, 3-story commercial building at 447 Battery Street (Block/Lot 0206/002); and the 18,626-square-foot fire station at 530 Sansome Street (Block/Lot 0206/017). The project sponsors propose to construct a 4-story replacement fire station and a separate high-rise building up to 41 stories tall.

The Planning Department prepared a Historic Resource Evaluation Response (HRER) Part II for a prior project that included demolition of the buildings at 530 Sansome Street, 425 Washington Street, and 439–445 Washington Street, construction of a new fire station on the site, and reinstallation of *Untitled* on the replacement fire station.[2] That document concluded that impacts resulting from the demolition of 530 Sansome Street would result in less-than-significant impacts on the eligible Embarcadero Center Historic District. The HRER Part II also concluded that removal, temporary storage, and reinstallation of the sculpture *Untitled* would result in less-than-significant impacts on the eligible object. The Planning Department also prepared an HRER Part II for a prior project that included demolition of the building 447 Battery Street. The demolition of the 447 Battery Street building would result in loss of a San Francisco Landmark building which would be a significant impact to historical resources. As such, the preservation alternatives described in this memorandum include a No Project Alternative, two Full Preservation Alternatives, and a Partial Preservation Alternative.

1.2 Methodology

This memorandum was produced based on guidance provided by "Historic Preservation Commission Resolution No. 0746" and consultation with Preservation Staff at the Planning Department to provide the Historic Preservation Commission with information to confirm, further develop, and/or analyze the preservation alternatives described herein. Sections 1 through 3 of this memorandum summarize the property's significance, character-defining features, and proposed project description. The memorandum then describes a No Project Alternative, the two Full Preservation Alternatives, and a Partial Preservation Alternative to review impacts on identified character-defining features of 447 Battery Street and sculpture *Untitled*.

Under Record No. 2024-007066ENV, ESA referred to the *447 Battery Street, San Francisco, Historic Resource Evaluation* prepared by Page & Turnbull (447 Battery Street HRE); *Historic Resource Evaluation Response for 447 Battery Street, Part I* (447 Battery Street HRER Part I); *Historic Resource Evaluation Response for 447 Battery Street, Part II* (447 Battery Street HRER Part II); *530 Sansome Street, San Francisco, Historic Resource Evaluation, Part 1* prepared by ESA (530 Sansome HRE); *Historic Resource Evaluation Response for 530 Battery Street, Part I* (530 Battery Street HRER Part I); *Historic Resource Evaluation Response for 530 Sansome Street, Part II* (530 Battery HRER Part II); *Historical Evaluation of 425 and 439–445 Washington Street, San Francisco, According to California Register Criteria* prepared by William Kostura (425 and 439–445 Washington Street HRE); and *Preservation Team Review Form for 425 and 439–445 Washington Street* (PTR for 425 and 439–445 Washington Street. ESA also consulted the "Notice of Preparation of an Environmental Impact Report" (NOP), prepared by the Planning Department and issued on November 6, 2024.

[2] San Francisco Planning Department, *Historic Resource Evaluation Response Part II: 530 Sansome Street*, December 18, 2020.

1.3 Regulatory Framework

The Secretary of the Interior's Standards for the Rehabilitation

The *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (Secretary's Standards) were published and codified as 36 Code of Federal Regulations 68 in 1995 and updated in 2017.[3] The Secretary's Standards for rehabilitation have been adopted by local government bodies across the country, including the City and County of San Francisco, for reviewing proposed work on historic properties under local preservation ordinances. The Secretary's Standards provide a useful analytical tool for understanding and describing the potential impacts of changes to historic resources and are used to inform CEQA review. Developed by the National Park Service for reviewing certified rehabilitation tax credit projects, the rehabilitation standards provide guidance for reviewing work on historic properties. The rehabilitation standards are as follows:

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale, and proportion, and massing to protect the integrity of the property and its environment.
10. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

[3] U.S. Department of the Interior, National Park Service (Kay D. Weeks and Anne E. Grimmer), *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstruction Historic Buildings*, revised 2017, http://www.nps.gov/tps/standards/treatment-guidelines-2017.pdf, accessed December 18, 2024.

Conformance with all rehabilitation standards does not determine whether a project would cause a substantial adverse change in the significance of a historical resource under CEQA. Rather, projects that comply with the standards benefit from a regulatory presumption that they would have a less-than-significant adverse impact on a historic resource.

California Environmental Quality Act

CEQA requires a lead agency to determine if a proposed project would have a significant effect on important historical resources or unique archaeological resources. If a resource is neither a unique archaeological resource nor a historical resource, the CEQA Guidelines note that the effects of the project on that resource shall not be considered a significant effect on the environment (CEQA Guidelines section 15064.5(c)(4)). As noted above, projects that comply with the Secretary's Standards benefit from a regulatory presumption under CEQA that they would have a less-than-significant impact on a historical resource. Projects that do not comply with the Secretary's Standards may or may not cause a substantial adverse change in the significance of a historical resource and must be subject to further analysis to assess whether they would result in material impairment of a historical resource's significance (CEQA Guidelines section 15064.5(b).

2. Historic Resources Summary

2.1 Evaluation Summary and Period of Significance

447 Battery Street

The building was determined individually eligible for listing in the California Register under Criteria 1 and 3. Under Criterion 1, 447 Battery Street is directly associated with reconstruction efforts in downtown San Francisco following the widespread destruction caused by the 1906 earthquake and fires. It is also significant under Criterion 1 for its association with the Jones-Thierbach Coffee Company and the City's coffee industry. Under Criterion 3, the building is significant as "an outstanding example of a late nineteenth/early twentieth century store-and-warehouse building."[4]

The period of significance under Criteria 1 (events) and 3 (design/construction) is from 1907, when the building was originally constructed, to 1967, when it ceased to be used for the manufacture and warehousing of coffee.[5]

Embarcadero Center Historic District

The building at 530 Sansome Street and the sculpture *Untitled* are contributors to the discontiguous Embarcadero Center Historic District. While the Embarcadero Center Historic District has not been subject to formal evaluation, based on the results of prior documentation, the Planning Department has determined that the four office towers (Embarcadero Center 1–4) and the Hyatt Regency Hotel (Embarcadero Center 5) are historic resources that qualify as a historic district.[6,7] The complex noted as one of the City's "Influential Downtown Office Towers and Designed Landscapes," in the *San Francisco Modern Architecture and Landscape Design 1935–1970 Historic*

[4] San Francisco Planning Department, *Historic Resource Evaluation Response for 447 Battery Street, Part I*, December 2017, p. 8.

[5] Ibid., p. 4.

[6] San Francisco Planning Department, *Historic Resource Evaluation Response for 530 Sansome Street, Part I*, December 2020, p. 6.

[7] Environmental Science Associates, *Historic Resource Evaluation Report, Part 1,* Prepared for the San Francisco Planning Department, September 2020, p. 31.

Context Statement.[8] It is presumed eligible under Criterion 3 as an excellent representative, large-scale example of the Brutalist style and for its association with master architects John Portman & Associates.[9]

While the Embarcadero Center historic district has not been fully analyzed, the Planning Department assumes that its period of significance is 1971–1982.[10]

There are two contributors to the Embarcadero Center Historic District within the project site: 530 Sansome Street and the sculpture *Untitled*. However, only *Untitled* has been determined to be individually eligible for listing in the California Register.

Sculpture *Untitled*

At the west end of the 530 Sansome Street's north façade is a wall-mounted sculpture by artist Henri Marie-Rose named *Untitled*. The three-dimensional copper sculpture depicts firefighters with a hose next to the letters "SFFD." The sculpture *Untitled*, is eligible for listing in the California Register under Criterion 3 as an object that is "a distinctive example of a master artist's work, has high artistic merit, and was designed specifically for a fire station."[11] It was created by Marie-Rose, a master artisan, and commissioned by the San Francisco Arts Commission as a site-specific artwork for 530 Sansome Street. It is believed to be the last surviving public artwork in San Francisco associated with Marie-Rose.

The sculpture was determined to be individually eligible for listing under Criterion 3 as a distinctive, site-specific object designed by a master artist. It was also determined to be a contributor to the potentially eligible Embarcadero Center Historic District. Its individual period of significance is 1976, the date of its installation.

2.2 Character-Defining Features

Character-defining features are the essential physical features that enable a property to convey its historic identity. To be eligible for national, state, or local designation, a property must clearly retain a sufficient concentration of its character-defining features to be considered a true representative of a particular type, period, or method of construction, and these features must also retain a sufficient degree of integrity. Characteristics can be expressed in terms of form, proportion, structure, plan, style, or materials. The following describes the character-defining features of the historic resources.

447 Battery Street

With regard to the significance of 447 Battery Street under Criteria 1 (events) and 3 (design/construction), the 447 Battery Street HRER Part I identifies the following character-defining features:

- Three-story height and roughly rectangular footprint
- Exterior walls constructed of brick masonry
- Openings for storefronts and a building entry on Battery Street

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8 Mary Brown. *San Francisco Modern Architecture and Landscape Design 1935–1970 Historic Context Statement.* Prepared for the San Francisco City and County Planning Department, 2010, p. 143.

9 San Francisco Planning Department, *Historic Resource Evaluation Response for 530 Sansome Street, Part I*, December 2020, p. 6.

10 Ibid., p. 8.

11 Ibid., p. 5.

- Regular, evenly spaced rhythm of window openings on the first (Merchant Street only), second and third stories; the westernmost two bays on Merchant Street are slightly closer together
- Slightly projecting brick sill and a segmental arch head at window openings
- Brick cornice consisting, from bottom to top, of a projecting bandcourse, a flat frieze, several courses of corbeling, and projecting coping[12]

Embarcadero Center Historic District

As a representative of Brutalist architecture in San Francisco, the Embarcadero Center Historic District has the following character-defining features related to its architecture:

- Rough unadorned poured concrete construction
- Massive form and heavy cubic shapes
- Visible imprints of wood grain forms
- Recessed windows that read as voids
- Repeating geometric patterns
- Strong right angles and simple cubic forms
- Deeply shadowed irregular openings
- Rectangular block-like shapes
- Precast concrete panels with exposed joinery[13]

Sculpture *Untitled*

The sculpture *Untitled* is recommended individually eligible for listing in the California Register under Criterion 3, and it retains a high degree of integrity. The 530 Sansome Street HRER Part I identifies the following character-defining features for the sculpture *Untitled*:

- Visually prominent position on a building occupying a corner location
- Visually prominent position on the exterior of Fire Station 13, with which the sculpture is historically associated
- Copper construction
- Verdigris (patina)
- Overall design that includes abstract figures and typographic elements

[12] San Francisco Planning Department, *Historic Resource Evaluation Response for 447 Battery Street, Part I*, December 2017, pp. 9–10.

[13] Mary Brown, *San Francisco Modern Architecture and Landscape Design 1935–1970 Historic Context Statement*, Prepared for the San Francisco City and County Planning Department, 2010, pp. 190–191.

3. Proposed Project Information

3.1 Project Sponsor Objectives

1. Leverage new commercial development to provide San Francisco with a new state-of-the-art fire station and financial contributions to support new affordable housing production.
2. Build a new commercial development to generate both daytime and nighttime activity in the Financial District and provide employment opportunities and generate demand for area businesses in a transit-rich and walking-friendly area of the City.
3. Build a new fire station in a separate structure that meets the San Francisco Fire Department's (SFFD) programmatic and design requirements for a state-of-the-art facility, while accommodating the contemplated commercial development on a distinct portion of the project site.
4. Improve Merchant Street between Sansome and Battery streets to complete a pedestrian-oriented connection between Maritime Plaza and Transamerica Redwood Park.
5. Build adequate parking and vehicular and loading access to serve the needs of project workers and visitors.
6. Create a new luxury hotel catering to tourists and businesses.
7. Create new office space meeting the programmatic and locational needs of financial service firms.
8. Allow flexibility in the allowable amount of office and hotel uses to be developed to meet the future and evolving needs in San Francisco's downtown area.

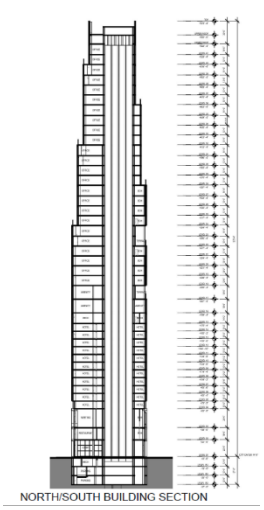
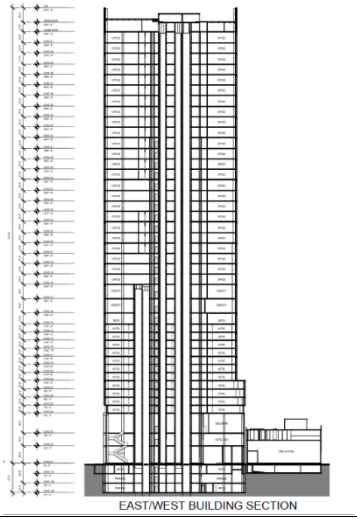
3.2 Project Description

The project sponsors propose to construct a 4-story replacement fire station and a separate high-rise building up to 41 stories tall. The replacement fire station would be located on the 447 Battery Street parcel and would include approximately 31,200 square feet (including basement) in a 4-story, approximately 55-foot-tall building (60 feet total, including rooftop mechanical equipment) on the eastern portion of the project site. There would be one below-grade level under the 4-story replacement fire station, which would provide parking spaces and mechanical, electrical, and plumbing space. The high-rise building, approximately 544 feet tall (574 feet total, including rooftop mechanical equipment), would be located on the remaining three parcels and would include retail/restaurant space; office space (including office amenity spaces); ballroom/pre-function/meeting space; and hotel space (the three combined parcels are referred to as 530 Sansome Street). There would be three below-grade levels under the high-rise building, which would provide vehicle parking spaces, bicycle parking spaces, and utility rooms.

The proposed project would convert all of Merchant Street between Battery and Sansome streets into a shared street/living alley with approximately 12,695 square feet of privately owned public open space improvements. Streetscape improvements include installation of a raised crosswalk and roadway ramp at the intersection of Sansome and Merchant streets, non-standard street lighting and paving, and installation of benches under the proposed street trees.

See **Table 1** for a summary of the proposed project characteristics.

TABLE 1
PROJECT CHARACTERISTICS

Project Characteristics	Description
Existing Buildings	
447 Battery Street	The 20,154 sf building would be demolished and replaced by a 4-story-plus basement, 55-foot-tall fire station building.
530 Sansome Street	The 18,626 sf fire station would be demolished and combined with 435 and 439–445 Washington Street. The combined lot would be developed with a 544-foot-tall, mixed-use building.
425 Washington Street	The 17,800 sf, 3-story building would be demolished and the lot combined with 530 Sansome and 439–445 Washington streets.
439–445 Washington Street	The 12,862 sf 2-story building would be demolished and the lot combined with 530 Sansome and 425 Sansome streets.
Overall Project Elements	
North-South Elevation (left) East-West Elevation (right)	 NORTH/SOUTH BUILDING SECTION  EAST/WEST BUILDING SECTION
Number of Buildings	2
Ground level uses (Battery Street)	Fire Station
Ground level uses (Merchant Street)	12,695 sf POPOS
530 Sansome Street	
Building Height	574 feet
Number of Stories	41 above grade, 3 below grade
Hotel (gsf)	127,710 – 188,820 sf (100 – 200 rooms)
Hotel Ballroom/Pre-Function/Meeting (gsf)	10,135 sf
Administrative (gsf)	16,170 sf
Office & Office Amenities (gsf)	372,035 – 417,230 sf
Retail/Restaurant (gsf)	7,405 sf
Passenger Loading/Parking	705 sf
Garage (gsf)	52,410 sf
Below-grade Loading Space (gsf)	1,840 sf
Vehicle Parking Spaces	74 spaces

Project Characteristics	Description
Bicycle Parking Spaces	104 spaces
TOTAL 530 SANSOME STREET GSF	**649,510 sf**
447 Battery Street	
Building Height	60 feet
Number of Stories	4 above grade, 1 below grade
Public Facility (Fire Station) (gsf)	24,440 sf
Garage (gsf)	6,760 sf
Vehicle Parking Spaces	18
Bicycle Parking Spaces	6
TOTAL 447 BATTERY STREET GSF	**31,200 sf**

4. Preservation Alternatives

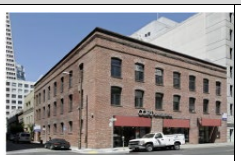
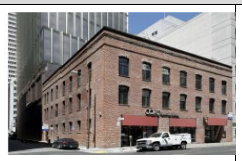
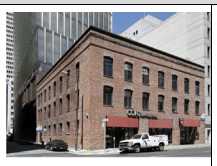
This section provides an overview of the process used to develop the preservation alternatives for the building at 447 Battery Street. Development of alternatives that addressed impacts to historic resources considered both retention (in whole or in part) of the historic building at 447 Battery Street, considered possible implications on the larger Embarcadero Center Historic District, and the ability of the alternatives to meet (in whole or in part) the project sponsor's objectives.

The San Francisco Planning Department, project sponsor, SOM (project architect), and ESA staff participated in a series of meetings between September and December 2024 to discuss the development of preservation alternatives for the proposed project. The goal of these discussions was to develop two Full Preservation Alternatives that reduced impacts to the historic resources by proposing adaptive reuse of 447 Battery Street building in combination with increased development on the remaining portions of the project site. The participants also discussed what character-defining features a Partial Preservation Alternative must retain to qualify as a potential option for further consideration. As a result of these discussions, it was determined that retention of the exterior façades of 447 Battery Street, in combination with modifications to first floor fenestration to accommodate fire and emergency vehicles, and extensive interior modifications would meet the intent of the Partial Preservation Alternative requirements.

In addition to historic preservation, a primary objective in the development of alternatives was to construct a new fire station as part of the project. This required consideration of fire truck and emergency vehicle egress and maneuverability (including four apparatus bays), building and safety code requirements for emergency facilities, and structural requirements to maintain as much of the proposed project's program in a tower located above, or adjacent to, the new fire station.

All new construction proposed in the preservation alternatives has been designed to the greatest extent that is technically feasible to be comparable in program and square footage to the proposed project; the preservation alternatives illustrated are based on the proposed project program, building types, and their limitations. The Full Preservation Alternatives include rehabilitation of the building at 447 Battery Street and the Partial Preservation Alternative includes modifications to 447 Battery Street building to accommodate the replacement fire station. The preservation alternatives are summarized in **Table 2** and described in detail in the following sections.

TABLE 2
SUMMARY OF PRESERVATION ALTERNATIVES

Parcels/ Addresses	Proposed Project	No Project	Full Preservation A	Full Preservation B	Partial Preservation
447 Battery Street	Demolished, replaced with new fire station	Existing building retained, no changes to existing commercial uses	Existing building retained, building rehabilitated, new commercial uses	Existing building retained, building rehabilitated, new commercial uses	Existing building modified for the replacement fire station with 1-level, below-grade parking structure
530 Sansome Street	Demolished, lot combined with 425 and 439–449 Washington Street, redeveloped with 41-story hotel and office tower	Existing building retained; building would continue to serve as a fire station	Demolished, lot combined with 425 and 439–449 Washington Street, redeveloped with new fire station and 19-story hotel and office tower	Demolished, lot combined with 425 and 439–449 Washington Street, redeveloped with new fire station and 41-story hotel and office tower	Demolished, lot combined with 425 and 439–449 Washington Street, redeveloped with 41-story hotel and office tower
425 Washington Street	Demolished, lot combined with 530 Sansome and 439–449 Washington streets, redeveloped with 41-story hotel and office tower	Existing building retained, no changes to existing commercial uses	Demolished, lot combined with 530 Sansome and 439–449 Washington streets, redeveloped with new fire station and 19-story hotel and office tower	Demolished, lot combined with 530 Sansome and 439–449 Washington streets, redeveloped with new fire station and 41-story hotel and office tower	Demolished, lot combined with 530 Sansome and 439–449 Washington streets, redeveloped with 41-story hotel and office tower
439–445 Washington Street	Demolished, lot combined with 530 Sansome and 425 Washington streets, redeveloped with 41-story hotel and office tower	Existing building retained, no changes to existing commercial uses	Demolished, lot combined with 530 Sansome and 425 Washington streets, redeveloped with new fire station and 19-story hotel and office tower	Demolished, lot combined with 530 Sansome and 425 Washington streets, redeveloped with new fire station and 41-story hotel and office tower	Demolished, lot combined with 530 Sansome and 425 Washington streets, redeveloped with 41-story hotel and office tower
	Characteristics				
447 Battery Street Building					
Number of Buildings	2	4	2	2	2
Building Height and Number of Stories	447 Battery Street: 60 feet, 4 stories above grade, 1 below grade 530 Sansome Street: 574 feet, 41 stories above grade, 3 below grade	447 Battery Street: 45 feet, 3 stories above grade 530 Sansome Street: 40 feet, 3 stories above grade, 1 below grade 425 Washington Street: 45 feet, 3 stories above grade 439–445 Washington Street: 35 feet, 2 stories above grade	447 Battery Street: 45 feet, 3 stories above grade 530 Sansome Street: 218 feet. 19 stories above grade, 3 below grade	447 Battery Street: 45 feet, 3 stories above grade 530 Sansome Street: 574 feet. 41 stories above grade, 3 below grade	447 Battery Street: 55 feet, 4 stories above grade, 1 below grade 530 Sansome Street: 574 feet, 41 stories above grade, 3 below grade

Parcels/ Addresses	Proposed Project	No Project	Full Preservation A	Full Preservation B	Partial Preservation
Public Facility (Fire Station) (gsf)	24,440 sf	18,625 sf	20,240 sf	20,154 sf	18,908 sf
Hotel (gsf)	127,710–188,820 sf (100–200 rooms)	0	146,065 sf (200 rooms)	127,710–188,820 sf (100–200 rooms)	127,710–188,820 sf (100–200 rooms)
Hotel Ballroom/ Pre-Function/ Meeting (gsf)	10,135 sf	0	0	6,135 sf	10,135 sf
Administrative (gsf)	16,170 sf	0	8,225 sf[a]	10,170 sf	16,170 sf
Office & Office Amenities (gsf)	372,035–417,230 sf	39,345 sf[b]	40,490 sf	372,035–417,230 sf	372,035–417,230 sf
Retail/Restaurant (gsf)	7,405 sf	0 sf	6,470 sf	4,699 sf	7,405 sf
Fitness Center (gsf)	0	0	35,230 sf	0	0
Below Grade (gsf)	59,170 sf	8,850 sf	52,650 sf	59,170 sf	59,170 sf
Vehicle Parking Spaces	92	21	48	65	92
Bicycle Parking Spaces	110	0	48	107	110
TOTAL GSF	**680,710 sf**	**66,820 sf**	**323,249 sf**	**649,684**	**680,710**

SOURCES: Environmental Science Associates (ESA), *530 Sansome Street Initial Study*, April 2021, 2019-017481ENV, p.15; Page & Turnbull, *447 Battery Street, Preservation Alternatives Memorandum*, August 25, 2020, 2014.1036ENV, 6–7; Skidmore, Owings & Merrill LLP, *447 Battery Preservation Studies*, November 26, 2024

NOTE:

a. The administrative use is located in Level B2 for Full Preservation Alternative A and accounted for in the "Below Grade (gsf)" row. The square footage from the "Administrative (gsf)" row for Full Preservation Alternative A is therefore not counted in the total gsf.
b. Represents existing square footage figures listed in recent CEQA documents for subject properties, including Draft Environmental Impact Report for 447 Battery, which listed approximately 7,178 square feet of existing office and retail space in 447 Battery Street.

4.1 Considered and Rejected Alternative

One partial preservation alternative concept was considered and rejected. Under this considered alternative, the building at 447 Battery Street would be modified to house the relocated fire station. All other buildings on the project site would be demolished and replaced by a 41-story building as under the proposed project. To accommodate the new fire station, the east and south exterior walls of 447 Battery Street would be retained, and the ground floor of the Battery Street façade would be modified to accommodate fire trucks. Interior floors and walls would be removed and replaced under this alternative. The structural columns would be retained or replaced in the same location as the existing building. To provide enough floor-to-ceiling height and to meet building code requirements, the new third floor would be higher than the existing. On Battery Street, the three existing recessed storefronts would be modified to be taller and wider, with headers reaching to just below the sills of the second-floor windows. On Merchant Street, three new pedestrian entrances would be added and a new vehicular opening would be cut into the southwest corner to provide access to the replacement fire station.

However, this alternative was rejected because of the limitations of keeping the columns in the same location as the existing building. By doing so, this alternative would only allow for three entrance bays to the fire station and would not allow for the four required apparatus bays (**Figure 2**). The space limitations on the ground floor would result in available equipment reduced by one fire engine and one CO_2 unit compared to existing conditions. Because retention of the fire station that meets the fire department's programmatic and design requirements is a primary objective, this concept was rejected in favor of a Partial Preservation Alternative that would involve more extensive demolition, but allow for the required four apparatus bays to house all the necessary equipment.

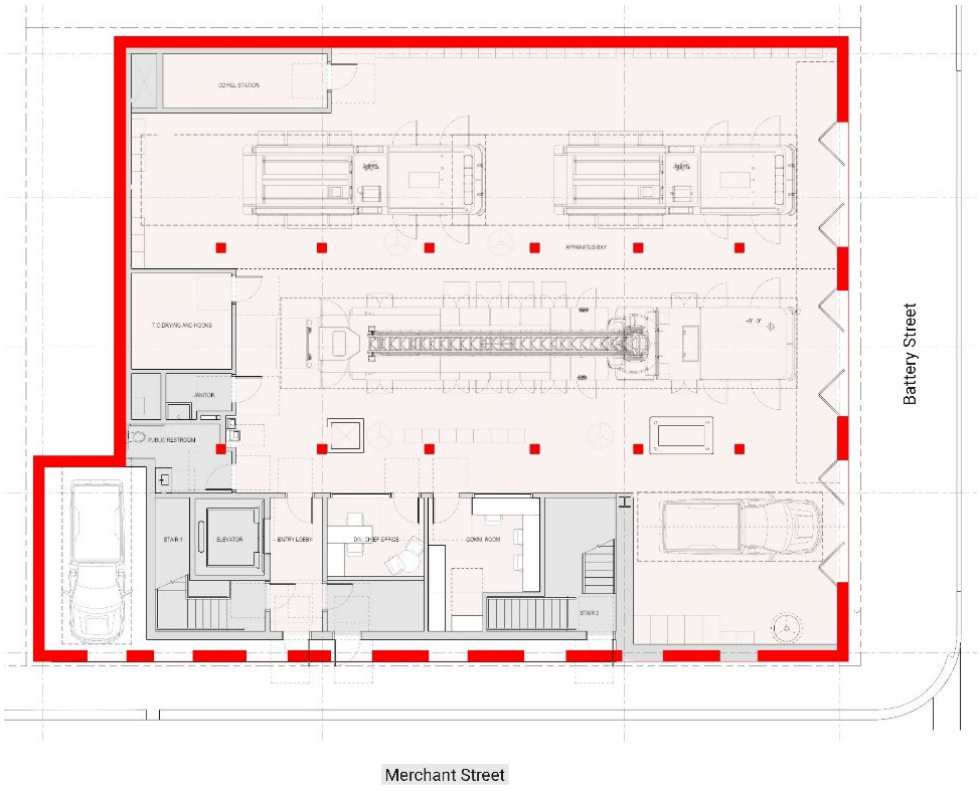


Figure 2 Considered and Rejected Partial Preservation Alternative

4.2 No Project Alternative

Under the No Project Alternative, no modifications to the existing historic resources would be undertaken. Fire Station 13 would remain in place and no new fire station or new tower building would be constructed. The character-defining features of the 447 Battery Street building would be retained; no modification, repairs, or restoration activities would be conducted. The historic resource would retain its approximately 45-foot height and 7,178 square feet of office and retail space on its existing three floors. The sculpture *Untitled* would remain in place at Fire Station 13 with no modifications, repairs, or restoration.

Because the No Project Alternative would not demolish or make any modifications to the historic resources, it would not result in material impairment. Compared to the proposed project, which would demolish 447 Battery Street and temporarily remove then reinstall *Untitled* on the replacement fire station, the No Project Alternative would not result in any impacts to historical resources, nor would it contribute to any cumulative impacts related to historic architectural resources.

4.3 Full Preservation Alternative A

Full Preservation Alternative A would retain the historic 447 Battery Street building. The existing buildings at 530 Sansome Street, 425 Washington Street, and 439–445 Washington Street would be demolished and a 4-story replacement fire station and 19-story, mixed-use building would be constructed on these parcels (**Figure 3**). The 44-foot-tall, 4-story fire station would provide 20,240 square feet on floors 1 through 4. Floor 1 would contain gear and equipment rooms, firetruck parking bays, and office space. A mezzanine on the second floor would contain a kitchen and dining area, as well as a day room and small terrace. The third floor would contain additional office space, locker and laundry rooms, and a dorm room. The fourth floor would contain a fitness room and library. The 19-story, approximately 218-foot-tall building (236 feet total, including rooftop mechanical equipment) would provide approximately 6,470 square feet of retail/restaurant space on the first and second floors; approximately 40,490 square feet of office space on the first, second, and sixth through eighth floors; approximately 35,230 square feet of fitness center space on the first through fifth floors; and approximately 146,065 square feet of hotel space that would accommodate about 200 guest rooms. Under Full Preservation Alternative A, three below-grade levels would provide 48 accessory vehicle parking spaces (30 for the commercial uses and 18 for fire department personnel and department vehicles), one loading space, two vehicle service spaces, bicycle parking spaces, and utility rooms for the fire station, hotel, and retail/restaurant uses in approximately 52,650 square feet. The below-grade parking would be accessed from Merchant Street. The 447 Battery Street building would be adaptively reused for purposes unrelated to the hotel or uses in in the replacement fire station or 19-story building.

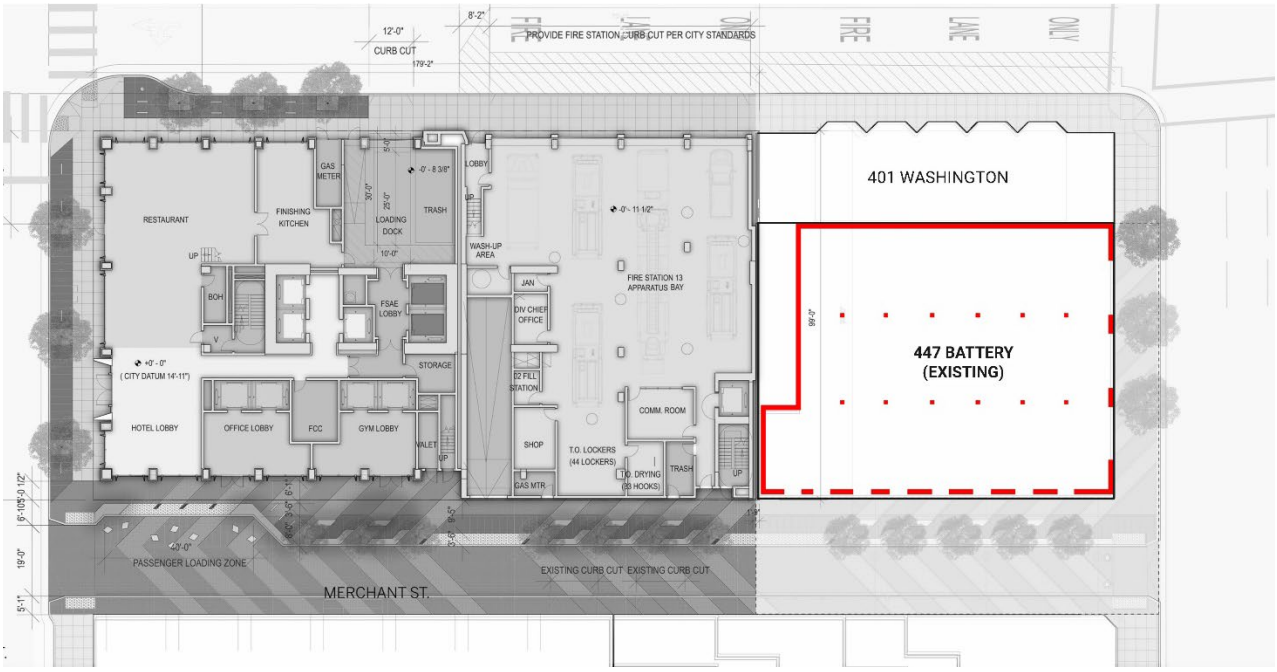


Figure 3 Full Preservation Alternative A Plan

Full Preservation Alternative A includes construction of a replacement fire station and reinstallation of the sculpture *Untitled* on the front façade. This is similar to the treatment of the historic resource proposed for the 530 Sansome Street project. The HRER Part II for that project concluded that this treatment would result in less-than-significant impacts to the historic resource.

Full Preservation Alternative A would retain the majority of the character-defining features of the historic resources as shown in **Table 3**.

TABLE 3
FULL PRESERVATION ALTERNATIVE A CHARACTER-DEFINING FEATURES ANALYSIS

Character-Defining Feature	Retained	Partially Retained	Not Retained
447 Battery Street			
Three-story height and roughly rectangular footprint	X		
Exterior walls constructed of brick masonry	X		
Openings for storefronts and a building entry on Battery Street	X		
Regular, evenly spaced rhythm of window openings on the first (Merchant Street only), second and third stories; the westernmost two bays on Merchant Street are slightly closer together	X		
Slightly projecting brick sill and a segmental arch head at window openings	X		
Brick cornice consisting, from bottom to top, of a projecting bandcourse, a flat frieze, several courses of corbeling, and projecting coping	X		
Untitled			
Visually prominent position on a building occupying a corner location		X	
Visually prominent position on the exterior of Fire Station 13, with which the sculpture is historically associated	X		
Copper construction	X		
Verdigris (patina)	X		
Overall design that includes abstract figures and typographic elements	X		

4.4 Full Preservation Alternative B

Full Preservation Alternative B would retain the historic 447 Battery Street building. The existing buildings at 530 Sansome Street, 425 Washington Street, and 439–445 Washington Street would be demolished and a 4-story replacement fire station and 41-story, mixed-use building would be constructed on these parcels (**Figure 4**). The 44-foot-tall, 4-story fire station would provide 20,154 square feet on floors 1 through 4. Floor 1 would contain gear and equipment rooms, firetruck parking bays, and office space. A mezzanine on the second floor would contain a kitchen and dining area, as well as a day room and small terrace. The third floor would contain additional office space, locker and laundry rooms, and a dorm room. The fourth floor would contain a fitness room and library. The 41-story, approximately 544-foot-tall building (574 feet total, including rooftop mechanical equipment) would provide approximately 4,700 square feet of retail/restaurant space; approximately 372,035 to 417,230 square feet of office space; and between approximately 127,710 to 188,820 square feet of hotel space that would accommodate 100 to 200 guest rooms. Similar to the proposed project, two loading spaces would be located on the first floor with ingress and egress from Washington Street. Under Full Preservation Alternative B, three below-grade levels would provide 65 accessory vehicle parking spaces (46 for the high-rise building uses and 19 spaces for fire department personnel and department vehicles), bicycle parking spaces, and utility rooms for the fire station, hotel, office, and retail/restaurant uses in approximately 59,170 square feet. The below-grade parking would be accessed from Merchant Street. The 447 Battery Street building would be adaptively reused for purposes unrelated to the hotel or uses in in the replacement fire station or 41-story building.

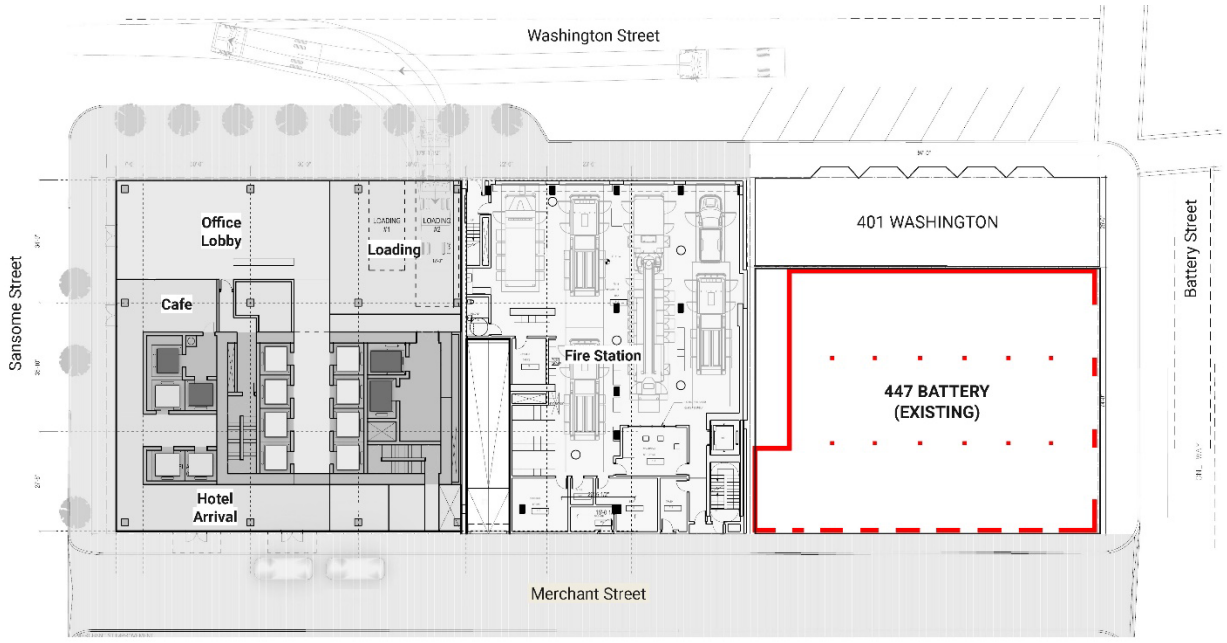


Figure 4 Full Preservation Alternative B Plan

The Full Preservation Alternative includes construction of a replacement fire station and reinstallation of the sculpture *Untitled* on the front façade. This is similar to the treatment of the historic resource proposed for the 530 Sansome Street project. The HRER Part II for that project concluded that this treatment would result in less-than-significant impacts to the historic resource.

The Full Preservation Alternative would retain the majority of the character-defining features of the historic resources as shown in **Table 4**.

Analysis of the Full Preservation Alternatives (A and B) for Conformance with the Secretary of the Interior's Standards for Rehabilitation

Full Preservation Alternatives A and B would not alter the building at 447 Battery Street. Under both alternatives, the building would be rehabilitated for continued commercial uses. All character-defining features would be retained and repaired according to the Secretary's Standards for Rehabilitation. The following Secretary's Standards analysis applies to both full preservation alternatives because the treatment of 447 Battery Street is the same under both.

As described in the 530 Sansome Street HRER Part II, relocation of the sculpture *Untitled* would retain most of the character-defining features of the historic resource and as such did not warrant further analysis for compliance with the Secretary's Standards. Therefore, no analysis of conformance with the Secretary's Standards is presented here.

TABLE 4
FULL PRESERVATION ALTERNATIVE B CHARACTER-DEFINING FEATURES ANALYSIS

Character-Defining Feature	Retained	Partially Retained	Not Retained
447 Battery Street			
Three-story height and roughly rectangular footprint	X		
Exterior walls constructed of brick masonry	X		
Openings for storefronts and a building entry on Battery Street	X		
Regular, evenly spaced rhythm of window openings on the first (Merchant Street only), second and third stories; the westernmost two bays on Merchant Street are slightly closer together	X		
Slightly projecting brick sill and a segmental arch head at window openings	X		
Brick cornice consisting, from bottom to top, of a projecting bandcourse, a flat frieze, several courses of corbeling, and projecting coping	X		
Untitled			
Visually prominent position on a building occupying a corner location		X	
Visually prominent position on the exterior of Fire Station 13, with which the sculpture is historically associated	X		
Copper construction	X		
Verdigris (patina)	X		
Overall design that includes abstract figures and typographic elements	X		

Summary

Because no new uses and no modifications to the 447 Battery Street building would take place under the full preservation alternatives, and because all modifications necessary to accommodate new tenants in the building would be done in conformance with the Secretary's Standards, neither Full Preservation Alternative A nor Full Preservation Alternative B would result in material impairment to a historic resource. Thus, both full preservation alternatives would result in less-than-significant impacts to an Article 10 Landmark. Relocation of the sculpture *Untitled* to the front façade of the replacement fire station would retain most of the character-defining features of the historic resource and would result in a less-than-significant impact to a historic resource.

4.5 Partial Preservation Alternative

The Partial Preservation Alternative would modify the building at 447 Battery Street to house the relocated fire station. All other buildings on the project site would be demolished and replaced by a 41-story high-rise building as under the proposed project. To accommodate the new fire station, the east and south exterior walls of 447 Battery Street would be retained, and the ground floor of the Battery Street façade would be modified to accommodate fire trucks. On Battery Street, the three existing recessed storefronts would be modified to four openings and would be taller and wider, with headers reaching to just below the sills of the second-floor windows (**Figure 5**). On Merchant Street, three new pedestrian entrances would be added and a new vehicular opening would be cut into the southwest corner to provide access to the replacement fire station below-grade parking (**Figure 6**).

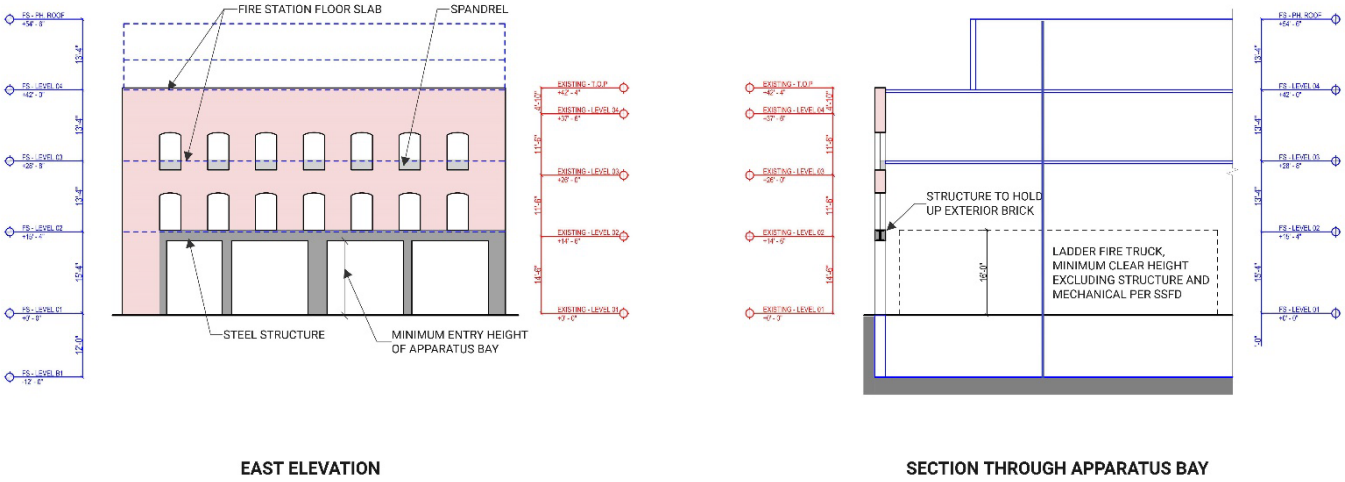


Figure 5 East Elevation and North Section of the Partial Preservation Alternative

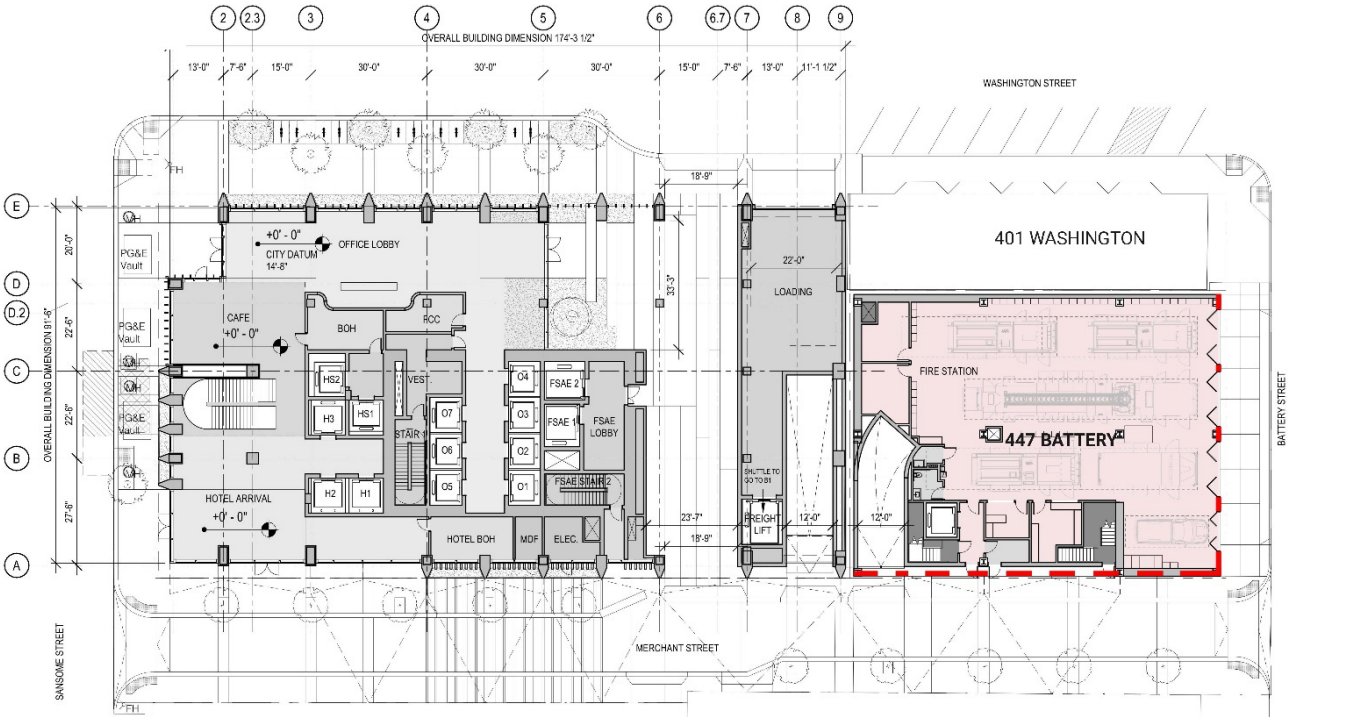


Figure 6 Partial Preservation Alternative Plan

Because the column spacing of the building's current structural system is too narrow and the first-floor height is too short to accommodate fire trucks, a new structural system would be required. The Partial Preservation Alternative would not retain the north and west façades and the south and east facades would no longer be load-bearing. The interior structure would not be retained and all interior floors and walls would be removed and replaced under the Partial Preservation Alternative. To provide enough floor-to-ceiling height and to meet building code requirements, the new third floor would be higher than the existing. As shown in Figure 5, the modifications at the third-floor window openings would make the windows partially blind where new structural elements pass the openings.

The replacement fire station under the Partial Preservation Alternative would be 4 stories and 55 feet tall, including the mechanical penthouse level, totaling 18,908 square feet.

The Partial Preservation Alternative would retain some of the character-defining features of the 447 Battery Street building and the majority of the character-defining features of the sculpture *Untitled* as shown in **Table 5**.

TABLE 5
PARTIAL PRESERVATION ALTERNATIVE CHARACTER-DEFINING FEATURES

Character-Defining Feature	Retained	Partially Retained	Not Retained
447 Battery Street			
Three-story height and roughly rectangular footprint;		X	
Exterior walls constructed of brick masonry		X	
Openings for storefronts and a building entry on Battery Street			X
Regular, evenly spaced rhythm of window openings on the first (Merchant Street only), second and third stories; the westernmost two bays on Merchant Street are slightly closer together		X	
Slightly projecting brick sill and a segmental arch head at window openings	X		
Brick cornice consisting, from bottom to top, of a projecting bandcourse, a flat frieze, several courses of corbeling, and projecting coping	X		
Untitled			
Visually prominent position on a building occupying a corner location		X	~~X~~
Visually prominent position on the exterior of Fire Station 13, with which the sculpture is historically associated	X		
Copper construction	X		
Verdigris (patina)	X		
Overall design that includes abstract figures and typographic elements	X		

Analysis for Conformance with the Secretary of the Interior's Standards for Rehabilitation

The following analysis evaluates the Partial Preservation Alternative for conformance with the Secretary's Standards.

Standard 1: A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

The Partial Preservation Alternative would convert the 447 Battery Street building to a replacement fire station. To accommodate this use, the building would require extensive modification. All interior floors and walls would be removed and replaced, changing the floor heights of the building. The ground floor of the east and south façades along Battery and Merchant streets would be altered to create openings for vehicular and pedestrian access where none currently exist. A new structural system, and all new utilities would be required. There would be no below-grade parking garage under the Partial Preservation Alternative and no excavation would be required for the 447 Battery Street building. This new program would require major changes to the character defining features of the building.

The Partial Preservation Alternative is not consistent with Rehabilitation Standard 1.

Standard 2: The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

The Partial Preservation Alternative retains two of the six identified character-defining features of the building. It also partially retains three additional features. Retained elements include substantial portions of the brick masonry exterior façades on Battery and Merchant streets, the arched brick window headers, projecting brick sills, and brick masonry cornice. There are no interior character-defining features identified for the resource. This alternative would alter the pattern of openings on the ground floor and would require partial blocking of window openings on the third floor. The existing building's 3-story height is identified as a character-defining feature. The Partial Preservation Alternative's proposal to construct an additional story for the mechanical penthouse would alter the historic character that is associated with the building's existing massing and scale. In total, this alternative retains portions of the exterior façade, but the function of the walls is reduced to a decorative feature. They would no longer be load-bearing, nor would the fenestration pattern relate to the internal arrangement of floors within the building. While the Partial Preservation Alternative would retain in whole or in part five of the six character-defining features of the building, the functional nature of those features (window sizes and openings, door sizes and openings, brick masonry exterior) would no longer relate to the functionality of the building. They would become purely decorative.

The Partial Preservation Alternative is partially consistent with Rehabilitation Standard 2.

Standard 3: Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.

The Partial Preservation Alternative would not apply conjectural features or architectural elements from other buildings to the historic resource and the new rooftop mechanical equipment addition will be clearly differentiated from the historic resource through use of non-brick masonry construction materials. No new exterior features are included. All changes would be clearly modern and include partial blocking of existing openings and modification of glazing patterns within the remaining portions of the openings. Also, because the new openings on the first floor are required to be larger than any of the current openings, they will be out of scale with the existing fenestration and obviously not part of the original design.

The Partial Preservation Alternative is consistent with Rehabilitation Standard 3.

Standard 4: Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.

The building's brick walls were originally clad in stucco; however, the brick exterior walls have been identified as a character-defining feature because they have acquired historic significance in their own right. The Partial Preservation Alternative would retain the brick exterior walls.

The Partial Preservation Alternative is consistent with Rehabilitation Standard 4.

Standard 5: Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.

The most distinctive features and finishes associated with 447 Battery Street are the brick masonry construction, including brick arched headers and projecting sills. The Partial Preservation Alternative would retain a number of

those features, finishes, and construction techniques or examples of craftsmanship that characterize the historic resource. These include the regular, evenly spaced rhythm of window openings on the second and third stories; brick arched headers, and projecting sills. All interior features, including all structural components and any construction not directly associated with the exterior shell of the building would be removed.

The Partial Preservation Alternative is partially consistent with Rehabilitation Standard 5.

Standard 6: Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

Because the 447 Battery Street would serve as a replacement fire station under the Partial Preservation Alternative, any repairs to the exterior walls would be made according to current fire and safety codes as appropriate to that building use. However, repairs to the exterior walls are assumed to be in-kind replacements where necessary to maintain the visual and aesthetic qualities of the current building and would follow the Secretary's Standards.

The Partial Preservation Alternative is consistent with Rehabilitation Standard 6.

Standard 7: Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.

The Partial Preservation Alternative would not include any potentially damaging or chemical treatments such as sandblasting, high-pressure water-blasting, or paint stripping. This alternative assumes that ordinary maintenance and repair to existing historic building materials, features, and elements, would be undertaken in ways that are consistent with the Secretary's Standards.

The Partial Preservation Alternative is consistent with Rehabilitation Standard 7.

Standard 8: Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

The Partial Preservation Alternative would not involve excavation to construct a below-grade parking level. However, some ground disturbance would be required for the updated interior work. While there are no known archeological resources in the project area, the Partial Preservation Alternative would include the San Francisco Planning Department's standard procedures for the treatment of archaeological resources and would comply with all applicable regulations.

The Partial Preservation Alternative is consistent with Rehabilitation Standard 8.

Standard 9: New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

The modifications to 447 Battery Street would remove the north and west exterior walls, remove a most of the brick masonry at the first-floor level along Battery Street, alter the fenestration pattern of the two street-facing façades, and remove all interior materials including structural columns, floors, and walls. The new components of the building would be in different locations (different floor plates, new structural supports, etc.) and constructed of modern materials. The Partial Preservation Alternative would also include an additional story for the mechanical penthouse. In this manner, the new work would be clearly differentiated from the original construction. However, the Partial Preservation Alternative would remove substantial amounts of original material as well, including non-visible exterior walls and all interior structural and finish materials.

The Partial Preservation Alternative is partially consistent with Rehabilitation Standard 9.

Standard 10: New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Alterations as part of the Partial Preservation Alternative are intended to be permanent, and their future removal is not anticipated. The changes are extensive, and reversal of the alteration could not be undertaken without additional impacts to the historic resource. If the new Partial Preservation Alternative components are removed in the future, the historic resource would retain only its east and south façades, which contain a few of the character-defining features. The hypothetical removal of everything but the façades would restore a lower density environment that currently and historically has existed at the site. However, the essential form and integrity of the historic resource and its environment would still be impaired as only two walls of the building would remain.

The Partial Preservation Alternative is not consistent with Rehabilitation Standard 10.

Summary

The Partial Preservation Alternative is compatible with Standards 3, 4, 6, 7, and 8 and is partially compatible with Standards 2, 5, and 9. It is not compatible with Standards 1 and 10. In summary, the Partial Preservation Alternative is somewhat compliant with the Secretary's Standards. The overall form and massing of the building would remain intact as would the majority of the exterior character-defining features. However, the function of the building would be significantly altered, and the historic resource would be reduced to an exterior shell.

5. Conclusions

The purpose of this memorandum is to provide the Historic Preservation Commission with information to confirm, further develop, and/or analyze the preservation alternatives described herein, and is based on guidance provided by "Historic Preservation Commission Resolution No. 0746" and consultation with Preservation Staff at the Planning Department.

A No Project Alternative would not cause any material impairment to the historic resource. Full Preservation Alternatives A and B would fully retain all of the character-defining features at 447 Battery Street and would

relocate the sculpture *Untitled* to a location that maintains its integrity. Both historic resources would retain their status as historical resources for the purposes of CEQA.

The Partial Preservation Alternative would partially retain the character-defining features at 447 Battery Street that relate to fenestration, brick masonry construction, façade details, and height, and fully retain the character-defining features that relate to massing. Its interior would be completely removed, including all structural elements, floors, and walls. New floors and walls would partially obscure those window openings that would remain unaltered. The sculpture *Untitled* would be relocated to the façade of the replacement fire station and retain most of its character-defining features.

The ability of the preservation alternatives to meet the project objectives is summarized in **Table 6**.

TABLE 6
ABILITY OF THE PRESERVATION ALTERNATIVES TO MEET PROJECT OBJECTIVES

Project Objective	Proposed Project	No Project	Full Preservation Alternative A	Full Preservation Alternative B	Partial Preservation Alternative
1. Leverage new commercial development to provide San Francisco with a new state-of-the-art fire station and financial contributions to support new affordable housing production.	Meets	Does not meet	Does not meet	Does not meet	Partially Meets
2. Build a new commercial development to generate both daytime and nighttime activity in the Financial District and provide employment opportunities and generate demand for area businesses in a transit-rich and walking-friendly area of the City.	Meets	Does not meet	~~Partially Meets~~ Meets	~~Partially Meets~~ Meets	Meets
3. Build a new fire station in a separate structure that meets the San Francisco Fire Department's (SFFD) programmatic and design requirements for a state-of-the-art facility, while accommodating the contemplated commercial development on a distinct portion of the project site.	Meets	Does not meet	~~Partially Meets~~ Does not meet	~~Partially Meets~~ Does not meet	Partially Meets
4. Improve Merchant Street between Sansome and Battery streets to complete a pedestrian-oriented connection between Maritime Plaza and Transamerica Redwood Park.	Meets	Does not meet	Partially Meets	Partially Meets	Meets
5. Build adequate parking and vehicular and loading access to serve the needs of project workers and visitors.	Meets	Does not meet	Partially Meets	Partially Meets	Partially Meets
6. Create a new luxury hotel catering to tourists and businesses.	Meets	Does not meet	Meets	Meets	Meets
7. Create new office space meeting the programmatic and locational needs of financial service firms.	Meets	Does not meet	Partially Meets	Partially Meets	Meets
8. Allow flexibility in the allowable amount of office and hotel uses to be developed to meet the future and evolving needs in San Francisco's downtown area.	Meets	Does not meet	Meets	~~Meets~~ Does not meet	Meets

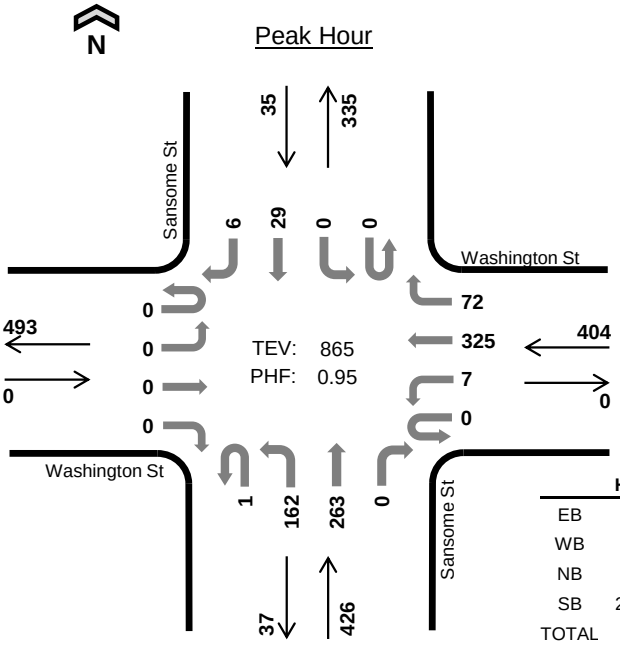
APPENDIX D

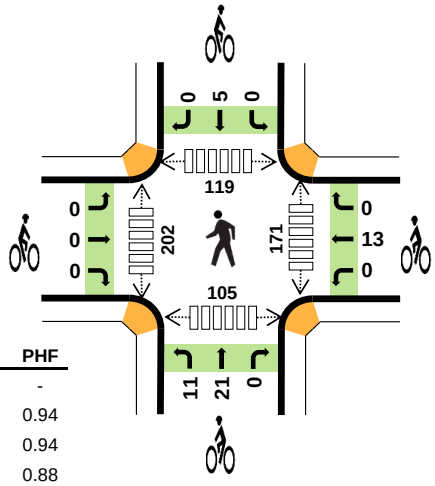
Transportation Supporting Information

D.1 – Traffic Count Data

Sansome St
Washington St

Date: 10/15/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM





	HV %:	PHF
EB	-	-
WB	1.5%	0.94
NB	6.8%	0.94
SB	28.6%	0.88
TOTAL	5.2%	0.95

Two-Hour Count Summaries

Interval Start		Washington St Eastbound				Washington St Westbound				Sansome St Northbound				Sansome St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	0	0	0	1	54	29	0	28	61	0	0	0	8	2	183	0
4:15 PM		0	0	0	0	0	2	64	22	0	17	60	0	0	0	8	4	177	0
4:30 PM		0	0	0	0	0	2	44	17	0	37	66	0	0	0	9	5	180	0
4:45 PM		0	0	0	0	0	1	48	21	0	29	68	0	0	0	7	2	176	716
5:00 PM		**0**	**0**	**0**	**0**	**0**	**1**	**64**	**19**	**1**	**43**	**64**	**0**	**0**	**0**	**5**	**1**	**198**	731
5:15 PM		**0**	**0**	**0**	**0**	**0**	**1**	**85**	**21**	**0**	**30**	**66**	**0**	**0**	**0**	**6**	**4**	**213**	767
5:30 PM		**0**	**0**	**0**	**0**	**0**	**4**	**89**	**14**	**0**	**49**	**60**	**0**	**0**	**0**	**9**	**1**	**226**	813
5:45 PM		**0**	**0**	**0**	**0**	**0**	**1**	**87**	**18**	**0**	**40**	**73**	**0**	**0**	**0**	**9**	**0**	**228**	**865**
Count Total		0	0	0	0	0	13	535	161	1	273	518	0	0	0	61	19	1,581	0
Peak Hour	**All**	**0**	**0**	**0**	**0**	**0**	**7**	**325**	**72**	**1**	**162**	**263**	**0**	**0**	**0**	**29**	**6**	**865**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**3**	**0**	**4**	**25**	**0**	**0**	**0**	**10**	**0**	**45**	**0**
	HV%	**-**	**-**	**-**	**-**	**-**	**0%**	**1%**	**4%**	**0%**	**2%**	**10%**	**-**	**-**	**-**	**34%**	**0%**	**5%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	4	5	3	*12*	0	2	3	1	*6*	40	48	28	23	*139*
4:15 PM	0	2	7	4	*13*	0	1	7	3	*11*	28	30	21	13	*92*
4:30 PM	0	0	5	4	*9*	0	1	4	1	*6*	25	43	26	21	*115*
4:45 PM	0	1	5	4	*10*	0	4	8	5	*17*	32	68	34	17	*151*
5:00 PM	**0**	**3**	**4**	**2**	***9***	**0**	**2**	**7**	**1**	***10***	**51**	**57**	**24**	**26**	*158*
5:15 PM	**0**	**1**	**12**	**3**	***16***	**0**	**2**	**10**	**1**	***13***	**43**	**54**	**48**	**23**	*168*
5:30 PM	**0**	**2**	**6**	**2**	***10***	**0**	**4**	**8**	**2**	***14***	**45**	**32**	**24**	**27**	*128*
5:45 PM	**0**	**0**	**7**	**3**	***10***	**0**	**5**	**7**	**1**	***13***	**32**	**59**	**23**	**29**	***143***
Count Total	0	13	51	25	*89*	0	21	54	15	*90*	296	391	228	179	*1,094*
Peak Hour	**0**	**6**	**29**	**10**	***45***	**0**	**13**	**32**	**5**	***50***	**171**	**202**	**119**	**105**	***597***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Washington St Eastbound				Washington St Westbound				Sansome St Northbound				Sansome St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	2	2	0	0	5	0	0	0	2	1	12	0
4:15 PM	0	0	0	0	0	0	1	1	0	1	6	0	0	0	3	1	13	0
4:30 PM	0	0	0	0	0	0	0	0	0	1	4	0	0	0	4	0	9	0
4:45 PM	0	0	0	0	0	0	1	0	0	0	5	0	0	0	4	0	10	44
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**4**	**0**	**0**	**0**	**2**	**0**	**9**	41
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**10**	**0**	**0**	**0**	**3**	**0**	**16**	44
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**5**	**0**	**0**	**0**	**2**	**0**	**10**	45
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**6**	**0**	**0**	**0**	**3**	**0**	**10**	**45**
Count Total	0	0	0	0	0	0	7	6	0	6	45	0	0	0	23	2	89	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**3**	**0**	**4**	**25**	**0**	**0**	**0**	**10**	**0**	**45**	**0**

Two-Hour Count Summaries - Bikes

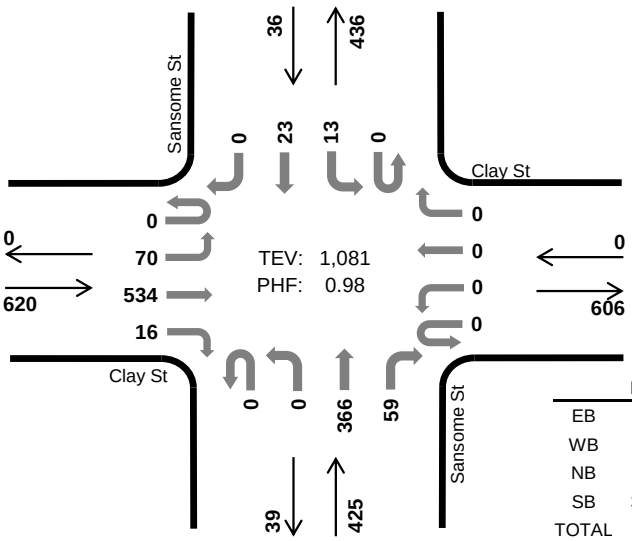
Interval Start	Washington St Eastbound			Washington St Westbound			Sansome St Northbound			Sansome St Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	2	0	1	2	0	0	0	1	6	0
4:15 PM	0	0	0	0	1	0	2	5	0	0	3	0	11	0
4:30 PM	0	0	0	0	1	0	2	2	0	0	1	0	6	0
4:45 PM	0	0	0	1	3	0	3	5	0	0	5	0	17	40
5:00 PM	**0**	**0**	**0**	**0**	**2**	**0**	**2**	**5**	**0**	**0**	**1**	**0**	**10**	44
5:15 PM	**0**	**0**	**0**	**0**	**2**	**0**	**5**	**5**	**0**	**0**	**1**	**0**	**13**	46
5:30 PM	**0**	**0**	**0**	**0**	**4**	**0**	**1**	**7**	**0**	**0**	**2**	**0**	**14**	54
5:45 PM	**0**	**0**	**0**	**0**	**5**	**0**	**3**	**4**	**0**	**0**	**1**	**0**	**13**	**50**
Count Total	0	0	0	1	20	0	19	35	0	0	14	1	90	0
Peak Hour	**0**	**0**	**0**	**0**	**13**	**0**	**11**	**21**	**0**	**0**	**5**	**0**	**50**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

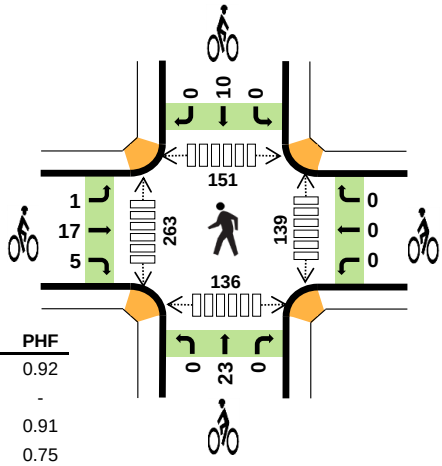
Sansome St
Clay St

Date: 10/16/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM

Peak Hour



	HV %:	PHF
EB	3.1%	0.92
WB	-	-
NB	5.9%	0.91
SB	33.3%	0.75
TOTAL	5.2%	0.98



Two-Hour Count Summaries

Interval Start	Clay St Eastbound				Clay St Westbound				Sansome St Northbound				Sansome St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	19	116	6	0	0	0	0	0	0	77	18	1	7	9	0	253	0
4:15 PM	0	18	123	7	0	0	0	0	0	0	71	13	0	5	5	0	242	0
4:30 PM	0	14	119	4	0	0	0	0	0	0	61	12	0	6	14	0	230	0
4:45 PM	0	19	102	4	0	0	0	0	0	0	85	17	0	5	11	0	243	968
5:00 PM	**0**	**27**	**124**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**82**	**20**	**0**	**3**	**9**	**0**	**268**	983
5:15 PM	**0**	**17**	**145**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**84**	**14**	**0**	**3**	**3**	**0**	**272**	1,013
5:30 PM	**0**	**11**	**128**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**105**	**12**	**0**	**3**	**4**	**0**	**266**	1,049
5:45 PM	**0**	**15**	**137**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**95**	**13**	**0**	**4**	**7**	**0**	**275**	**1,081**
Count Total	0	140	994	37	0	0	0	0	0	0	660	119	1	36	62	0	2,049	0
Peak Hour All	**0**	**70**	**534**	**16**	**0**	**0**	**0**	**0**	**0**	**0**	**366**	**59**	**0**	**13**	**23**	**0**	**1,081**	**0**
Peak Hour HV	**0**	**0**	**19**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**24**	**1**	**0**	**10**	**2**	**0**	**56**	**0**
Peak Hour HV%	**-**	**0%**	**4%**	**0%**	**-**	**-**	**-**	**-**	**-**	**-**	**7%**	**2%**	**-**	**77%**	**9%**	**-**	**5%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	4	0	2	1	*7*	1	0	5	0	*6*	63	72	45	47	*227*
4:15 PM	9	0	8	3	*20*	5	0	1	1	*7*	33	64	35	45	*177*
4:30 PM	5	0	3	3	*11*	0	0	6	2	*8*	26	47	43	37	*153*
4:45 PM	7	0	8	3	*18*	2	0	8	2	*12*	44	51	29	34	*158*
5:00 PM	**6**	**0**	**5**	**3**	***14***	**6**	**0**	**7**	**1**	***14***	**36**	**71**	**42**	**35**	*184*
5:15 PM	**5**	**0**	**8**	**4**	***17***	**5**	**0**	**1**	**3**	***9***	**44**	**85**	**38**	**44**	*211*
5:30 PM	**3**	**0**	**3**	**2**	***8***	**7**	**0**	**8**	**3**	***18***	**22**	**61**	**41**	**35**	*159*
5:45 PM	**5**	**0**	**9**	**3**	***17***	**5**	**0**	**7**	**3**	***15***	**37**	**46**	**30**	**22**	***135***
Count Total	44	0	46	22	*112*	31	0	43	15	*89*	305	497	303	299	*1,404*
Peak Hour	**19**	**0**	**25**	**12**	***56***	**23**	**0**	**23**	**10**	***56***	**139**	**263**	**151**	**136**	***689***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Clay St Eastbound				Clay St Westbound				Sansome St Northbound				Sansome St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	3	0	0	0	0	0	0	0	2	0	0	1	0	0	7	0
4:15 PM	0	0	8	1	0	0	0	0	0	0	7	1	0	3	0	0	20	0
4:30 PM	0	1	2	2	0	0	0	0	0	0	3	0	0	2	1	0	11	0
4:45 PM	0	3	2	2	0	0	0	0	0	0	7	1	0	3	0	0	18	56
5:00 PM	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**2**	**1**	**0**	**14**	63
5:15 PM	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**1**	**0**	**3**	**1**	**0**	**17**	60
5:30 PM	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**2**	**0**	**0**	**8**	57
5:45 PM	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**0**	**3**	**0**	**0**	**17**	**56**
Count Total	0	5	34	5	0	0	0	0	0	0	43	3	0	19	3	0	112	0
Peak Hour	**0**	**0**	**19**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**24**	**1**	**0**	**10**	**2**	**0**	**56**	**0**

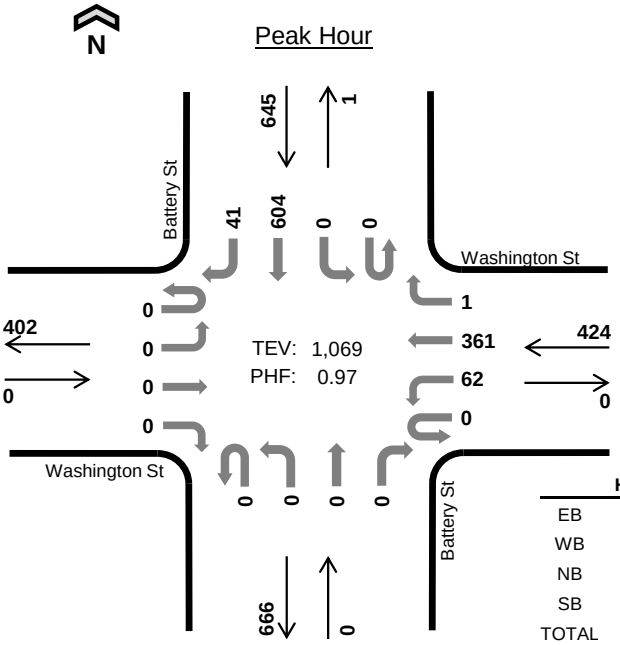
Two-Hour Count Summaries - Bikes

Interval Start	Clay St Eastbound			Clay St Westbound			Sansome St Northbound			Sansome St Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	1	0	0	0	0	0	5	0	0	0	0	6	0
4:15 PM	1	4	0	0	0	0	0	1	0	0	1	0	7	0
4:30 PM	0	0	0	0	0	0	0	5	1	0	2	0	8	0
4:45 PM	0	2	0	0	0	0	0	7	1	0	2	0	12	33
5:00 PM	**1**	**4**	**1**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**1**	**0**	**14**	41
5:15 PM	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	**0**	**9**	43
5:30 PM	**0**	**4**	**3**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**3**	**0**	**18**	53
5:45 PM	**0**	**4**	**1**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**3**	**0**	**15**	**56**
Count Total	2	24	5	0	0	0	0	41	2	0	15	0	89	0
Peak Hour	**1**	**17**	**5**	**0**	**0**	**0**	**0**	**23**	**0**	**0**	**10**	**0**	**56**	**0**

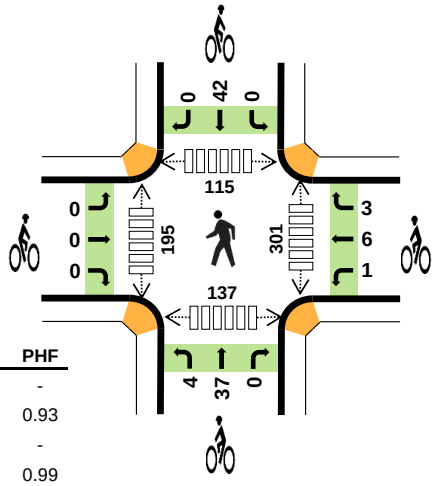
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Battery St
Washington St

Date: 10/15/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	-	-
WB	1.2%	0.93
NB	-	-
SB	2.5%	0.99
TOTAL	2.0%	0.97



Two-Hour Count Summaries

Interval Start	Washington St Eastbound				Washington St Westbound				Battery St Northbound				Battery St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	19	70	0	0	0	0	0	0	0	141	10	240	0
4:15 PM	0	0	0	0	0	17	69	0	0	0	0	0	0	0	128	17	231	0
4:30 PM	0	0	0	0	0	18	52	0	0	0	0	0	0	0	129	10	209	0
4:45 PM	0	0	0	0	0	17	61	0	0	0	0	0	0	0	141	5	224	904
5:00 PM	**0**	**0**	**0**	**0**	**0**	**14**	**79**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**154**	**9**	**256**	920
5:15 PM	**0**	**0**	**0**	**0**	**0**	**18**	**93**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**153**	**10**	**275**	964
5:30 PM	**0**	**0**	**0**	**0**	**0**	**14**	**100**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**152**	**10**	**276**	1,031
5:45 PM	**0**	**0**	**0**	**0**	**0**	**16**	**89**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**145**	**12**	**262**	**1,069**
Count Total	0	0	0	0	0	133	613	1	0	0	0	0	0	0	1,143	83	1,973	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**62**	**361**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**604**	**41**	**1,069**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**1**	**21**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**0%**	**1%**	**0%**	**-**	**-**	**-**	**-**	**-**	**-**	**2%**	**2%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	3	0	4	*7*	0	2	6	3	*11*	53	36	29	20	*138*
4:15 PM	0	1	0	4	*5*	0	2	10	9	*21*	49	46	27	26	*148*
4:30 PM	0	0	0	3	*3*	0	1	2	7	*10*	55	28	26	26	*135*
4:45 PM	0	1	0	2	*3*	0	0	12	9	*21*	91	54	29	28	*202*
5:00 PM	**0**	**3**	**0**	**3**	***6***	**0**	**1**	**7**	**12**	***20***	**87**	**57**	**30**	**40**	*214*
5:15 PM	**0**	**1**	**0**	**3**	***4***	**0**	**2**	**12**	**6**	***20***	**89**	**60**	**35**	**31**	*215*
5:30 PM	**0**	**1**	**0**	**5**	***6***	**0**	**4**	**13**	**17**	***34***	**64**	**31**	**23**	**32**	*150*
5:45 PM	**0**	**0**	**0**	**5**	***5***	**0**	**3**	**9**	**7**	***19***	**61**	**47**	**27**	**34**	***169***
Count Total	0	10	0	29	*39*	0	15	71	70	*156*	549	359	226	237	*1,371*
Peak Hour	**0**	**5**	**0**	**16**	***21***	**0**	**10**	**41**	**42**	***93***	**301**	**195**	**115**	**137**	***748***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Washington St Eastbound				Washington St Westbound				Battery St Northbound				Battery St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	1	7	0
4:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3	1	5	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	3	18
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**6**	17
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**4**	16
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**1**	**6**	19
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**5**	**21**
Count Total	0	0	0	0	0	0	10	0	0	0	0	0	0	0	26	3	39	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**1**	**21**	**0**

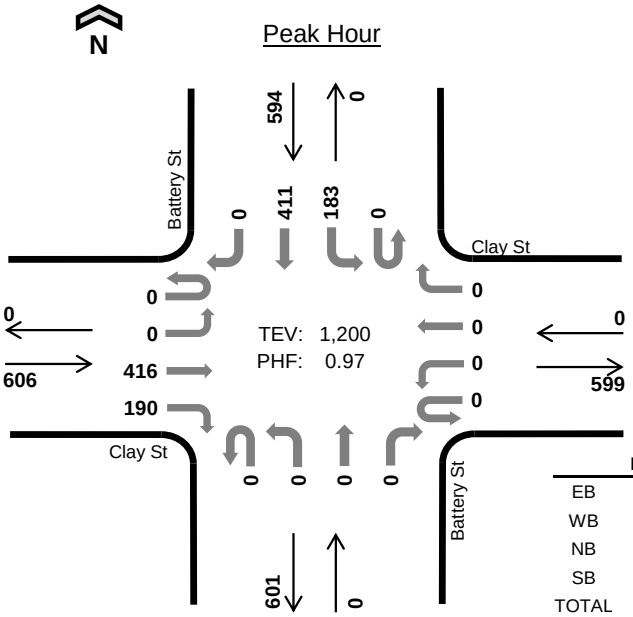
Two-Hour Count Summaries - Bikes

Interval Start	Washington St Eastbound			Washington St Westbound			Battery St Northbound			Battery St Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	1	1	1	5	0	0	2	1	11	0
4:15 PM	0	0	0	1	1	0	0	10	0	0	9	0	21	0
4:30 PM	0	0	0	0	0	1	0	2	0	0	6	1	10	0
4:45 PM	0	0	0	0	0	0	3	9	0	0	9	0	21	63
5:00 PM	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**5**	**0**	**0**	**12**	**0**	**20**	72
5:15 PM	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**12**	**0**	**0**	**6**	**0**	**20**	71
5:30 PM	**0**	**0**	**0**	**1**	**2**	**1**	**1**	**12**	**0**	**0**	**17**	**0**	**34**	95
5:45 PM	**0**	**0**	**0**	**0**	**2**	**1**	**1**	**8**	**0**	**0**	**7**	**0**	**19**	**93**
Count Total	0	0	0	2	8	5	8	63	0	0	68	2	156	0
Peak Hour	**0**	**0**	**0**	**1**	**6**	**3**	**4**	**37**	**0**	**0**	**42**	**0**	**93**	**0**

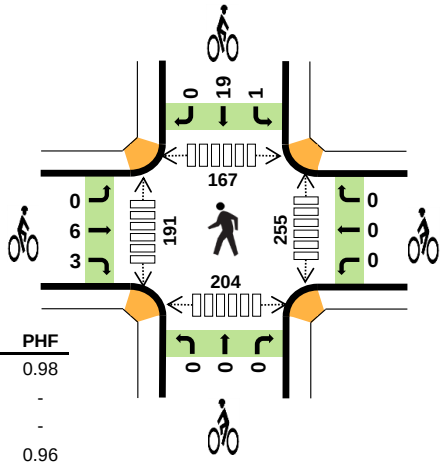
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Battery St
Clay St

Date: 10/16/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	5.1%	0.98
WB	-	-
NB	-	-
SB	2.2%	0.96
TOTAL	3.7%	0.97



Two-Hour Count Summaries

Interval Start	Clay St Eastbound				Clay St Westbound				Battery St Northbound				Battery St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	92	50	0	0	0	0	0	0	0	0	0	34	105	0	281	0
4:15 PM	0	0	111	33	0	0	0	0	0	0	0	0	0	56	98	0	298	0
4:30 PM	0	0	95	37	0	0	0	0	0	0	0	0	0	41	99	0	272	0
4:45 PM	0	0	93	33	0	0	0	0	0	0	0	0	0	44	89	0	259	1,110
5:00 PM	**0**	**0**	**104**	**44**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**42**	**109**	**0**	**299**	1,128
5:15 PM	**0**	**0**	**101**	**53**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**44**	**110**	**0**	**308**	1,138
5:30 PM	**0**	**0**	**100**	**52**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**44**	**96**	**0**	**292**	1,158
5:45 PM	**0**	**0**	**111**	**41**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**53**	**96**	**0**	**301**	**1,200**
Count Total	0	0	807	343	0	0	0	0	0	0	0	0	0	358	802	0	2,310	0
Peak Hour All	**0**	**0**	**416**	**190**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**183**	**411**	**0**	**1,200**	**0**
Peak Hour HV	**0**	**0**	**31**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**8**	**0**	**44**	**0**
Peak Hour HV%	**-**	**-**	**7%**	**0%**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3%**	**2%**	**-**	**4%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	0	0	7	*10*	3	0	0	4	*7*	54	53	37	73	*217*
4:15 PM	12	0	0	2	*14*	2	0	0	5	*7*	54	46	25	57	*182*
4:30 PM	4	0	0	4	*8*	0	0	0	6	*6*	60	25	47	63	*195*
4:45 PM	6	0	0	2	*8*	2	0	0	5	*7*	69	55	32	70	*226*
5:00 PM	**9**	**0**	**0**	**4**	***13***	**2**	**0**	**0**	**7**	***9***	**65**	**48**	**32**	**63**	*208*
5:15 PM	**9**	**0**	**0**	**2**	***11***	**3**	**0**	**0**	**5**	***8***	**76**	**40**	**45**	**39**	*200*
5:30 PM	**5**	**0**	**0**	**1**	***6***	**2**	**0**	**0**	**5**	***7***	**52**	**60**	**44**	**56**	*212*
5:45 PM	**8**	**0**	**0**	**6**	***14***	**2**	**0**	**0**	**3**	***5***	**62**	**43**	**46**	**46**	***197***
Count Total	56	0	0	28	*84*	16	0	0	40	*56*	492	370	308	467	*1,637*
Peak Hour	**31**	**0**	**0**	**13**	***44***	**9**	**0**	**0**	**20**	***29***	**255**	**191**	**167**	**204**	***817***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Clay St Eastbound				Clay St Westbound				Battery St Northbound				Battery St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	2	5	0	10	0
4:15 PM	0	0	12	0	0	0	0	0	0	0	0	0	0	1	1	0	14	0
4:30 PM	0	0	3	1	0	0	0	0	0	0	0	0	0	2	2	0	8	0
4:45 PM	0	0	6	0	0	0	0	0	0	0	0	0	0	1	1	0	8	40
5:00 PM	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**13**	43
5:15 PM	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**11**	40
5:30 PM	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**6**	38
5:45 PM	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**5**	**0**	**14**	**44**
Count Total	0	0	55	1	0	0	0	0	0	0	0	0	0	11	17	0	84	0
Peak Hour	**0**	**0**	**31**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**8**	**0**	**44**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Clay St Eastbound			Clay St Westbound			Battery St Northbound			Battery St Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	3	0	0	0	0	0	0	0	0	4	0	7	0
4:15 PM	0	1	1	0	0	0	0	0	0	0	5	0	7	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	6	0	6	0
4:45 PM	0	1	1	0	0	0	0	0	0	0	5	0	7	27
5:00 PM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**9**	29
5:15 PM	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**8**	30
5:30 PM	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	**0**	**7**	31
5:45 PM	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**5**	**29**
Count Total	0	11	5	0	0	0	0	0	0	1	39	0	56	0
Peak Hour	**0**	**6**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**19**	**0**	**29**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

D.2 – Travel Demand Calculations

Table 1: Person Trip Generation

Land Use	Quantity	Unit	Trip Rates		Person Trips	
			Daily	PM Peak Hour	Daily	PM Peak Hour
Office	344.84	1,000 sq ft	15.59	1.39	5,376	480
Hotel	200	Rooms	8.24	0.59	1,648	118
Restaurant (Composite)	7.41	1,000 sq ft	599.06	80.83	4,439	599
Total Person Trips					11,463	1,197

Sources: San Francisco Planning 2019 TIA Guidelines, 447 Battery and 530 Sansome Street Project Notice of Preparation of an Environmental Impact Report, 2024

Table 2: Person Trips by Mode

Person Trip Mode	Daily Person Trips	PM Peak Hour Person Trips
Auto	1,792	178
Taxi / TNC	864	81
Public Transit	2,787	298
Walk	5,655	600
Bike	365	40
Total Person Trips	**11,463**	**1,197**

Sources: San Francisco Planning 2019 TIA Guidelines, Appendix F: Travel Demand, Fehr & Peers 2024

Table 3: Vehicle Trips by Mode[1]

Vehicle Trip Mode	Daily Vehicle Trips	PM Peak Hour Vehicle Trips
Auto	1,333	129
Taxi / TNC	608	56
Total Vehicle Trips	**1,941**	**185**

Note:

1. Calculated by dividing person trips by average vehicle occupancy rates.

Sources: San Francisco Planning 2019 TIA Guidelines, Appendix F: Travel Demand, Fehr & Peers 2024

Table 4: Vehicle Trip Generation

Land Use	Quantity	Unit	Vehicle Trip Rates		Vehicle Trips	
			Daily	PM Peak Hour	Daily	PM Peak Hour
Office	344.84	1,000 sq ft	3.24	0.29	1,119	101
Hotel	200	Rooms	1.93	0.14	385	27
Restaurant (Composite)	7.41	1,000 sq ft	58.97	7.69	437	57
Total Vehicle Trips					1,941	185

Sources: San Francisco Planning 2019 TIA Guidelines, Appendix F: Travel Demand, 447 Battery and 530 Sansome Street Project Notice of Preparation of an Environmental Impact Report, 2024, Fehr & Peers 2024

Table 5: Vehicle Trips Directionality

Mode	Daily			PM Peak Hour		
	Inbound	Outbound	Total	Inbound	Outbound	Total
Auto	660	672	1,332	26	103	129
Taxi / TNC	299	310	609	14	42	56
Total	**959**	**982**	**1,941**	**40**	**145**	**185**

Source: San Francisco Planning 2019 TIA Guidelines, Appendix F: Travel Demand

Table 6: PM Peak Hour Vehicle Trips Distribution

Geographic Place	Total	Inbound	Outbound
Downtown/North Beach	41	16	25
SoMa	6	3	3
Marina/Western Market	19	3	16
Mission/Potrero	11	4	7
Outer Mission/Hills	28	5	23
Bayshore	7	1	6
Richmond	5	2	3
Sunset	4	1	3
Islands	0	0	0
South Bay	25	2	23
East Bay	26	2	24
North Bay	13	1	12
Total	**185**	**40**	**145**

Source: San Francisco Planning 2019 TIA Guidelines, Appendix F: Travel Demand

Table 7: Peak Hour Freight Loading Demand

Land Use	KSF	Rate per KSF	Spaces per KSF[1]	Peak Hour Loading Spaces[2]
Office	344.84	0.21	0.01	4.19
Hotel	188.82	0.09	0.01	0.98
Restaurant	7.41	3.60	0.21	1.54
Total Spaces				6.71
Total Spaces (rounded)				**7**

Notes:

1. Freight and delivery peak hour loading spaces per KSF calculation: $\frac{\left[\frac{(1.25)(Rate\ per\ KSF)}{9}\right]}{2.4}$
2. Freight and delivery peak hour loading spaces demand calculation: $KSF * Spaces\ per\ KSF$

Sources: San Francisco Planning 2019 TIA Guidelines, Appendix F: Travel Demand, 447 Battery and 530 Sansome Street Project Notice of Preparation of an Environmental Impact Report, 2024, Fehr & Peers 2024

Table 8: Passenger Loading Demand

Land Use (Geography)	PM Peak Hour Person Trips[1]	Passenger Loading %	Peak Hour Loading Spaces[2]	Peak 15-Min Loading Spaces[3]
Office	480	7.30%	0.58	1.17
Hotel	118	21.80%	0.43	0.86
Retail[1]	599	5.50%	0.55	1.10
Total Spaces			1.56	3.13
Total Spaces (rounded)			**2**	**4**

Notes:

1. Retail used as restaurant equivalent per 2019 San Francisco TIA Guidelines.
2. Peak hour passenger loading spaces demand calculation: $\frac{Person\ Trips * Passenger\ Loading\ \% * 1\ minute\ average\ stop\ duration}{60}$
3. Peak 15-min passenger loading spaces demand calculation: $\frac{\left(\frac{Person\ Trips * Passenger\ Loading\ \%}{2}\right) * 1\ minute\ average\ stop\ duartion}{15}$

Sources: San Francisco Planning 2019 TIA Guidelines, Appendix F: Travel Demand, Fehr & Peers 2024

Travel Demand Data

Daily Travel Demand

Person Trips by Mode

	Residential	Office	Retail	Restaurant (Quality Sit Down)	Restaurant (Composite)	Supermarke	Hotel	Total
Auto Split	-	996	-	-	502	-	294	1,792
Taxi TNC Split	-	330	-	-	204	-	329	864
Public Transit	-	1,559	-	-	1,129	-	99	2,787
Walk	-	2,290	-	-	2,439	-	926	5,655
Bike	-	200	-	-	164	-	-	365

OD PERSON TRIPS BY TRIP PURPOSE AND DIRECTION - DISTRICT

		Outbound													*Inbound*												
		1 Downtown/NorthBeach	2 SoMa	3 Marina/WesternMarket	4 Mission/Potrero	5 OuterMission/Hills	6 Bayshore	7 Richmond	8 Sunset	9 Islands	10 South Bay	11 East Bay	12 North Bay	Total	1 Downtown/NorthBeach	2 SoMa	3 Marina/WesternMarket	4 Mission/Potrero	5 OuterMission/Hills	6 Bayshore	7 Richmond	8 Sunset	9 Islands	10 South Bay	11 East Bay	12 North Bay	Total
Auto Person Trips	**Daily Work Trips**	55	20	57	16	90	27	17	10	-	107	120	62	580	72	16	42	13	63	53	22	17	-	100	145	56	598
	Daily Non-Work Trips	89	10	45	14	48	4	12	5	-	40	50	11	327	79	8	45	26	25	9	9	9	-	22	44	11	287
Taxi / TNC Person Trips	**Daily Work Trips**	24	11	22	8	32	9	7	4	-	45	49	22	233	27	9	19	8	24	18	8	7	-	42	56	20	237
	Daily Non-Work Trips	58	7	30	9	32	2	8	4	-	26	25	7	208	51	5	29	17	17	6	6	6	-	15	27	7	186
Transit Person Trips	**Daily Work Trips**	75	5	87	64	61	28	14	21	-	135	356	46	891	74	15	96	57	70	12	21	32	-	126	367	65	935
	Daily Non-Work Trips	94	15	74	18	38	19	27	13	3	21	121	9	452	145	34	54	47	18	3	25	11	3	28	131	10	508
Auto VehicleTrips*	**Daily Work Trips**	42	13	46	11	74	23	14	8	-	84	96	52	462	58	11	32	9	51	45	18	14	-	78	117	46	479
	Daily Non-Work Trips	57	6	28	8	30	2	7	3	-	25	36	8	210	50	5	29	16	16	5	5	5	-	14	29	8	181
Taxi / TNC Vehicle Trips*	**Daily Work Trips**	18	7	17	6	26	8	6	3	-	34	37	18	179	21	6	14	5	19	15	6	5	-	32	44	16	183
	Daily Non-Work Trips	36	4	18	6	20	2	5	2	-	16	17	4	131	32	3	18	11	10	4	4	4	-	9	17	4	116

*Auto vehicle trips based on rolling up of shared ride 2, shared ride 3, and drive alone person trips divided by an AVO of 2,3.5, and 1, respectively

PM Travel Demand

Person Trips by Mode

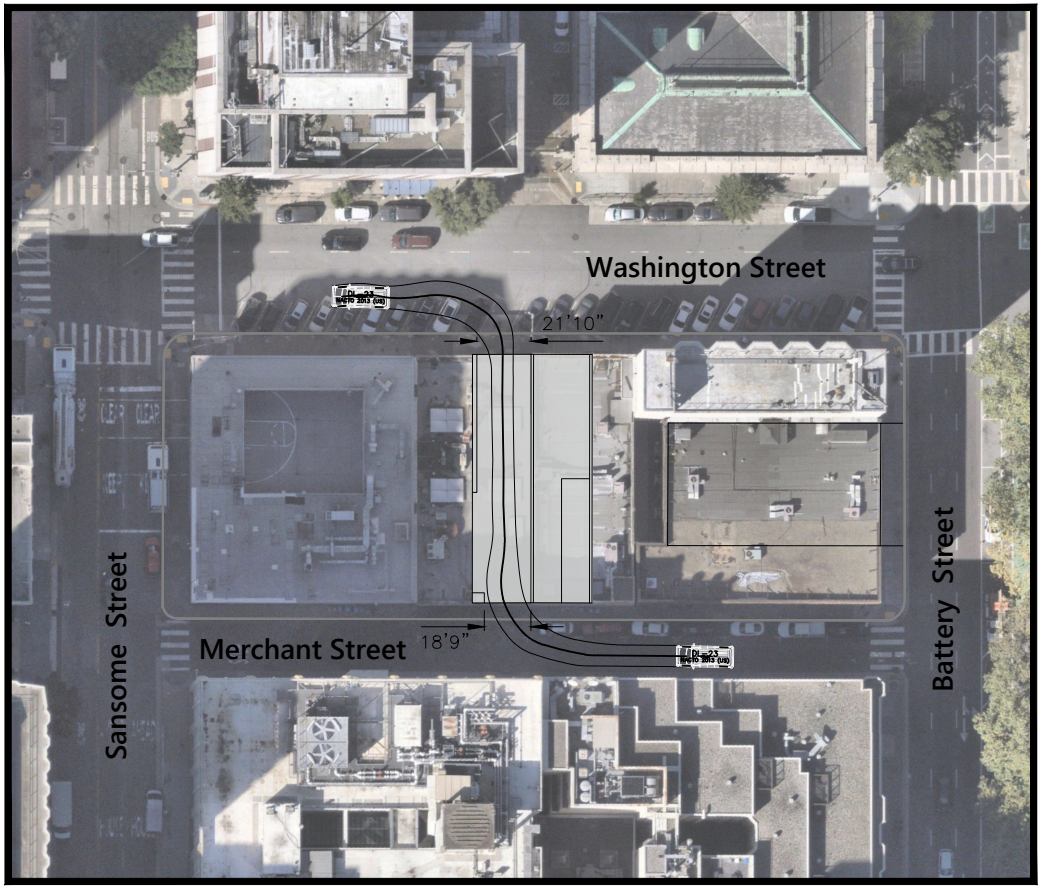
	Residential	Office	Retail	Restaurant (Quality Sit Down)	Restaurant (Composite)	Supermarke	Hotel	Total
Auto Split	-	89	-	-	68	-	21	178
Taxi TNC Split	-	29	-	-	28	-	24	81
Public Transit	-	139	-	-	152	-	7	298
Walk	-	204	-	-	329	-	66	600
Bike	-	18	-	-	22	-	-	40

OD PERSON TRIPS BY TRIP PURPOSE AND DIRECTION - DISTRICT

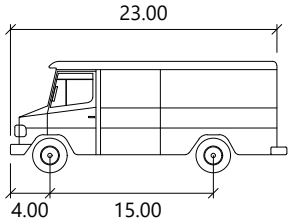
		Outbound													*Inbound*												
		1 Downtown/NorthBeach	2 SoMa	3 Marina/WesternMarket	4 Mission/Potrero	5 OuterMission/Hills	6 Bayshore	7 Richmond	8 Sunset	9 Islands	10 South Bay	11 East Bay	12 North Bay	Total	1 Downtown/NorthBeach	2 SoMa	3 Marina/WesternMarket	4 Mission/Potrero	5 OuterMission/Hills	6 Bayshore	7 Richmond	8 Sunset	9 Islands	10 South Bay	11 East Bay	12 North Bay	Total
Auto Person Trips	**PM Work Trips**	9	1	10	3	16	4	2	2	-	16	19	9	91	5	2	1	1	3	-	-	0	-	1	1	0	14
	PM Non-Work Trips	16	1	5	4	5	1	1	1	-	6	3	2	46	12	1	2	3	2	0	2	1	-	1	1	1	26
Taxi / TNC Person Trips	**PM Work Trips**	3	0	4	1	5	1	1	1	-	7	7	3	33	2	1	1	1	1	-	-	0	-	0	1	0	6
	PM Non-Work Trips	9	1	3	2	3	1	1	1	-	4	1	1	25	7	1	1	2	1	0	1	0	-	1	1	0	15
Transit Person Trips	**PM Work Trips**	10	1	13	12	7	2	2	2	-	21	67	10	148	6	2	6	0	4	-	1	0	-	-	5	2	26
	PM Non-Work Trips	18	1	14	4	3	0	6	0	-	2	23	2	74	16	4	11	6	0	-	2	0	1	7	5	-	51
Auto VehicleTrips*	**PM Work Trips**	7	1	8	2	14	3	2	2	-	12	15	7	74	4	1	1	1	3	-	-	0	-	0	1	0	10
	PM Non-Work Trips	10	1	3	2	3	1	1	1	-	4	2	2	29	7	1	1	2	1	0	1	0	-	1	1	0	16
Taxi / TNC Vehicle Trips*	**PM Work Trips**	3	0	3	1	5	1	1	1	-	5	5	3	26	1	1	0	0	1	-	-	0	-	0	0	0	4
	PM Non-Work Trips	5	0	2	1	2	0	0	0	-	2	1	1	16	4	0	1	1	1	0	1	0	-	0	0	0	9

*Auto vehicle trips based on rolling up of shared ride 2, shared ride 3, and drive alone person trips divided by an AVO of 2,3.5, and 1, respectively

D.3 – Turn Templates



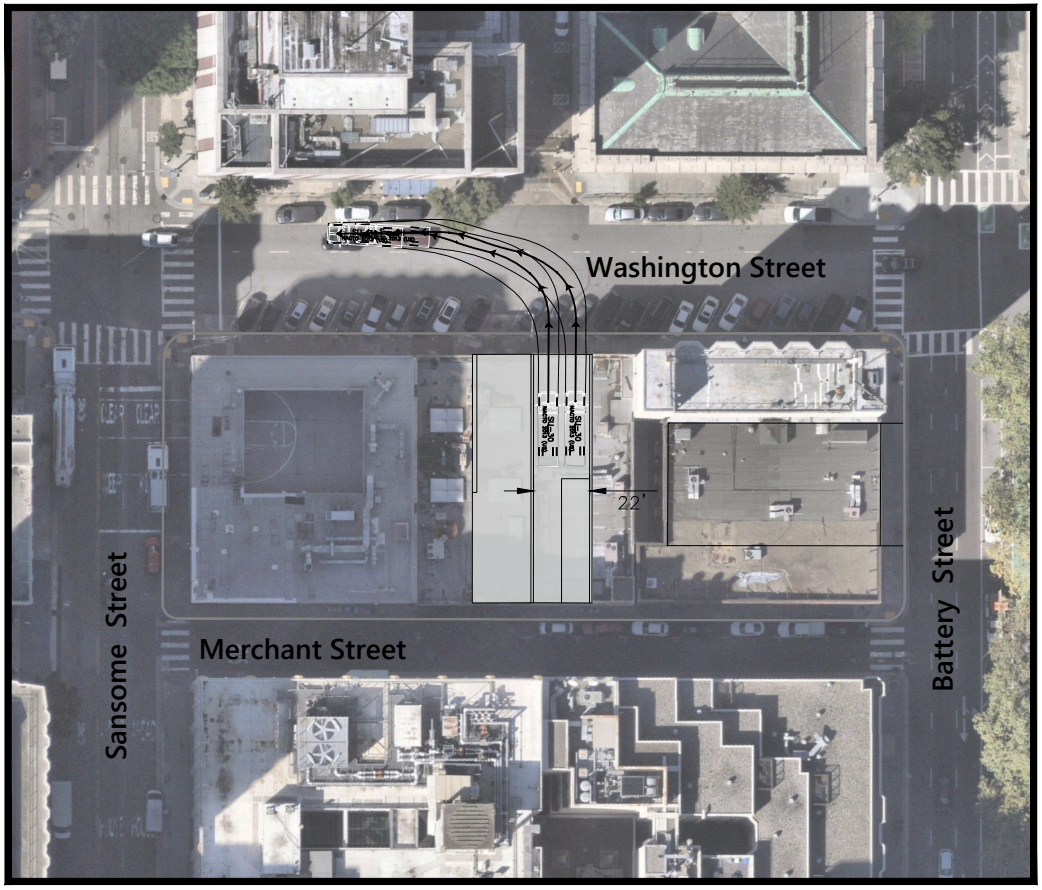
Porte-Cochere



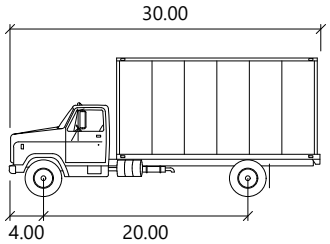
DL-23

	feet
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 40.4

Washington Street
Vehicle Turning Templates
DL-23



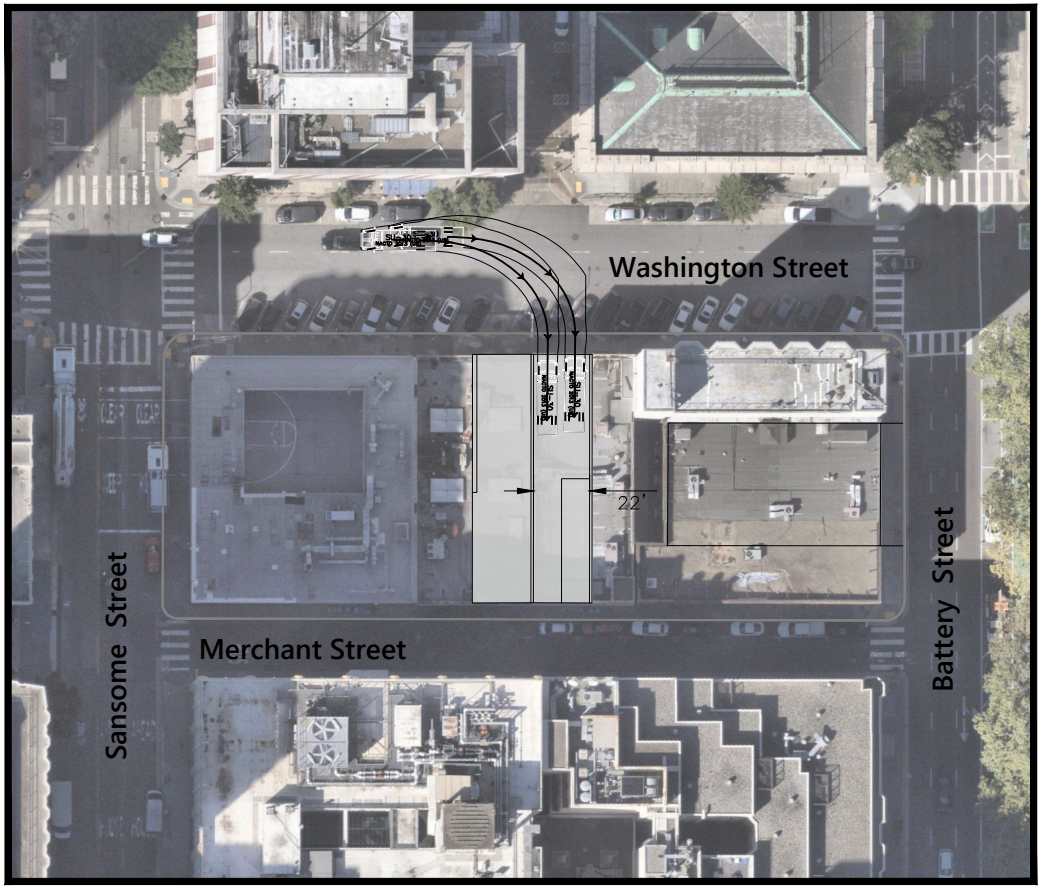
Loading Dock - Egress



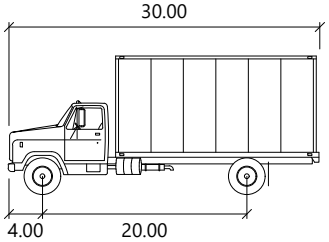
SU-30

	feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.8

Washington Street
Vehicle Turning Templates
SU-30



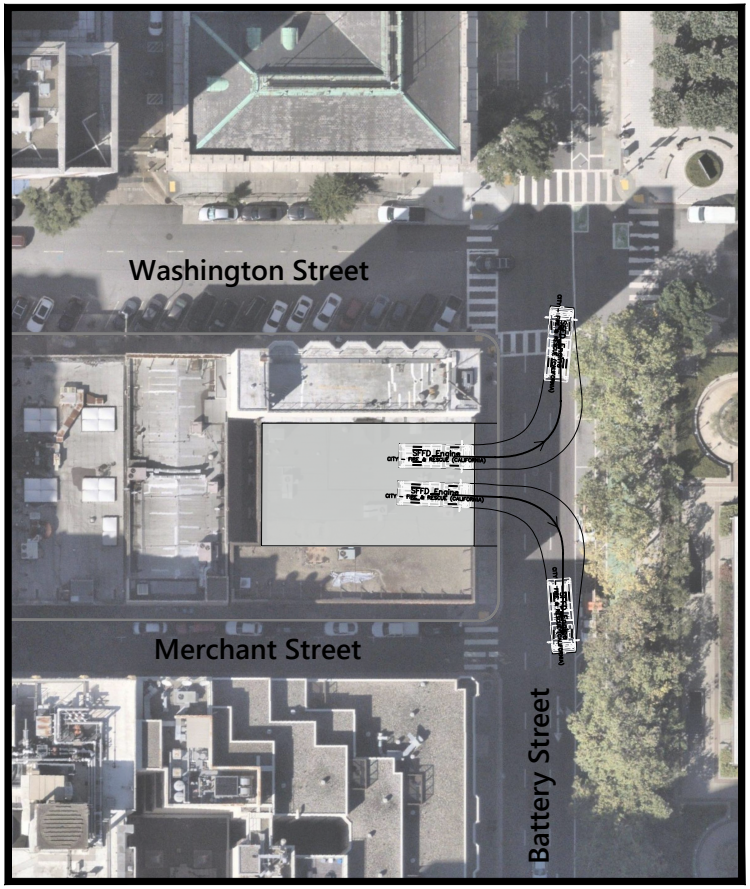
Loading Dock - Ingress



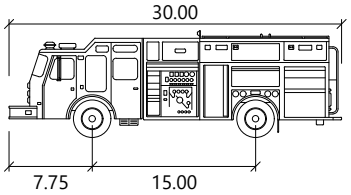
SU-30

	feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.8

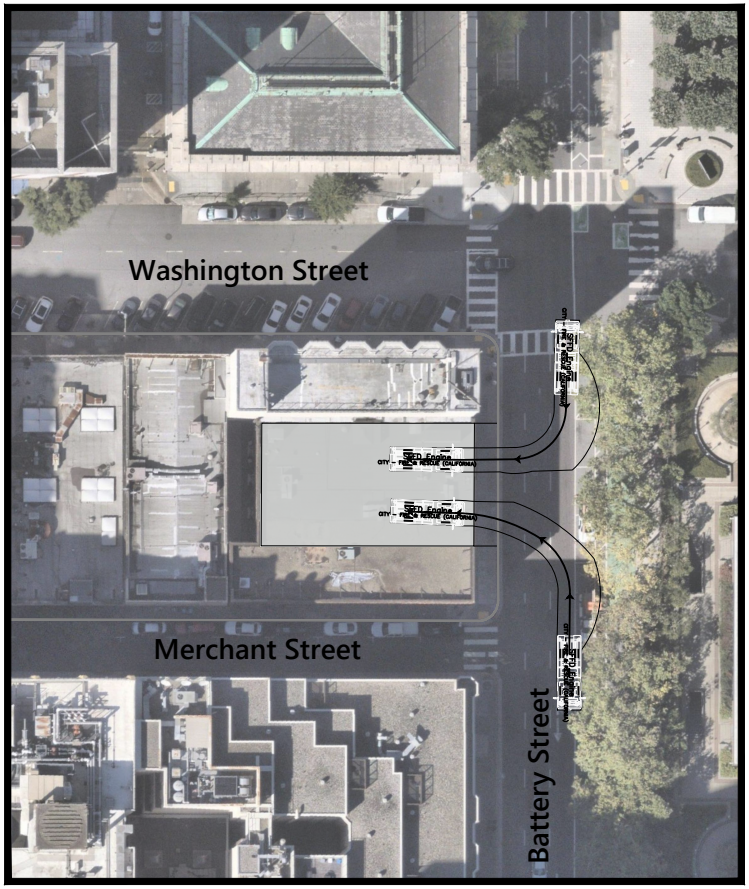
Washington Street
Vehicle Turning Templates
SU-30



Egress of fire station -
Northbound and Southbound



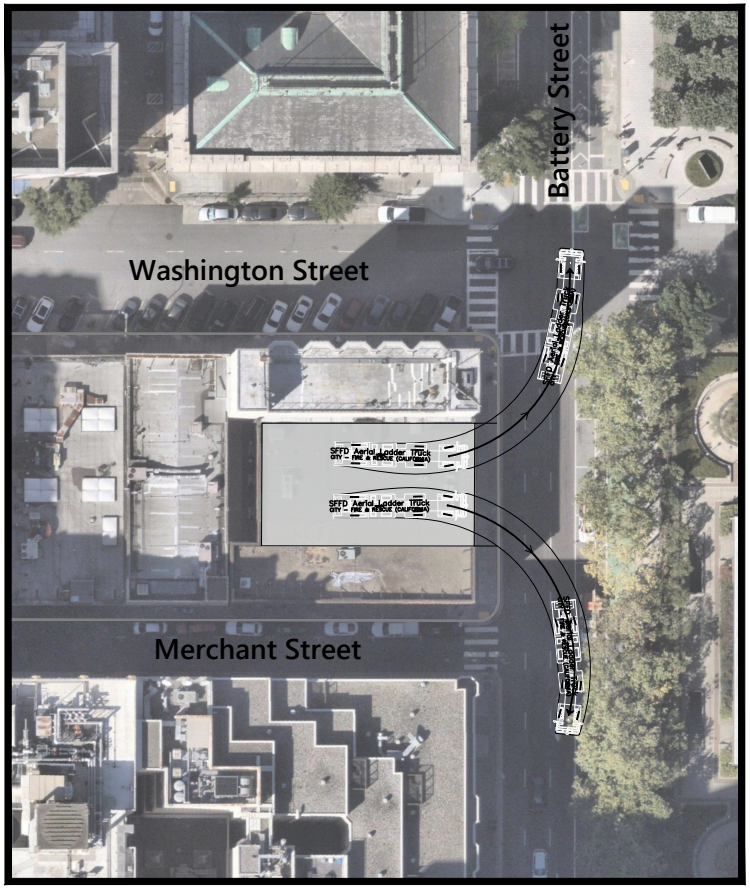
SFFD Engine	feet
Width	: 9.50
Track	: 8.17
Lock to Lock Time	: 6.0
Steering Angle	: 36.0



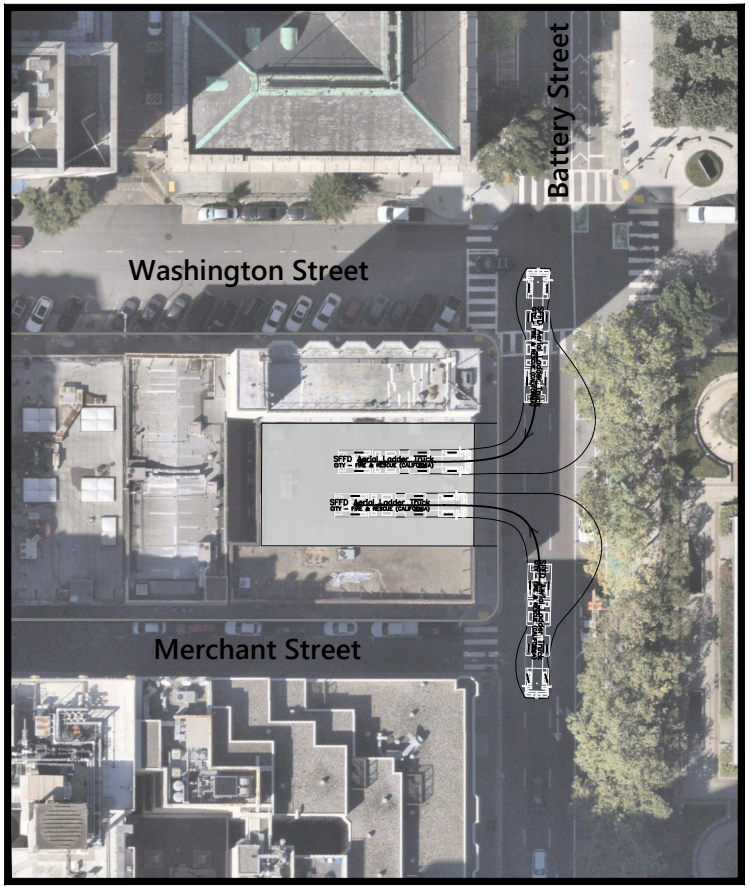
Ingress of fire station -
Northbound and Southbound

Battery Street
Vehicle Turning Templates
SFFD Engine

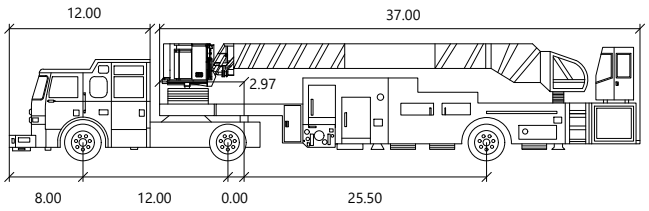
CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL
DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.



Egress of fire station -
Northbound and Southbound



Ingress of fire station -
Northbound and Southbound



SFFD Aerial Ladder Truck

		feet			
First Unit Width	:	9.50	Lock to Lock Time	:	6.0
Trailer Width	:	9.50	Steering Angle	:	30.0
First Unit Track	:	8.25	Articulating Angle	:	70.0
Trailer Track	:	8.25			

Battery Street
Vehicle Turning Templates
SFFD Ladder Truck

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL
DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

APPENDIX E

Noise and Vibration Supporting Information

Summary

File Name on Meter	LxT_Data.147.s
File Name on PC	LxT_0004337-20241028 070000-LxT_Data.147.ldbin
Serial Number	0004337
Model	SoundTrack LxT®
Firmware Version	2.404
User	Nick Reynoso
Location	LT-1: Near 550 Battery Street, in front of the Gateway Apartments
Job Description	447 Battery and 530 Sansome Street Project
Note	

Measurement

Description	
Start	2024-10-28 07:00:00
Stop	2024-10-30 07:00:00
Duration	48:00:00.0
Run Time	48:00:00.0
Pause	00:00:00.0
Pre-Calibration	2024-10-28 06:52:44
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting			
Peak Weight	Z Weighting			
Detector	Slow			
Preamplifier	PRMLxT2B			
Microphone Correction	Off			
Integration Method	Exponential			
Overload	143.3 dB			
	A	**C**	**Z**	
Under Range Peak	99.6	96.6	**101.6**	dB
Under Range Limit	**37.9**	37.5	44.2	dB
Noise Floor	28.8	28.3	35.1	dB
	First	**Second**	**Third**	
Instrument Identification				

Results

LA_{Seq}	64.3		
LASE	116.7		
EAS	51.659	mPa^2h	
EAS8	8.610	mPa^2h	
EAS40	43.049	mPa^2h	
$LZ_{peak\ (max)}$	2024-10-29 12:25:21	114.2	dB
LAS_{max}	2024-10-29 12:25:21	101.6	dB
LAS_{min}	2024-10-30 01:18:28	48.6	dB
SEA	-99.9	dB	

	Exceedance Counts	**Duration**	
LAS > 85.0 dB	17	80.5	s
LAS > 115.0 dB	0	0.0	s
LZ_{peak} > 135.0 dB	0	0.0	s
LZ_{peak} > 137.0 dB	0	0.0	s
LZ_{peak} > 140.0 dB	0	0.0	s

LC_{Seq}	71.8	dB
LA_{Seq}	64.3	dB
LC_{Seq} - LA_{Seq}	7.5	dB
LAI_{eq}	67.5	dB
LA_{eq}	64.3	dB
LAI_{eq} - LA_{eq}	3.2	dB

	A		**C**		**Z**	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	64.3					
$L_{S(max)}$	101.6	2024/10/29 12:25:21				
$L_{S(min)}$	48.6	2024/10/30 1:18:28				
$L_{Peak(max)}$					114.2	2024/10/29 12:25:21

Overload Count	0	
Overload Duration	0.0	s

Calculated Ldn from Long-Term Noise Monitoring Data

Meter 0004337 - 447 Battery and 530
Sansome Street Project
10/29/2024
Tuesday

	TIME	dBA	Numbers...	10 dBA More Numbers...	5 dBA
Midnight	0 / 24	56.6	459872	4598720	1454243
am 1:00	100	60.4	1090531	10905310	3448562
2:00	200	56.5	451605	4516053	1428101
3:00	300	58.6	728283	7282827	2303032
4:00	400	55.7	367829	3678290	1163178
5:00	500	59.7	924123	9241235	2922335
6:00	600	62.2	1677208	16772083	5303798
7:00	700	63.8	2411171	24111709	7624792
8:00	800	66.2	4127841	41278414	13053381
9:00	900	64.1	2587814	25878137	8183385
10:00	1000	65.8	3818300	38182996	12074523
11:00	1100	64.6	2910704	29107037	9204453
12:00	1200	69.7	9349319	93493195	29565144
pm 1:00	1300	62.8	1890810	18908105	5979268
2:00	1400	64.9	3111544	31115444	9839567
3:00	1500	68.9	7835812	78358119	24779013
4:00	1600	64.4	2754292	27542921	8709836
5:00	1700	64.5	2817111	28171113	8908488
6:00	1800	64.2	2654966	26549662	8395740
7:00	1900	63.4	2176547	21765468	6882845
8:00	2000	61.5	1416632	14166318	4479783
9:00	2100	62.0	1576075	15760754	4983988
10:00	2200	59.6	902527	9025266	2854040
pm 11:00	2300	57.7	584571	5845706	1848575

Leq Nighttime 10:00 p.m.-7:00 a.m. (not penalized)
59 dBA

Leq Daytime 7:00 am-10:00 p.m.
65 dBA

Leq 24-Hour
64 dBA

Ldn: 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.
67 dBA

CNEL: 5 dBA penalty for noise between 7:00p.m. and 10:00 p.m., and 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.
67 dBA

CNEL - Ld 0.3768481

Summary

File Name on Meter	LxT_Data.182.s
File Name on PC	LxT_0004435-20241028 070000-LxT_Data.182.ldbin
Serial Number	0004435
Model	SoundTrack LxT®
Firmware Version	2.404
User	Nick Reynoso
Location	LT-2: Southeast of project site at corner of Merchant and Battery Streets, adjacent to existing hotel building.
Job Description	447 Battery and 530 Sansome Street Project
Note	

Measurement

Description	
Start	2024-10-28 07:00:00
Stop	2024-10-30 07:00:00
Duration	48:00:00.0
Run Time	48:00:00.0
Pause	00:00:00.0
Pre-Calibration	2024-10-28 06:39:30
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamplifier	PRMLxT2B
Microphone Correction	Off
Integration Method	Exponential
Overload	143.7 dB

	A	C	Z
Under Range Peak	99.9	96.9	**101.9** dB
Under Range Limit	**38.2**	37.8	44.6 dB
Noise Floor	29.1	28.7	35.5 dB

	First	Second	Third
Instrument Identification			

Results

LA_{Seq}	66.0	
LASE	118.4	
EAS	76.533	mPa²h
EAS8	12.755	mPa²h
EAS40	63.777	mPa²h
$LZ_{peak\ (max)}$	2024-10-29 08:47:35	128.4 dB
LAS_{max}	2024-10-28 14:37:20	102.6 dB
LAS_{min}	2024-10-30 01:18:25	51.1 dB
SEA	139.4 dB	

	Exceedance Counts	Duration
LAS > 85.0 dB	34	175.7 s
LAS > 115.0 dB	0	0.0 s
LZ_{peak} > 135.0 dB	0	0.0 s
LZ_{peak} > 137.0 dB	0	0.0 s
LZ_{peak} > 140.0 dB	0	0.0 s

LC_{Seq}	73.6	dB
LA_{Seq}	66.0	dB
LC_{Seq} - LA_{Seq}	7.6	dB
LAI_{eq}	69.4	dB
LA_{eq}	66.0	dB
LAI_{eq} - LA_{eq}	3.4	dB

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	66.0					
$L_{S(max)}$	102.6	2024/10/28 14:37:20				
$L_{S(min)}$	51.1	2024/10/30 1:18:25				
$L_{Peak(max)}$					128.4	2024/10/29 8:47:35

Overload Count	0	
Overload Duration	0.0	s

Calculated Ldn from Long-Term Noise Monitoring Data

Meter 0004435 - 447 Battery and 530
Sansome Street Project
10/29/2024
Tuesday

	TIME	dBA	Numbers...	10 dBA More Numbers...	5 dBA
Midnight	0 / 24	58.7	738055	7380555	2333936
am 1:00	100	63.9	2461053	24610532	7782534
2:00	200	59.8	948724	9487242	3000129
3:00	300	56.5	451178	4511781	1426750
4:00	400	63.4	2176391	21763914	6882354
5:00	500	61.6	1434928	14349276	4537640
6:00	600	65.8	3780245	37802455	11954186
7:00	700	67.5	5630488	56304875	17805165
8:00	800	69.0	7970343	79703428	25204437
9:00	900	65.7	3685242	36852419	11653758
10:00	1000	63.9	2460974	24609739	7782283
11:00	1100	64.0	2501532	25015316	7910538
12:00	1200	63.9	2451010	24510095	7750773
pm 1:00	1300	64.2	2615767	26157667	8271780
2:00	1400	63.8	2406057	24060575	7608622
3:00	1500	66.6	4537598	45375978	14349144
4:00	1600	66.5	4502150	45021504	14237050
5:00	1700	68.0	6330733	63307330	20019536
6:00	1800	68.6	7163611	71636111	22653327
7:00	1900	64.7	2984840	29848396	9438892
8:00	2000	64.7	2967003	29670031	9382488
9:00	2100	64.3	2713270	27132699	8580113
10:00	2200	62.6	1814696	18146965	5738574
pm 11:00	2300	62.1	1620052	16200522	5123055

Leq Nighttime 10:00 p.m.-7:00 a.m. (not penalized)
62 dBA

Leq Daytime 7:00 am-10:00 p.m.
66 dBA

Leq 24-Hour
65 dBA

Ldn: 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.
70 dBA

CNEL: 5 dBA penalty for noise between 7:00p.m. and 10:00 p.m., and 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.
70 dBA

CNEL - Ld 0.3625972

Summary

File Name on Meter	831_Data.004.s
File Name on PC	831_0002783-20241030 073112-831_Data.004.ldbin
Serial Number	0002783
Model	Model 831
Firmware Version	2.403
User	Nick Reynoso
Location	ST-1: Northeast corner of Washington Street and Hotaling Place
Job Description	447 Battery and 530 Sansome Street Project
Note	

Measurement

Description	
Start	2024-10-30 07:31:12
Stop	2024-10-30 07:51:13
Duration	00:20:00.5
Run Time	00:20:00.5
Pause	00:00:00.0
Pre-Calibration	2024-10-30 07:25:51
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamplifier	PRM831
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Gain	0.0 dB
Overload	143.4 dB

	A	**C**	**Z**	
Under Range Peak	75.8	72.8	**77.8**	dB
Under Range Limit	**26.2**	26.4	31.8	dB
Noise Floor	17.0	17.3	22.5	dB

	First	**Second**	**Third**
Instrument Identification			

Results

LAeq	65.0	
LAE	95.8	
EA	422.146	µPa²h
LZpeak (max)	2024-10-30 07:47:15	99.8 dB
LASmax	2024-10-30 07:47:16	77.3 dB
LASmin	2024-10-30 07:33:52	58.8 dB
SEA	-99.9	dB

	Exceedance Counts	**Duration**
LAS > 65.0 dB	32	373.0 s
LAS > 85.0 dB	0	0.0 s
LZpeak > 135.0 dB	0	0.0 s
LZpeak > 137.0 dB	0	0.0 s
LZpeak > 140.0 dB	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**	
	65.0	65.0	-99.9	65.0	65.0	-99.9	-99.9	dB

LCeq	74.0	dB
LAeq	65.0	dB
LCeq - LAeq	9.0	dB
LAIeq	66.6	dB
LAeq	65.0	dB
LAIeq - LAeq	1.6	dB

	A		**C**		**Z**	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
Leq	65.0		74.0		75.8	
LS(max)	77.3	2024/10/30 7:47:16	85.3	2024/10/30 7:47:17	85.8	2024/10/30 7:47:17
LF(max)	79.3	2024/10/30 7:47:16	88.2	2024/10/30 7:47:17	89.7	2024/10/30 7:34:52
LI(max)	80.8	2024/10/30 7:47:15	89.6	2024/10/30 7:47:17	91.9	2024/10/30 7:34:52
LS(min)	58.8	2024/10/30 7:33:52	69.7	2024/10/30 7:47:40	71.7	2024/10/30 7:36:31
LF(min)	58.2	2024/10/30 7:33:52	68.3	2024/10/30 7:47:40	70.0	2024/10/30 7:38:57
LI(min)	58.5	2024/10/30 7:33:52	69.7	2024/10/30 7:47:40	72.1	2024/10/30 7:36:29
LPeak(max)	94.7	2024/10/30 7:47:15	100.0	2024/10/30 7:47:15	99.8	2024/10/30 7:47:15

Overload Count	0	
Overload Duration	0.0	s
OBA Overload Count	0	
OBA Overload Duration	0.0	s

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/23/2025
Case Description: 530 Sansome Demolition

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Gateway	Residential	69	69	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Gradall	No	40		83.4	150	0
Gradall	No	40		83.4	150	0

		Results Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Gradall		73.9	69.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gradall		73.9	69.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	73.9	72.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Hotaling Place	Residential	69	69	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Gradall	No	40		83.4	360	0
Gradall	No	40		83.4	360	0

		Results Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Gradall		66.3	62.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gradall		66.3	62.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	66.3	65.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
401 Washington Street	Commercial	69	69	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Gradall	No	40		83.4	5	0
Gradall	No	40		83.4	5	0

		Results Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Gradall		103.4	99.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gradall		103.4	99.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	103.4	102.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/23/2025
Case Description: 530 Sansome Grading

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Gateway	Residential	69	69	60

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Gradall	No	40		83.4	150	0
Pumps	No	50		80.9	150	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Gradall	73.9	69.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	71.4	68.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	73.9	72.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Hotaling Place	Residential	69	69	60

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Gradall	No	40		83.4	360	0
Pumps	No	50		80.9	360	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Gradall	66.3	62.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	63.8	60.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	66.3	64.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
401 Washington Street	Commercial	69	69	60

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Gradall	No	40		83.4	5	0
Pumps	No	50		80.9	5	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Gradall	103.4	99.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	100.9	97.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	103.4	101.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/23/2025
Case Description: 530 Sansome Drainage Subgrade

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Gateway	Residential	69	69	60

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Gradall	No	40		83.4	150	0
Pumps	No	50		80.9	150	0

Results

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Gradall		73.9	69.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps		71.4	68.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	73.9	72.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Hotaling Place	Residential	69	69	60

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Gradall	No	40		83.4	360	0
Pumps	No	50		80.9	0	0

Results

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Gradall		66.3	62.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps			-3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	66.3	62.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
401 Washington Street	Commercial	69	69	60

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Gradall	No	40		83.4	5	0
Pumps	No	50		80.9	5	0

Results

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Gradall		103.4	99.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps		100.9	97.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	103.4	101.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/23/2025
Case Description: 530 Sansome Foundations

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Gateway	Residential	69	69	60

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Saw	No	20		89.6	150	0
Gradall	No	40		83.4	150	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	80	73	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gradall	73.9	69.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	80	74.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Hotaling Place	Residential	69	69	60

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Saw	No	20		89.6	360	0
Gradall	No	40		83.4	360	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	72.4	65.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gradall	66.3	62.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	72.4	67.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
401 Washington Street	Commercial	69	69	60

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Saw	No	20		89.6	5	0
Gradall	No	40		83.4	5	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	109.6	102.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gradall	103.4	99.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	109.6	104.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/23/2025
Case Description: 530 Sansome Building Construction

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Gateway	Residential	69	69	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	150	0
Gradall	No	40		83.4	150	0

		Calculated (dBA)		Results Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw		80	73	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gradall		73.9	69.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	80	74.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Hotaling Place	Residential	69	69	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	360	0
Gradall	No	40		83.4	360	0

		Calculated (dBA)		Results Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw		72.4	65.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gradall		66.3	62.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	72.4	67.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
401 Washington Street	Commercial	69	69	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	5	0
Gradall	No	40		83.4	5	0

		Calculated (dBA)		Results Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw		109.6	102.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gradall		103.4	99.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	109.6	104.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/23/2025
Case Description: 530 Sansome Night Concrete Pour

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Gateway	Residential	69	69	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Pump Truck	No	20		81.4	150	0
Concrete Mixer Truck	No	40		78.8	150	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Pump Truck	71.9	64.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	69.3	65.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	71.9	68.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Hotaling Place	Residential	69	69	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Pump Truck	No	20		81.4	360	0
Concrete Mixer Truck	No	40		78.8	360	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Pump Truck	64.3	57.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	61.7	57.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	64.3	60.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Club Quarters Hotel	Commercial	69	69	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Pump Truck	No	20		81.4	30	0
Concrete Mixer Truck	No	40		78.8	30	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Pump Truck	85.8	78.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	83.2	79.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.8	82.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Vibration propogation from Construction Equipment

Formula from FTA, 2018 = PPVequip = PPVref x (25/D)^1.5 where

Receptor 1: 423 Washington Street

PPV refs @ 25 ft =		PPV@25ft
	Vibratory Roller	0.21
	Caisson Drill	0.089
	Truck(loaded)	0.076

Enter distance = 5 Adjacent Buildings

Resultant PPV =		
	Vibratory Roller	2.347871
	Caisson Drill	0.99505
	Truck(loaded)	0.849706

	Lv@25 ft
Vibratory Roller	94
Caisson Drill	87
Truck(loaded)	86

Lv(D) = Lv(25 ft) – 30log(D/25)

Resultant Lv =		
	Vibratory Roller	114.9691
	Caisson Drill	107.9691
	Truck(loaded)	106.9691

Formula from FTA, 2018 = PPVequip = PPVref x (25/D)^1.5 where

Receptor 2: 424 Clay Street

PPV refs @ 25 ft =		PPV@25ft
	Vibratory Roller	0.21
	Caisson Drill	0.089
	Truck(loaded)	0.076

Enter distance = 30 Adjacent Buildings

Resultant PPV =		
	Vibratory Roller	0.159752
	Caisson Drill	0.067705
	Truck(loaded)	0.057815

	Lv@25 ft
Vibratory Roller	94
Caisson Drill	87
Truck(loaded)	86

Formula from FTA 2006 = Lv(D) = Lv(25 ft) – 30log(D/25)

Resultant Lv =		
	Vibratory Roller	91.62456
	Caisson Drill	84.62456
	Truck(loaded)	83.62456

Formula from FTA, 2018 = PPVequip = PPVref x (25/D)^1.5 where

Receptor 3: 555 Battery Street, 545 Sansome Street

PPV refs @ 25 ft =		PPV@25ft
	Vibratory Roller	0.21
	Caisson Drill	0.089
	Truck(loaded)	0.076

Enter distance = 60 Adjacent Buildings

Resultant PPV =		
	Vibratory Roller	0.056481
	Caisson Drill	0.023937
	Truck(loaded)	0.020441

	Lv@25 ft
Vibratory Roller	94
Caisson Drill	87
Truck(loaded)	86

Formula from FTA 2006 = Lv(D) = Lv(25 ft) – 30log(D/25)

Resultant Lv =		
	Vibratory Roller	82.59366
	Caisson Drill	75.59366
	Truck(loaded)	74.59366

Formula from FTA, 2018 = PPVequip = PPVref x (25/D)^1.5 where

Receptor 4: 617-619 and 630 Sansome Street

PPV refs @ 25 ft =		PPV@25ft
	Vibratory Roller	0.21
	Caisson Drill	0.089
	Truck(loaded)	0.076

Enter distance = 200 Adjacent Buildings

Resultant PPV =		
	Vibratory Roller	0.009281
	Caisson Drill	0.003933
	Truck(loaded)	0.003359

	Lv@25 ft
Vibratory Roller	94
Caisson Drill	87
Truck(loaded)	86

Formula from FTA 2006 = Lv(D) = Lv(25 ft) – 30log(D/25)

Resultant Lv =		
	Vibratory Roller	66.9073
	Caisson Drill	59.9073
	Truck(loaded)	58.9073

530 Sansome/447 Battery Stationary Mechanical Equipment Noise Analysis

Mechanical Equipment		Location	Reference SPL (dBA)	Reference Distance (feet)	Distance to project site boundary (feet)				dBA at project site boundary				Combined Noise Level (dBA)				Standard	dBA Reduction Needed			
					North	East	South	West	North	East	South	West	North	East	South	West	dBA	North	East	South	West
Hotel Tower/530 Sansome - Section 2909(b) Compliance																					
Air Cooled Heat Pump Chiller	ASHP-R-1	Roof	62	30	53.6	158.1	22.7	9.6	57.0	47.6	64.4	71.9	71.9	74.7	71.9	73.1	62.0	9.9	12.7	9.9	11.1
	ASHP-R-2	Roof	62	30	53.6	141.6	22.7	27.5	57.0	48.5	64.4	62.8									
	ASHP-R-3	Roof	60	30	53.6	123.8	28.9	45.4	55.0	47.7	60.3	56.4									
	ASHP-R-4	Roof	60	30	31.6	138.9	59.1	20.6	59.5	46.7	54.1	63.3									
Cooling Towers	CT-R-1	Roof	85	5	34.4	30.9	42.6	133.4	68.3	69.2	66.4	56.5									
	CT-R-2	Roof	85	5	34.4	19.3	42.6	145.8	68.3	73.3	66.4	55.7									

Mechanical Equipment		Location	Reference SPL (dBA)	Reference Distance (feet)	Distance to point 25 feet from equipment closest to project boundary site boundary (feet)				dBA point 25 feet from equipment closest to project boundary site boundary				Combined Noise Level (dBA)				Standard	dBA Reduction Needed			
					North	East	South	West	North	East	South	West	North	East	South	West	dBA	North	East	South	West
Fire Station/447 Battery - Section 2909(c) Compliance																					
Heat Recovery Ventilator	HRV-R-1	Roof/General Ventilation & Exhaust	76	3.3	27.0	50.4	48.0	27.8	57.3	51.8	52.3	57.0									
Rooftop Packaged Makeup Air Unit (Heat Pump)	MAU-R-1	Roof/Kitchen Makeup Air	71	3.3	33.7	39.8	39.7	39.5	51.2	49.7	49.7	49.8									
	EF-R-1	Roof/App Bay	67	3.3	52.3	31.3	25.7	52.1	43.0	47.4	49.2	43.0									
	EF-R-2	Roof/Parking Garage	69	3.3	49.0	25.0	29.0	58.1	45.6	51.4	50.1	44.1									
Fans	EF-R-3	Roof/Kitchen Makeup Air	59	3.3	53.0	53.9	25.0	29.2	34.9	34.7	41.4	40.1	61.6	60.5	61.4	60.8	64.0	-2.4	-3.5	-2.6	-3.2
	EF-R-4	Roof/Fuel Storage	69	3.3	35.0	59.5	43.3	25.0	48.5	43.9	46.6	51.4									
	TES-R-1	Roof/Tailpipe Exhaust System	76	3.3	52.3	37.0	25.7	46.2	52.0	55.0	58.2	53.1									
	SF-R-1	Roof/App Bay Makeup	74	3.3	29.0	32.8	39.7	47.6	55.5	54.5	52.8	51.3									
VRF Outdoor Condensing Unit	VRF-R-1	Roof	69	3.3	25.0	39.8	52.3	37.0	51.4	47.4	45.0	48.0									

Mechanical Equipment		Location	Reference SPL (dBA)	Reference Distance (feet)	Distance to 424 Clay Street boundary (feet)				Outdoor dBA at 424 Clay Street boundary				Combined Outdoor Noise Level (dBA)				Standard	Combined Interior Noise Level (dBA)			
					North	East	South	West	North	East	South	West	North	East	South	West	dBA	North	East	South	West
Hotel Tower/530 Sansome - Section 2909(d) Compliance																					
Air Cooled Heat Pump Chiller	ASHP-R-1	Roof	62	30			52.7				57.1										
	ASHP-R-2	Roof	62	30			52.7				57.1										
	ASHP-R-3	Roof	60	30			58.9				54.1				66.4		45.0			41.4	
	ASHP-R-4	Roof	60	30			89.1				50.5										
Cooling Towers	CT-R-1	Roof	85	5			72.6				61.8										
	CT-R-2	Roof	85	5			72.6				61.8										

Mechanical Equipment		Location	Reference SPL (dBA)	Reference Distance (feet)	Distance to 530 Sansome Street boundary (feet)				Outdoor dBA at 530 Sansome St boundary				Combined Outdoor Noise Level (dBA)				Standard	Combined Interior Noise Level (dBA)			
					North	East	South	West	North	East	South	West	North	East	South	West	dBA	North	East	South	West
Fire Station/447 Battery - Section 2909(d) Compliance																					
Heat Recovery Ventilator	HRV-R-1	Roof/General Ventilation & Exhaust	76	3.3				15.5				62.1									
Rooftop Packaged Makeup Air Unit (Heat Pump)	MAU-R-1	Roof/Kitchen Makeup Air	71	3.3				27.1				53.0									
	EF-R-1	Roof/App Bay	67	3.3				39.8				45.4									
	EF-R-2	Roof/Parking Garage	69	3.3				45.8				46.1									
Fans	EF-R-3	Roof/Kitchen Makeup Air	59	3.3				16.9				44.8				65.1	45.0				40.1
	EF-R-4	Roof/Fuel Storage	69	3.3				12.7				57.3									
	TES-R-1	Roof/Tailpipe Exhaust System	76	3.3				33.8				55.8									
	SF-R-1	Roof/App Bay Makeup	74	3.3				35.3				53.9									
VRF Outdoor Condensing Unit	VRF-R-1	Roof	69	3.3				24.7				51.5									

HEAT RECOVERY VENTILATOR

DESIGNATION	LOCATION / SERVICE	MODEL NUMBER	SUPPLY		EXHAUST		EMERGENCY POWER? (Y/N)	NOTES
			CFM	ESP (IN. WG)	CFM	ESP (IN. WG)		
HRV-R-1	ROOF / GENERAL VENTILATION & EXHAUST	GREENHECK OR SIMILAR	4,100	1.5	4,100	1.5	Y	ALL

NOTES:
1. MERV-8 & MERV-15 OUTDOOR AIR AND MERV-8 EXHAUST AIR FILTERS.

ROOFTOP PACKAGED MAKEUP AIR UNIT (HEAT PUMP)

DESIGNATION	LOCATION / SERVICES	MANUF. MODEL NUMBER	TOTAL AIRFLOW CFM	MINIMUM OUTSIDE AIR CFM	SUPPLY FAN					DX COIL (COOLING)				DX COIL(HEATING)		REFRIGERANT	MERV RATING	EER/ COP	ELECTRICAL DATA				VFD (Y/N)	OPERATING WEIGHT (LBS)	NOTES
					CFM	EXT. S.P. (IN. WG.)	RPM	BHP	MOTOR HP	EAT		LAT		EAT DB (°F)	LAT DB (°F)				VOLTAGE/ PHASE	UNIT FLA	UNIT MOCP	EMERG. POWER (Y/N)			
										DB (°F)	WB (°F)	DB (°F)	WB (°F)												
MAU-R-1	ROOF / KITCHEN MAKEUP AIR	DAIKIN OR SIMILAR	1,500	1,500		0.75				83		75		38	70		13					Y	Y		

NOTES:

FANS

DESIGNATION	LOCATION/ SERVICE	MANUF. MODEL NUMBER	CFM	STATIC PRESSURE (IN. WG.)	BHP	MOTOR		EMERG. POWER (Y/N)	VAR. SPEED (Y/N)	OPERATING WEIGHT (LBS)	NOTES
						HP	VOLTAGE/ PHASE				
EF-R-1	ROOF / APP BAY	GREENHECK OR SIMILAR	3,200	1.5				Y	Y		
EF-R-2	ROOF / PARKING GARAGE	GREENHECK OR SIMILAR	3,700	1.5				Y	Y		
EF-R-3	ROOF / KITCHEN	GREENHECK OR SIMILAR	1,500	0.75				Y	Y		
EF-R-4	ROOF / FUEL STORAGE	GREENHECK OR SIMILAR	460	1.0				Y	Y		
TES-R-1	ROOF / TAILPIPE EXHAUST SYSTEM	NEDERMAN OR SIMILAR	2,800	5.0				Y	Y		1
SF-R-1	ROOF / APP BAY MAKEUP	GREENHECK OR SIMILAR	6,000	1.2				Y	Y		2

NOTES:
1. (4) RAILS CONNECTED TO SINGLE ROOFTOP FAN
2. MAKEUP AIR UNIT w/ MERV-13 FILTER. GREENHECK MSX OR SIMILAR

VARIABLE REFRIGERANT FLOW (VRF) - OUTDOOR CONDENSING UNIT

TAG	MANUFACTURER	TOTAL COOLING CAPACITY (TONS)	TOTAL HEATING CAPACITY (MBH)	AMBIENT TEMP (F)	REFRIGERANT	ELECTRICAL DATA				REFRIGERANT CHARGE (LBS)	EFFICIENCY (EER)	DIMENSIONS (HxWxD)	OPER. WEIGHT (LBS)	NOTES
						MCA	MOCP	VOLTAGE / PHASE	E-POWER					
VRF-R-1	DAIKIN OR SIMILAR	26						208/3	Y					1

NOTES:
1. HEAT RECOVERY UNIT CAPABLE OF SIMULTANEOUS HEATING AND COOLING.

VRF FAN COIL UNITS

DESIGNATION	LOCATION / SERVICE	MODEL NUMBER	CFM	OA CFM	ESP (IN. WG.)	COOLING						HEATING			ELECTRICAL DATA			OPER. WEIGHT (LBS)	NOTES
						TOTAL CAPACITY (MBH)	SENSIBLE (MBH)	DB (°F)	WB (°F)	DB (°F)	WB (°F)	CAPACITY (MBH)	EAT (°F)	LAT (°F)	MCA (A)	VOLTAGE/ PHASE	EMERG. POWER (Y/N)		
FCU-B1-1	DW PUMP AND BACKFLOW	DAIKIN OR SIMILAR				12									0.4	208 / 1	Y		1
FCU-B1-2	MPOE	DAIKIN OR SIMILAR				12									0.4	208 / 1	Y		1
FCU-B1-3	FIRE PUMP	DAIKIN OR SIMILAR				18									0.5	208 / 1	Y		1
FCU-1-1	DIV. CHIEF OFFICE	DAIKIN OR SIMILAR				7									0.4	208 / 1	Y		1
FCU-1-2	COMM ROOM	DAIKIN OR SIMILAR				12									0.8	208 / 1	Y		1
FCU-2-1	DINING + KITCHEN	DAIKIN OR SIMILAR				36									2.5	208 / 1	Y		1
FCU-2-2	DAY ROOM	DAIKIN OR SIMILAR				24									1.8	208 / 1	Y		1
FCU-3-1	OFFICER SUITE 1	DAIKIN OR SIMILAR				18									1.6	208 / 1	Y		1
FCU-3-2	OFFICER SUITE 2	DAIKIN OR SIMILAR				18									1.6	208 / 1	Y		1
FCU-3-3	OFFICER SUITE 3	DAIKIN OR SIMILAR				18									1.6	208 / 1	Y		1
FCU-3-4	OFFICER SUITE 4	DAIKIN OR SIMILAR				18									1.6	208 / 1	Y		1
FCU-3-5	MAIN DORM	DAIKIN OR SIMILAR				36									2.5	208 / 1	Y		1
FCU-4-1	LIBRARY	DAIKIN OR SIMILAR				18									1.6	208 / 1	Y		1
FCU-4-2	STUDY	DAIKIN OR SIMILAR				18									1.6	208 / 1	Y		1
FCU-4-3	FITNESS	DAIKIN OR SIMILAR				36									2.5	208 / 1	Y		1

NOTES:
1. PROVIDE MANUFACTURER'S FILTER BOX. PROVIDE 2" MERV-13 FILTER.

ELECTRIC UNIT HEATER

DESIGNATION	LOCATION / SERVICE	MANUF. MODEL NUMBER	CFM	ELECTRICAL				WEIGHT (LBS)	NOTES
				CAPACITY (KW)	AMPS	VOLTAGE/PHASE	EMERG. POWER (Y/N)		
EUH-1-1	T.O. DRYING	KING OR SIMILAR		1.2		120 / 1	Y		1

NOTES:
1. PROVIDE WITH WALL-SWITCH.

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Meyers + SOM

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DRAWING TITLE

MECHANICAL SCHEDULES

DRAWING NUMBER

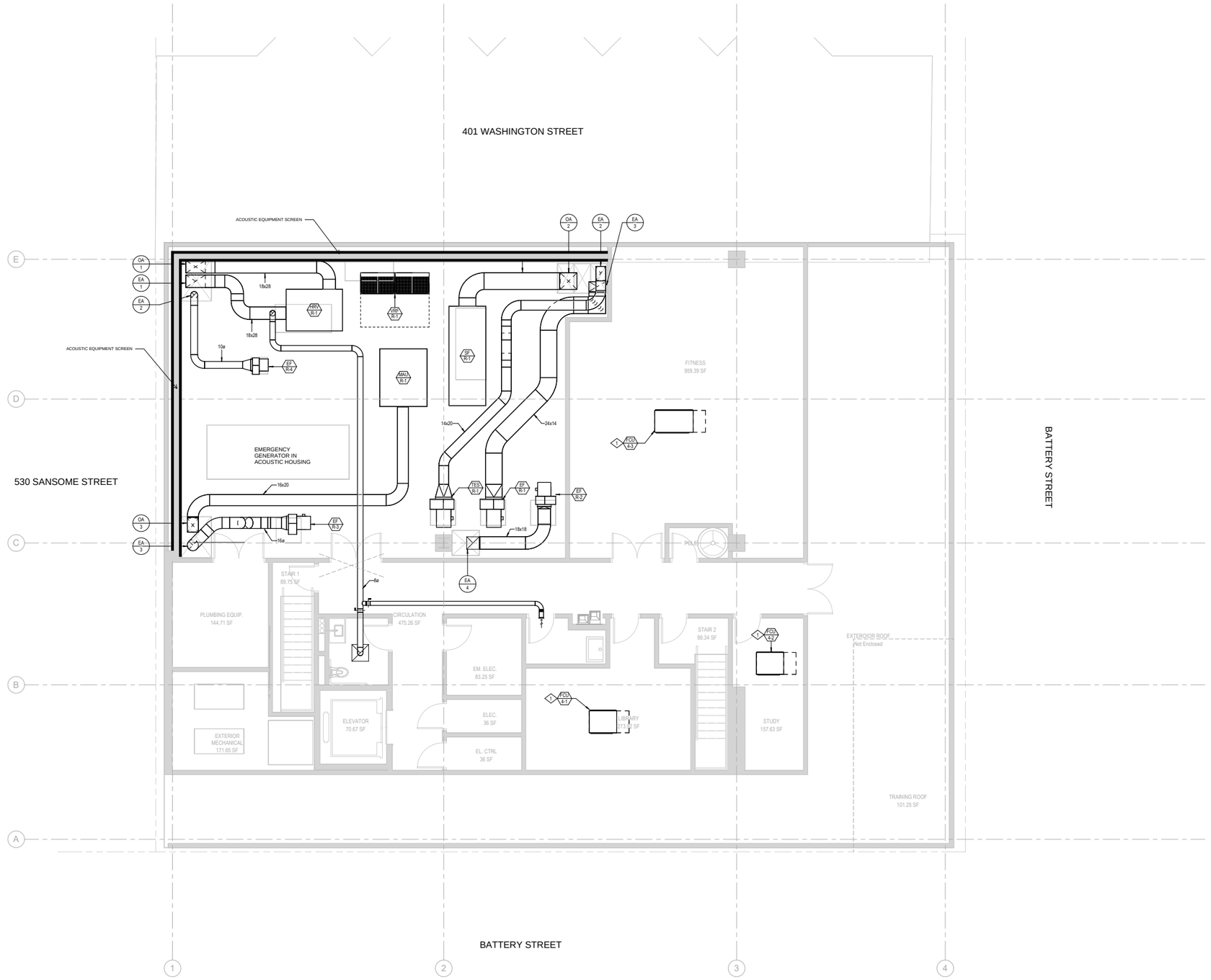
M0.02

GENERAL NOTES

A. REFER TO THE BASIS OF DESIGN REPORT IN CONJUNCTION WITH THE DRAWINGS FOR THE COMPLETE SCOPE OF WORK.

NUMBERED NOTES

1 OUTSIDE AIR FROM OA-1 DUCTED OT RETURN SIDE OF FAN COIL. FAN COIL SUPPLY AIR DUCTED TO CEILING DIFFUSERS THROUGHOUT SPACE.



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MECHANICAL LEVEL 04

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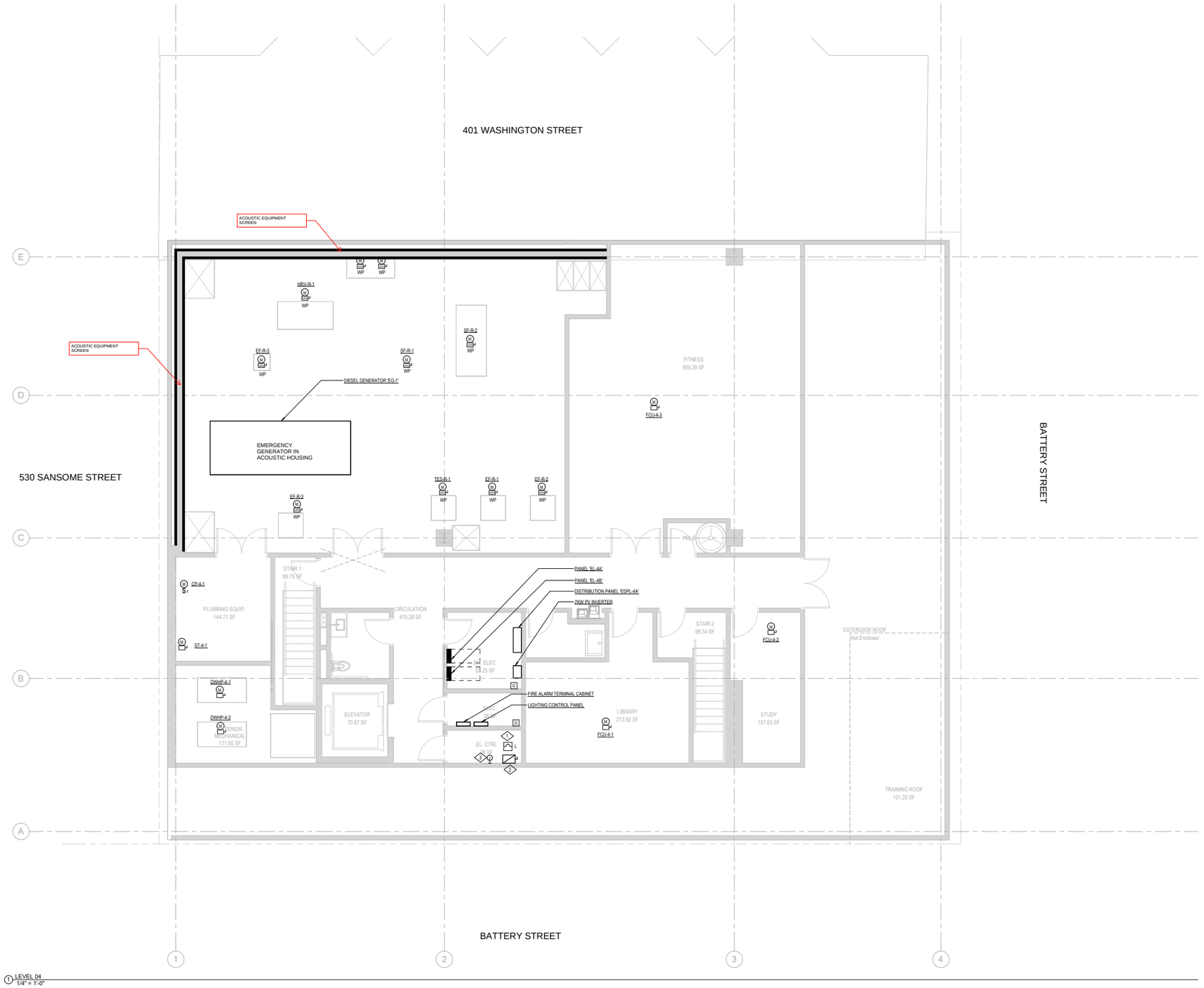
NUMBERED NOTES

1. PROVIDE DEDICATED EMERGENCY CIRCUIT FOR ELEVATOR CAB FAN LIGHTS. PROVIDE LOCAKBLE BREAKER.
2. PROVIDE LOCKABLE FUSED DISCONNECT SWITCH FOR ELEVATOR. VERIFY FUSE AND WIRE SIZE WITH ELEVATOR CONTRACTOR.
3. PROVIDE DEDICATED EMERGENCY CIRCUIT FOR SECURITY SYSTEM AND/OR ELEVATOR COMMUNICATION SYSTEM.



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BACKFLOW PREVENTER SCHEDULE

ITEM	DESCRIPTION	SYSTEM	LOCATION	SIZE	DESIGN FLOW (GPM)	PRESSURE DROP (PSI)	MANUFACTURER	MODEL	REMARKS
RPBP-B-1	REDUCED PRESSURE BACKFLOW PREVENTER	DOMESTIC WATER	-	6"	-	-	FEBCO	LF880V-FS	-
DCVA-B-1	DOUBLE CHECK VALVE ASSEMBLY	FIRE WATER	-	6"	750	-	WATTS	757BFG	VERTICAL DOUBLE CHECK VALVE ASSEMBLY. PROVIDE BUTTERFLY VALVES

TRAP PRIMER VALVE SCHEDULE

ITEM	DESCRIPTION	REMARKS
TPV	TRAP PRIMER VALVE	PRESSURE ACTIVATED
TPV-2	TRAP PRIMER VALVE	ELECTRIC

SAND INTERCEPTOR SCHEDULE

ITEM	DESCRIPTION	CAPACITY (GAL)	MANUFACTURER	MODEL	REMARKS
SI-G-1	SAND INTERCEPTOR	-	-	-	-

PRESSURE REDUCING VALVE SCHEDULE

ITEM	DESCRIPTION	LOCATION	SIZE	FLOW (GPM)	PRESSURE		MANUFACTURER	MODEL	REMARKS
					INLET (PSI)	OUTLET (PSI)			
PRV-G-1	PRESSURE REDUCING VALVE	GARAGE LEVEL	-	-	-	-	-	-	-
PRV-G-2	PRESSURE REDUCING VALVE	GARAGE LEVEL	-	-	-	-	-	-	-
PRV-6-3	PRESSURE REDUCING VALVE	LEVEL 6	-	-	-	-	-	-	-
PRV-6-4	PRESSURE REDUCING VALVE	LEVEL 6	-	-	-	-	-	-	-

PLUMBING FIXTURE CONNECTION SCHEDULE (PUBLIC) - 2022 CPC

ITEM	DESCRIPTION	ROUGH-IN SIZE (INCHES)								NOTES
		W	DFU (PUBLIC)	V	DCW	DCWFU (PUBLIC)	DHW	DHWFU (PUBLIC)	FLOW RATE	
WC-1	WATER CLOSET	4"	4	2"	1-1/4"	5	-	-	1.28 GPF	WALL HUNG, SENSOR FLUSH VALVE.
WC-2	WATER CLOSET (ADA)	4"	4	2"	1-1/4"	5	-	-	1.28 GPF	WALL HUNG, SENSOR FLUSH VALVE.
UR-1	URINAL	2"	2	1-1/2"	1"	4	-	-	0.125 GPF	WALL HUNG, SENSOR FLUSH VALVE.
UR-2	URINAL (ADA)	2"	2	1-1/2"	1"	4	-	-	0.125 GPF	WALL HUNG, SENSOR FLUSH VALVE.
L-1	LAVATORY (ADA)	2"	2	1-1/2"	1/2"	0.75	1/2" (105°F)	0.75	0.5 GPF	-
SH-1	SHOWER (3" TRAP ARM)	3"	6	2"	3/4"	1.5	3/4" (120°F)	1.5	1.75 GPM	-
SH-2	SHOWER (ADA) (3" TRAP ARM)	3"	6	2"	3/4"	1.5	3/4" (120°F)	1.5	1.75 GPM	-
SK-1	KITCHEN SINK (ADA) & FAUCET (ADA) TRAINING AREA & FLEX ROOM	2"	2	1-1/2"	1/2"	1.2	1/2" (120°F)	1.2	1.5 GPM	-
DF-1	DRINKING FOUNTAIN (ADA) (BI LEVEL)	2"	0.5	1-1/2"	1/2"	0.5	-	-	-	-
MR-1	MOP RECEPTOR	3"	3	2"	3/4"	2.25	3/4" (120°F)	2.25	-	-
WM-1 (FBO)	CLOTHES WASHER	3"	3	-	1/2"	4	-	-	-	APPLIANCE PROVIDED BY OTHERS. PLUMBER TO MAKE FINAL CONNECTION.
DW-1 (FBO)	DISHWASHER (UNDERCOUNTER)	2"	2	1-1/2"	3/4"	1.5	3/4"	1.5	-	APPLIANCE PROVIDED BY OTHERS. PLUMBER TO MAKE FINAL CONNECTION.

PLUMBING DRAIN SCHEDULE

ITEM	DESCRIPTION	CONNECTIONS				LOCATION	REMARKS
		SAN	V	ST	OST		
RD-1	ROOF DRAIN	-	-	3"	-	ROOF	-
ORD-1	OVERFLOW ROOF DRAIN	-	-	-	3"	ROOF	-
RR-1	ROOF RECEPTOR	3"	2"	-	-	ROOF	-
FD-1	FLOOR DRAIN 4" TRAP ARM (RESTROOMS, SHOWER AREAS)	4"	2"	-	-	VARIES	-
FD-2	FLOOR DRAIN 4" TRAP ARM (SHOWER STALL)	4"	2"	-	-	VARIES	-
FSK-1	FLOOR SINK 4" TRAP ARM	4"	2"	-	-	VARIES	INSTALL WITH TRAP PRIMER CONNECTION, VANDAL PROOF, ADJUSTABLE STRAINER, STAINLESS STEEL STRAINER.
TD-1	TRENCH DRAIN 4" TRAP ARM	4"	2"	-	-	GARAGE RAMP / APPARATUS BAY	-
GD-1	GARAGE DRAIN	-	-	-	-	VARIES	-

PUMP SCHEDULE

ITEM	DESCRIPTION	LOCATION	QUANTITY	FLOW (GPM)	TDH (FT)	MOTOR				MANUFACTURER	MODEL	REMARKS
						HP	RPM	V	PH			
DWBP-B-1	DOMESTIC WATER BOOSTER PUMP	DW PUMP AND BACKFLOW ROOM	1	-	-	5	-	208	3	GRUNDFOS	MPC-E 2CRE	-
DWBP-B-2	DOMESTIC WATER BOOSTER PUMP	DW PUMP AND BACKFLOW ROOM	1	-	-	5	-	208	3	GRUNDFOS	MPC-E 2CRE	-
CP	HOT WATER CIRCULATING PUMP	ROOF	1	-	-	-	-	120	1	GRUNDFOS	MAGNA3	-
FP-B-1	INLINE FIRE PUMP	FIRE PUMP ROOM	1	750	-	40	1770	208	3	PENTAIR	4-383-13	-
JP-B-1	JOCKEY PUMP	**FIRE PUMP ROOM**	1	7.5	-	3	-	208	3	PENTAIR	PMV1-17	-
FOP-1-1	FUEL OIL PUMP	LEVEL 1	1	-	-	-	-	208	3	PREFERRED UTILITIES	-	-
SE-B-1	SUBMERSIBLE SEWAGE EJECTOR PUMP	DW PUMP AND BACKFLOW ROOM	1	-	-	5.5	-	208	3			
SE-B-2	SUBMERSIBLE SEWAGE EJECTOR PUMP	DW PUMP AND BACKFLOW ROOM	1	-	-	5.5	-	208	3			

ELECTRIC WATER HEATER SCHEDULE

ITEM	DESCRIPTION	LOCATION	DEMAND (GPM)	CAPACITY (GAL)	ELECTRICAL			MANUFACTURER	MODEL	REMARKS
					KW	V	PH			
DWHP-R-1	DOMESTIC WATER HEAT PUMP	ROOF	-	-	7.9	208	3	NYLE	C90A (LOW GWP) REFRIGERANT TYPE: R-513A	STACKING FRAME PART NUMBER: 65330068 (OPTIONAL) CONTROL PANEL: NYLE MASTER CONTROL PANEL BMS GATEWAY PART NUMBER: 65330015
DWHP-R-2	DOMESTIC WATER HEAT PUMP	ROOF	-	-	7.9	208	3	NYLE	C90A (LOW GWP) REFRIGERANT TYPE: R-513A	STACKING FRAME PART NUMBER: 65330068 (OPTIONAL) CONTROL PANEL: NYLE MASTER CONTROL PANEL BMS GATEWAY PART NUMBER: 65330015
ST-R-1	ELECTRIC WATER HEATER (SWING TANK)	ROOF	-	119	36	208	3	NYLE	NSW119-A-2A	-

STORAGE TANK SCHEDULE

ITEM	DESCRIPTION	LOCATION	STORAGE	MANUFACTURER	MODEL	REMARKS
HWST-R-1	HOT WATER STORAGE TANK	ROOF	1250	NYLE	NWHSS-1250	PROVIDE UNIVERSAL TANK SENSOR PART NUMBER: 65330072

THERMOSTATIC MIXING VALVE SCHEDULE

ITEM	DESCRIPTION	LOCATION	DEMAND (GPM)	MIN. FLOW (GPM)	PRESSURE DROP (PSI)	INLET (IN.)		OUTLET (IN.)	MANUFACTURER	MODEL	REMARKS
						CW	HW (140°)	HW (120°)			
TMV-22-1	THERMOSTATIC MIXING VALVE	ROOF	-	-	-	-	-	-	LEONARD	-	-

HYDRO PNEUMATIC TANK & EXPANSION TANK SCHEDULE

ITEM	DESCRIPTION	LOCATION	VOLUME (GAL.)	DIMENSIONS	MANUFACTURER	MODEL	REMARKS
ET-22-1	EXPANSION TANK	ROOF	-	-	AMTROL	-	-
HT-22-1	HYDROPNEUMATIC TANK (BOOSTER PUMP)	ROOF	80	-	AMTROL	WX-448C	-

GASOLINE AND DIESEL STORAGE TANK SCHEDULE

ITEM	DESCRIPTION	LOCATION	STORAGE	MANUFACTURER	MODEL	REMARKS
GST-B1-1	GASOLINE STORAGE TANK	FUEL STORAGE ROOM (LEVEL B1)	1000	ENVIROSAFE	CONTRACTOR READY	-
GST-B1-1	DIESEL STORAGE TANK	FUEL STORAGE ROOM (LEVEL B1)	3000	ENVIROSAFE	CONTRACTOR READY	-

GASOLINE AND DIESEL SYSTEM EQUIPMENT

ITEM	DESCRIPTION	LOCATION	PORTS SIZES	MANUFACTURER	MODEL	REMARKS
-	REMOTE SPILL CONTAINER	LEVEL 1 (EXTERIOR)	2" & 2"	MORRISON AND BROTHERS	P-515-2200 AC	-
GAS-1	GASOLINE DISPENSER	APPARATUSES BAY	-	WAYNE	A-WAYNE DISP 1P1H1P/PRDCT	PROVIDE: 3/4 IN X 25FT ASSEMBLY
D-1	GASOLINE DISPENSER	APPARATUSES BAY	-	WAYNE	A-WAYNE DISP 1P1H1P/PRDCT	PROVIDE:1" X 25' ASSEMBLE

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WATER-COOLED CHILLER SCHEDULE

DESIGNATION	LOCATION	TYPE	REFRIGERANT	CAPACITY (TONS)	EVAPORATOR (COOLING ONLY MODE)							CONDENSER (COOLING ONLY MODE)						
					FOULING FACTOR	NO. OF PASSES	EWT (ºF)	LWT (ºF)	GPM	PD (FT H20)	PRESS. RATING (PSIG)	FOULING FACTOR	NO. OF PASSES	EWT (ºF)	LWT (ºF)	GPM	PD (FT H20)	PRESS. RATING (PSIG)
HRC-B1-1	CHILLER ROOM	CENTRIFUGAL - HEAT RECOVERY	NOTE 1	520			60	45	832		300			77	92	1,040		300
HRC-B1-2	CHILLER ROOM	CENTRIFUGAL - HEAT RECOVERY	NOTE 1	520			60	45	832		300			77	92	1,040		300

DESIGNATION	EVAPORATOR (HEAT RECOVERY MODE)							CONDENSER (HEAT RECOVERY MODE)							PERFORMANCE DATA (COOLING ONLY)		PERFORMANCE DATA (HEAT RECOVERY)		ELECTRICAL DATA			EMERGENCY POWER (Y/N)	VFD (Y/N)	OPERATING WEIGHT (LBS)	NOTES
	FOULING FACTOR	NO. OF PASSES	EWT (ºF)	LWT (ºF)	GPM	PD (FT H20)	PRESS. RATING (PSIG)	FOULING FACTOR	NO. OF PASSES	EWT (ºF)	LWT (ºF)	GPM	PD (FT H20)	PRESS. RATING (PSIG)	FULL LOAD (KW/TON)	NPLV.IP (KW/TON)	FULL LOAD (KW/TON)	IPLV (KW/TON)	MCA	MOCP	VOLTAGE/ PHASE				
HRC-B1-1			60	45	832		300			100	115	1,040		300					750		480 / 3		Y		
HRC-B1-2			60	45	832		300			100	115	1,040		300					750		480 / 3		Y		

NOTES:
1. PROVIDE NEXT-GEN, LOW GWP REFRIGERANT

COOLING TOWER SCHEDULE

DESIGNATION	LOCATION / SERVICE	AMBIENT WET BULB (°F)	EWT (°F)	LWT (°F)	GPM	FANS				EMERGENCY POWER (Y/N)	VAR. SPEED (Y/N)	OPERATING WEIGHT (LBS)	NOTES
						CFM	HP	RPM	VOLTAGE/ PHASE				
CT-1	ROOF	67.0	90	75	1,150		30		480 / 3	N	Y		ALL
CT-2	ROOF	67.0	90	75	1,150		30		480 / 3	N	Y		ALL

NOTES:
1. SUPPLEMENTAL STRUCTURAL STEEL FOR SUPPORT TO BE PROVIDED PER STRUCTURAL ENGINEER DRAWINGS
2. PROVIDE WITH LOUVER FACED PLATFORM FOR COOLING TOWER MAINTENANCE.

AIR COOLED HEAT PUMP CHILLER SCHEDULE

DESIGNATION	LOCATION	REFRIGERANT	HEATING CAPACITY (MBH)	COOLING CAPACITY (TONS)	HEATING PERFORMANCE							COOLING PERFORMANCE								ELECTRICAL				VFD (Y/N)	OPER. WEIGHT (LBS)	NOTES
					EWT (ºF)	LWT (ºF)	GPM	PD (FT H2O)	KW	COP	AMBIENT DRY BULB (ºF)	EWT (ºF)	LWT (ºF)	GPM	PD (FT H2O)	KW	EER	NPLV.IP	AMBIENT DRY BULB (ºF)	VOLTAGE/ PHASE	MCA	MOCP	EMERGENCY POWER (Y/N)			
ASHP-R-1	ROOF	NOTE 3	1,408	132	100	115	226					60	45	232						480 / 3	272			Y		1,2
ASHP-R-2	ROOF	NOTE 3	1,408	132	100	115	226					60	45	232						480 / 3	272			Y		1,2
ASHP-R-3	ROOF	NOTE 3	1,056	99	100	115	170					60	45	174						480 / 3	206			Y		1,2
ASHP-R-4	ROOF	NOTE 3	1,056	99	100	115	170					60	45	174						480 / 3	206			Y		1,2

NOTES:
1. LISTED HEATING CAPACITY AND COP VALUES ARE TIME-AVERAGED AND ACCOUNT FOR THE LOSS OF CAPACITY DURING DEFROST CYCLE.
2. VFDs INTEGRAL TO UNIT
3. PROVIDE WITH NEXT-GEN, LOW GWP REFRIGERANT.

ELECTRIC WATER BOILER SCHEDULE

DESIGNATION	LOCATION/ SERVICE	OUTPUT CAPACITY (MBH)	CAPACITY (KW)	CONTROL STEPS	GPM	EWT (°F)	LWT (°F)	PRESS DROP (FT H2O)	FLA	VOLTAGE/ PHASE	EMERGENCY POWER (Y/N)	OPERATING WEIGHT (LBS)	NOTES
EBLR-B1-1	LEVEL B1	750	230		40	113	153			480 / 3			
EBLR-B1-2	LEVEL B1	750	230		40	113	153			480 / 3			

NOTES:

PUMP SCHEDULE

DESIGNATION	SERVICE	TYPE	SYSTEM GPM	PUMP GPM	HEAD (FT H2O)	CASING PRESSURE (PSIG)	RPM	MOTOR			EMERG. POWER	VFD	OPER. WEIGHT (LBS)	NOTES
								BRAKE HP	MOTOR HP	VOLTAGE/ PHASE				
CWP-B1-1	CONDENSER WATER (LOWER BLDG)		2,080	1,460	75	300			50	480 / 3		Y		1
CWP-B1-2	CONDENSER WATER (LOWER BLDG)			1,460	75	300			50	480 / 3		Y		1
CWP-15-1	CONDENSER WATER (UPPER BLDG)		2,080	1,460	100	300			60	480 / 3		Y		1
CWP-15-2	CONDENSER WATER (UPPER BLDG)			1,460	100	300			60	480 / 3		Y		1
HWP-B1-1	HEATING HOT WATER (BOILERS)		80	60	30	150			2	480 / 3		Y		1
HWP-B1-2	HEATING HOT WATER (BOILERS)			60	30	150			2	480 / 3		Y		1
HWP-15-1	HEATING HOT WATER		350	245	75	150			10	480 / 3		Y		1
HWP-15-2	HEATING HOT WATER			245	75	150			10	480 / 3		Y		1
HWP-R-1	HEATING HOT WATER		800	280	50	150			10	480 / 3		Y		1
HWP-R-2	HEATING HOT WATER			280	50	150			10	480 / 3		Y		1
HWP-R-3	HEATING HOT WATER			280	50	150			10	480 / 3		Y		1
HWP-R-4	HEATING HOT WATER		800	560	75	150			25	480 / 3		Y		1
HWP-R-5	HEATING HOT WATER			560	75	150			25	480 / 3		Y		1
CHWP-B1-1	CHILLED WATER		1,670	1,165	75	300			50	480 / 3		Y		1
CHWP-B1-2	CHILLED WATER			1,165	75	300			50	480 / 3		Y		1
CHWP-15-1	CHILLED WATER		1,310	920	75	300			30	480 / 3		Y		1
CHWP-15-2	CHILLED WATER			920	75	300			30	480 / 3		Y		1
CHWP-R-1	CHILLED WATER		820	290	50	150			10	480 / 3		Y		1
CHWP-R-2	CHILLED WATER			280	50	150			10	480 / 3		Y		1
CHWP-R-3	CHILLED WATER			290	50	150			10	480 / 3		Y		1
CHWP-R-4	CHILLED WATER		820	575	75	150			25	480 / 3		Y		1
CHWP-R-5	CHILLED WATER			575	75	150			25	480 / 3		Y		1

NOTES:
1. PUMP SETS SIZED TO MAINTAIN 70% OF SYSTEM GPM WITH LOSS OF ONE PUMP

PLATE AND FRAME HEAT EXCHANGER SCHEDULE

DESIGNATION	LOCATION / SERVICE	SURFACE AREA (SF)	SIDE 1							SIDE 2							OPERATING WEIGHT (LBS)	NOTES
			SYSTEM GPM	GPM	EWT (°F)	LWT (°F)	PD (PSIG)	RATED PRESSURE (PSIG)	FOULING FACTOR	SYSTEM GPM	GPM	EWT (°F)	LWT (°F)	PD (PSIG)	RATED PRESSURE (PSIG)	FOULING FACTOR		
HX-15-1	LEVEL 15 / CW PRESSURE BREAK		2,080	730	75	90		300		2,080	730	92	77		150			
HX-15-2	LEVEL 15 / CW PRESSURE BREAK			730	75	90		300			730	92	77		150			
HX-15-3	LEVEL 15 / CW PRESSURE BREAK			730	75	90		300			730	92	77		150			
HX-15-4	LEVEL 15 / HHW PRESSURE BREAK		350	125	115	100		300		350	125	98	113		150			
HX-15-5	LEVEL 15 / HHW PRESSURE BREAK			125	115	100		300			125	98	113		150			
HX-15-6	LEVEL 15 / HHW PRESSURE BREAK			125	115	100		300			125	98	113		150			
HX-15-7	LEVEL 15 / CHW PRESSURE BREAK		1,310	460	45	60		300		1,310	460	62	47		150			
HX-15-8	LEVEL 15 / CHW PRESSURE BREAK			460	45	60		300			460	62	47		150			
HX-15-9	LEVEL 15 / CHW PRESSURE BREAK			460	45	60		300			460	62	47		150			

NOTES:
1. HEAT EXCHANGER SETS SIZED TO MAINTAIN 70% OF SYSTEM GPM WITH LOSS OF ONE HX

BUFFER TANK SCHEDULE

DESIGNATION	LOCATION/SERVICE	TANK VOLUME (GALLONS)	PRESS. RATING (PSIG)	DIA. (INCHES)	HEIGHT (INCHES)	SHIPPING WEIGHT (LBS)	OPERATING WEIGHT (LBS)	NOTES
CHWT-R-1	ROOF / CHILLED WATER	5,000	150					1, 2, 3, 4
HWT-R-1	ROOF / HEATING HOT WATER	5,000	150					1, 2, 3, 4

NOTES:
1. PROVIDE TANK WITH EXTERNAL R-16 INSULATION.
2. PROVIDE PIPING CONNECTIONS AND TEMPERATURE SENSOR CONNECTIONS AS SHOWN ON SCHEMATIC DIAGRAM.
3. PROVIDE INTERNAL STEEL BAFFLES TO SEPARATE DIFFERENT HW TEMPERATURE LOOPS AND MAXIMIZE STRATIFICATION IN TANK.
4. PROVIDE HOUSEKEEPING PAD TO SUPPORT TANK.

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AIR HANDLING UNITS

DESIGNATION	LOCATION / SERVICE	TOTAL AIFLOW CFM	MINIMUM OUTSIDE AIR CFM	SUPPLY FAN CFM	SUPPLY FAN EXT. S.P. (IN. WG.)	SUPPLY FAN RPM	SUPPLY FAN BHP	SUPPLY FAN MOTOR HP	SUPPLY FAN ELECTRICAL DATA VOLTAGE/PHASE	SUPPLY FAN ELECTRICAL DATA FLA	RETURN FAN CFM	RETURN FAN EXT. S.P. (IN. WG.)	RETURN FAN RPM	RETURN FAN BHP	RETURN FAN MOTOR HP	RETURN FAN ELECTRICAL DATA VOLTAGE/PHASE	RETURN FAN ELECTRICAL DATA FLA	HYDRONIC COOLING COIL EAT DB (ºF)	HYDRONIC COOLING COIL EAT WB (ºF)	HYDRONIC COOLING COIL LAT DB (ºF)	HYDRONIC COOLING COIL LAT WB (ºF)	HYDRONIC COOLING COIL CAPACITY TOTAL (MBH)	HYDRONIC COOLING COIL CAPACITY SENSIBLE (MBH)	HYDRONIC COOLING COIL GPM	HYDRONIC COOLING COIL RUNOUT PIPE SIZE (IN)	HYDRONIC COOLING COIL EWT (ºF)	HYDRONIC COOLING COIL LWT (ºF)	HYDRONIC COOLING COIL P.D, AIR (IN. WG.)	HYDRONIC COOLING COIL P.D. WATER (FT. H2O)	FILTER FACE VELOCITY (FPM)	FILTER P.D. (IN. WG.)	FILTER MERV	EMERGENCY POWER (Y/N)	VFD (Y/N)	OPERATING WEIGHT (LBS)	NOTES
AHU-B1-1	BASEMENT / BASEMENT SPACE MAKEUP AIR	4,000	4,000	4,000	1.5			3.0	480 / 3		-	-			-	-																8/14	N	Y		
AHU-1-1	LEVEL 1 / OFFICE LOBBY	7,500	3,000	7,500	1.0			5	480 / 3		7,500	1.0			5	480 / 3																8/14	N	Y		
AHU-1-2	LEVEL 1 / HOTEL ARRIVAL/CAFÉ	10,000	5,000	10,000	1.0			7.5	480 / 3		10,000	1.0			10	480 / 3																8/14	N	Y		
AHU-2-1	LEVEL 2 / RESTAURANT	10,000	4,000	10,000	1.5			10	480 / 3		10,000	1.5			10	480 / 3																8/14	N	Y		
AHU-3-1	LEVEL 3 / HOTEL LOBBY/LOUNGE	10,000	5,000	10,000	1.5			10	480 / 3		10,000	1.0			10	480 / 3																8/14	N	Y		
AHU-3-2	LEVEL 3 / BALLROOM/PREFUNCTION	15,000	5,000	15,000	1.5			15	480 / 3		15,000	1.0			10	480 / 3																8/14	N	Y		
AHU-15-1	LEVEL 15 / FITNESS	20,000	5,000	20,000	2.0			25	480 / 3		20,000	1.5			20	480 / 3																8/14	N	Y		
AHU-15-2	LEVEL 15 / F&B/CONF	10,000	5,000	10,000	2.5			15	480 / 3		10,000	2.0			15	480 / 3																8/14	N	Y		
AHU-15-3	LEVEL 15 / SKY BAR	7,000	3,500	7,000	2.5			15	480 / 3		7,000	2.0			10	480 / 3																8/14	N	Y		
AHU-15-4	LEVEL 15 / OFFICE AMENITY	8,000	4,000	8,000	2.5			15	480 / 3		8,000	2.0			10	480 / 3																8/14	N	Y		
AHU-18-1	LEVEL 18 / OFFICE FLOOR	7,500	3,125	7,500	1.5			10	480 / 3		7,500	1.0			5	480 / 3																8/14	N	Y		
AHU-19-1	LEVEL 19 / OFFICE FLOOR	7,500	3,125	7,500	1.5			10	480 / 3		7,500	1.0			5	480 / 3																8/14	N	Y		
AHU-20-1	LEVEL 20 / OFFICE FLOOR	7,500	3,125	7,500	1.5			10	480 / 3		7,500	1.0			5	480 / 3																8/14	N	Y		
AHU-21-1	LEVEL 21 / OFFICE FLOOR	7,500	3,125	7,500	1.5			10	480 / 3		7,500	1.0			5	480 / 3																8/14	N	Y		
AHU-21-2	LEVEL 21 / OFFICE FLOOR (L22)	7,500	3,125	7,500	1.5			10	480 / 3		7,500	1.0			5	480 / 3																8/14	N	Y		
AHU-24-1	LEVEL 24 / OFFICE FLOOR	7,500	3,125	7,500	1.5			10	480 / 3		7,500	1.0			5	480 / 3																8/14	N	Y		
AHU-24-2	LEVEL 24 / OFFICE FLOOR (L23)	6,750	2,815	6,750	1.5			10	480 / 3		6,750	1.0			5	480 / 3																8/14	N	Y		
AHU-25-1	LEVEL 25 / OFFICE FLOOR	6,750	2,815	6,750	1.5			10	480 / 3		6,750	1.0			5	480 / 3																8/14	N	Y		
AHU-26-1	LEVEL 26 / OFFICE FLOOR	6,750	2,815	6,750	1.5			10	480 / 3		6,750	1.0			5	480 / 3																8/14	N	Y		
AHU-27-1	LEVEL 27 / OFFICE FLOOR	6,750	2,815	6,750	1.5			10	480 / 3		6,750	1.0			5	480 / 3																8/14	N	Y		
AHU-R-1	ROOF / OFFICE FLOORS (L28-41)	75,000	31,250	75,000	2.5			112	480 / 3		75,000	2.0			112	480 / 3																8/14	Y	Y		

NOTES:

MAKEUP AIR UNITS

DESIGNATION	LOCATION / SERVICE	TOTAL AIFLOW CFM	MINIMUM OUTSIDE AIR CFM	SUPPLY FAN CFM	SUPPLY FAN EXT. S.P. (IN. WG.)	SUPPLY FAN RPM	SUPPLY FAN BHP	SUPPLY FAN MOTOR HP	SUPPLY FAN ELECTRICAL DATA VOLTAGE/PHASE	SUPPLY FAN ELECTRICAL DATA FLA	HYDRONIC HEATING COIL EAT (ºF)	HYDRONIC HEATING COIL LAT (ºF)	HYDRONIC HEATING COIL CAPACITY (MBH)	FILTER FACE VELOCITY (FPM)	FILTER P.D. (IN. WG.)	FILTER MERV	EMERGENCY POWER (Y/N)	VFD (Y/N)	OPERATING WEIGHT (LBS)	NOTES
MAU-2-1	LEVEL 2 / KITCHEN MAKEUP AIR UNIT	9,000	9,000	9,000	1			10			38	70				8/14	N	Y		

NOTES:

DEHUMIDIFICATION UNIT

DESIGNATION	LOCATION / SERVICE	OUTSIDE AIR AIR FLOW (CFM)	SUPPLY FAN AIR FLOW (CFM)	SUPPLY FAN EXT. S.P. (IN. WG.)	DX COOLING COIL EAT DB (°F)	DX COOLING COIL EAT WB (°F)	DX COOLING COIL TOTAL CAPACITY (BTU/HR)	DX COOLING COIL SENSIBLE CAPACITY (BTU/HR)	DX COOLING COIL MOISTURE REMOVAL CAPACITY (LBS/HR)	CONDENSER HEAT OF REJECTION (BTU/HR)	CONDENSER WATER FLOW (GPM)	CONDENSER EWT (ºF)	CONDENSER LWT (ºF)	CONDENSER PD (FT H20)	ELECTRICAL DATA VOLTAGE/ PHASE	ELECTRICAL DATA UNIT FLA	ELECTRICAL DATA UNIT MCA	REFRIGERANT TYPE	REFRIGERANT CHARGE (LBS)	OPERATING WEIGHT (LBS)	EMERGENCY POWER	NOTES
DHU-R-1	LEVEL 15 / POOL	9,000	9,000	1.5					90						480 / 3		14				N	

NOTES:

FANS

DESIGNATION	LOCATION/ SERVICE	MANUF. MODEL NUMBER	CFM	STATIC PRESSURE (IN. WG.)	BHP	MOTOR HP	MOTOR VOLTAGE/ PHASE	EMERG. POWER (Y/N)	VAR. SPEED (Y/N)	OPERATING WEIGHT (LBS)	NOTES
SF-B3-1	LEVEL B3 / GARAGE MAKEUP AIR	GREENHECK OR SIMILAR	6,000	1		2		Y	Y		
SF-B2-1	LEVEL B2 / GARAGE MAKEUP AIR	GREENHECK OR SIMILAR	6,000	1		2		Y	Y		
SF-B1-1	LEVEL B1 / CHILLER ROOM MAKEUP	GREENHECK OR SIMILAR	4,000	1.5		2		Y	Y		
EF-1-1	LOADING DOCK / LOADING DOCK	GREENHECK OR SIMILAR	1,100	0.75		1/2		N	Y		
EF-1-2	LOADING DOCK / PORTE-COCHERE	GREENHECK OR SIMILAR	2,400	0.75		1		N	Y		
EF-2-1	LEVEL 2 / CHILLER ROOM EXHAUST	GREENHECK OR SIMILAR	4,000	1.5		2		Y	Y		
EF-2-2	LEVEL 2 / GARAGE EXHAUST	GREENHECK OR SIMILAR	16,600	2		10		Y	Y		
EF-2-3	LEVEL 2 / GENERAL BASEMENT EXHAUST	GREENHECK OR SIMILAR	4,000	1.5		2		N	Y		
EF-15-1	LEVEL 15 / LOWER OFFICE TOILET EXHAUST	GREENHECK OR SIMILAR	7,500	1.5		5		N	Y		
EF-15-2	LEVEL 15 / HOTEL CORRIDOR EXHAUST	GREENHECK OR SIMILAR	2,000	1.5		1		Y	Y		
SPF-R-1	ROOF / STAIR PRESSURIZATION	GREENHECK OR SIMILAR	20,500	3		20		Y	Y		
SPF-R-2	ROOF / STAIR PRESSURIZATION	GREENHECK OR SIMILAR	20,500	3		20		Y	Y		
SPF-R-3	ROOF / STAIR PRESSURIZATION	GREENHECK OR SIMILAR	41,000	3		40		Y	Y		
KEF-2-1	LEVEL 2 / TYPE I KITCHEN EXHAUST	GREENHECK OR SIMILAR	5,000	1		2		N	Y		
KEF-2-2	LEVEL 2 / TYPE II KITCHEN EXHAUST	GREENHECK OR SIMILAR	1,200	0.75		1/2		N	Y		

NOTES:

HEAT RECOVERY VENTILATOR

DESIGNATION	LOCATION / SERVICE	SUPPLY CFM	SUPPLY ESP (IN. WG)	SUPPLY HP	EXHAUST CFM	EXHAUST ESP (IN. WG)	EXHAUST HP	VOLTAGE/ PHASE	EMERGENCY POWER? (Y/N)	NOTES
HRV-15-1	LEVEL 15 / HOTEL ROOM VENT/EXH	17,000	2.0	15	17,000	2.0	15	480 / 3	N	ALL
HRV-15-2	LEVEL 15 / HOTEL CORRIDOR VENT/EXH	2,000	1.5	3	EF-15-2 (SEE FAN SCHEDULE)			480 / 3	N	ALL

NOTES:
1. MERV-8 & MERV-14 OUTDOOR AIR AND MERV-8 EXHAUST AIR FILTERS.

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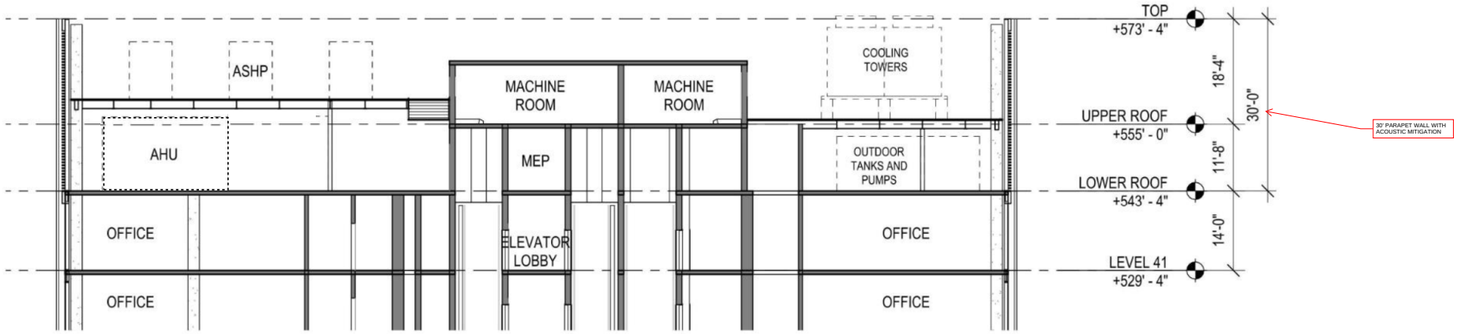
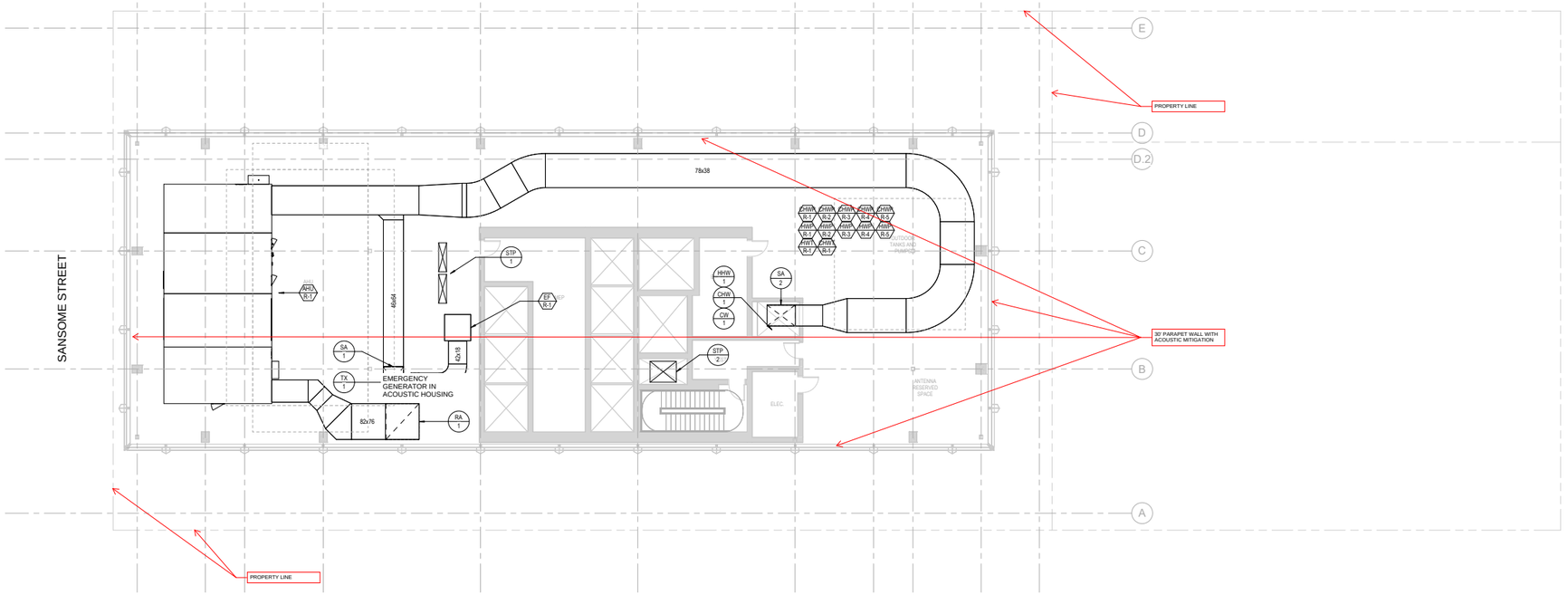


SECTION

WASHINGTON STREET



MERCHANT STREET

PLAN
LOWER ROOF

GENERAL NOTES

A. REFER TO THE BASIS OF DESIGN REPORT IN CONJUNCTION WITH THE DRAWINGS FOR THE COMPLETE SCOPE OF WORK.

NUMBERED NOTES

1 FAN MOUNTED ON ROOF OF PENTHOUSE.

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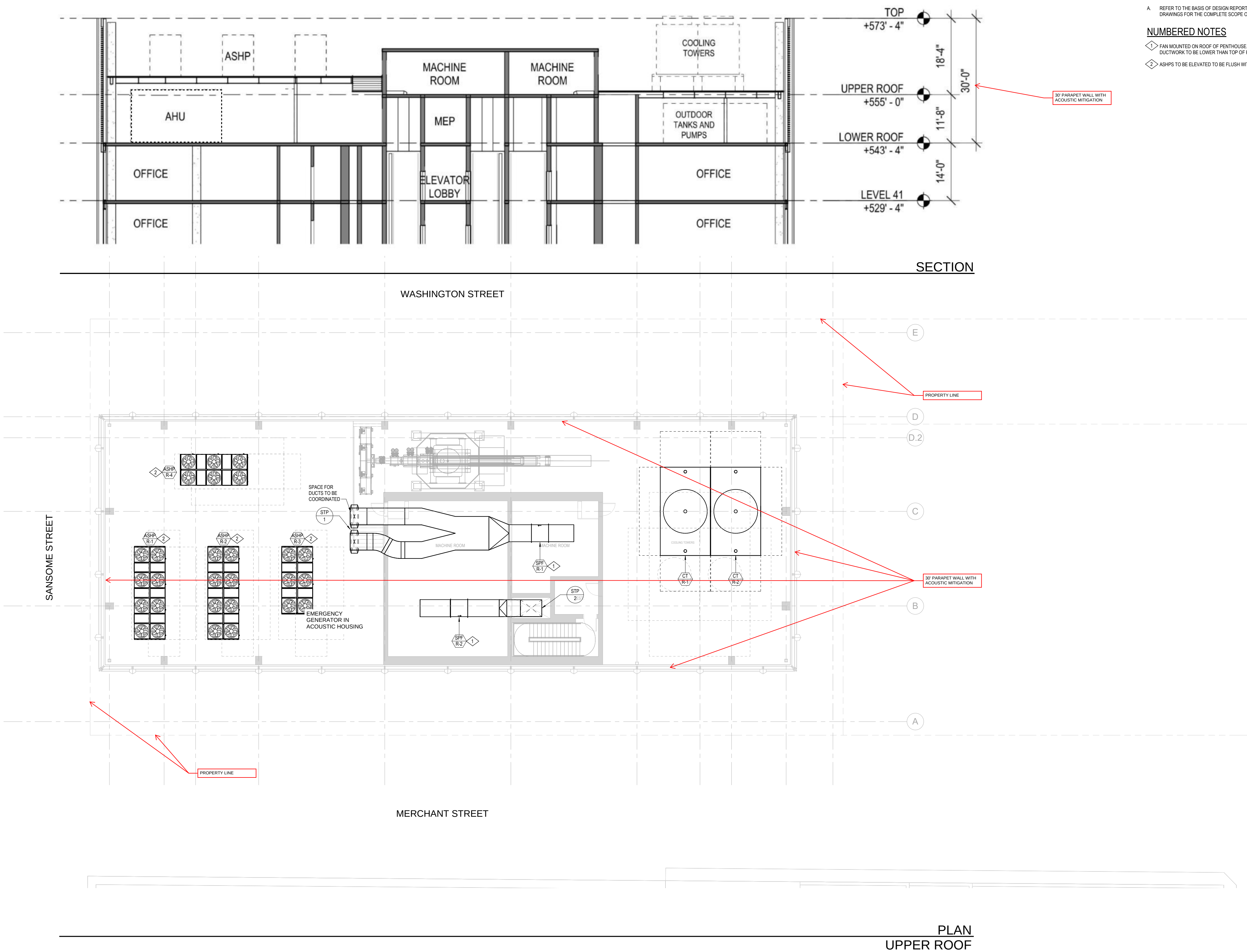
DRAWING NUMBER

M2.42



GENERAL NOTES

A. REFER TO THE BASIS OF DESIGN REPORT IN CONJUNCTION WITH THE DRAWINGS FOR THE COMPLETE SCOPE OF WORK.

NUMBERED NOTES

1. FAN MOUNTED ON ROOF OF PENTHOUSE. FAN AND ASSOCIATED DUCTWORK TO BE LOWER THAN TOP OF ROOF SCREEN.
2. ASHPS TO BE ELEVATED TO BE FLUSH WITH TOP OF ROOF SCREEN.

530 SANSOME - MIXED USE TOWER

530 SANSOME STREET
SAN FRANCISCO, CA 94111

OWNER

RELATED

Related
44 Montgomery Street, Suite 1310
San Francisco, CA 90027

ARCHITECT

SOM

Skidmore, Owings & Merrill LLP
One Maritime Plaza, San Francisco, CA 94111

CONSULTANT / ENGINEER

MAGNUSSON KLEMENCIC — 1301 Fifth Avenue, Suite 3200, Seattle, WA 98101

LANGAN — 135 Main Street, Suite 1500, San Francisco, CA 94105

MEYERS+ ENGINEERS — 98 Battery Street, Suite 502, San Francisco, CA 94111

ewcG — 102 East Blithedale Avenue, Suite 1, Mill Valley, CA 94941

AMERICAN TRASH MANAGEMENT — 1900 Powell St #890, Emeryville, CA 94608

560 14th Street, Suite 300, Oakland, CA 94613

RWDI — 600 Southgate Drive, Guelph, ON N1G 4P6 Canada

The Fire Consultants, Inc. — 2890 North Main St, Suite 210, Walnut Creek, CA 94597

SURFACEDESIGN INC — Pier 33 North, Suite 200, San Francisco, CA 94111

PREVISION DESIGN — 1806 Belles St, #6b, San Francisco, CA 94129

KEYPLAN

SEAL

NOT FOR CONSTRUCTION

MEP Rooftop Equipment Acoustics Response

Meyers +
SOM

December 18, 2024

NO.	DATE	DESCRIPTION
	2024-06-07	50% SCHEMATIC DESIGN

DRAWN BY: Author
CHECKED BY: Checker

DRAWING TITLE

MECHANICAL UPPER ROOF PLAN

DRAWING NUMBER

M2.43

Operational Traffic Noise Levels - 530 Sansome/447 Battery

Existing

ROAD SEGMENT	From	To	TOTAL VEHICLES	VEHICLE TYPE %						VEHICLE SPEED						NOISE LEVEL			Calculated Noise Level (15 meters from Roadway Center) (dBA)	Receptor Distance from Roadway Center (meters)	Adjusted Noise Level (dBA)	Distance from Roadway to 65 dBA (meters)	Distance from Roadway to 65 dBA (feet)
				Auto		MT		HT		Auto		MT		HT		Auto	MT	HT					
				%	#	%	#	%	#	mph	kmph	mph	kmph	mph	kmph	(dBA)	(dBA)	(dBA)					
Washington St	Montgomery St	Sansome St	493	97	478	2	10	1	5	25	40	25	40	25	40	56.9	51.7	56.3	60.3	40	56.0	5.1	16.6
Washington St	Sansome St	Battery St	402	97	390	2	8	1	4	25	40	25	40	25	40	56.0	50.8	55.4	59.4	40	55.1	4.1	13.5
Washington St	Battery St	Davis St	423	97	410	2	8	1	4	25	40	25	40	25	40	56.2	51.0	55.7	59.6	40	55.4	4.3	14.2
Sansome St	Jackson St	Washington St	269	97	261	2	5	1	3	25	40	25	40	25	40	54.3	49.1	53.7	57.6	40	53.4	2.8	9.1
Sansome St	Washington St	Clay St	472	97	458	2	9	1	5	25	40	25	40	25	40	56.7	51.5	56.1	60.1	40	55.8	4.8	15.9
Battery St	Jackson St	Washington St	645	97	626	2	13	1	6	25	40	25	40	25	40	58.1	52.9	57.5	61.4	40	57.2	6.6	21.7
Battery St	Washington St	Clay St	594	97	576	2	12	1	6	25	40	25	40	25	40	57.7	52.5	57.1	61.1	40	56.8	6.1	20.0
Battery St	Clay St	Sacramento St	601	97	583	2	12	1	6	25	40	25	40	25	40	57.8	52.6	57.2	61.1	40	56.9	6.2	20.2
Clay St	Sansome St	Battery St	606	97	588	2	12	1	6	25	40	25	40	25	40	57.8	52.6	57.2	61.2	40	56.9	6.2	20.4

Assumptions: PM peak hour traffic data from Fehr & Peers

Existing + Project

ROAD SEGMENT	From	To	TOTAL VEHICLES	VEHICLE TYPE %						VEHICLE SPEED						NOISE LEVEL			Calculated Noise Level (15 meters from Roadway Center) (dBA)	Receptor Distance from Roadway Center (meters)	Adjusted Noise Level (dBA)	Distance from Roadway to 65 dBA (meters)	Distance from Roadway to 65 dBA (feet)	Existing Plus Project Minus Existing (dBA)
				Auto		MT		HT		Auto		MT		HT		Auto	MT	HT						
				%	#	%	#	%	#	mph	kmph	mph	kmph	mph	kmph	(dBA)	(dBA)	(dBA)						
Washington St	Montgomery St	Sansome St	552	97	535	2	11	1	6	25	40	25	40	25	40	57.4	52.2	56.8	60.8	40	56.5	5.7	18.6	0.5
Washington St	Sansome St	Battery St	409	97	397	2	8	1	4	25	40	25	40	25	40	56.1	50.9	55.5	59.5	40	55.2	4.2	13.8	0.1
Washington St	Battery St	Davis St	428	97	415	2	9	1	4	25	40	25	40	25	40	56.3	51.1	55.7	59.7	40	55.4	4.4	14.4	0.1
Sasome St	Jackson St	Washington St	328	97	318	2	7	1	3	25	40	25	40	25	40	55.1	49.9	54.6	58.5	40	54.2	3.4	11.0	0.9
Sasome St	Washington St	Clay St	492	97	477	2	10	1	5	25	40	25	40	25	40	56.9	51.7	56.3	60.3	40	56.0	5.0	16.6	0.2
Battery St	Jackson St	Washington St	747	97	725	2	15	1	7	25	40	25	40	25	40	58.7	53.5	58.1	62.1	40	57.8	7.7	25.1	0.6
Battery St	Washington St	Clay St	665	97	645	2	13	1	7	25	40	25	40	25	40	58.2	53.0	57.6	61.6	40	57.3	6.8	22.4	0.5
Battery St	Clay St	Sacramento St	647	97	628	2	13	1	6	25	40	25	40	25	40	58.1	52.9	57.5	61.5	40	57.2	6.6	21.8	0.3
Clay St	Sansome St	Battery St	606	97	588	2	12	1	6	25	40	25	40	25	40	57.8	52.6	57.2	61.2	40	56.9	6.2	20.4	0.0

Assumptions: PM peak hour traffic data from Fehr & Peers

Cumulative Plus Project (2040)

ROAD SEGMENT	From	To	TOTAL VEHICLES	VEHICLE TYPE %						VEHICLE SPEED						NOISE LEVEL			Calculated Noise Level (15 meters from Roadway Center) (dBA)	Receptor Distance from Roadway Center (meters)	Adjusted Noise Level (dBA)	Distance from Roadway to 65 dBA (meters)	Distance from Roadway to 65 dBA (feet)	Cumulative Plus Project Minus Existing (dBA)
				Auto		MT		HT		Auto		MT		HT		Auto	MT	HT						
				%	#	%	#	%	#	mph	kmph	mph	kmph	mph	kmph	(dBA)	(dBA)	(dBA)						
Washington St	Montgomery St	Sansome St	685	97	664	2	14	1	7	25	40	25	40	25	40	58.3	53.1	57.8	61.7	40	57.4	7.0	23.1	1.4
Washington St	Sansome St	Battery St	541	97	525	2	11	1	5	25	40	25	40	25	40	57.3	52.1	56.7	60.7	40	56.4	5.6	18.2	1.3
Washington St	Battery St	Davis St	579	97	562	2	12	1	6	25	40	25	40	25	40	57.6	52.4	57.0	61.0	40	56.7	5.9	19.5	1.4
Sasome St	Jackson St	Washington St	461	97	447	2	9	1	5	25	40	25	40	25	40	56.6	51.4	56.0	60.0	40	55.7	4.7	15.5	2.3
Sasome St	Washington St	Clay St	923	97	895	2	18	1	9	25	40	25	40	25	40	59.6	54.4	59.1	63.0	40	58.7	9.5	31.1	2.9
Battery St	Jackson St	Washington St	1156	97	1121	2	23	1	12	25	40	25	40	25	40	60.6	55.4	60.0	64.0	40	59.7	11.9	38.9	2.5
Battery St	Washington St	Clay St	1076	97	1044	2	22	1	11	25	40	25	40	25	40	60.3	55.1	59.7	63.7	40	59.4	11.0	36.2	2.6
Battery St	Clay St	Sacramento St	897	97	870	2	18	1	9	25	40	25	40	25	40	59.5	54.3	58.9	62.9	40	58.6	9.2	30.2	1.7
Clay St	Sansome St	Battery St	740	97	718	2	15	1	7	25	40	25	40	25	40	58.7	53.5	58.1	62.0	40	57.8	7.6	24.9	0.9

Assumptions: PM peak hour traffic data from Fehr & Peers

APPENDIX F

Air Quality Supporting Information

- Appendix F.1, Air Quality Methodology Memorandum
- Appendix F.2, Air Quality and Health Risk Assessment Results Memorandum

APPENDIX F.1

Air Quality Methodology Memorandum

Final

447 BATTERY AND 530 SANSOME STREET PROJECT

Air Quality and Health Risk Assessment Methods

Prepared for
San Francisco Planning Department
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103

January 2025

ESA

Final

447 BATTERY AND 530 SANSOME STREET PROJECT

Air Quality and Health Risk Assessment Methods

Prepared for
San Francisco Planning Department
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103

January 2025

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TABLE OF CONTENTS

447 Battery and 530 Sansome Street Project Air Quality Technical Memorandum Scope of Work

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ACRONYMS AND ABBREVIATIONS

Acronym	Description
AERMOD	American Meteorological Society/Environmental Protection Agency regulatory air dispersion model
ASF	Age Sensitivity Factors
ATCM	Air Toxics Control Measure
CARB	California Air Resources Board
BAAQMD	Bay Area Air Quality Management District
CalEEMod	California Emissions Estimator Model
CPF	Cancer potency factor
CEQA	California Environmental Quality Act
EP	Environmental Planning
ESA	Environmental Science Associates
EMFAC2021	CARB's Emission Factor Model For On-Road Emissions
g/s	gram/second
hp	Horsepower
HRA	health risk assessment
kW	kilowatt
mg/µg	micrograms to milligrams
NOx	nitrogen oxides
OEHHA	Office of Environmental Health Hazard Assessment
$PM_{2.5}$	Fine particulate matter less than 2.5 micrometers in aerodynamic diameter
PM_{10}	Particulate matter less than 10 micrometers in aerodynamic diameter
Proposed project	530 Sansome Street Project (proposed project)
ROG	Reactive organic gases
TAC	toxic air contaminant
TRU	Truck refrigeration units
μ/m^3	micrograms per cubic meter
U.S. EPA	United States Environmental Protection Agency

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CHAPTER 1
Introduction

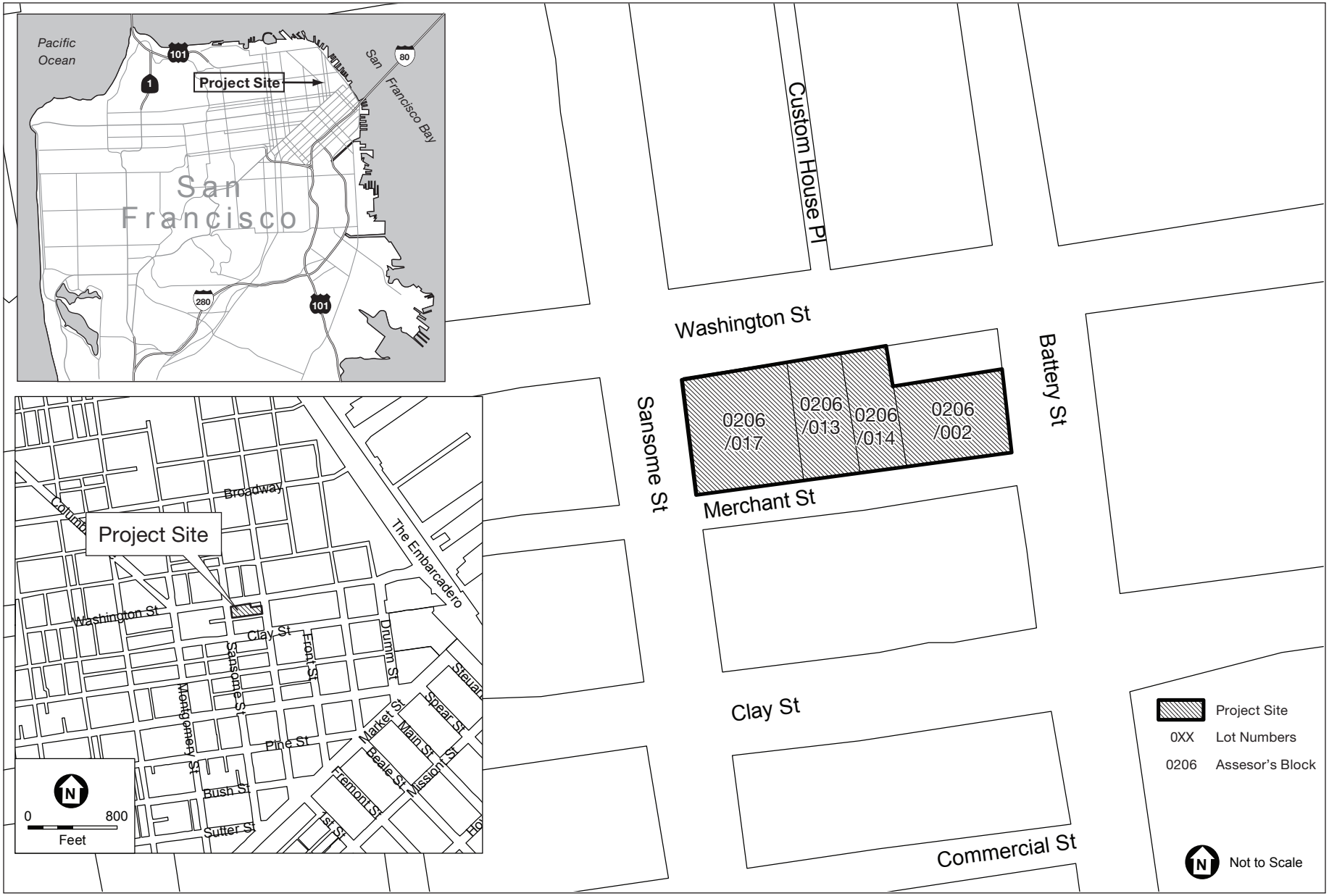
Environmental Science Associates (ESA) will conduct an air quality analysis in support of environmental clearance under the California Environmental Quality Act (CEQA) for the 447 Battery and 530 Sansome Street Project (proposed project). The air quality analysis will evaluate the air quality impacts resulting from construction and operation of the proposed project. The analysis will include an estimation of criteria pollutant and toxic air contaminant (TAC) emissions and a health risk assessment (HRA) of TACs, including fine particulate matter ($PM_{2.5}$).

ESA will present draft results of the criteria pollutant analysis for review by the San Francisco Planning Department Environmental Planning (EP) Division. The interim draft results will be presented via video-conference or teleconference, after initial analysis is complete. The goal of this preliminary review would be to assess results and determine if analysis refinements are necessary. Furthermore, the review will help identify feasible design features and measures to reduce project impacts, if required based on the results, and the methods for evaluating the effectiveness of those measures.

This methodology memorandum identifies the preliminary methods to be used to evaluate criteria air pollutant emissions[1] resulting from the proposed project in concurrence with EP's CEQA requirements. Specifically, it presents the methods that will be used to evaluate criteria air pollutant emissions from construction sources, as well as vehicle exhaust and road dust from traffic associated with proposed project operation, and other project sources of criteria pollutant emissions associated with the proposed project (refer to **Figure 1**, **Project Location**).

The methods in this memorandum depend on detailed information (e.g., construction data, operational assumptions, etc.) and studies (e.g., transportation and circulation) currently under development under separate cover. Therefore, the approach described herein may need to be updated as detailed information is developed and becomes available from the project sponsors (or if critical elements of this information change over the course of CEQA analysis). The Air Quality and HRA Results Memorandum will document the final results of the proposed project's air quality analysis. Any deviations from assumptions used in the analysis will be incorporated into this memorandum's final draft.

[1] The Air Quality Analysis does not evaluate greenhouse gas emissions and toxic air contaminants ("TACs"), as they will be evaluated separately in the proposed project's environmental document.



SOURCE: San Francisco Planning Department, 2024; ESA, 2024

530 Sansome Street; Case No. 2024-007066ENV

FIGURE 1
PROJECT LOCATION

1.1 Project Description

This section includes a brief project description that discusses the key elements of the proposed project, especially as they relate to air emissions and air quality impacts.

The proposed project includes the demolition of four existing buildings located on four separate contiguous lots[2] and the construction of a four-story replacement fire station and a separate 41-story building. The existing fire station is an 18,625 square-foot, two to three story building, combined with the existing office space, the total area to be demolished will be 68,350 square feet of building and 21 parking spaces. The replacement fire station would be located on the 447 Battery Street parcel and would include approximately 31,200 square feet (including basement) in a 4-story, approximately 55-foot-tall building (60 feet total to the roof, including rooftop mechanical equipment) on the eastern portion of the project site. There would be one below-grade level under the 4-story replacement fire station. The 6,760-square-foot below-grade level under the four-story replacement fire station would provide 18 parking spaces, four class I bicycle parking spaces, equipment storage space, and utility rooms.

The 41-story, approximately 544-foot tall building (574 feet total, including rooftop mechanical equipment) would be located on the remaining three parcels and would provide for a range of commercial uses with approximately 7,405 square feet of retail/restaurant space; between 344,840 and 408,550 square feet of office space; approximately 27,195 square feet of office amenities (e.g., food and beverage, coworking spaces, and fitness space), between approximately 126,000 and 188,020 square feet of hotel space that would accommodate between 100 and 200 guest rooms, and approximately 10,135 square feet of ballroom/pre-function/meeting space. The range in hotel and office uses reflects that the proposed project approvals would allow for post-entitlement refinement to the final design to program five of the middle floors of the building as either office or hotel. The maximum hotel scenario would represent 188,020 square feet of hotel space and 344,840 square feet of office space. The maximum office scenario would represent 126,000 square feet of hotel space and 408,550 square feet of office space. There would be three below-grade levels under the 41-story building, which would provide 74 accessory vehicle parking spaces, 77 class 1 bicycle parking spaces, and utility rooms. The high-rise building uses would total 649,510 square feet, for either build out scenario. ESA will analyze the maximum impacts between the maximum hotel scenario and the maximum office scenario.

The proposed project would provide 29 class 2 bicycle parking spaces on streets adjacent to the project site, subject to San Francisco Municipal Transportation Agency (SFMTA) and San Francisco Public Works approval. The proposed project would include two loading spaces on the northeastern portion of the first floor of the 41-story building, with ingress and egress from Washington Street. The proposed project will require two emergency generators, one for each building.

[2] A vacant three-story office building at 425 Washington Street, a vacant two-story commercial building at 439–445 Washington Street, the two-story-with-mezzanine San Francisco Fire Station 13 building at 530 Sansome Street, and a vacant three-story office building at 447 Battery Street.

1.2 Project Construction

The project sponsor estimates that construction would last 39 months with overlapping phases. Demolition would take approximately one month. Excavation and sub-grade work would last approximately six months. Foundation and below-grade construction would last about 22 months. The building construction and exterior and interior finishing phases would partially overlap and last approximately 32 months. Construction of the planned basement levels and foundation installation would require excavation extending about 40 feet below ground surface for the 40-story building and 15 feet below ground surface for the replacement fire station. Overall, excavation of the basement levels would remove approximately 42,000 cubic yards of soil.

Construction workers driving to the project site would park at nearby garages or on-street parking spaces or they will take public transportation. Construction equipment and materials would be staged at sidewalks surrounding the project site, including, but not limited to, a portion of the on-street parking lane on Washington Street and Merchant Street. Pedestrian traffic on Sansome Street, Washington Street, and Merchant Street would be routed to a protected pedestrian lane in a portion to the adjacent parking lanes, which would be closed to vehicular traffic. A full closure of Washington Street would occur for two days to erect and dismantle a tower crane, and northbound Sansome Street would be closed for one day during the mat foundation placement. During project construction, closures of those same travel lanes on Sansome and Washington streets could be necessary for approximately 15 single-day periods for utility work. Nighttime closure of Merchant Street could be necessary for utility work.

During construction, SFFD personnel and apparatus would be relocated to offsite fire stations that are as close as possible to the project site and would continue to serve the Financial District neighborhood and the City in general. Relocation of fire equipment typically takes no more than eight hours to complete.

1.3 Analysis Scenarios and Data Collection

1.3.1 Analysis Years and Scenarios

1. Construction and operational criteria pollutant and TAC emission inventories will be developed for the proposed project.
2. Construction of the proposed project would begin in approximately 2027. Construction would last 39 months with overlapping phases. The buildings would not be occupied until construction is completed.

1.3.2 Data Collection and Emissions Modeling

1. The existing site is occupied by three buildings: a vacant three-story office building, a vacant two-story commercial building, and the two-story Fire Station Number 13 building. It is assumed that the proposed new fire station will not result in any additional vehicle trips. Therefore, ESA will not conduct emissions modeling for the existing conditions scenario.
2. The project sponsors will provide all required project information necessary for the emissions modeling for construction and each operational scenario. ESA will provide a written list of all information necessary to the project sponsors and ESA will inform project sponsors if its response is inadequate. For construction, this includes, but is not limited to, construction schedule and off-road

equipment details, soil hauling and demolition debris volumes, daily/annual truck trips, haul truck travel routes, asphalt paving area, and construction worker commute information. For operations, this includes, but is not limited to, operational traffic data (including daily trip rates by land use for both light-duty and heavy-duty vehicles [such as delivery trucks], as indicated in the transportation analysis,[3] emergency generator operation, and employee commute information. Transportation data will be provided by the transportation consultant. ESA also assumes that the trip generation rates for the project must be complete prior to the first round of modeling, per request from EP.

3. The pollutants analyzed within the emissions modeling will be limited to four pollutants of primary concern associated with construction and operation of the project. These are ozone precursors, which are oxides of nitrogen (NO_x) and reactive organic gases (ROG), as well as inhalable particulate matter less than 10 micrometers in diameter(PM_{10}), and fine particulate matter less than 2.5 micrometers in diameter ($PM_{2.5}$) from exhaust.

4. ESA will not conduct a quantitative analysis for future or planned development projects in the surrounding area, or for other existing or future sources of criteria pollutants as part of any cumulative analysis. However, if quantitative construction-related or operational-related emissions from nearby occurring or reasonably foreseeable projects are known or have already been estimated (such as for 545 Sansome Street), those health risk results will be included in the cumulative analysis. This inventory will be limited by the availability of data for all potential cumulative projects.

1.3.3 Deliverables

One (1) electronic copy of the draft 1 Air Quality and HRA Results Memorandum, the draft 2 Air Quality and HRA Results Memorandum, the screencheck Air Quality and HRA Results Memorandum and the final Air Quality and HRA Results Memorandum (hard copies can be provided upon request) to EP for review and comment. In addition, ESA will provide the initial analysis results to EP for review and discussion prior to submission of the draft Air Quality and Results Memorandum.

1.4 Objective and Methods

The Air Quality and HRA Results Memorandum will evaluate criteria air pollutant and TAC emissions associated with construction and operation of the project. Criteria air pollutants to be estimated are those discussed above: ozone precursors NO_x and ROG, exhaust PM_{10}, and exhaust $PM_{2.5}$. TAC emissions include diesel particulate matter (DPM) and exhaust $PM_{2.5}$. Fugitive emissions of PM_{10} and $PM_{2.5}$ during construction (dust from construction) will not be estimated in the air quality analysis, because the project would comply with the San Francisco Construction Dust Control Ordinance (176-08) (Health Code article 22B and San Francisco Building Code section 106.A.3.2.6).[4] However, fugitive $PM_{2.5}$ from resuspended road dust will be estimated for operation of the proposed project. For construction, criteria pollutant emissions will be estimated from combustion sources, including off-road equipment and on-road haul trucks, and from road dust. For operation, criteria pollutant emissions will be estimated from combustion sources, including two emergency generators, on-road heavy-duty trucks (travel and idling), road dust, and exhaust from operational gasoline vehicles (i.e., project-generated traffic).

[3] Fehr & Peers will prepare a standalone Transportation Memorandum for this project.

[4] The ordinance would reduce the quantity of dust generated during site preparation, demolition, and construction work to protect the health of the general public and on-site workers and minimize public nuisance complaints through measures that include dust suppression activities (e.g., watering), street sweeping, and material stockpile covers. Accordingly, construction-generated PM_{10} and $PM_{2.5}$ dust are not discussed or evaluated further.

The approach for the air quality analysis will be consistent with EP requirements, using technical information from the Bay Area Air Quality Management District (BAAQMD), California Air Resources Board (CARB), and the U.S. Environmental Protection Agency (U.S. EPA).

The draft results of the criteria pollutant analysis will be provided to EP for review once the initial analysis is complete; these results will be part of the draft Air Quality and HRA Results Memorandum. The purpose of submitting draft results to EP is to assess the preliminary results and determine if analysis refinements are necessary and/or to identify additional (or refinements to) control measures to reduce project impacts and the methods for assessing their effectiveness. Furthermore, the review may help identify additional feasible control measures to reduce project impacts, if required based on the results from the first round of analysis, and the methods for evaluating the effectiveness of those control measures.

1.5 Document Organization

This Methodology Memorandum is divided into six chapters as follows:

- **Chapter 1, Introduction**, describes the purpose and scope of the Air Quality and HRA Results Memorandum, the project description, the objectives and overall methods used in the Air Quality and HRA Results Memorandum, and outlines document organization.
- **Chapter 2, Emissions Calculation Methods**, describes the methods that will be used to estimate criteria air pollutant and TAC emissions from construction and operation of the project.
- **Chapter 3, Estimated Air Concentrations**, describes the dispersion modeling approach to calculating TAC concentrations.
- **Chapter 4, Risk Characterization Method**, describes the assumptions and factors used to calculate health risks from the modeled TAC concentrations.
- **Chapter 5, Control Measures**, identifies the approach to identifying control measures and describes several preliminary reduction measures that could reduce criteria pollutant emissions.
- **Chapter 6, Uncertainties**, summarizes the critical uncertainties associated with the air quality analysis.
- **Chapter 7, Tables**, contains all tables to support this memorandum.

CHAPTER 2
Emission Calculation Methods

The following sections discuss methods used to calculate emissions of criteria pollutants and TACs for each source associated with the proposed project. The chapter is separated into construction emissions and operational emissions. All assumptions used to estimate construction and operational emissions will be included as an appendix to this Methodology Memo. The following emissions estimates will be reported for both the proposed project.

1. **Construction:** Average daily and total annual construction emissions for each year of construction.
2. **Operation:** Average daily and annual maximum operational emissions at project buildout.

2.1 Calculation Methods for Construction Emissions

Project construction-related emissions of criteria pollutants and TACs will be estimated using a project-specific construction-phasing schedule. A project-specific equipment mix to be provided by the project sponsors pursuant to a pending data request will also be utilized for the emissions modeling. ESA will estimate average daily and total annual construction-related criteria pollutant and TAC emissions for each construction phase and year of construction. ESA will assume that all off-road and on-road equipment is diesel-powered (unless documentation is provided otherwise by the project sponsor, such as for certain pieces of electric equipment). See **Table 1**, **Off-Road Construction Equipment List by Phase**, for the breakdown of off-road equipment required for construction including assumed fuel type.

Calculation methods for each source of construction emissions are described separately below. If any refinements are needed for the criteria pollutant analysis, or if the project description changes further, ESA will use updated information to estimate emissions. If project changes cannot be accommodated in the Air Quality and HRA Results Memorandum schedule, ESA will notify EP immediately to discuss schedule and document management. If additional analysis beyond the first two rounds is necessary, additional budget would be required, and ESA would prepare a scope of work for this effort for review and approval by EP staff and the project sponsors at that time. Please refer to the list of assumptions in Chapter 1.

Construction emissions under a controlled scenario will also be estimated in consultation with EP staff and the project sponsors regarding specific control measures to include.

2.1.1 Off-Road Equipment

To estimate off-road construction equipment emissions, ESA will use CalEEMod, version 2022.1.1, or equivalent methods, described below. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental

professionals to quantify potential criteria pollutant and greenhouse gas emissions from a variety of land use projects. The model is considered to be an accurate and comprehensive tool for quantifying air pollutant emissions from land use projects throughout California and is recommended by BAAQMD for land-use CEQA analyses.[5] Where specialty equipment pieces are used, emission factors from the California Air Resources Board's 2017 Off-Road Equipment Model (OFFROAD2017-ORION) emission rate program will be used to quantify emissions based on **Equation 1**. A newer version of this model, OFFROAD2021-ORION, is available from CARB, but CalEEMod still uses OFFROAD2017-ORION. ESA will use OFFROAD2017-ORION for any calculations outside of CalEEMod to be consistent with CalEEMod. Equipment horsepower will be based on information provided by the project sponsors. Where project-specific data is unavailable, CalEEMod default values will be used.

Equation 1: $E_{phase} = \sum_{i} (Activity_i * EF_i * LF_i * HP_i) * Conv$

Where:

E_{phase} = Total exhaust emissions for the phase, pounds per day

Activity = Equipment activity, hours per day (to be specified by project sponsors)

EF = Engine emissions factor, grams/horsepower-hour (CalEEMod/OFFROAD2017-ORION)

LF = Engine load factor, unitless (CalEEMod/OFFROAD2017-ORION)

HP = Engine horsepower, hp (project sponsors or CalEEMod/OFFROAD2017-ORION)

Conv = Conversion factor, 0.002205 pounds/grams

i = Equipment type

2.1.2 On-Road Mobile Sources

In addition to off-road equipment, project construction would require on-road vehicles for materials import/export (i.e., haul trucks), employee commute trips, on-site personnel movement, and vendor trips.

On-road haul truck emissions will be calculated using haul truck trip estimates and trip length provided by the project sponsors or transportation analysis, if available. If project-specific information on disposal site(s) for demolition debris and exported fill material is not available from the project sponsors, ESA will use CalEEMod default value of 20 miles for haul truck trips. Vendor truck trips will also be based on information from the project sponsors. If that information is not available, these trips will be calculated by CalEEMod based on land use and building square footage and an assumed vendor truck trip length of 7.3 miles (CalEEMod default), unless project-specific information on vendor trips is available from the project sponsors or contained in the transportation analysis. Construction worker trip lengths will also be estimated using the daily number of workers provided by the project sponsors (or contained in the transportation analysis), if available, or default values from the CalEEMod model, if necessary.

On-road emissions, for other non-haul truck mobile sources, may be calculated outside of CalEEMod using CARB's EMission FACtor (EMFAC2021) emission rate program. Additionally, scaling factors provided by CARB that incorporate CARB's Clean Mile Standard (CMS), Advanced Clean Cars II

[5] See: http://www.caleemod.com.

(ACC II), Clean Truck Check (Heavy-Duty Inspection and Maintenance [HD I/M]), and Federal Clean Trucks Plan (CTP) will be applied to the EMFAC2021 emission rates because the model does not yet include these regulations.

Estimated on-road construction criteria pollutant emissions for each construction phase will be totaled for each year of construction and, consistent with BAAQMD guidance, averaged over the number of work days in the construction phase for each year of construction to determine average daily emissions on an annual basis.

Criteria pollutants generated by on-road vehicle trips will be calculated for each phase using **Equation 2**, unless otherwise calculated using CalEEMod.

Equation 2: $E_{pha} = \sum_{i} (Activity_i * EF_i * Distance_i) * Conv$

Where

E_{phase} = Total exhaust emissions for the phase, pounds per day
Activity = Vehicle trips, trips per day (project sponsors)
Distance = Vehicle trip length, miles per trip (project sponsors)
EF = Engine emissions factor, grams/mile (EMFAC2021)
Conv = Conversion factor, 0.002205 grams/pound
i = Vehicle type

2.1.3 Haul Truck Idling

Idling emissions associated with heavy-duty trucks (haul trucks, concrete trucks, material delivery trucks, water trucks, etc.) will be estimated based on the anticipated number of truck trips as provided by the project sponsors, and idling emission factors for heavy-duty vehicles from CARB's EMFAC2021. It is assumed that idling activities would total 6 minutes per trip, representing three separate 2-minute[6] idling occurrences: check-in to the site or queuing at the site boundary upon arrival, on-site idling during loading/unloading, and check-out of the site or queuing at the site boundary upon departure. The 5-minute limit per idling occurrence is consistent with the CARB's Air Toxics Control Measure (ATCM) to Limit Diesel-Fueled Commercial Motor Vehicle Idling.

2.1.4 Evaporatives

Emissions of ROG from asphalt paving will be estimated within CalEEMod based on the area paved for each construction phase as provided by the project sponsors. Emissions of ROG from architectural coatings will be estimated within CalEEMod, based on the square footage of new building as provided by the project sponsors. In some cases, building materials are pre-coated, but this analysis will conservatively assume all coating is done on the project site during building construction.

[6] Under the priority application processing for clean construction projects, idling is limited to 2-minutes. San Francisco Planning Department, Priority Application Processing for Clean Construction Projects – Supplemental Application for Type 3 Projects, September 2020, https://sfplanning.org/sites/default/files/forms/DB2_Type3_SupplementalApplication.pdf, accessed December 4, 2024.

2.2 Calculation Methods for Operational Emissions

ESA will estimate project operational criteria pollutant emissions (ROG, NO_X, exhaust and road dust PM_{10}, and exhaust and road dust $PM_{2.5}$) from mobile sources, stationary sources, area sources and energy sources using CalEEMod 2022.1.1 or equivalent methods, and EMFAC2021.

There are no activities producing emissions at the existing vacant buildings on the proposed project site, except for the fire station. The new fire station is not anticipated to generate additional trips compared to the existing fire station because there would be no change in its operations or number of emergency trips. However, there would be some increases in area source emissions (e.g., architectural coatings, consumer products, etc.) associated with the increase in the fire station's size, which ESA will include in the analysis. Additionally, the existing fire station has a 200 horsepower (hp) emergency generator[7], which will be replaced with a 200 kilowatt (kW) engine; ESA will include net changes in the emergency engine emissions into the analysis. Therefore, the net increase in emissions is assumed to be associated with the proposed new high-rise building, with the exception of the new fire station, and emissions modeling for existing conditions will not be required. Thus, project-related operational emissions for all components of the project will represent the net increase in emissions compared to existing conditions associated with the proposed project.

2.2.1 Mobile Sources

Operation of the proposed project would generate emissions from on-road motor vehicle activity generated by the new land uses associated with the project. These trips include residents, employees, visitors, and deliveries to new non-residential uses (retail, office, fitness center, and hotel) associated with the proposed project. The fire station would also generate employee vehicle trips and emergency vehicle trips, but these would not change from existing conditions.

Residential, employee, and visitor vehicles are assumed to be predominantly gasoline-powered vehicles, and delivery trucks are assumed to be diesel vehicles. Gasoline on-road vehicles also emit total organic gases (TOG) in their exhaust and through evaporation. Many constituents of TOGs are TACs and thus will be evaluated in the HRA, if warranted, based on the number of daily and annual vehicles estimated in the transportation study. Diesel delivery truck emissions are discussed further, below.

Operational mobile source criteria pollutant emissions for the proposed project will be estimated using traffic data from the transportation consultant (trip generation rates, pass-by trips, trip lengths or VMT, etc.) and the CalEEMod emissions model or EMFAC2021 (see Equation 2 above). We will base the air emission estimates on project-specific trip generation rates to be reported in the transportation analysis and vehicle miles traveled calculated using model default trip distances (unless the project team can provide project-specific trip distances or VMT). We will not use CalEEMod default trip rates but will incorporate CalEEMod default trip lengths.

The proposed project will also include medium- and heavy-duty trucks delivering materials and goods to the project site (such as package deliveries and vendor trucks associated with retail and restaurant uses);

[7] DeWitt, Dawn, Assistant Deputy Chief, Support Services, San Francisco Fire Department, e-mail correspondence with Susan Yogi, Senior Managing Associate, Environmental Science Associates, October 22, 2020.

these vehicles may be diesel-powered. ESA will obtain estimates from the transportation consultant regarding daily deliveries, including the percentage of which are estimated to be from diesel trucks. For deliveries by diesel truck, ESA will use the EMFAC default fleet mix for light heavy-duty trucks (LHD1 and LHD2), medium heavy-duty trucks (MHDT), and heavy heavy-duty trucks (HHDT). ESA will estimate emissions from delivery vehicles using Equation 2 above.

2.2.1.1 Vehicle Idling

Idling emissions associated with delivery vehicles at loading docks and other locations will be estimated based on the anticipated number of delivery trips at each land use, as provided by the project sponsors, and idling emission factors for heavy-duty vehicles from CARB's EMFAC2021 emission rate program. It is assumed that idling activities would total 5 minutes per trip for trucks, consistent with CARB's ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling. Based on the foregoing assumptions, ESA will calculate new project-related delivery vehicle idling emissions based on the traffic analysis report and additional data from the project sponsors, in order to calculate net new idling emissions associated with the project. For diesel trucks that may include transport refrigeration units (TRUs), it is assumed that the truck's main engine powers the TRU while it is idling, and a separate analysis of diesel TRU engines, which are typically required when the truck is powered off, will not be included in the analysis.

2.2.2 Area Sources

Operation of the proposed project would also generate emissions from area sources, including landscaping equipment, consumer products, and paint and other architectural coatings. Area source emissions will be estimated using the CalEEMod emissions model and land use type and size information provided by the project sponsors. All new residential and non-residential construction in San Francisco is required to be all-electric and include no natural gas hookups pursuant to the all-electric ordinance included in the City of San Francisco Building Code.[8] The fire station component of the project will be subject to the City of San Francisco's Municipal Green Building Requirements, which requires all-electric buildings for new construction.[9] Therefore, the analysis will not include emissions from natural gas combustion.

2.2.2.1 Consumer Products

A daily emission factor of $1.46*10^{-5}$ pounds of ROG per square foot per day for consumer products will be assumed in the emissions modeling to replace the CalEEMod default value, based on the 2024 San Francisco Planning Department Air Quality and Greenhouse Gas Analysis Guidelines.[10] ESA will use default CalEEMod values and assumptions where project-specific information is not available for all other assumptions.

[8] City of San Francisco Ordinance No. 237-20, https://sfgov.legistar.com/View.ashx?M=F&ID=9013924&GUID=77973C9B-F562-4EFF-BA82-7BAEB558BE08 accessed May 24, 2024.

[9] City of San Francisco Ordinance No. 204-11, Chapter 7, https://codelibrary.amlegal.com/codes/san_francisco/latest/sf_environment/0-0-0-577, accessed October 22, 2024.

[10] San Francisco Planning Department, Air Quality and Greenhouse Gas Analysis Guidelines, July 2024, https://sfplanning.org/air-quality, accessed November 4, 2024.

2.2.2.2 Landscaping

The proposed project would involve street trees and outdoor terraces but no substantial landscaping that would require maintenance with diesel or gasoline-powered equipment. Therefore, landscaping equipment emissions will not be included in the analysis.

2.2.2.3 Architectural Coatings

Emissions of ROG from periodic architectural coatings of buildings will be estimated within CalEEMod, based on the building square footage as provided by the project sponsors.

2.2.3 Stationary Sources

Operation of the proposed project will include two emergency diesel backup generators. The generator at the fire station will be replacing an existing unit.

2.2.3.1 Emergency Generator and Fire Pumps

Back-up diesel generators are required by the San Francisco Building Code for buildings with occupied floor levels greater than 75 feet in height. The proposed project would include two emergency generators. Two generators will be required for the proposed project: one for the replacement fire station and one for the mixed use high-rise building. The generator for the high-rise building would be located on the second level and the replacement fire station's generator would be located on the roof. Exact locations were specified by the project sponsor and will be incorporated into the modeling. The fire station generator will be replacing an existing 200 hp unit with a 200 kW engine, while the high-rise building will require a 800 kW engine. ESA will estimate the criteria pollutant and TAC emissions from the generator(s) based on information from the project sponsors.

Emergency generator emissions will be estimated based on a maximum annual non-emergency testing schedule of 50 hours each.[11] Emissions factors for the generators will be based on generator manufacturer's specifications and will be assumed to meet U.S. EPA and CARB Tier 2 diesel engine standards for generators less than 1,000 hp or Tier 4 diesel engine standards for diesel engines with a power rating equal to or greater than 1,000 hp.[12]

The proposed project would also have a fire pump at the 530 Sansome Street building (no fire pumps are required at the fire station); ESA will assume that the pump would be powered by diesel engines in the case of emergencies when grid electricity is not available, unless information to the contrary is provided by the project sponsors. The fire pumps would be powered by the emergency generators described above, and no additional diesel engines would be needed for emergency operation.

[11] San Francisco Planning Department, *Air Quality and Greenhouse Gas Analysis Guidelines*, July 2024, https://sfplanning.org/air-quality, accessed July 25, 2024.

[12] Bay Area Air Quality Management District, BACT for Emergency Backup Engines greater than or equal to 1,000 brake-horsepower, 2021, https://www.baaqmd.gov/permits/apply-for-a-permit/engine-permits, accessed May 22, 2024.

CHAPTER 3
Estimated Air Concentrations

ESA will conduct a detailed HRA resulting from project construction and operations consistent with the methods used in the 2020 Citywide HRA. ESA will estimate lifetime excess cancer risk from DPM and annual average exhaust $PM_{2.5}$ concentrations at all sensitive and worker receptors located within 1,000 meters of the proposed project's boundaries. The HRA will be conducted following methods in BAAQMD's Health Risk Screening Analysis Guidelines,[13] in the California Office of Environmental Health Hazard Assessment (OEHHA) Air Toxics Hot Spots Program Guidance,[14] and in the 2024 San Francisco Planning Department Air Quality and Greenhouse Gas Analysis Guidelines.[15]

3.1 Chemical Selection

The HRA will evaluate health risks associated with the proposed project based on exposure of sensitive receptors to TAC emissions, including DPM and exhaust and road dust $PM_{2.5}$. The DPM analysis will use PM_{10} emissions as a surrogate for DPM emissions.[16] OEHHA guidance indicates that the cancer potency factor to be used to evaluate lifetime excess cancer risks were developed based on whole (gas and particulate matter) diesel exhaust, and that the surrogate for whole diesel exhaust is DPM, with PM_{10} serving as the basis for the potential risk calculations. In addition to evaluating the effects of TAC concentrations, the HRA will also evaluate annual average exhaust and road dust $PM_{2.5}$ concentrations. This is consistent with the 2020 Citywide HRA.

3.2 Sources

ESA will use the U.S. EPA's AERMOD steady-state Gaussian dispersion model to evaluate DPM and annual average exhaust and road dust $PM_{2.5}$ concentrations at off-site sensitive and worker receptor locations that would result from construction activities associated with the proposed project. Construction sources include off-road construction equipment, on-road diesel trucks (including haul trucks and material delivery trucks), and idling. Operational sources include emergency backup diesel generators, delivery

[13] Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines*, 2022,* Appendix E: Recommended Methods for Screening and Modeling Local Risks and Hazards, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?rev=b8917a27345a4a629fc18fc8650951e4, accessed May 20, 2024.

[14] Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Risk Assessment Guidelines: Guidance Manual for the Preparation of Health Risk Assessments, February 2015*,* http://oehha.ca.gov/air/hot_spots/hotspots2015.html*,* accessed May 20, 2024.

[15] San Francisco Planning Department, *Air Quality and Greenhouse Gas Analysis Guidelines*, July 2024, https://sfplanning.org/air-quality, accessed July 25, 2024.

[16] Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Risk Assessment Guidelines: Guidance Manual for the Preparation of Health Risk Assessments, February 2015, Appendix D, section D-2 https://oehha.ca.gov/media/downloads/crnr/2015gmappendicesaf.pdf, accessed May 24, 2024.

trucks idling, and passenger vehicles. Fire pumps would be powered by the emergency backup diesel generator engines in the case of emergencies when grid electricity is not available and are not considered separate emissions units.

3.3 AERMOD Modeling

ESA will use the most recent version of the American Meteorological Society/Environmental Protection Agency regulatory air dispersion model (AERMOD version 23132) to estimate concentrations of DPM and exhaust and road dust $PM_{2.5}$ at off-site sensitive receptors. For each receptor location, AERMOD generates air concentrations that result from emissions from multiple sources. The AERMOD model requires numerous inputs, such as meteorological data, source parameters, topographical data, and receptor characteristics. Where project-specific information is not available, ESA will use default parameter sets that are designed to produce conservative (i.e., overestimates of) air concentrations[17] (U.S. EPA 2016a, 2016b). **Table 2**, **Overall AERMOD Modeling Parameters**, summarizes the overall modeling parameters to be used in AERMOD.

3.3.1 Meteorological Data

ESA will use meteorological data consistent with the 2020 Citywide HRA in the 2024 San Francisco Planning Department Air Quality and Greenhouse Gas Analysis Guidelines, which is the Mission Bay (Site ID# 5803) monitoring site.[18] We will also use the most recently available dataset (2008 through 2012), which will be obtained from EP.

3.3.2 Terrain and Land Use Considerations

Terrain and elevation data will be imported from the United States Geological Survey's (USGS) National Elevation Dataset (United States Geological Survey 2013). Elevations for all receptors will be obtained from this dataset. Based on the land use characteristics in the project vicinity, urban dispersion coefficients will be used in AERMOD. The site will be modeled with the 2023 population of 808,988 for San Francisco, California.[19]. The urban option will be used in AERMOD, which accounts for increased turbulence associated with the urban heat island effect.

3.3.3 Emission Rates

Emission rates from the various emission sources (e.g., construction activities, generators, and roadways) will be based on the anticipated hours of activity for each source and other information as described in Chapter 2, above. Because each emission source will be modeled separately within AERMOD, ESA will use a unitized emission rate for each source, where each source is modeled with an emission rate of 1 gram/second (g/s). The modeled concentration at each receptor (micrograms per cubic meter [μ/m^3]/[g/s]) represents a "dispersion factor," which will then be multiplied by the actual emission rate of each source to determine ground-level concentrations for that pollutant.

[17] United States Environmental Protection Agency, AERMOD Implementation Guide*, December 2016*, https://gaftp.epa.gov/Air/aqmg/SCRAM/models/preferred/aermod/aermod_implementation_guide.pdf, accessed May 20, 2024.

[18] San Francisco Planning Department, *Air Quality and Greenhouse Gas Analysis Guidelines*, July 2024, https://sfplanning.org/air-quality, accessed July 25, 2024.

[19] U.S. Census Bureau, City of San Francisco population 2023, https://www.census.gov/quickfacts/fact/table/sanfranciscocitycalifornia,sanfranciscocountycalifornia/PST045222, accessed May 20, 2024.

For annual average ambient air concentrations, the estimated annual average dispersion factors are multiplied by the annual average emission rates for each source. The emission rates will vary day to day, with some days having no emissions. For simplicity, the model will assume a constant emission rate during an entire year.

3.3.4 Source Parameters

Source parameters are required to model the dispersion of emissions. The construction of the project site will be modeled as an area source within AERMOD using a release height of 5 meters and an initial vertical dimension of 1.4 meters, consistent with the 2020 Citywide HRA.[20] Roadways will be modeled as line-volume sources, per BAAQMD guidance,[21]with the following inputs:

- **Trucks, running and idling:** 4-meter vehicle height, 6.8-meter plume height, 3.4-meter release height, and 3.16 initial vertical dimension.
- **Passenger vehicles:** 1.53-meter vehicle height, 2.6-meter plume height, 1.3-meter release height, and 1.21 initial vertical dimension.

Table 3, **Source Modeling Parameters**, summarizes the source modeling parameters to be used in AERMOD.

3.3.5 Receptors

A 20-meter receptor modeling grid will be modeled within AERMOD to represent off-site sensitive and worker receptors. The grid will extend to 1,000 meters from the project boundary for modeling the construction area, generators, and haul truck routes, as shown in **Figure 2**, **Modeling Domain**. Receptors will be modeled at a height of 1.8 meters above terrain height, which represents the default breathing height for ground floor receptors. Maximum annual average concentrations will be estimated for each receptor location.

Sensitive receptor locations will include residential areas, day cares, schools (for children under 16 years of age), hospitals, and convalescent homes. **Figure 3**, **Non-residential Sensitive Receptors**, presents the sensitive receptors described above within the modeling domain (1,000 meters) using data from the San Francisco Citywide HRA. Workplaces, worker receptors, will include all commercial and retail locations within 1,000 meters of the project boundary.

However, these data may not capture all sensitive receptor locations near the project site. As such, ESA will assume that all modeled receptors within the 1,000-meter receptor radius are residential for risk modeling purposes in the HRA, and then verify that the receptor locations with the highest health risks from the proposed project's contribution are, in fact, residential sensitive receptors. Similarly, for worker receptors, ESA will assess the full modeling radius as worker receptors and then verify that the receptor locations with the highest worker health risks are, in fact, a workplace.

[20] San Francisco Planning Department, Air Quality and Greenhouse Gas Analysis Guidelines, July 2024, https://sfplanning.org/air-quality, accessed July 25, 2024.

[21] Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines*, 2022,* Appendix E: Recommended Methods for Screening and Modeling Local Risks and Hazards, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?rev=b8917a27345a4a629fc18fc8650951e4, accessed May 20, 2024.

SOURCE: San Francisco Planning Department, 2024; ESA, 2024

530 Sansome Street; Case No. 2024-007066ENV

FIGURE 2
MODELING DOMAIN

CHAPTER 4
Risk Characterization Methods

In March 2015, OEHHA updated the methods for estimating lifetime excess cancer risks to use higher estimates of cancer potency during early life exposures and different assumptions for breathing rates and length of residential exposures. The new guidance, *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments*, incorporates advances in risk assessment with consideration of infants and children using Age Sensitivity Factors (ASF).[22] These updated exposure factors can result in numeric lifetime health risk values to be approximately two to three times higher than those calculated under the previous OEHHA guidelines. In 2016 the BAAQMD issued guidelines on adopting the 2015 OEHHA Guidance Manual.[23] Based on BAAQMD and EP guidance, an HRA will be performed in accordance with OEHHA's 2015 guidelines to quantify potential impacts from TACs emitted during construction, as recommended by BAAQMD modeling methods.[24]

ESA will estimate project-specific health risks based on the emissions calculation methods identified in Chapter 2, annual average pollutant concentrations calculated from AERMOD output discussed in Chapter 3, and dose and risk calculations from OEHHA and BAAQMD, as discussed in this chapter.

4.1 Exposure Assessment

Lifetime excess cancer risk resulting from exposure to DPM occurs exclusively through the inhalation pathway.[25] Therefore, the HRA will only evaluate lifetime excess cancer risks from inhalation and no other exposure pathways (e.g., dermal and ingestion pathways).

4.1.1 Potentially Exposed Populations

This analysis will evaluate the following receptor populations:

- Off-site residents (sensitive)

[22] Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Risk Assessment Guidelines: Guidance Manual for the Preparation of Health Risk Assessments, February 2015, http://oehha.ca.gov/air/hot_spots/hotspots2015.html, accessed May 20, 2024.

[23] Bay Area Air Quality Management District, Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*, January 2016,* http://www.baaqmd.gov/~/media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en, accessed May 20, 2024.

[24] Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines*, 2022,* Appendix E: Recommended Methods for Screening and Modeling Local Risks and Hazards, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?rev=b8917a27345a4a629fc18fc8650951e4, accessed May 20, 2024.

[25] Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Risk Assessment Guidelines: Guidance Manual for the Preparation of Health Risk Assessments, February 2015, http://oehha.ca.gov/air/hot_spots/hotspots2015.html, accessed May 20, 2024.

- Off-site daycare receptors (sensitive)
- Off-site school receptors (sensitive)
- Off-site hospitals and convalescent homes (sensitive)
- Off-site worker receptors at commercial and retail locations

Because child exposure assumptions result in greater health risks than those for adults, a conservative approach of considering all off-site sensitive receptors as initially children will be used in this HRA (see **Table 4**, **Exposure Parameters**).

The HRA will model all sensitive receptors described above and shown on Figure 3 according to the age group that is appropriate for the receptor type. Residential receptors will be assumed to be a fetus at the beginning of its third trimester. Daycare receptors will be modeled for age groups from birth to 2 years, school receptors will be modeled for age groups from 2 to 16 years, and convalescent facilities will be modeled for age group from 16 to 70 years. Hospitals will be conservatively modeled for age group from 0 to 2 years. Worker receptors will be modeled for the 16 to 70 year age group.

4.1.2 Exposure Scenario and Assumptions

Exposure to off-site sensitive and worker receptors will be modeled for a 30-year period, per OEHHA guidelines, beginning at the start of construction and continuing through operation of the project. Construction is assumed to be completed in one phase such that new, on-site receptors at 530 Sansome would not be exposed to ongoing construction emissions. Table 4 shows the proposed exposure parameters that will be used for the HRA.

4.1.3 Calculation of Intake

The dose estimated for each exposure pathway is a function of the concentration of a chemical and the intake of that chemical. The intake factor for inhalation, IF_{inh}, will be calculated as follows using **Equation 3**. The values used in this equation are presented in Table 4.

Equation 3: $$IF_{inh} = \frac{DBR * FAH * EF * ED * MAF * ASF * CF}{AT}$$

Where:

IF_{inh} = Intake Factor for Inhalation (m^3/kg-day)
DBR = Daily Breathing Rate (L/kg-day)
FAH = Frequency of time at home (unitless)
EF = Exposure Frequency (days/year)
ED = Exposure Duration (years)
AT = Averaging Time (days)
MAF = Model Adjustment Factor (unitless)
ASF = Age Sensitivity Factor (unitless)
CF = Conversion Factor, 0.001 (m^3/L)

The chemical intake or dose is estimated by multiplying the intake factor for inhalation, IF_{inh}, by the chemical concentration in air, C_i. This calculation is mathematically equivalent to the dose algorithm given in the current OEHHA guidance.[26]

4.1.4 Toxicity Assessment

The assessment of toxicity determines the relationship between the magnitude of chemical exposure and the nature and magnitude of adverse health effects resulting from this exposure. Adverse health effects will be calculated for both cancer and non-cancer endpoints for DPM exposure. Toxicity values that are used to estimate the likelihood of adverse health effects occurring in humans at different exposure levels are identified as part of the toxicity assessment component of an HRA.

4.1.5 Age Sensitivity Factors (ASF)

The estimated lifetime excess cancer risks for children receptors (resident, day care, and school) will be adjusted using the ASFs recommended in the OEHHA guidance (2015a). This approach accounts for an "anticipated special sensitivity to carcinogens" of infants and children. Lifetime excess cancer risk estimates are weighted by a factor of 10 for exposures that occur from the third trimester of pregnancy to two years of age and by a factor of three for exposures that occur from two years through 15 years of age. No weighting factor (i.e., an ASF of one, which is equivalent to no adjustment) is applied to ages 16 to 70 years. Table 4 shows the ASFs to be used for all child receptors.

4.2 Cancer Risk Characterization

Lifetime excess cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to carcinogens. The risk is expressed as a unitless probability and will be calculated as the number of cancer incidences per million individuals in the HRA. The lifetime excess cancer risk for each chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical-specific cancer potency factor (CPF).

Lifetime excess cancer risk occurs exclusively through the inhalation pathway and will be calculated according to **Equation 4**.

Equation 4: $Risk_{inh} = C_i * IF_{in} \ * CPF_i * CF_1 * CF_2$

Where:

$Risk_{inh}$ = Lifetime excess cancer risk; the incremental probability of an individual developing cancer as a result of inhalation exposure to a particular carcinogen (per million)

C_i = Average annual air concentration of chemical, from AERMOD (μ/m^3)

IF_{inh} = Intake Factor for Inhalation (m^3/kg-day)

[26] Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Risk Assessment Guidelines: Guidance Manual for the Preparation of Health Risk Assessments, February 2015, http://oehha.ca.gov/air/hot_spots/hotspots2015.html, accessed May 20, 2024.

CPF_i = Cancer potency factor for chemical (mg chemical/kg body weight-day)$^{-1}$

CF_1 = Conversion factor, micrograms to milligrams (mg/µg)

CF_2 = Risk per million individuals

i = Chemical

CHAPTER 5
Control Measures

In each draft of the Air Quality and HRA Results Memorandum and first round of analysis, ESA will include identification of identify control measures that could reduce criteria air pollutant emissions. ESA will model two versions of construction and operations for the project: (1) an uncontrolled scenario and (2) a controlled scenario with potential control measures. Based on the results of the first round of analysis for the controlled scenario, additional consultation and coordination with EP and the project sponsors is anticipated to occur to identify these measures.

ESA will consult with EP staff to determine whether controls should be modeled for construction equipment for any necessary mitigation measure scenarios.

Based on EIRs for similar recent projects, such control measures may include:

1. Use of Tier 4 Final engines.
2. Use of electric construction equipment, such as cranes, pumps, air compressors, saws, forklifts, and small off-road vehicles.
3. Use of pole power instead of mobile diesel generators.
4. Use of biodiesel, renewable diesel, or natural gas in heavy-duty on-road trucks.
5. Model year requirement for heavy-duty on-road trucks (such as model year 2016 or newer).
6. Idling limits for all vehicles and equipment.
7. Routing on-road haul trucks as far away from off-site sensitive receptor locations as feasible.

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CHAPTER 6
Uncertainties

ESA will provide a summary discussion of the critical uncertainties associated with the air quality analysis modeling for both criteria pollutants and TACs. Due to the complex nature of uncertainties associated with the numerous calculations performed in the air quality analysis, our discussion will be qualitative in nature unless specific quantified estimates of uncertainty are readily available.

The following topics will be included in the uncertainty discussion:

1. **Emission calculations:** uncertainties associated with CalEEMod and EMFAC modeling, project-specific data, emission factors, general assumptions, and other methods and calculations associated with the criteria pollutant and TAC emissions estimation.
2. **Air concentrations and source representation:** uncertainties associated with the AERMOD dispersion model, including the representation of emissions sources within AERMOD and dispersion characteristics related to representative environmental datasets such as terrain and meteorology.
3. **Exposure assumptions:** uncertainties associated with estimating human exposure to TACs emitted by the project, such as exposure durations and exposure frequency.
4. **Toxicity assessment:** uncertainties associated with toxicity values for DPM.
5. **Risk calculations:** uncertainties associated with estimating lifetime excess cancer risk for sensitive and worker receptors, including inhalation dose factors and lifetime excess cancer risk estimates.
6. **Existing plus project and cumulative risk calculations:** uncertainties associated with estimating the lifetime excess cancer risk at the project MEIR resulting from existing emissions sources and future foreseeable cumulative projects.

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CHAPTER 7
Tables

TABLE 1
OFF-ROAD CONSTRUCTION EQUIPMENT LIST BY PHASE

Phase	Equipment Name	Equipment per Day	Hours per Day per Equipment	Fuel Type
Demolition	Excavator	1	8	Diesel
Site Preparation/ Grading/Excavation	Backhoes	1	8	Diesel
	Bore/Drill Rigs	2	8	Diesel
	Cement and Mortar Mixers	1	8	Electric
	Cranes (Mobile)	1	8	Diesel
	Dumpers/ Tenders	1	6	Diesel
	Excavator	2	8	Diesel
	Pumps	4	8	Electric
	Rollers	1	4	Diesel
Drainage/ Utilities/ Sub-Grade	Backhoes	1	8	Diesel
	Excavator	1	4	Diesel
	Pumps	1	8	Electric
	Rollers	1	4	Diesel
	Trenchers	1	4	Diesel
Foundations/ Concrete Pour	Backhoes	1	8	Diesel
	Cement and Mortar Mixers	1	8	Electric
	Concrete/ Industrial Saws	1	8	Electric
	Cranes (Mobile)	1	4	Diesel
	Cranes (Tower)	1	8	Electric
	Excavator	1	2	Diesel
	Forklifts	1	8	Propane
	Generator Sets	1	8	Diesel
	Welders	1	12	Electric
Building Construction	Concrete/ Industrial Saws	1	12	Electric
	Cranes (Tower)	1	14	Electric
	Forklifts	2	8	Propane
	Welders	1	12	Electric
Paving	Pavers	1	8	Diesel
	Paving Equipment	1	8	Diesel
Architectural Coating	Air Compressors	1	10	Electric
All Phases[a]	Sweepers/ Scrubbers	1	3	Diesel

SOURCE: Related, 2025

NOTES:

a. There will be one sweeper/scrubbers equipment type required for the entirety of construction.

TABLE 2
AERMOD OVERALL MODELING PARAMETERS

Pathway	Input Parameter	Input Value
Control	Averaging Time	Period average
	Dispersion Coefficient	Urban
	Model Version	v24142
Source	Source Dimension	*See Table 3*
	Release Height	*See Table 3*
	Initial Vertical Dimension	*See Table 3*
	Initial Lateral Dimension	*See Table 3*
	Variable Emission Factor	Construction = 6 a.m. to 6 p.m.[a] Operations = no variable emissions
Receptor	Receptor Height	1.8 m[b]
	Grid	20 m x 20 m[b]
Meteorology[c]	Surface Data	Mission Bay (Site ID# 5803) monitoring site
	Upper Air	Oakland International Airport (KOAK)
	Station Elevation	2 m

SOURCES:

Related, 2024

San Francisco Planning Department, Air Quality and Greenhouse Gas Analysis Guidelines, July 2024, https://sfplanning.org/air-quality, accessed July 25, 2024.Bay Area Air Quality Management District, AERMOD-Ready Meteorological Data Sets for 35 Sites in the Bay Area, 2022, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools/ceqa-modeling-data, accessed February 15, 2024.

ABBREVIATIONS: m = meters

NOTES:

a. Provided by the project sponsor.
b. From the Citywide HRA (SF DPH and SF Planning 2024).
c. From the Citywide HRA (SF DPH and SF Planning 2024).

TABLE 3
AERMOD SOURCE MODELING PARAMETERS

Parameter	Off-Road Construction Equipment	Haul/Vendor Onsite Idling	On-Road Trucks	Operational Generators	Operational Mobile Sources[a]
Construction Period					
Source Type[b]	Area	Area	Line Volume	Point	Line Volume
Source Dimension	Representative Project Areas	Representative Project Areas	Variable	TBD	Variable
Number of Sources[c]	3	3	Variable	TBD	Variable
Release Height (m)[d]	5.0	3.4	3.4	3.66	1.7
Initial Vertical Dimension (m)[e]	1.4	3.16	3.16	NA	1.58
Initial Lateral Dimension (m)[f]	NA	4.65	4.65	NA	3.72
Gas Exit Temperature (°C)[g]	NA	NA	NA	467	NA
Stack Inside Diameter (m)[g]	NA	NA	NA	0.183	NA
Gas Exit Velocity (m/s)[g]	NA	NA	NA	45.3	NA

SOURCES:

Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines, Appendix E: Recommended Methods for Screening and Modeling Local Risks and Hazards, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?rev=b8917a27345a4a629fc18fc8650951e4&sc, accessed May 15, 2024.

San Francisco Planning Department, Air Quality and Greenhouse Gas Analysis Guidelines, July 2024, https://sfplanning.org/air-quality, accessed July 25, 2024.

ABBREVIATION: m = meters; K = degrees Kelvin; m/s = meters per second; NA = not applicable; TBD = to be determined

NOTES:

a. Speciated TOG from operational, gasoline-powered mobile sources will be included in the HRA if traffic volumes warrant the analysis.
b. Construction will be modeled as area sources covering the representative project sites, consistent with the BAAQMD Appendix E guidelines.
c. Construction, off-road and on-site idling from trucks will be modeled as three separate sources to represent off-road construction activities. Operational Mobile Source locations will be dependent on traffic analysis and roadway segment volumes.
d. Release height for off-road construction equipment, on-road construction vehicles, and operational generators are from the BAAQMD Appendix E guidelines. The on-road operational mobile source parameters are from the Citywide-HRA.
e. Initial vertical dimensions for off-road construction equipment, on-road construction vehicles, and operational generators are from the BAAQMD Appendix E guidelines. The on-road operational mobile source parameters are from the Citywide-HRA.
f. Initial lateral dimensions for off-road construction equipment, on-road construction vehicles, and operational generators are from the BAAQMD Appendix E guidelines. The on-road operational mobile source parameters are from the Citywide-HRA.
g. Gas exit temperature, stack inside diameter, and gas exit velocity for operational generators are from the BAAQMD Appendix E guidelines and are consistent with the Citywide-HRA.

TABLE 4
EXPOSURE PARAMETERS

Receptor Type	Age Group (construction or operations)	Daily Breathing Rate (L/kg day or L/kg 8hrs)[a]	Exposure Duration (years)[b]	Fraction of Time at Home (unitless)[c]	Exposure Frequency (days/year)[d]	Averaging Time (days)[e]	Model Adjustment Factor (unitless)[f]	Age Sensitivity Factor (unitless)[g]
Off-site resident	Third Trimester	361	0.25	1	350	25,550	1	10
	Age 0–2 Years	1,090	2	1	350	25,550	1	10
	Age 2–16 Years	572	14	1	350	25,550	1	3
	Age 16-30 Years	261	14	0.83	350	25,550	1	1
Off-site childcare	Age 0–2 Years	1,090	2	n/a	250	25,550	1	10
	Age 2–16 Years	572	4	n/a	250	25,550	1	3
Off-site school	Age 2–16 Years[h]	572	9	n/a	180	25,550	1	3
Off-site worker	Age 16–70 Years	230	25	n/a	250	25,550	2.0 and 1	1

SOURCES:

Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments*, February 2015, https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf, accessed February 1, 2024.

Bay Area Air Quality Management District, Appendix E, "Recommended Methods for Screening and Modeling Local Risks and Hazards", August 2023, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?rev=b8917a27345a4a629fc18fc8650951e4, accessed February 1, 2024.

San Francisco Planning Department, Air Quality and Greenhouse Gas Analysis Guidelines, July 2024, https://sfplanning.org/air-quality, accessed July 25, 2024.

ABBREVIATIONS: kg = kilogram; L = liter; m^3 = cubic meters

NOTES:

a. Daily breathing rates are from OEHHA (2015) based on BAAQMD guidance (2023) as follows: for residents, 95th percentile 24-hour breathing rates (OEHHA Table 5.6) for third trimester and age 0–2 years and 80th percentile 24-hour breathing rates (OEHHA Table 5.7) for age 2–16 years and age 16–30 years; for worker, 95th percentile 8-hour moderate-intensity breathing rates (OEHHA Table 5.8) for age 16–70 years. For off-site childcare and off-site school, daily breathing rates are analyzed using residential exposure parameters consistent with San Francisco Planning Department guidance (2024).
b. The exposure duration will be as follows: 30.25 years for a resident, 6 years for childcare, 9 years for school, and 25 years for worker.
c. Fraction of time at home is set to 1 for all age groups less than 2 years and for age group 2 to 16, since there is a school within cancer risk isopleths of one in a million or greater, per BAAQMD guidance.
d. Exposure frequency represents default residential exposure frequency from BAAQMD guidance.
e. Averaging time represents 70 years for lifetime cancer risk, per OEHHA (2015).
f. The Model Adjustment Factor is applied to adjust the annual average concentration (24 hours per day, 7 days per week) from AERMOD associated with construction emissions, which assumes emissions occur seven days per week; to the actual construction emission schedule and receptor exposure for worker receptors, which is based on 5 days per week of both construction emissions and receptor exposure (equation = [7 days / 5 days] * (24 hours residential/8 hours when construction coincides with worker hours of operation) = 4.2 * ([8 hours of an employee shift/12 hours of construction activity]*[5 days a week of an employee shift/7 days of construction activity]) = 2.0). Operational emissions are continuous and therefore no modeling adjustment factor is applied for worker. No modeling adjustment factor is applied to the school or childcare receptor which is consistent with San Francisco Planning Department guidance (2024).
g. Age sensitivity factors from OEHHA (2015) Table 8.3
h. The earliest age at the school is assumed to be 2 years and based on a 9-year exposure duration, based on BAAQMD guidance.

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TABLE 4
EXPOSURE PARAMETERS

Receptor Type	Age Group (construction or operations)	Daily Breathing Rate (L/kg day or L/kg 8hrs)[a]	Exposure Duration (years)[b]	Fraction of Time at Home (unitless)[c]	Exposure Frequency (days/year)[d]	Averaging Time (days)[e]	Model Adjustment Factor (unitless)[f]	Age Sensitivity Factor (unitless)[g]
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	Age 0–2 Years	1,090	2	1	350	25,550	1	10
	Age 2–16 Years	572	14	1	350	25,550	1	3
	Age 16-30 Years	261	14	0.83	350	25,550	1	1
Off-site childcare	Age 0–2 Years	1,090	2	n/a	250	25,550	1	10
	Age 2–16 Years	572	4	n/a	250	25,550	1	3
Off-site school	Age 2–16 Years[h]	572	9	n/a	180	25,550	1	3
Off-site worker	Age 16–70 Years	230	25	n/a	250	25,550	2.8 and 1	1

SOURCES:

Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments*, February 2015, https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf, accessed February 1, 2024.

Bay Area Air Quality Management District, Appendix E, "Recommended Methods for Screening and Modeling Local Risks and Hazards", August 2023, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?rev=b8917a27345a4a629fc18fc8650951e4, accessed February 1, 2024.

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a. Daily breathing rates are from OEHHA (2015) based on BAAQMD guidance (2023) as follows: for residents, 95th percentile 24-hour breathing rates (OEHHA Table 5.6) for third trimester and age 0–2 years and 80th percentile 24-hour breathing rates (OEHHA Table 5.7) for age 2–16 years and age 16–30 years; for worker, 95th percentile 8-hour moderate-intensity breathing rates (OEHHA Table 5.8) for age 16–70 years. For off-site childcare and off-site school, daily breathing rates are analyzed using residential exposure parameters consistent with San Francisco Planning Department guidance (2024).
b. The exposure duration will be as follows: 30.25 years for a resident, 6 years for childcare, 9 years for school, and 25 years for worker.
c. Fraction of time at home is set to 1 for all age groups less than 2 years and for age group 2 to 16, since there is a school within cancer risk isopleths of one in a million or greater, per BAAQMD guidance.
d. Exposure frequency represents default residential exposure frequency from BAAQMD guidance.
e. Averaging time represents 70 years for lifetime cancer risk, per OEHHA (2015).
f. The Model Adjustment Factor is applied to adjust the annual average concentration (24 hours per day, 7 days per week) from AERMOD associated with construction emissions, which assumes emissions occur seven days per week; to the actual construction emission schedule and receptor exposure for worker receptors, which is based on 5 days per week of both construction emissions and receptor exposure (equation = [7 days / 5 days] * (24 hours residential/8 hours when construction coincides with worker hours of operation) = 4.2 * (8 hours of an employee shift/12 hours of construction activity) = 2.8). Operational emissions are continuous and therefore no modeling adjustment factor is applied for worker. No modeling adjustment factor is applied to the school or childcare receptor which is consistent with San Francisco Planning Department guidance (2024).
g. Age sensitivity factors from OEHHA (2015) Table 8.3
h. The earliest age at the school is assumed to be 2 years and based on a 9-year exposure duration, based on BAAQMD guidance.

APPENDIX F.2

Air Quality and Health Risk Assessment Results Memorandum

Final

447 BATTERY AND 530 SANSOME STREET PROJECT

Air Quality and Health Risk Assessment Results Memorandum

Prepared for
San Francisco Planning Department
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103

March 2025

ESA

Final

447 BATTERY AND 530 SANSOME STREET PROJECT

Air Quality and Health Risk Assessment Results Memorandum

Prepared for
San Francisco Planning Department
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103

March 2025

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447 Battery and 530 Sansome Street Project Air Quality and Health Risk Assessment Results Memorandum

Tables

ACRONYMS AND ABBREVIATIONS

Acronym	Description
BAAQMD	Bay Area Air Quality Management District
CEQA	California Environmental Quality Act
DPM	diesel particulate matter
EP	Environmental Planning
ESA	Environmental Science Associates
hp	Horsepower
HRA	health risk assessment
MEISR	maximum exposed individual sensitive receptor
MEIW	maximum exposed individual worker
NA	Not applicable
NOx	nitrogen oxides
$PM_{2.5}$	fine particulate matter less than 2.5 micrometers in aerodynamic diameter
PM_{10}	particulate matter less than 10 micrometers in aerodynamic diameter
Proposed project	447 Battery and 530 Sansome Street Project
ROG	reactive organic gases
TAC	toxic air contaminant
TOG	total organic gases
μ/m^3	micrograms per cubic meter
U.S. EPA	United States Environmental Protection Agency
UTM	Universal Transverse Mercator

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CHAPTER 1
Introduction

Environmental Science Associates (ESA) conducted an air quality analysis in support of environmental clearance under the California Environmental Quality Act (CEQA) for the 447 Battery and 530 Sansome Street Project (proposed project). This Air Quality Results Memorandum (AQRM) presents the results of the air quality analysis including an estimation of criteria pollutant and toxic air contaminant (TAC) emissions and a health risk assessment (HRA) of TACs, including fine particulate matter ($PM_{2.5}$). This memo presents the project-level and cumulative air quality impacts associated with the proposed project construction and operations. The overall approach to estimating air quality impacts from construction of the proposed project was discussed in the Air Quality and Health Risk Assessment Methods memorandum.[1]

The sections below describe:

- Construction criteria air pollutant emissions (Table 1 and Table 2)
- Operations criteria air pollutant emissions (Table 3 and Table 4)
- Health risks (Table 5 through Table 16)
- Cumulative projects (Table 17 and Table 18)

[1] Environmental Science Associates, *447 Battery and 530 Sansome Street Project Air Quality and Health Risk Assessment Methods*, November 2024.

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CHAPTER 2
Construction Criteria Air Pollutant Emissions

The following tables present average daily uncontrolled and controlled construction emissions by year by phase for the proposed project. The tables presented below include:

- **Table 1:** Average daily uncontrolled construction emissions for the proposed projects by year by phase.
- **Table 2:** Average daily controlled construction emissions for the proposed projects by year by phase.

TABLE 1
AVERAGE DAILY UNCONTROLLED CONSTRUCTION EMISSIONS BY YEAR BY PHASE

	Average Daily Emissions (pounds/day)			
Year/Phase	**ROG**	**NO_X**	**PM_{10} Exhaust**	**$PM_{2.5}$ Exhaust**
2027				
Demolition	<0.1	0.3	<0.1	<0.1
Grading/Excavation	0.5	7.9	0.1	0.1
Drainage/Utilities/Sub-Grade	0.1	0.9	<0.1	<0.1
Foundations/Concrete Pour	1.0	9.3	0.2	0.2
Building Construction	1.3	6.9	0.1	0.1
Street Sweeping (All Phases)	<0.1	2.1	<0.1	<0.1
2027 Total	***3.0***	***27.4***	***0.5***	***0.4***
2028				
Foundations/Concrete Pour	1.3	12.2	0.2	0.2
Building Construction	3.3	17.5	0.3	0.2
Street Sweeping (All Phases)	<0.1	2.1	<0.1	<0.1
2028 Total	***4.6***	***31.7***	***0.5***	***0.5***
2029				
Building Construction	3.1	16.7	0.2	0.2
Architectural Coatings	23.7	1.2	<0.1	<0.1
Street Sweeping (All Phases)	<0.1	2.0	<0.1	<0.1
2029 Total	***26.8***	***19.9***	***0.3***	***0.3***
2030				
Paving	0.2	2.4	<0.1	<0.1
Street Sweeping (All Phases)	<0.1	2.0	<0.1	<0.1
2030 Total	***0.2***	***4.3***	***<0.1***	***<0.1***

SOURCE: ESA, 2025.

ABBREVIATIONS: ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter

NOTES: Due to rounding, numbers in columns may not add to totals.

TABLE 2
AVERAGE DAILY CONTROLLED CONSTRUCTION EMISSIONS BY YEAR BY YEAR BY PHASE

	Average Daily Emissions (pounds/day)			
Year/Phase	**ROG**	**NO_X**	**PM_{10} Exhaust**	**$PM_{2.5}$ Exhaust**
2027				
Demolition	<0.1	0.3	<0.1	<0.1
Grading/Excavation	0.3	3.2	0.1	<0.1
Drainage/Utilities/Sub-Grade	0.1	0.3	<0.1	<0.1
Foundations/Concrete Pour	0.8	2.7	<0.1	<0.1
Building Construction	1.2	3.2	<0.1	<0.1
Street Sweeping (All Phases)	<0.1	2.0	<0.1	<0.1
2027 Total	***2.4***	***11.7***	***0.2***	***0.1***
2028				
Foundations/Concrete Pour	1.0	3.4	0.1	0.1
Building Construction	3.0	7.8	0.1	0.1
Street Sweeping (All Phases)	<0.1	1.9	<0.1	<0.1
2028 Total	***4.1***	***13.2***	***0.2***	***0.1***
2029				
Building Construction	2.8	7.3	0.1	0.1
Architectural Coatings	23.7	0.1	<0.1	<0.1
Street Sweeping (All Phases)	<0.1	1.8	<0.1	<0.1
2029 Total	***26.5***	***9.2***	***0.1***	***0.1***
2030				
Paving	0.2	0.3	<0.1	<0.1
Street Sweeping (All Phases)	<0.1	1.8	<0.1	<0.1
2030 Total	***0.2***	***2.1***	***<0.1***	***<0.1***

SOURCE: ESA, 2025.

ABBREVIATIONS: ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter

NOTES: Due to rounding, numbers in columns may not add to totals.

Controls include the use of Tier 4 Final off-road construction equipment with engines 25 horsepower or greater and electrification of air compressors, cement and mortar mixers, concrete/industrial saws, tower cranes, pumps, and welders.

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CHAPTER 3
Operational Criteria Air Pollutant Emissions

The following tables present average daily and annual operational emissions by source for the proposed project. The tables presented below include:

- **Table 3:** Average daily operational emissions for the proposed project by source, in pounds per day.
- **Table 4:** Average daily operational emissions for the proposed project by source, in tons per year.

TABLE 3
AVERAGE DAILY OPERATIONAL EMISSIONS BY SOURCE

	Average Daily Emissions (pounds/day)			
Emissions Source	**ROG**	**NO_X**	**PM_{10} Exhaust**	**$PM_{2.5}$ Exhaust**
Mobile	6.0	4.5	13.6	3.5
Consumer Products	8.4	<0.1	<0.1	<0.1
Architectural Coatings	1.6	<0.1	<0.1	<0.1
Emergency Generators	<0.1	0.1	<0.1	<0.1
Total	***16.2***	***4.6***	***13.6***	***3.5***

SOURCE: ESA, 2025.

ABBREVIATIONS: ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter

NOTE: Due to rounding, numbers in columns may not add to totals.

TABLE 4
AVERAGE ANNUAL OPERATIONAL EMISSIONS BY SOURCE

	Average Annual Emissions (tons/year)			
Emissions Source	**ROG**	**NO_X**	**PM_{10} Exhaust**	**$PM_{2.5}$ Exhaust**
Mobile	1.1	0.8	2.5	0.6
Consumer Products	1.5	<0.1	<0.1	<0.1
Architectural Coatings	0.3	<0.1	<0.1	<0.1
Emergency Generators	<0.1	<0.1	<0.1	<0.1
Total	***2.9***	***0.8***	***2.5***	***0.6***

SOURCE: ESA, 2025.

ABBREVIATIONS: ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter

NOTE: Due to rounding, numbers in columns may not add to totals.

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CHAPTER 4
Health Risk Assessment

The following tables present the results of the health risk assessment for the proposed project, including lifetime excess cancer risk (chances per million) due to diesel particulate matter (DPM) exposure and annual average particulate matter with an aerodynamic diameter equal to or less than 2.5 microns ($PM_{2.5}$) concentrations (micrograms per cubic meter = $\mu g/m^3$) associated with uncontrolled TAC emissions from construction and full buildout operations of the RADP. The tables presented below include:

- **Table 5:** Uncontrolled lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations for construction plus operations for Scenario 1.
- **Table 6:** Uncontrolled lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations for construction plus operations for Scenario 2.
- **Table 7:** Uncontrolled lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations for construction plus operations for Scenario 3.
- **Table 8:** Controlled lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations for construction plus operations for Scenario 1.
- **Table 9:** Controlled lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations for construction plus operations for Scenario 2.
- **Table 10:** Controlled lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations for construction plus operations for Scenario 3.
- **Table 11:** Uncontrolled lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations for operations for Scenario 1.
- **Table 12:** Uncontrolled lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations for operations for Scenario 2.
- **Table 13:** Uncontrolled lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations for operations for Scenario 3.
- **Table 14:** Controlled lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations for operations for Scenario 1.
- **Table 15:** Controlled lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations for operations for Scenario 2.
- **Table 16:** Controlled lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations for operations for Scenario 3.

Where the 2025 San Francisco Planning Department Air Quality and Greenhouse Gas Analysis Guidelines[2] define Scenario 1, Scenario 2, and Scenario 3 as:

Scenario 1. If existing plus project health risks at receptors do not meet or exceed the Air Pollutant Exposure Zone (APEZ) criteria, then a project would not affect the geography or severity of the APEZ. This is considered a less-than-significant health risk impact.

Scenario 2. If existing health risks at receptors do not exceed the APEZ but would meet or exceed the APEZ criteria with the project's construction and operational emissions, then the project would affect the geography of the APEZ (i.e., by increasing the geographic areas that would exceed the criteria). Under this scenario, a cumulative health risk impact is the result of existing plus project health risks. The next step is to determine whether the project's contribution to cumulative health risks is considerable.

a. A substantial health risk contribution is defined as a $PM_{2.5}$ concentration at or above 0.3 $\mu g/m^3$ or an excess cancer risk at or above 10.0 per one million persons exposed at receptor locations. The 0.3 $\mu g/m^3$ $PM_{2.5}$ concentration and the excess cancer risk of 10.0 per million persons exposed are the Air District's adopted project-level health risk thresholds and the levels above which the Air District considers new sources to make a cumulatively considerable health risk impact.

Scenario 3. If existing health risks at receptors meet or exceed the APEZ criteria and a proposed project would add new sources of air pollutants in these areas, then the project would affect the geography or severity of the APEZ (i.e., how much air pollution would occur in the area). Under this scenario, a cumulative health risk impact occurs under existing conditions and the next step is to determine whether the project's contribution to cumulative health risks is considerable.

a. Consistent with the Air District Guidelines chapter on "Best Practices for Centering Environmental Justice, Health and Equity," because health risk impacts are considered significant under existing conditions, a more health protective standard (than what is considered a substantial health risk contribution described in Scenario 2) is required to ensure that the proposed project's contribution to existing health risks would not be significant. In these areas, a $PM_{2.5}$ concentration at or above 0.2 $\mu g/m^3$ or an excess cancer risk at or above 7.0 per one million persons exposed would represent a substantial health risk, and a significant impact would occur. The $PM_{2.5}$ concentration of 0.2 $\mu g/m^3$ is consistent with the "action level" identified in Article 38 when it was first effective in 2008.[3] As these thresholds are 30 percent more health protective, use of these thresholds in already impacted areas would result in further avoidance of health effects to receptors.

[2] San Francisco Planning Department, *Air Quality and Greenhouse Gas Analysis Guidelines*, February 2025, https://sfplanning.org/air-quality, accessed February 25, 2025.

[3] A 0.2 $\mu g/m^3$ increase in $PM_{2.5}$ would result in a 0.28 percent increase in non-injury mortality or an increase of about 21 excess deaths per million per year from non-injury causes in San Francisco. This information is based on Jerrett, M., et al., Spatial Analysis of Air Pollution and Mortality in Los Angeles, in *Epidemiology* 16 (2005): 727–736. The cancer risk has been proportionally reduced to result in a significance criterion of 7 per one million persons exposed.

TABLE 5
UNCONTROLLED LIFETIME EXCESS CANCER RISK AND ANNUAL AVERAGE $PM_{2.5}$ CONCENTRATIONS FROM COMBINED CONSTRUCTION AND OPERATIONS UNDER SCENARIO 1

	Uncontrolled			
	Lifetime Excess Cancer Risk (chances per million)		Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)	
Receptor Type/ Phase	**Receptor Location (UTM X, UTM Y)**	**Project Contribution**	**Receptor Location (UTM X, UTM Y)**	**Project Contribution [a]**
MEISR				
Construction	(552460, 4183660)	1.0	(552460, 4183660)	0.01
Operations		0.1		NA
Project Total		***1.0***		***0.01***
Existing		98.7		8.56
Existing plus Project		***99.7***		***8.57***
MEIW				
Construction	(551760, 4183180)	<0.1	(551780, 4183220)	<0.01
Operations		<0.1		NA
Project Total		***<0.1***		***<0.01***
Existing		95.7		8.64
Existing plus Project		***95.8***		***8.64***
School				
Construction	(552200, 4184000)	<0.1	(552200, 4184000)	<0.01
Operations		<0.1		NA
Project Total		***<0.1***		***<0.01***
Existing		58.6		8.09
Existing plus Project		***58.6***		***8.10***

SOURCE: ESA, 2025.

ABBREVIATIONS: UTM = Universal Transverse Mercator; UTM – X = eastward-measured distance; UTM – Y = northward-measured distance; $PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; $\mu g/m^3$ = micrograms per cubic meters; MEISR = maximum exposed individual sensitive receptor; MEIW = maximum exposed individual worker; NA = not applicable

NOTES: Due to rounding, numbers in columns may not add to totals.

a. For the construction plus operations scenario, annual average $PM_{2.5}$ concentrations are from construction only because operations only begin after the completion of construction and therefore have no overlap. Exposure to full operations is shown in Table 11 through Table 16.

TABLE 6
UNCONTROLLED LIFETIME EXCESS CANCER RISK AND ANNUAL AVERAGE $PM_{2.5}$ CONCENTRATIONS FROM COMBINED CONSTRUCTION AND OPERATIONS UNDER SCENARIO 2

	Uncontrolled			
	Lifetime Excess Cancer Risk (chances per million)		Annual Average $PM_{2.5}$ Concentrations (µg/m^3)	
Receptor Type/ Phase	**Receptor Location (UTM X, UTM Y)**	**Project Contribution**	**Receptor Location (UTM X, UTM Y)**	**Project Contribution**
MEISR				
Construction	(552040, 4183960)	0.3	NA [a]	NA
Operations		<0.1		NA
Project Total		***0.3***		***NA***
Existing		99.9		NA
Existing plus Project		***100.1***		***NA***
MEIW				
Construction	NA [a]	NA	NA [a]	NA
Operations		NA		NA
Project Total		***NA***		***NA***
Existing		NA		NA
Existing plus Project		***NA***		***NA***
School				
Construction	NA [a]	NA	NA [a]	NA
Operations		NA		NA
Project Total		***NA***		***NA***
Existing		NA		NA
Existing plus Project		***NA***		***NA***

SOURCE: ESA, 2025.

ABBREVIATIONS: UTM = Universal Transverse Mercator; UTM – X = eastward-measured distance; UTM – Y = northward-measured distance; $PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; µg/m^3 = micrograms per cubic meters; MEISR = maximum exposed individual sensitive receptor; MEIW = maximum exposed individual worker; NA = not applicable; APEZ = air pollutant exposure zone

NOTES: Due to rounding, numbers in columns may not add to totals.

a. No Scenario 2 receptors exist, i.e., no receptor is brought into the APEZ, except for the MEISR for cancer risk.

TABLE 7
UNCONTROLLED LIFETIME EXCESS CANCER RISK AND ANNUAL AVERAGE $PM_{2.5}$ CONCENTRATIONS FROM FULL BUILDOUT OPERATIONS UNDER SCENARIO 3

	Uncontrolled			
	Lifetime Excess Cancer Risk (chances per million)		Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)	
Receptor Type/ Phase	**Receptor Location (UTM X, UTM Y)**	**Project Contribution**	**Receptor Location (UTM X, UTM Y)**	**Project Contribution [a]**
MEISR				
Construction	(552800, 4183360)	42.9	(552800, 4183360)	0.33
Operations		1.2		NA
Project Total		***44.0***		***0.33***
Existing		272.7		9.82
Existing plus Project		***316.7***		***10.15***
MEIW				
Construction	(552740, 4183320)	13.0	(552740, 4183320)	0.97
Operations		1.5		NA
Project Total		***14.5***		***0.97***
Existing		280.9		9.96
Existing plus Project		***295.4***		***10.94***
School				
Construction	(552420, 4183340)	0.2	(552420, 4183340)	0.02
Operations		<0.1		NA
Project Total		***0.2***		***0.02***
Existing		269.3		10.39
Existing plus Project		***269.5***		***10.41***

SOURCE: ESA, 2025.

ABBREVIATIONS: UTM = Universal Transverse Mercator; UTM – X = eastward-measured distance; UTM – Y = northward-measured distance; $PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; $\mu g/m^3$ = micrograms per cubic meters; MEISR = maximum exposed individual sensitive receptor; MEIW = maximum exposed individual worker; NA = not applicable

NOTES: Due to rounding, numbers in columns may not add to totals.

a. For the construction plus operations scenario, annual average $PM_{2.5}$ concentrations are from construction only because operations only begin after the completion of construction and therefore have no overlap. Exposure to full operations is shown in Table 11 through Table 16.

TABLE 8
CONTROLLED LIFETIME EXCESS CANCER RISK AND ANNUAL AVERAGE $PM_{2.5}$ CONCENTRATIONS FROM COMBINED CONSTRUCTION AND OPERATIONS UNDER SCENARIO 1

	Controlled [a]			
	Lifetime Excess Cancer Risk (chances per million)		Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)	
Receptor Type/ Phase	**Receptor Location (UTM X, UTM Y)**	**Project Contribution**	**Receptor Location (UTM X, UTM Y)**	**Project Contribution [b]**
MEISR				
Construction	(552460, 4183660)	0.1	(552460, 4183660)	0.01
Operations		<0.1		NA
Project Total		***0.2***		***0.01***
Existing		98.7		8.56
Existing plus Project		***98.8***		***8.56***
MEIW				
Construction	(551760, 4183180)	<0.1	(551920, 4182960)	<0.01
Operations		<0.1		NA
Project Total		***<0.1***		***<0.01***
Existing		95.7		8.76
Existing plus Project		***95.7***		***8.76***
School				
Construction	(552200, 4184000)	<0.1	(552200, 4184000)	<0.01
Operations		<0.1		NA
Project Total		***<0.1***		***<0.01***
Existing		58.6		8.09
Existing plus Project		***58.6***		***8.09***

SOURCE: ESA, 2025.

ABBREVIATIONS: UTM = Universal Transverse Mercator; UTM – X = eastward-measured distance; UTM – Y = northward-measured distance; $PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; $\mu g/m^3$ = micrograms per cubic meters; MEISR = maximum exposed individual sensitive receptor; MEIW = maximum exposed individual worker; NA = not applicable

NOTES: Due to rounding, numbers in columns may not add to totals.

a. Controls include the use of Tier 4 Final off-road construction equipment with engines 25 horsepower or greater and electrification of air compressors, cement and mortar mixers, concrete/industrial saws, tower cranes, pumps, and welders.
b. For the construction plus operations scenario, annual average $PM_{2.5}$ concentrations are from construction only because operations only begin after the completion of construction and therefore have no overlap. Exposure to full operations is shown in Table 11 through Table 16.

TABLE 9
CONTROLLED LIFETIME EXCESS CANCER RISK AND ANNUAL AVERAGE $PM_{2.5}$ CONCENTRATIONS FROM COMBINED CONSTRUCTION AND OPERATIONS UNDER SCENARIO 2

	Controlled [a]			
	Lifetime Excess Cancer Risk (chances per million)		Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)	
Receptor Type/ Phase	**Receptor Location (UTM X, UTM Y)**	**Project Contribution**	**Receptor Location (UTM X, UTM Y)**	**Project Contribution**
MEISR				
Construction	NA [b]	NA	NA [b]	NA
Operations		NA		NA
Project Total		***NA***		***NA***
Existing		NA		NA
Existing plus Project		***NA***		***NA***
MEIW				
Construction	NA [b]	NA	NA [b]	NA
Operations		NA		NA
Project Total		***NA***		***NA***
Existing		NA		NA
Existing plus Project		***NA***		***NA***
School				
Construction	NA [b]	NA	NA [b]	NA
Operations		NA		NA
Project Total		***NA***		***NA***
Existing		NA		NA
Existing plus Project		***NA***		***NA***

SOURCE: ESA, 2025.

ABBREVIATIONS: UTM = Universal Transverse Mercator; UTM – X = eastward-measured distance; UTM – Y = northward-measured distance; $PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; $\mu g/m^3$ = micrograms per cubic meters; MEISR = maximum exposed individual sensitive receptor; MEIW = maximum exposed individual worker; NA = not applicable; APEZ = air pollutant exposure zone

NOTES: Due to rounding, numbers in columns may not add to totals.

a. Controls include the use of Tier 4 Final off-road construction equipment with engines 25 horsepower or greater and electrification of air compressors, cement and mortar mixers, concrete/industrial saws, tower cranes, pumps, and welders.
b. No Scenario 2 receptors exist, i.e., no receptor is brought into the APEZ.

TABLE 10
CONTROLLED LIFETIME EXCESS CANCER RISK AND ANNUAL AVERAGE $PM_{2.5}$ CONCENTRATIONS FROM FULL BUILDOUT OPERATIONS UNDER SCENARIO 3

	Controlled [a]			
	Lifetime Excess Cancer Risk (chances per million)		Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)	
Receptor Type/ Phase	**Receptor Location (UTM X, UTM Y)**	**Project Contribution**	**Receptor Location (UTM X, UTM Y)**	**Project Contribution [b]**
MEISR				
Construction	(552800, 4183360)	5.6	(552800, 4183360)	0.20
Operations		0.6		NA
Project Total		***6.2***		***0.20***
Existing		272.7		9.82
Existing plus Project		***278.8***		***10.02***
MEIW				
Construction	(552740, 4183280)	0.9	(552780, 4183280)	0.36
Operations		2.0		NA
Project Total		***2.9***		***0.36***
Existing		296.3		10.11
Existing plus Project		***299.2***		***10.47***
School				
Construction	(552420, 4183340)	<0.1	(552420, 4183340)	0.01
Operations		<0.1		NA
Project Total		***<0.1***		***0.01***
Existing		269.3		10.39
Existing plus Project		***269.3***		***10.40***

SOURCE: ESA, 2025.

ABBREVIATIONS: UTM = Universal Transverse Mercator; UTM – X = eastward-measured distance; UTM – Y = northward-measured distance; $PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; $\mu g/m^3$ = micrograms per cubic meters; MEISR = maximum exposed individual sensitive receptor; MEIW = maximum exposed individual worker; NA = not applicable

NOTES: Due to rounding, numbers in columns may not add to totals.

a. Controls include the use of Tier 4 Final off-road construction equipment with engines 25 horsepower or greater and electrification of air compressors, cement and mortar mixers, concrete/industrial saws, tower cranes, pumps, and welders.
b. For the construction plus operations scenario, annual average $PM_{2.5}$ concentrations are from construction only because operations only begin after the completion of construction and therefore have no overlap. Exposure to full operations is shown in Table 11 through Table 16.

TABLE 11
UNCONTROLLED LIFETIME EXCESS CANCER RISK AND ANNUAL AVERAGE $PM_{2.5}$ CONCENTRATIONS FROM OPERATIONS UNDER SCENARIO 1

	Uncontrolled			
	Lifetime Excess Cancer Risk (chances per million)		Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)	
Receptor Type/ Phase	**Receptor Location (UTM X, UTM Y)**	**Project Contribution**	**Receptor Location (UTM X, UTM Y)**	**Project Contribution**
MEISR				
Project Operations	(551760, 4183160)	0.2	(551760, 4183160)	0.04
Existing		96.1		8.65
Existing plus Project		***96.3***		***8.69***
MEIW				
Project Operations	(551760, 4183180)	<0.1	(551760, 4183180)	0.04
Existing		95.7		8.65
Existing plus Project		***95.7***		***8.69***
School				
Project Operations	(552200, 4184000)	<0.1	(552220, 4184000)	<0.01
Existing		58.6		8.06
Existing plus Project		***58.6***		***8.07***

SOURCE: ESA, 2025.

ABBREVIATIONS: UTM = Universal Transverse Mercator; UTM – X = eastward-measured distance; UTM – Y = northward-measured distance; $PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; $\mu g/m^3$ = micrograms per cubic meters; MEISR = maximum exposed individual sensitive receptor; MEIW = maximum exposed individual worker; NA = not applicable

NOTES: Due to rounding, numbers in columns may not add to totals.

TABLE 12
UNCONTROLLED LIFETIME EXCESS CANCER RISK AND ANNUAL AVERAGE $PM_{2.5}$ CONCENTRATIONS FROM OPERATIONS UNDER SCENARIO 2

	Uncontrolled			
	Lifetime Excess Cancer Risk (chances per million)		Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)	
Receptor Type/ Phase	**Receptor Location (UTM X, UTM Y)**	**Project Contribution**	**Receptor Location (UTM X, UTM Y)**	**Project Contribution**
MEISR				
Project Operations	NA [a]	NA	NA [a]	NA
Existing		NA		NA
Existing plus Project		***NA***		***NA***
MEIW				
Project Operations	NA [a]	NA	NA [a]	NA
Existing		NA		NA
Existing plus Project		***NA***		***NA***
School				
Project Operations	NA [a]	NA	NA [a]	NA
Existing		NA		NA
Existing plus Project		***NA***		***NA***

SOURCE: ESA, 2025.

ABBREVIATIONS: UTM = Universal Transverse Mercator; UTM – X = eastward-measured distance; UTM – Y = northward-measured distance; $PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; $\mu g/m^3$ = micrograms per cubic meters; MEISR = maximum exposed individual sensitive receptor; MEIW = maximum exposed individual worker; NA = not applicable; APEZ = air pollutant exposure zone

NOTES: Due to rounding, numbers in columns may not add to totals.

a. No Scenario 2 receptors exist, i.e., no receptor is brought into the APEZ.

TABLE 13
UNCONTROLLED LIFETIME EXCESS CANCER RISK AND ANNUAL AVERAGE $PM_{2.5}$ CONCENTRATIONS FROM OPERATIONS UNDER SCENARIO 3

	Uncontrolled			
	Lifetime Excess Cancer Risk (chances per million)		Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)	
Receptor Type/ Phase	**Receptor Location (UTM X, UTM Y)**	**Project Contribution**	**Receptor Location (UTM X, UTM Y)**	**Project Contribution**
MEISR				
Project Operations	(552800, 4183360)	2.5	(552800, 4183360)	0.09
Existing		272.7		9.82
Existing plus Project		***275.1***		***9.91***
MEIW				
Project Operations	(552740, 4183300)	9.6	(552740, 4183300)	0.22
Existing		288.8		10.04
Existing plus Project		***298.4***		***10.26***
School				
Project Operations	(552420, 4183340)	0.1	(552000, 4183200)	0.05
Existing		269.3		9.09
Existing plus Project		***269.3***		***9.14***

SOURCE: ESA, 2025.

ABBREVIATIONS: UTM = Universal Transverse Mercator; UTM – X = eastward-measured distance; UTM – Y = northward-measured distance; $PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; $\mu g/m^3$ = micrograms per cubic meters; MEISR = maximum exposed individual sensitive receptor; MEIW = maximum exposed individual worker; NA = not applicable

NOTES: Due to rounding, numbers in columns may not add to totals.

TABLE 14
CONTROLLED LIFETIME EXCESS CANCER RISK AND ANNUAL AVERAGE $PM_{2.5}$ CONCENTRATIONS FROM OPERATIONS UNDER SCENARIO 1

	Controlled [a]			
	Lifetime Excess Cancer Risk (chances per million)		Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)	
Receptor Type/ Phase	**Receptor Location (UTM X, UTM Y)**	**Project Contribution**	**Receptor Location (UTM X, UTM Y)**	**Project Contribution**
MEISR				
Project Operations	(551760, 4183160)	0.1	(551760, 4183160)	0.04
Existing		96.1		8.65
Existing plus Project		***96.3***		***8.69***
MEIW				
Project Operations	(551760, 4183180)	<0.1	(551760, 4183180)	0.04
Existing		95.7		8.65
Existing plus Project		***95.7***		***8.69***
School				
Project Operations	(552200, 4184000)	<0.1	(552220, 4184000)	<0.01
Existing		58.6		8.06
Existing plus Project		***58.6***		***8.07***

SOURCE: ESA, 2025.

ABBREVIATIONS: UTM = Universal Transverse Mercator; UTM – X = eastward-measured distance; UTM – Y = northward-measured distance; $PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; $\mu g/m^3$ = micrograms per cubic meters; MEISR = maximum exposed individual sensitive receptor; MEIW = maximum exposed individual worker; NA = not applicable

NOTES: Due to rounding, numbers in columns may not add to totals.

a. Controls include a 2-minute idling restriction for delivery trucks in loading zones.

TABLE 15
CONTROLLED LIFETIME EXCESS CANCER RISK AND ANNUAL AVERAGE $PM_{2.5}$ CONCENTRATIONS FROM OPERATIONS UNDER SCENARIO 2

	Controlled [a]			
	Lifetime Excess Cancer Risk (chances per million)		Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)	
Receptor Type/ Phase	**Receptor Location (UTM X, UTM Y)**	**Project Contribution**	**Receptor Location (UTM X, UTM Y)**	**Project Contribution**
MEISR				
Project Operations	NA [b]	NA	NA [b]	NA
Existing		NA		NA
Existing plus Project		***NA***		***NA***
MEIW				
Project Operations	NA [b]	NA	NA [b]	NA
Existing		NA		NA
Existing plus Project		***NA***		***NA***
School				
Project Operations	NA [b]	NA	NA [b]	NA
Existing		NA		NA
Existing plus Project		***NA***		***NA***

SOURCE: ESA, 2025.

ABBREVIATIONS: UTM = Universal Transverse Mercator; UTM – X = eastward-measured distance; UTM – Y = northward-measured distance; $PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; $\mu g/m^3$ = micrograms per cubic meters; MEISR = maximum exposed individual sensitive receptor; MEIW = maximum exposed individual worker; NA = not applicable; APEZ = air pollutant exposure zone

NOTES: Due to rounding, numbers in columns may not add to totals.

a. Controls include a 2-minute idling restriction for delivery trucks in loading zones.
b. No Scenario 2 receptors exist, i.e., no receptor is brought into the APEZ.

TABLE 16
CONTROLLED LIFETIME EXCESS CANCER RISK AND ANNUAL AVERAGE $PM_{2.5}$ CONCENTRATIONS FROM OPERATIONS UNDER SCENARIO 3

	Controlled [a]			
	Lifetime Excess Cancer Risk (chances per million)		Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)	
Receptor Type/ Phase	**Receptor Location (UTM X, UTM Y)**	**Project Contribution**	**Receptor Location (UTM X, UTM Y)**	**Project Contribution**
MEISR				
Project Operations	(552800, 4183360)	1.2	(552800, 4183360)	0.09
Existing		272.7		9.82
Existing plus Project		***273.9***		***9.91***
MEIW				
Project Operations	(552740, 4183300)	3.9	(552740, 4183300)	0.13
Existing		288.8		10.04
Existing plus Project		***292.7***		***10.17***
School				
Project Operations	(552420, 4183340)	<0.1	(552000, 4183200)	0.05
Existing		269.3		9.09
Existing plus Project		***269.3***		***9.14***

SOURCE: ESA, 2025.

ABBREVIATIONS: UTM = Universal Transverse Mercator; UTM – X = eastward-measured distance; UTM – Y = northward-measured distance; $PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; $\mu g/m^3$ = micrograms per cubic meters; MEISR = maximum exposed individual sensitive receptor; MEIW = maximum exposed individual worker; NA = not applicable

NOTES: Due to rounding, numbers in columns may not add to totals.

a. Controls include a 2-minute idling restriction for delivery trucks in loading zones.

CHAPTER 5
Cumulative Health Risk

This section presents information regarding potential cumulative health risks in combination with the existing plus project health risks, from Table 10 and Table 16, at the proposed project's Scenario 3 MEISR, school receptor, and MEIW. Below is a list of cumulative projects considered when determining if any are located within 1,000 feet of the project's Scenario 3 MEISR, school receptor, or MEIW, which is the zone of influence directed by the BAAQMD for cumulative assessments.[4] However, because of the lack of available emissions data for all but one of the cumulative projects, cumulative health risks were not evaluated quantitatively with the exception of 545 Sansome Street project. **Table 17** lists the cumulative projects and provides a brief description, the expected risk sources associated with each project, and the project distances from the proposed project's Scenario 3 MEISR, school receptor, and MEIW. **Table 18** provides the quantitative cumulative analysis of 545 Sansome Street project at the proposed project's Scenario 3 MEISR, school receptor, and MEIW.

[4] Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines, 2022, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed September 9, 2024.

TABLE 17
CUMULATIVE PROJECTS CONSIDERED FOR CUMULATIVE HEALTH RISK FOR CONSTRUCTION PLUS OPERATIONS UNDER SCENARIO 3

		Construction plus Operations			Operations			
Location	**Potential Source of Health Risk**	**Distance from Scenario 3 MEISR (feet)**	**Distance from Scenario 3 MEIW (feet)**	**Distance from Scenario 3 School Receptor (feet)**	**Distance from Scenario 3 MEISR (feet)**	**Distance from Scenario 3 MEIW (feet)**	**Distance from Scenario 3 School Cancer Risk Receptor (feet)**	**Distance from Scenario 3 School $PM_{2.5}$ Receptor (feet)**
545 Sansome Street (2020-001410ENV)	Construction DPM and $PM_{2.5}$; operational emergency generator and delivery truck DPM and $PM_{2.5}$; operational employee vehicle trip gasoline TOG and $PM_{2.5}$	475	255	735	475	235	735	2,120
425 Broadway; 2024-005966PRJ/ENV	Construction DPM and $PM_{2.5}$; operational emergency generator and delivery truck DPM and $PM_{2.5}$; operational employee vehicle trip gasoline TOG and $PM_{2.5}$	1,310	1,250	705	1,310	1,270	705	1,870
100 Columbus Ave, 2022-004374PRJ	Construction DPM and $PM_{2.5}$	1,195	1,060	200	1,195	1,060	1,195	1,060
749 Grant Avenue, 2019-003978ENV/PRJ	Construction DPM and $PM_{2.5}$	1,930	1,645	865	1,930	1,680	1,930	1,645
400 California Street, 2020-010710PRJ	Construction DPM and $PM_{2.5}$	1,010	690	1,290	1,010	765	1,010	690
2024-000138PRJ/ENV, 652-660 KEARNY ST	Construction DPM and $PM_{2.5}$	1,410	1,085	585	1,410	1,155	1,410	1,085
916 Kearny Street (2022-006253PRL, 2019-019722PRJ/ENV)	Construction DPM and $PM_{2.5}$; operational emergency generator and delivery truck DPM and $PM_{2.5}$; operational employee/resident vehicle trip gasoline TOG and $PM_{2.5}$	1,220	1,225	170	1,220	1,125	1,220	1,225
875 Sansome, 2024-006874PRJ/ENV	Construction DPM and $PM_{2.5}$; operational emergency generator DPM and $PM_{2.5}$;	950	1,095	1,005	950	1,030	950	1,095

SOURCE: San Francisco Planning Department, 2024.

ABBREVIATIONS: DPM = diesel particulate matter; MEISR = maximum exposed individual sensitive receptor; MEIW = maximum exposed individual worker; $PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; TOG = total organic gases

NOTE: Cumulative project descriptions and statuses are presented in Table 3-1.

TABLE 18
CUMULATIVE PROJECTS QUANTIFIED FOR CUMULATIVE HEALTH RISK FOR CONSTRUCTION PLUS OPERATIONS AND FULL OPERATIONS UNDER SCENARIO 3

	Construction plus Operations						Operations					
	Lifetime Excess Cancer Risk (chances per million)			Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)			Lifetime Excess Cancer Risk (chances per million)			Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)		
	Scenario 3 MEISR	Scenario 3 MEIW	Scenario 3 School	Scenario 3 MEISR	Scenario 3 MEIW	Scenario 3 School	Scenario 3 MEISR	Scenario 3 MEIW	Scenario 3 School	Scenario 3 MEISR	Scenario 3 MEIW	Scenario 3 School
Project Total	6.2	2.9	<0.1	0.20	0.36	0.01	1.2	3.9	<0.1	0.09	0.13	0.05
Existing	272.7	296.3	269.3	9.82	10.11	10.39	272.7	288.8	269.3	9.82	10.04	9.09
Existing plus Project	***278.8***	***299.2***	***269.3***	***10.02***	***10.47***	***10.40***	***273.9***	***292.7***	***269.3***	***9.91***	***10.17***	***9.14***
Cumulative Projects for Which Quantitative Information Is Available												
545 Sansome Street	2.2	0.6	0.1	0.01	<0.01	<0.01	2.2	0.6	0.1	0.01	<0.01	NA [a]
Cumulative Total	***281.1***	***299.8***	***269.4***	***10.03***	***10.47***	***10.41***	***276.1***	***293.3***	***269.4***	***9.92***	***10.17***	***NA a***

SOURCE: ESA, 2025.

FirstCarbon Solutions, 2023, 545 Sansome Street Modeling Methods and Assumptions Memorandum, https://citypln-m-extnl.sfgov.org/External/link.ashx?Action=Download&ObjectVersion=-1&vault=%7bA4A7DACD-B0DC-4322-BD29-F6F07103C6E0%7d&objectGUID=%7bD4027544-F5DF-4FC8-895D-7B125481FA12%7d&fileGUID=%7b4E06EFEF-3197-44D5-AB18-03D4DE5E5AD4%7d

ABBREVIATIONS: MEISR = maximum exposed individual sensitive receptor; MEIW = maximum exposed individual worker; $PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter

NOTE: Cumulative project descriptions and statuses are presented in Table 3-1.

a. No annual average $PM_{2.5}$ concentration data is available since it was not in the model as part of the 545 Sansome Street project.

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APPENDIX G

Pedestrian Wind Study

REPORT

447 BATTERTY STREET/ 530 SANSOME STREET

SAN FRANCISCO, CA

PEDESTRIAN WIND STUDY

RWDI # 2401916

February 28, 2025

SUBMITTED TO

San Francisco Planning

Attention: Sherie George
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EXECUTIVE SUMMARY

RWDI was retained to conduct a pedestrian wind assessment for the proposed 447 Battery Street/530 Sansome Street project in San Francisco, CA (Image 1). Wind tunnel tests were conducted for the following configurations of the site: A – Existing, B - Existing + Project, C – Existing + Project + Mitigation, and D - Project + Cumulative (Images 2A through 2D). The predicted wind comfort and hazard conditions are presented on site plans in Figures 1A through 2D, while the associated wind speeds are listed in Table 1 and Table 2. These results can be summarized as follows:

Wind Comfort

Existing wind speeds exceed the 11-mph wind comfort criterion at 16 of 68 test locations. This number increases to 35 of 68 locations after the construction of the proposed development. After the addition of mitigation elements, the number of locations that exceed the wind comfort criterion decreases to 30 of 68. With the addition of approved cumulative surroundings, wind speeds exceed the wind comfort criterion at 28 of 68 locations.

Wind Hazard

Existing wind speeds do not comply with the 1-hour, 36-mph wind hazard criterion at 3 of 68 test locations for 6 hours. This number increases to 5 of 68 locations and 17 hazard hours after the construction of the proposed development and is reduced to 3 of 68 locations with the addition of both the mitigation elements and approved cumulative surroundings for 10 hours and 12 hours, respectively.

Summary Table

		WIND COMFORT			WIND HAZARD		
CONFIGURATION		**Average Speed**	**Average (%)**	**Total Exceedances**	**Average Speed**	**Total Hours**	**Total Exceedances**
A	Existing	11 mph	10%	$\frac{21}{68}$	26 mph	6	$\frac{3}{68}$
B	Existing + Project	12 mph	13%	$\frac{35}{68}$	29 mph	17	$\frac{5}{68}$
C	Existing + Project + Mitigation	11 mph	12%	$\frac{30}{68}$	29 mph	10	$\frac{3}{68}$
D	Project + Cumulative	11 mph	11%	$\frac{28}{68}$	29 mph	12	$\frac{3}{68}$

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1 INTRODUCTION

RWDI was retained to conduct a pedestrian wind assessment for the proposed project, located at 447 Battery Street and 530 Sansome Street in San Francisco, CA. This report presents the project objectives, background, and approach, and discusses the results from our assessment.

1.1 Project Description

The proposed project consists of an approximately 573 ft tall tower at 530 Sansome Street, and a new 55 ft tall fire station at 447 Battery Street.

Image 1: Aerial View of the Existing Site and Surroundings (Source: Google Earth)

1.2 Objectives

The objective of the study was to assess the effect of the proposed development on local conditions in pedestrian areas on and around the study site and provide recommendations for minimizing adverse effects, if needed. This quantitative assessment was based on wind speed measurements on a scale model of the project and its surroundings in one of RWDI's boundary-layer wind tunnels. These measurements were combined with the local wind records and compared to the wind comfort and hazard criteria specified in Section 148 of the San Francisco Planning Code. The assessment focused on critical pedestrian areas, including main entrances and public sidewalks.

2 BACKGROUND AND APPROACH

2.1 Wind Tunnel Study Model

To assess the wind environment around the proposed project, a 1:300 scale model of the project site and surroundings was constructed for the wind tunnel tests of the following configurations:

A – Existing:
Existing site with existing surroundings (Image 2A).

B – Existing + Project:
Proposed Project (canopies included) with existing surroundings and existing street trees (Image 2B).

C – Existing + Project + Mitigation:
Proposed Project (canopies included) with existing surroundings and existing and proposed street trees (Image 2C).

D – Project + Cumulative:
Proposed project with existing and cumulative surroundings, and existing and proposed street trees (Image 2D).

The wind tunnel model included all relevant surrounding buildings, trees and topography within an approximate 1200 ft radius of the study site. The wind and turbulence profiles in the atmospheric boundary layer beyond the modelled area were also simulated in RWDI's wind tunnel. The wind tunnel model was instrumented with 68 wind speed sensors to measure mean and gust speeds at a full-scale height of approximately 5 ft above local grade in pedestrian areas throughout the study site. Wind speeds were measured for 36 directions in 10° increments. The measurements at each sensor location were recorded in the form of ratios of local mean and gust speeds to the mean wind speed at a reference height above the model. The placement of wind measurement locations was based on our experience and understanding of the pedestrian usage for this site and reviewed by the design team.

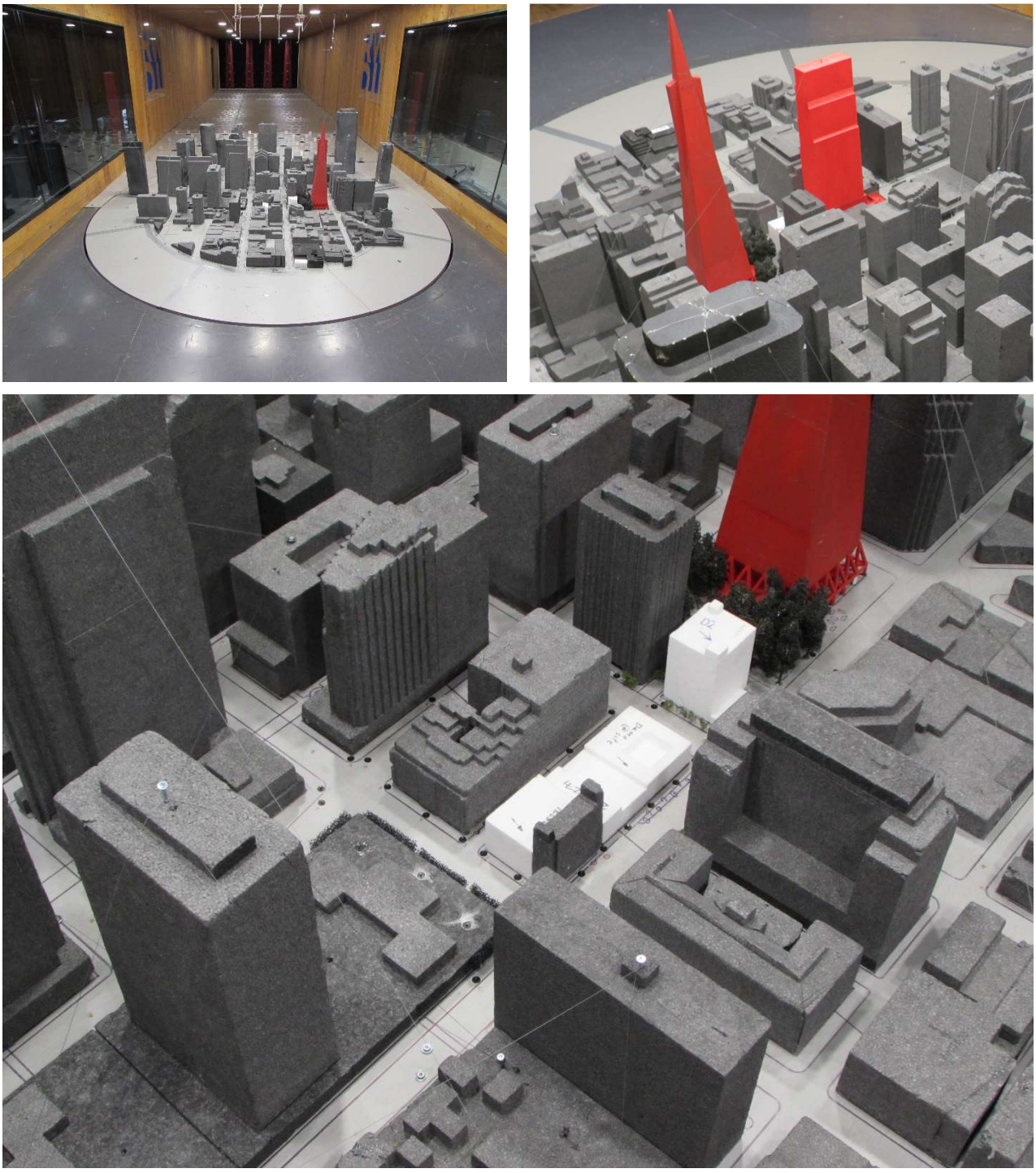


Image 2A: Wind Tunnel Study Model – Existing Configuration

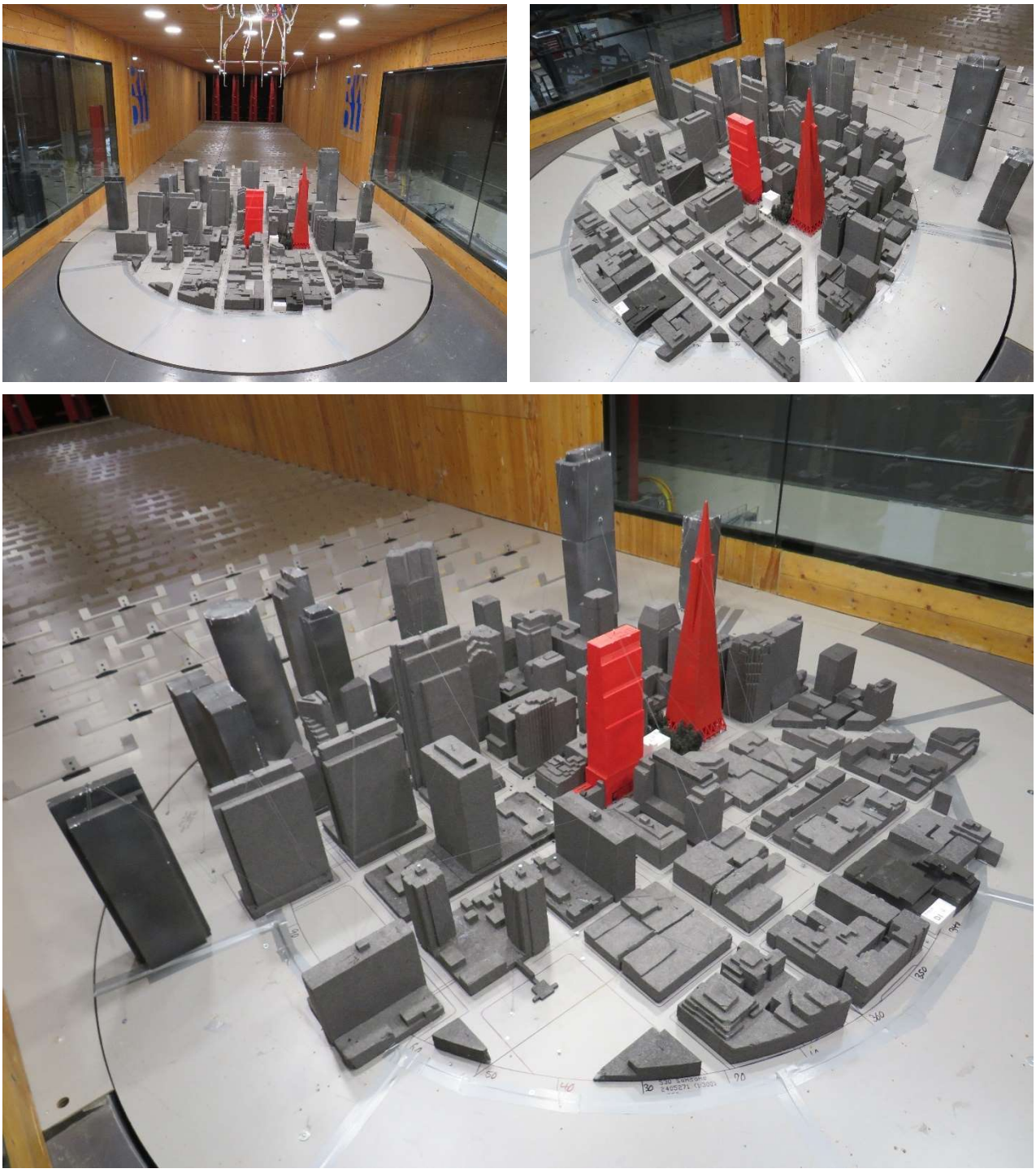
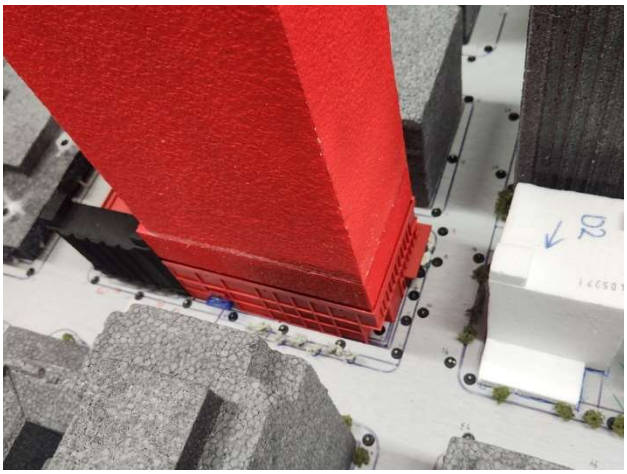


Image 2B: Wind Tunnel Study Model – Existing + Project Configuration



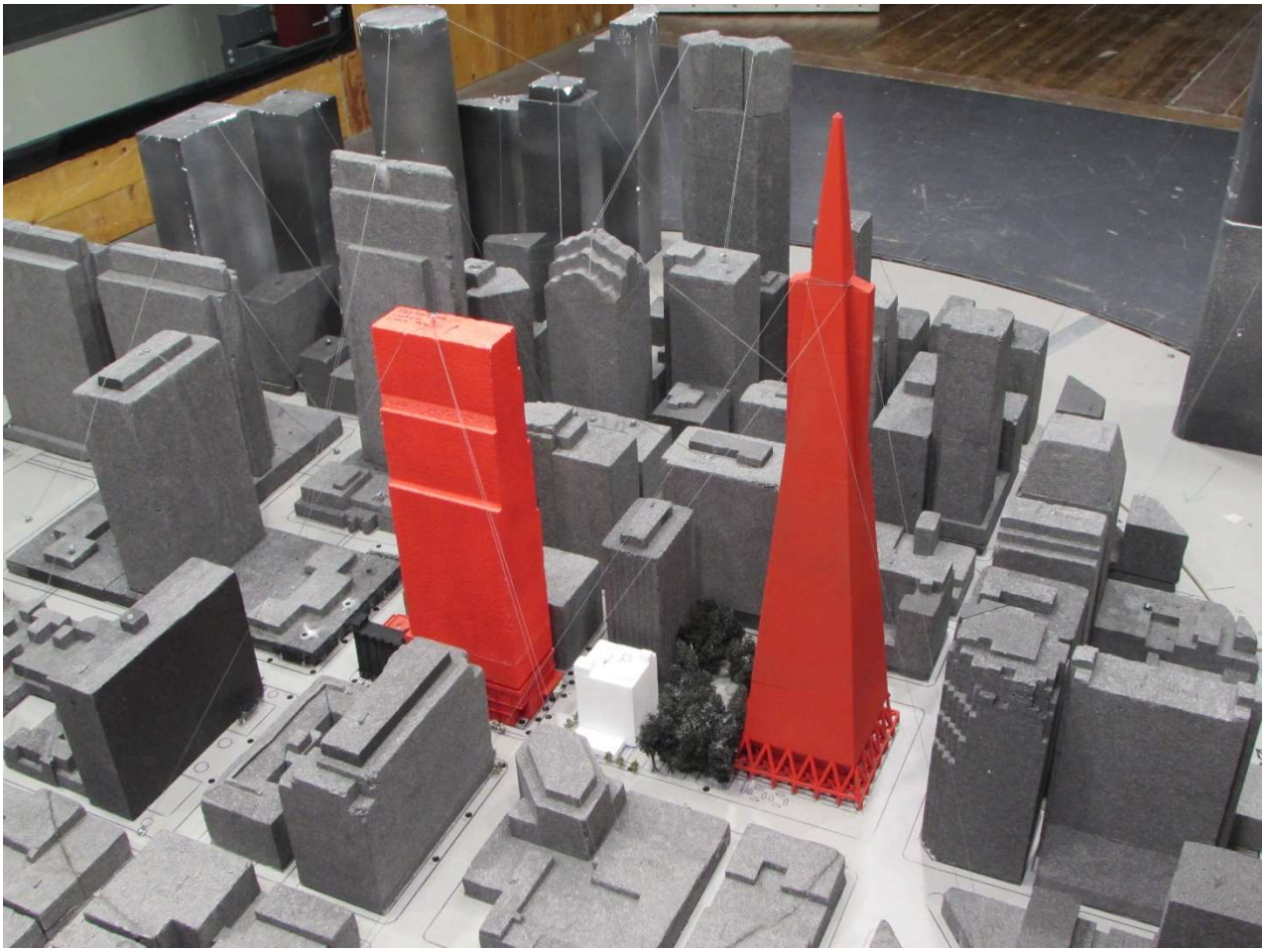


Image 2C: Wind Tunnel Study Model – Existing + Project + Mitigation Configuration

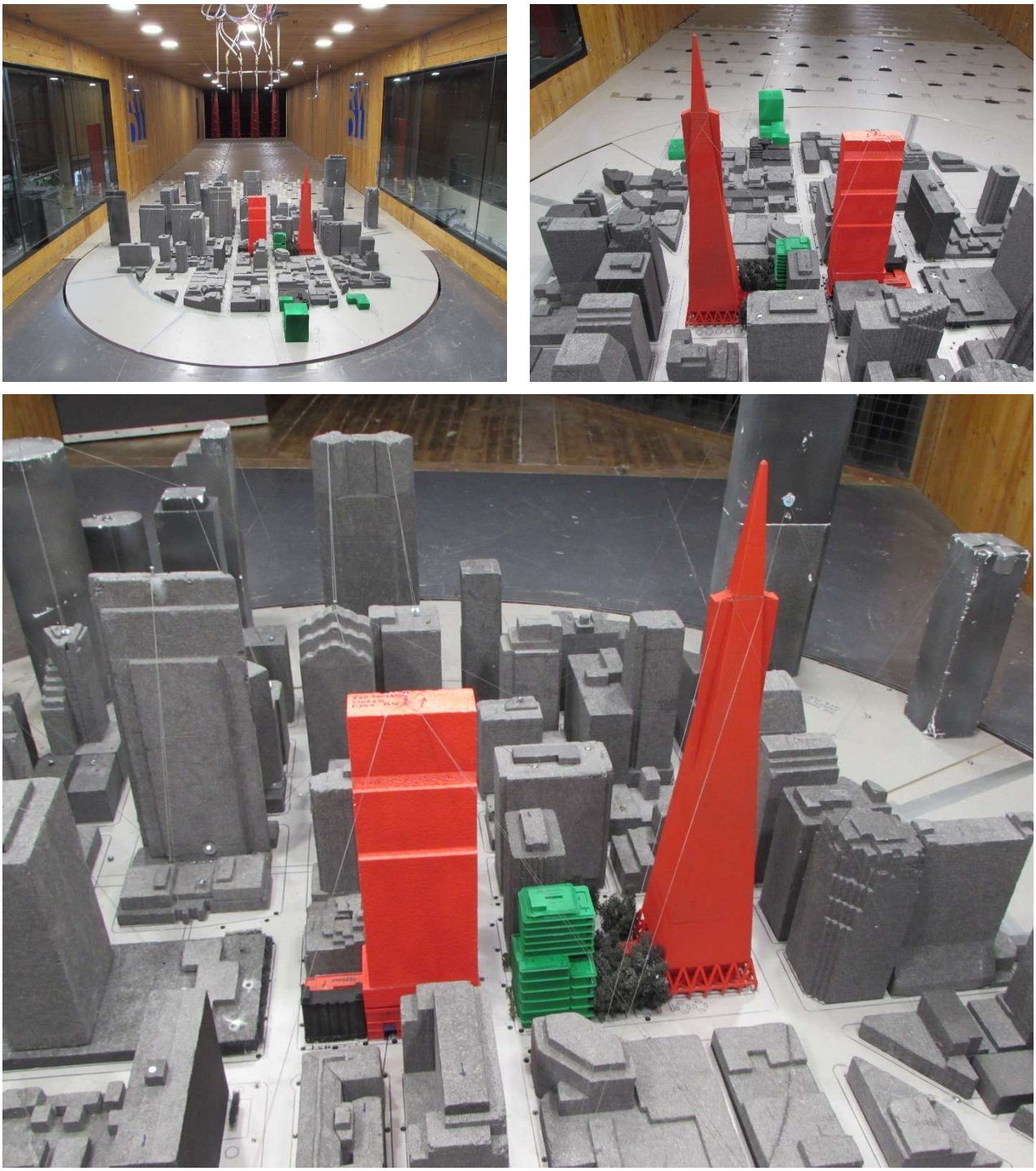


Image 2D: Wind Tunnel Study Model – Project + Cumulative Configuration

2.2 Cumulative Developments

Cumulative developments of substantial height within 0.25 miles were included in the Project + Cumulative configuration as identified by the City of San Francisco as of December 12th, 2024. These are shown in Image 3 and the table below. Cumulative developments outside of 0.25-mile boundary, and those of minimal height not expected to impact the proposed project site, were excluded from the Project + Cumulative configuration.

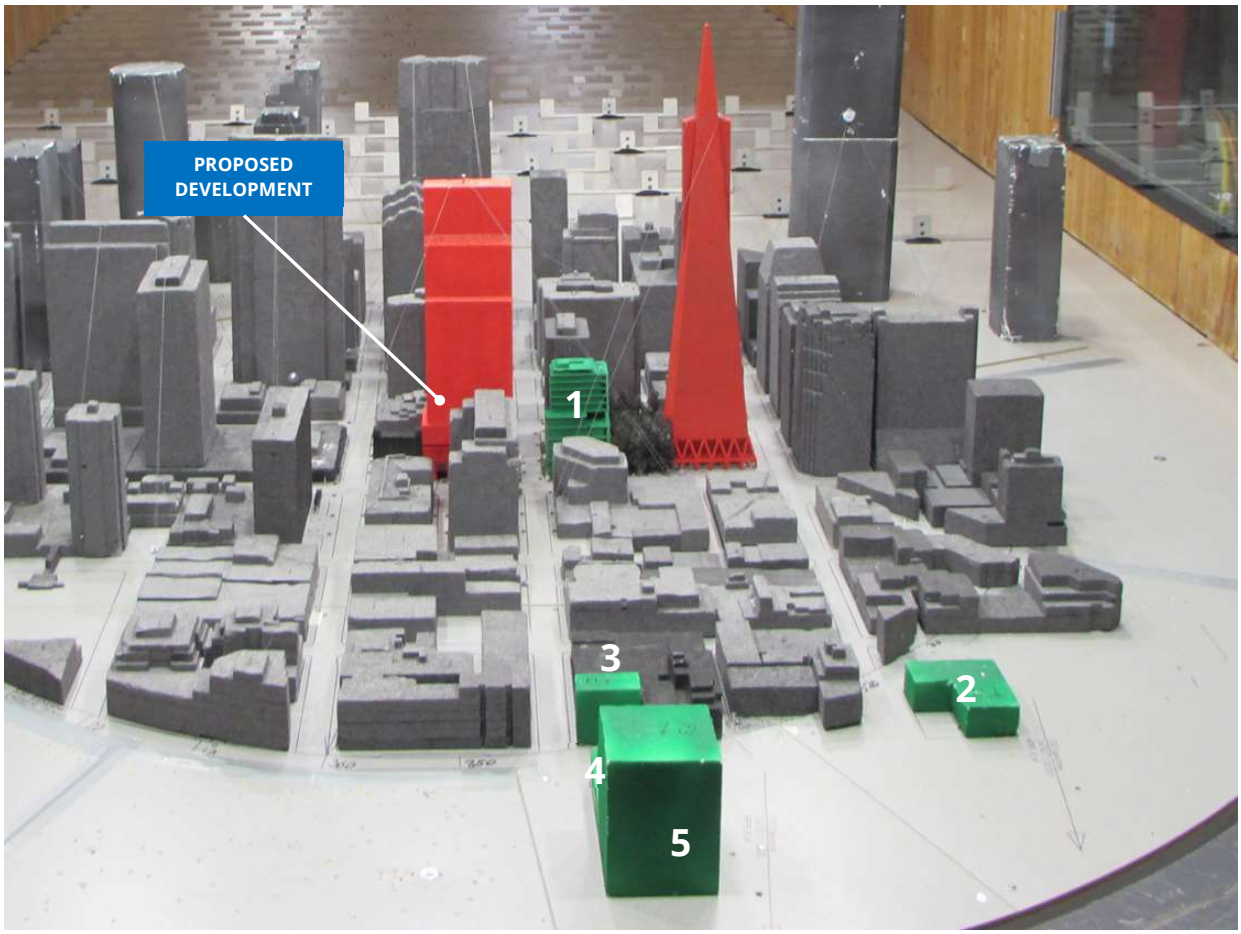


Image 3: Cumulative Developments

LIST OF CUMULATIVE DEVELOPMENTS AND HEIGHTS		
#	**Address**	**Height**
1	545 Sansome Street	198′
2	425 Broadway	49′ 2.6″
3	875 Sansome Street	87′ 11″
4	900 Sansome Street	45′ 11.2″
5	955 Sansome Street	183′ 8.7″

2.3 Meteorological Data

Long-term wind data were generated recently by RWDI using a Weather Research and Forecasting (WRF) model for the entire City of San Francisco. Results from the WRF model were used to identify areas of the city that demonstrate similar characteristics of winds speed and directionality. In this regard, five wind zones were identified: Blue, Gold, Orange, Red, and Green (Image 4).

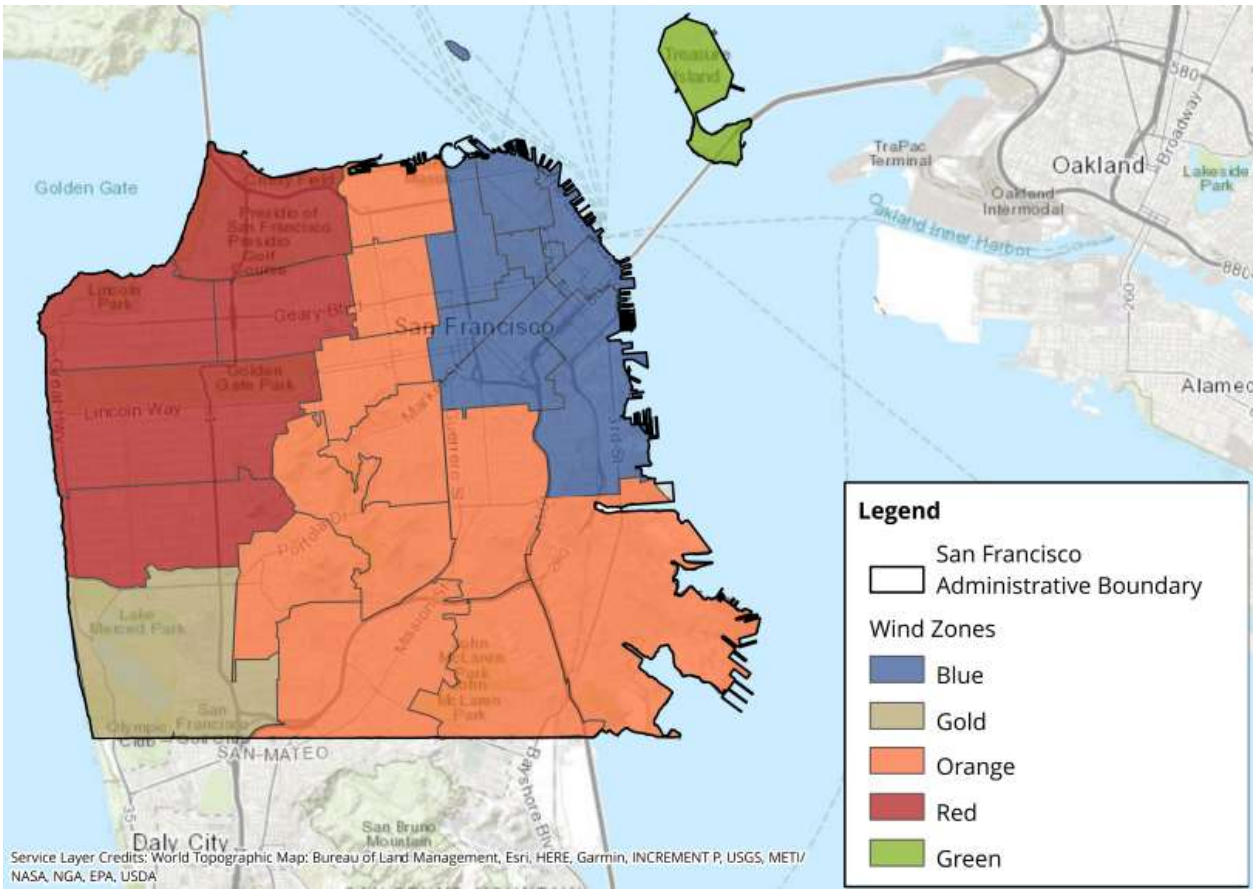


Image 4: Wind Zones in San Francisco (Courtesy of RWDI)

Image 5 presents the WRF-generated wind data for the downtown area (Blue Wind Zone). These are calculated wind speeds from 07:00 to 18:00 between 2000 and 2019, scaled to 33 ft above an open terrain. Compared to the data that was collected on the Old Federal Building at a height of 132 ft above grade during the period of 1945 to 1950 for day-time hours between 06:00 and 20:00, the WRF-generated winds take account of the local topography for different regions of the City of San Francisco for the exact daylight hours required by the Code and for longer and more current period of records.

Wind statistics were combined with the wind tunnel data to predict the frequency of occurrence of full-scale wind speeds. The full-scale wind predictions were then compared against the criteria for wind comfort and hazard as stated in the San Francisco Planning Code Section 148 (Appendix A).

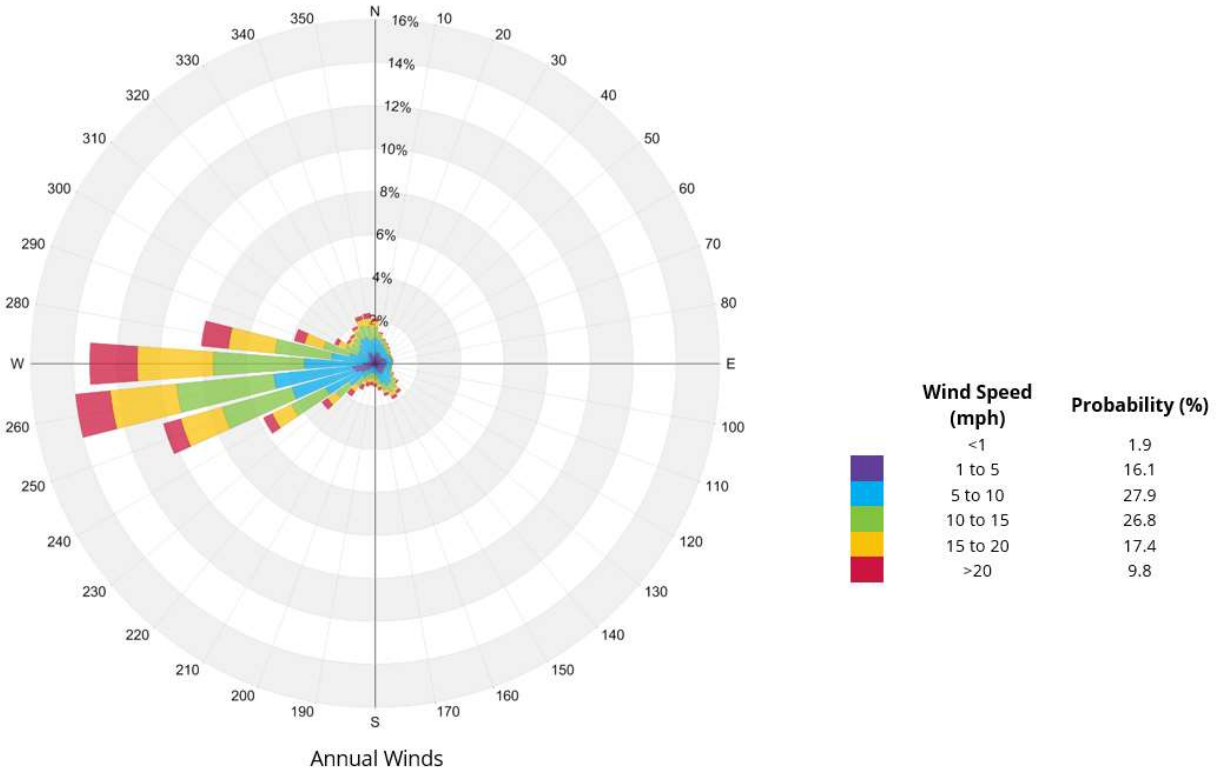


Image 5: Annual Distribution of Winds – WRF-Generated Data for Blue Wind Zone (07:00 to 18:00, 2000 to 2019)

2.4 Planning Code Requirements

This project is located in an area that is subject to the San Francisco Planning Code Section 148, Reduction of Ground-level Wind Currents in Downtown Commercial (C-3) Districts, that requires buildings in the C-3 downtown districts to be shaped so as not to cause ground-level wind currents to exceed defined comfort and hazard criteria (Appendix A). This analysis is performed using the wind testing analysis and evaluation methods to determine conformity with the Code.

Section 148 includes comfort and hazard criteria for wind speeds. The comfort criteria are that equivalent wind speeds (see notes) will not exceed, more than 10% of the time, 11-mph in substantial pedestrian use areas, and-7 mph in public seating areas. Similarly, the hazard criterion of the Code requires that buildings not cause equivalent wind speeds to reach or exceed the hazard level of 26-mph (see notes) as averaged from a single full hour of the year.

NOTES:

1. The Planning Code defines wind speeds in terms of equivalent wind speeds, and they are calculated according to the specifications in the San Francisco Planning Code Section 148, whereby the mean hourly wind speed is increased when the turbulence intensity is greater than 15% according to the following formula:

   $$\boldsymbol{EWS} = \boldsymbol{V_m} \times (\mathbf{2} \times \boldsymbol{TI} + \mathbf{0.7})$$

   Where: $\boldsymbol{EWS}$ = equivalent wind speed
   $\boldsymbol{V_m}$ = mean pedestrian – level wind speed
   $\boldsymbol{TI}$ = turbulence intensity.

2. The threshold wind speeds in the Planning Code were established by assuming wind speeds were all averaged for one hour, while the local wind data were generated by WRF for one minute on each hour. Therefore, an equivalent wind speed of 36 mph (based on the actual one-minute averaged meteorological data), instead of the Planning Code value of 26 mph (based on the assumed one-hour averaged meteorological data), is used in San Francisco for the assessment against the hazard criteria. The wind tunnel test results presented in this report use the one-minute average of 36 mph as the wind hazard criterion.

3 RESULTS AND DISCUSSION

This section presents the results of the wind tunnel measurements analyzed in terms of equivalent wind speeds as defined by the equation in Section 2.3. The text of the report simply refers to the data as wind speeds.

The wind comfort and hazard results in pedestrian areas for the configurations assessed are graphically depicted on a site plan in Figures 1A through 2D located in the "Figures" section of this report where locations have been color-coded according to the applicable criteria. This corresponding numerical data is presented in Table 1 and Table 2 located in the "Tables" section of this report. Table 1 presents the wind comfort results and lists the measured 10% exceeded (90th percentile) equivalent wind speed and the percentage of time that the wind speed exceeds 11 mph for each location assessed. The conditions are considered as comfort exceedance, indicated by the letter "e" in the last column for each configuration, if the 11-mph threshold is exceeded.

Table 2 presents the wind hazard results and lists the predicted wind speed to be exceeded one hour per year and the predicted number of hours per year that the Section 148 wind hazard criterion (one minute wind speed of 36 mph) would be exceeded. A letter "e" in the last column for each configuration indicates the wind hazard exceedance.

3.1 Existing Configuration

Existing wind speeds exceed the 11-mph comfort criterion at 21 of 68 test locations (Table 1 and Figure 1A). The average 90th percentile wind speed for the 68 test locations is 11 mph, exceeding the applicable criterion on average 10% of the time (Table 1).

Wind speeds do not comply with the wind hazard criterion at 3 of 68 test locations (Table 2 and Figure 2A), where the average wind speed, 26 mph, is exceeded for 6 hours per year.

3.2 Existing + Project Configuration

With the addition of the proposed building to the site in the Existing + Project configuration, wind speeds at 35 of 68 test locations are expected to exceed the 11-mph comfort criterion (Table 1 and Figure 1B), an increase of 14 test locations when compared with the Existing configuration. The average 90th percentile wind speed for the 68 test locations is predicted to be 12 mph, exceeding the comfort criterion on average 13% of the time (Table 1). In the presence of the proposed development, wind speeds are not expected to comply with the wind hazard criterion at 5 of 68 test locations (Table 2 and Figure 2B), an increase of 2 locations when compared with the Existing configuration. The average wind speed is 29 mph and is expected to be exceeded for 17 hours per year.

3.3 Existing + Project + Mitigation Configuration

With the addition of proposed street trees to the site in the Existing + Project + Mitigation configuration, wind speeds at 30 of 68 test locations are expected to exceed the 11-mph comfort criterion (Table 1 and Figure 1C), an increase of 9 test locations when compared with the Existing configuration, and a decrease of 5 test locations when compared with the Existing + Project configuration. The average 90th percentile wind speed for the 68 test locations is predicted to be 11 mph, exceeding the comfort criterion on average 12% of the time (Table 1). In the presence of the proposed development with proposed street trees, wind speeds are not expected to comply with the wind hazard criterion at 3 of 68 test locations (Table 2 and Figure 2C), matching the number of locations exceeded when compared with the Existing configuration. The average wind speed is 29 mph and is expected to be exceeded for 10 hours per year.

3.4 Project + Cumulative Configuration

The addition of the approved cumulative developments in the surrounding area would provide wind speeds greater to the Existing configuration, but less than the Existing + Project and Existing + Project + Mitigation configurations. The average 90th percentile wind speed for the 68 test locations would remain at 11 mph (Table 1 and Figure 2D), with the wind speeds at 28 test locations exceeding the comfort criterion of 11 mph, which is 7 more test locations when compared with the Existing configuration, 7 fewer test locations when compared with the Existing + Proposed configuration, and 2 fewer test locations when compared with the Existing + Project + Mitigation configuration. Winds would exceed the 11-mph comfort criterion approximately 11% of the time (Table 1).

For the Project + Cumulative configuration, wind speeds are expected to exceed the wind hazard criterion at 3 of 68 test locations (Table 2 and Figure 2D), matching the number of locations exceeded when compared with the Existing and Existing + Project + Mitigation configuration, and a reduction of 2 locations when compared with the Existing + Proposed configuration. The average wind speed is 29 mph and is expected to be exceeded for 12 hours per year.

4 STATEMENT OF LIMITATIONS

Limitations

This report was prepared by Rowan Williams Davies & Irwin, Inc. ("RWDI") for EQX Jackson SQ Holdco, LLC ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilize the report and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provided.

Design Assumptions

RWDI confirms that the pedestrian wind assessment (the "**Assessment**") discussed herein was performed by RWDI in accordance with generally accepted professional standards at the time when the Assessment was performed and in the location of the Project. No other representations, warranties, or guarantees are made with respect to the accuracy or completeness of the information, findings, recommendations, or conclusions contained in this Report. This report is not a legal opinion regarding compliance with applicable laws.

The findings and recommendations set out in this report are based on the following information disclosed to RWDI. Drawings and information listed below were received from the Client and used to construct the scale model of the proposed project ("**Project Data**")

File Name	File Type	Date Received (dd/mm/yyyy)
20240703_447 Battery & 530 Sansome PRJ_Revision 5	.PDF	11/10/2024
20241015_FS Massing_Wind	.3DM	16/10/2024
Fig2-X_CumulativeProjects	.PDF	18/10/2024
Fig3-1_CumulativeProjects	.PDF	10/12/2024
20241216_FS Massing_Wind_Canopy_No Landscape	.3DM	16/12/2024
20241216_FS Massing_Wind_Canopy_Yes Landscape	.3DM	16/12/2024
20241216_FS Massing_Wind_No Canopy_Yes Landscape	.3DM	16/12/2024
20241216_Site diagram for RWDI	.PDF	17/12/2024
1217_Wind Mode_RUN_1	.3DM	18/12/2024
1217_Wind Mode_RUN_2A	.3DM	18/12/2024
1217_Wind Mode_RUN_2B	.3DM	18/12/2024
1217_Wind Mode_RUN_3	.3DM	18/12/2024
1217_Wind Mode_RUN_4	.3DM	18/12/2024
20241217_Wind Model Diagram	.PDF	18/12/2024
0117_Wind Model_RUN 1	.3DM	21/01/2025
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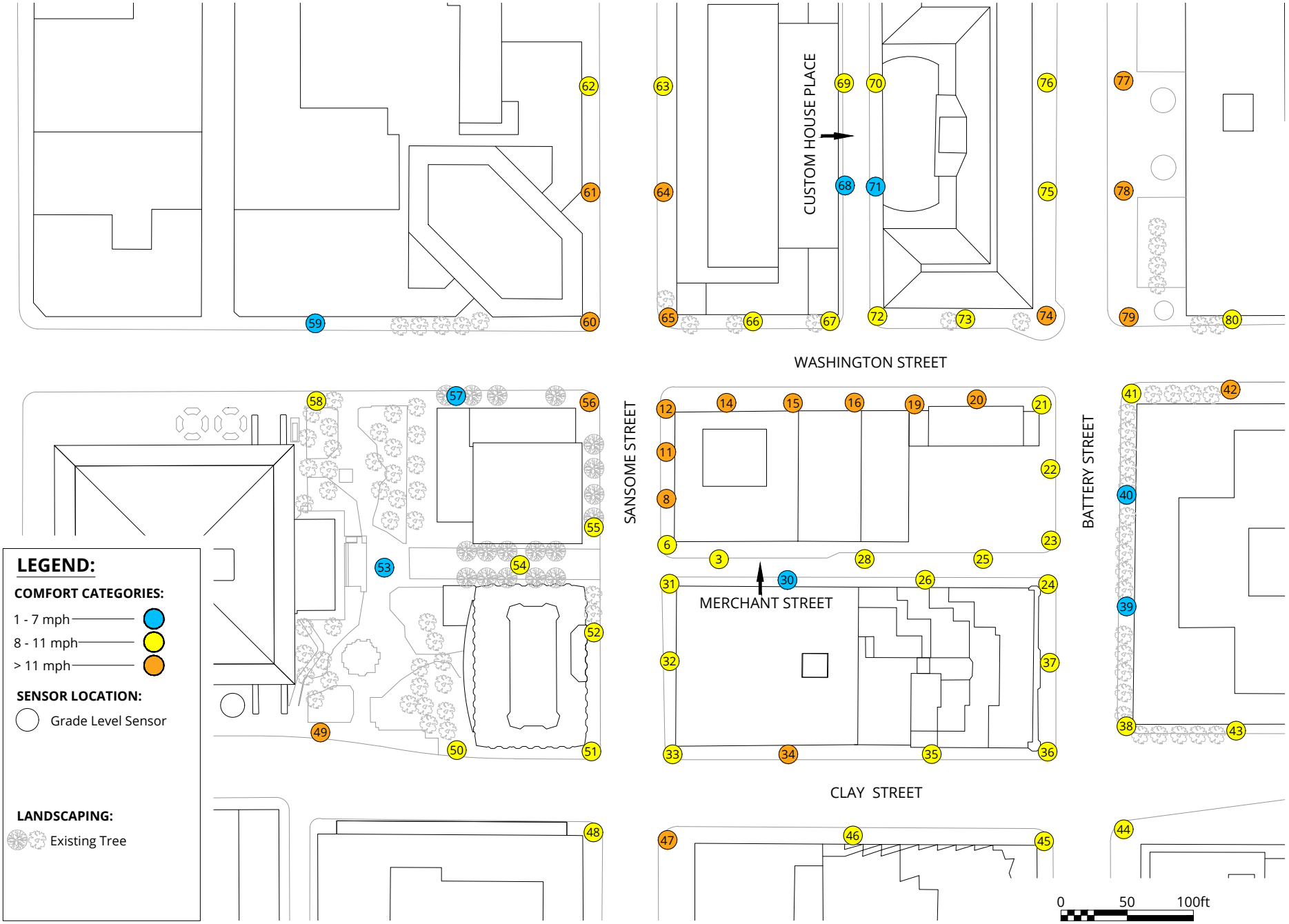
0117_Wind Model_RUN 4	.3DM	21/01/2025
0117_Wind Model_RUN 5	.3DM	21/01/2025
0117_Wind Model_RUN 6	.3DM	21/01/2025
20250117_Wind Model Diagram	.PDF	21/01/2025

The recommendations and conclusions are based on the assumption that the Project Data and Climate Data are accurate and complete. RWDI assumes no responsibility for any inaccuracy or deficiency in information it has received from others. In addition, the recommendations and conclusions in this report are partially based on historical data and can be affected by a number of external factors, including but not limited to Project design, quality of materials and construction, site conditions, meteorological events, and climate change. As such, the conclusions and recommendations contained in this report do not list every possible outcome.

The opinions in this report can only be relied upon to the extent that the Project Data and Project Specific Conditions have not changed. Any change in the Project Data or Project Specific Conditions not reflected in this report can impact and/or alter the recommendations and conclusions in this report. Therefore, it is incumbent upon the Client and/or any other third party reviewing the recommendations and conclusions in this report to contact RWDI in the event of any change in the Project Data and Project Specific Conditions in order to determine whether any such change(s) may impact the assumptions upon which the recommendations and conclusions were made.

FIGURES



Pedestrian Wind Comfort Conditions

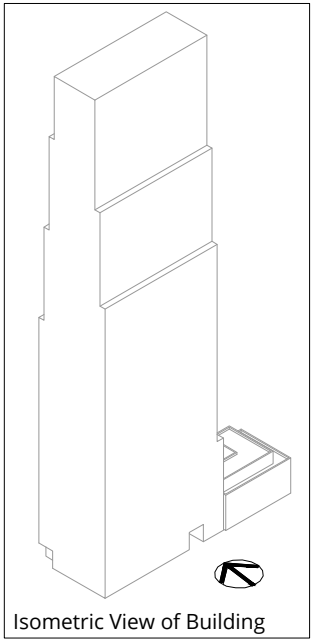
Existing
Annual

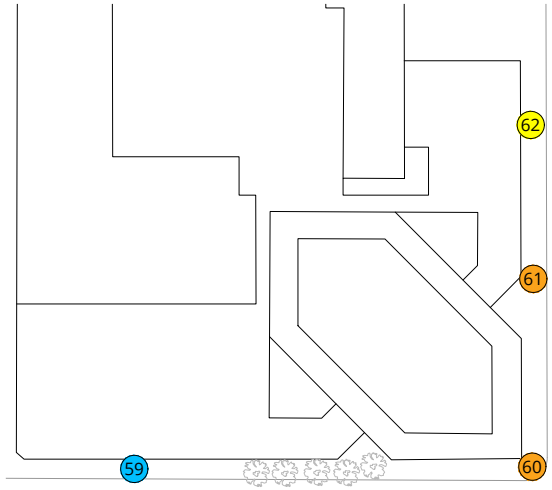
530 Sansome Street - San Francisco, CA

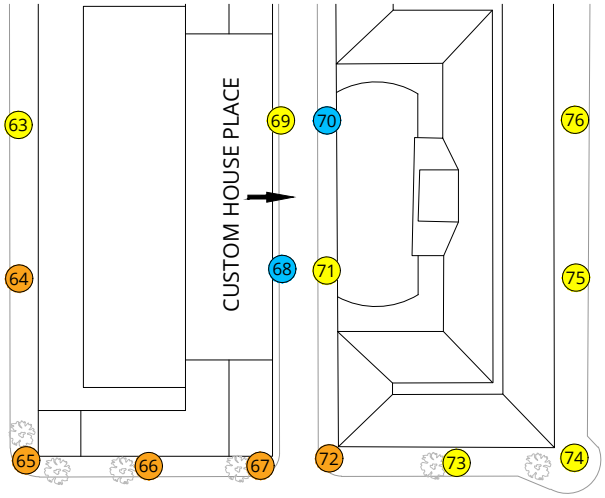
True North

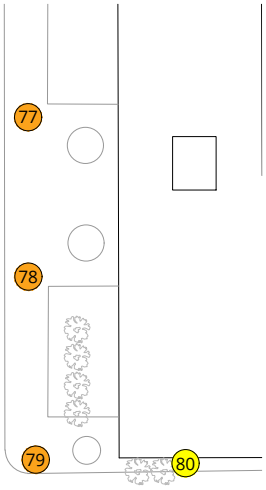
Project #2405271

Drawn by:	GRE	Figure:	1A
Approx. Scale:	1"=100'		
Date Revised:	Jan. 13, 2025		

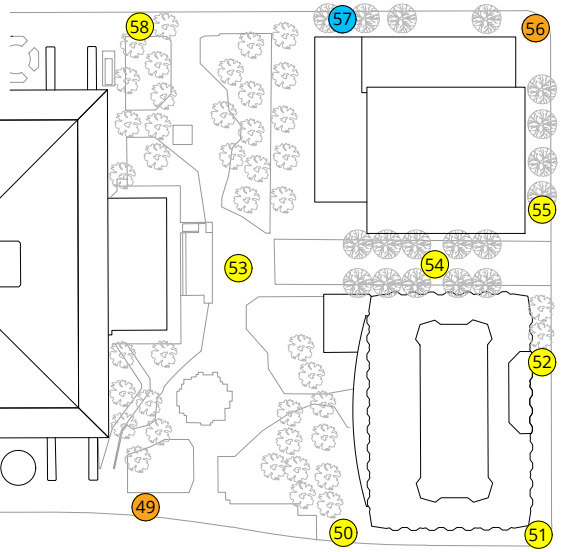








WASHINGTON STREET



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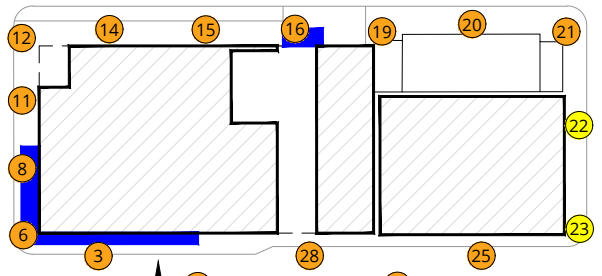

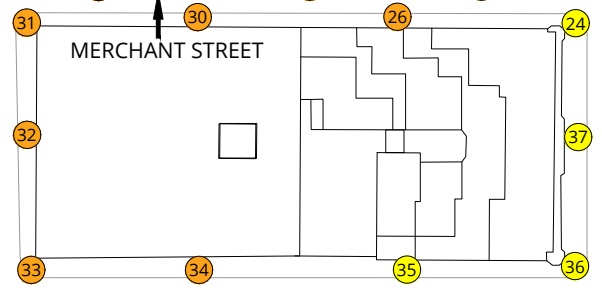

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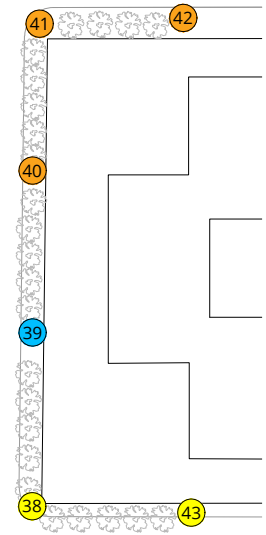
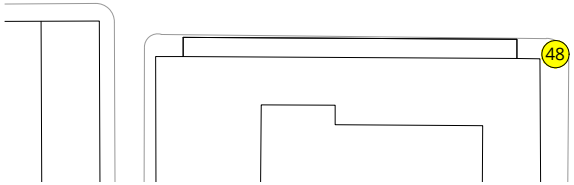
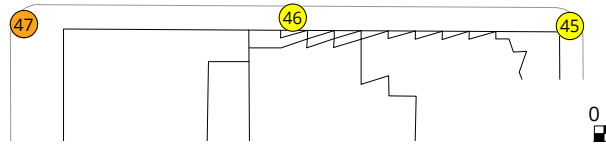
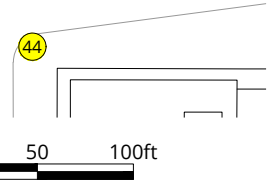


CLAY STREET







LEGEND:

COMFORT CATEGORIES:

- 1 - 7 mph
- 8 - 11 mph
- > 11 mph

SENSOR LOCATION:

- Grade Level Sensor
- Building Above Removed for Clarity

LANDSCAPE/MITIGATION:

- Existing Tree
- Proposed Canopy (Solid)

0 50 100ft

Pedestrian Wind Comfort Conditions

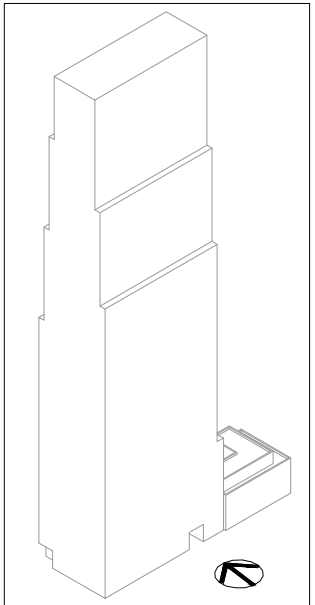
Existing + Project
Annual

530 Sansome Street - San Francisco, CA

True North

Project #2405271

Drawn by:	GRE	Figure:	1B
Approx. Scale:	1"=100'		
Date Revised:	Jan. 13, 2025		



Isometric View of Building

LEGEND:

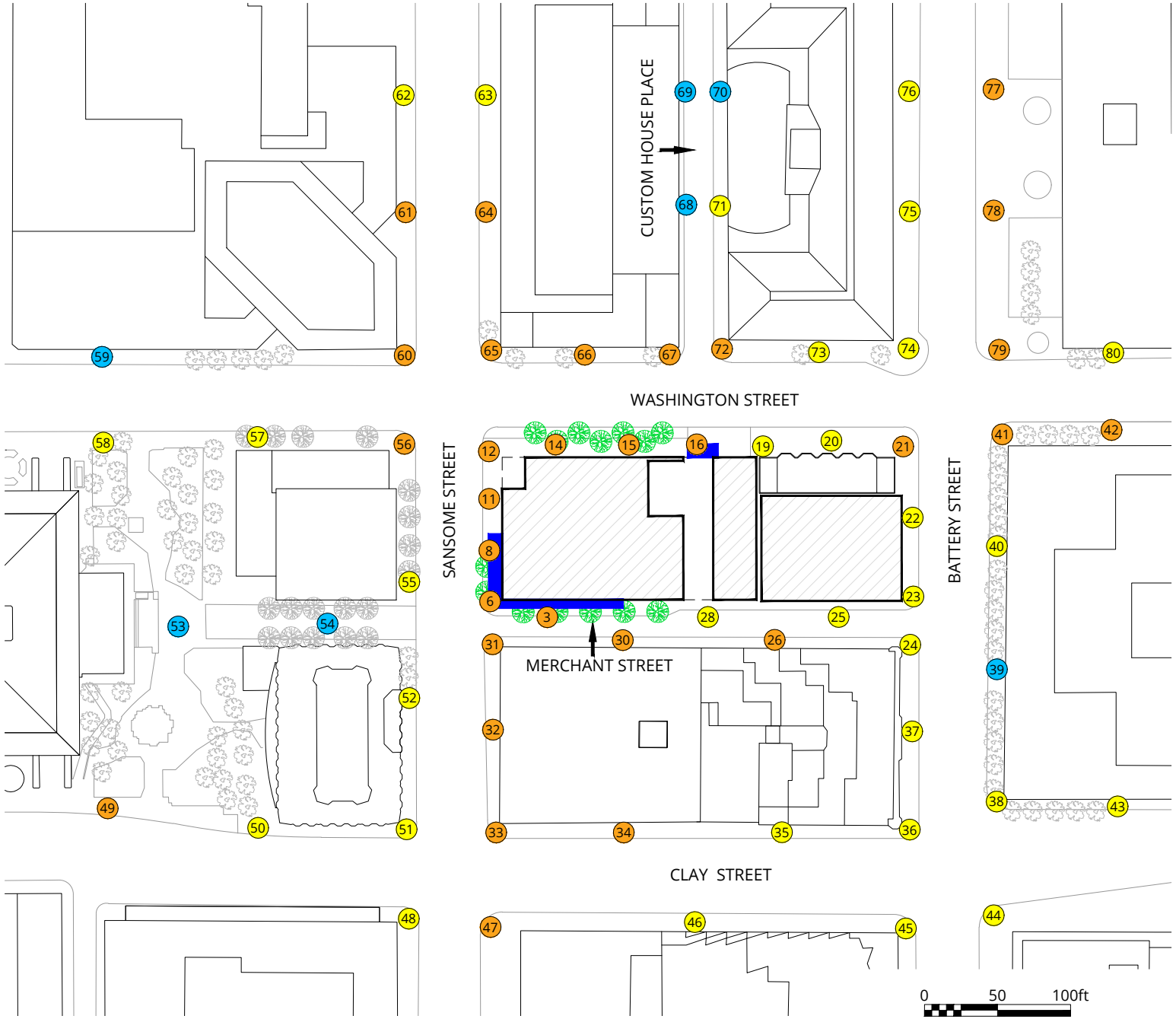
COMFORT CATEGORIES:

- 1 - 7 mph
- 8 - 11 mph
- > 11 mph

- Grade Level Sensor
- Building Above Removed for Clarity

LANDSCAPING:

- Existing Tree
- Proposed Tree
- Proposed Canopy (Solid)



Pedestrian Wind Comfort Conditions

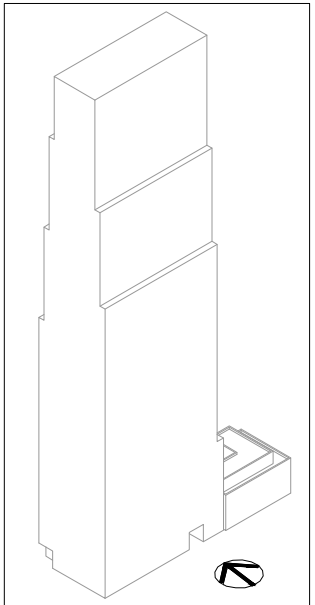
Existing + Project + Mitigation
Annual

530 Sansome Street - San Francisco, CA

True North

Project #2405271

Drawn by:	GRE	Figure:	1C
Approx. Scale:	1"=100'		
Date Revised:	Feb. 6, 2025		



Isometric View of Building

LEGEND:

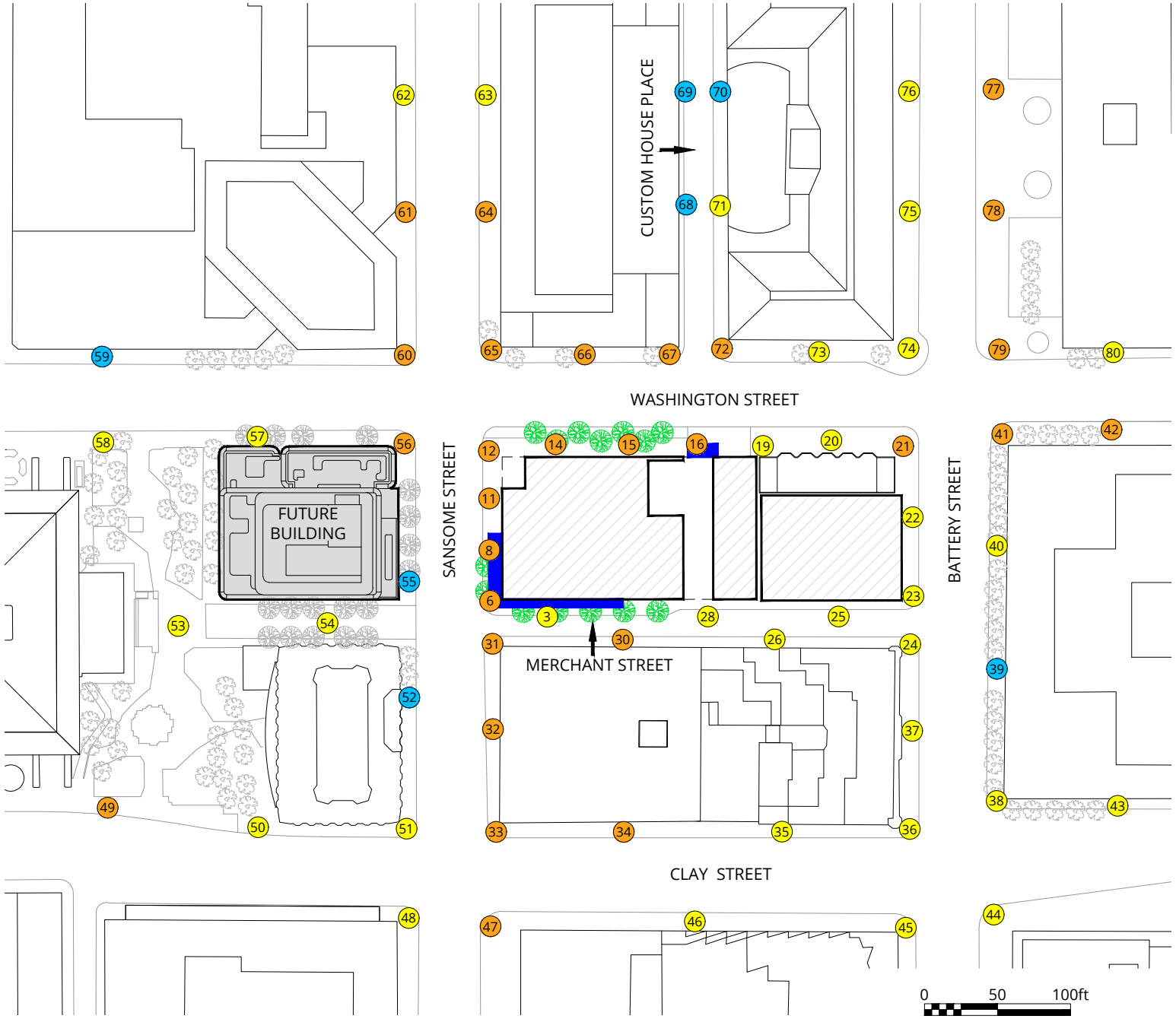
COMFORT CATEGORIES:

- 1 - 7 mph
- 8 - 11 mph
- > 11 mph

- Grade Level Sensor
- Building Above Removed for Clarity

LANDSCAPING:

- Existing Tree
- Proposed Tree
- Proposed Canopy (Solid)



Pedestrian Wind Comfort Conditions

Project + Cumulative

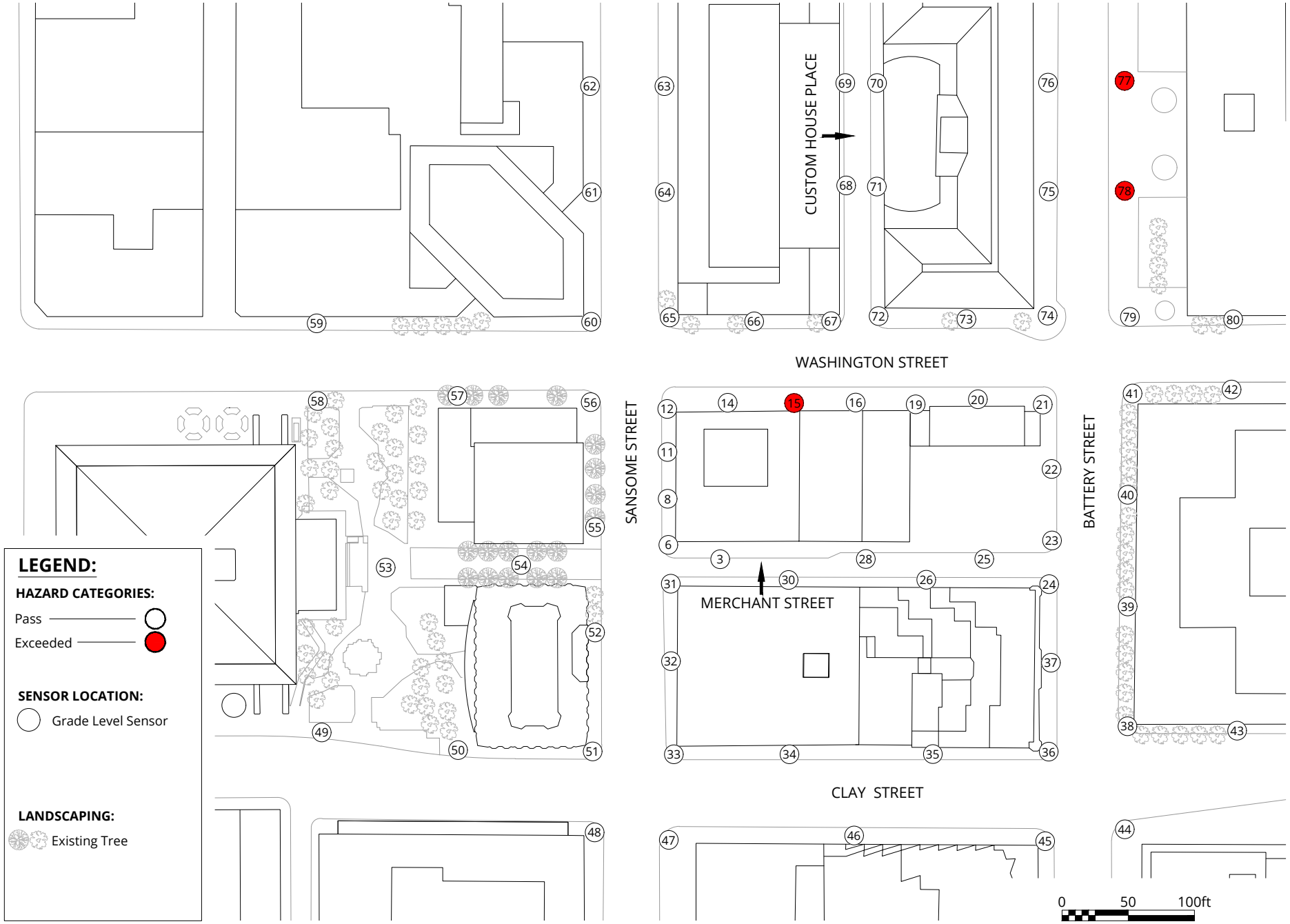
Annual

530 Sansome Street - San Francisco, CA

True North

Project #2405271

Drawn by:	GRE	Figure:	1D
Approx. Scale:	1"=100'		
Date Revised:	Feb. 6, 2025		



Pedestrian Wind Hazard Conditions

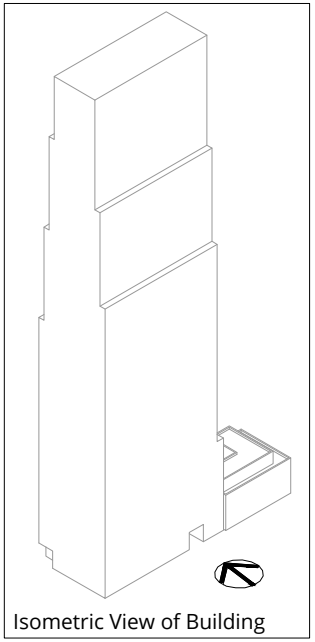
Existing
Annual

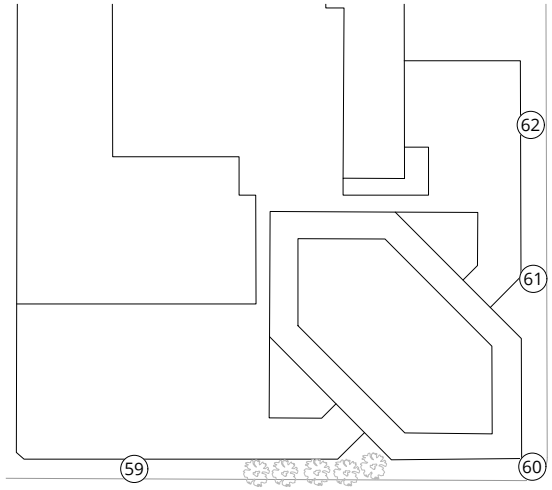
530 Sansome Street - San Francisco, CA

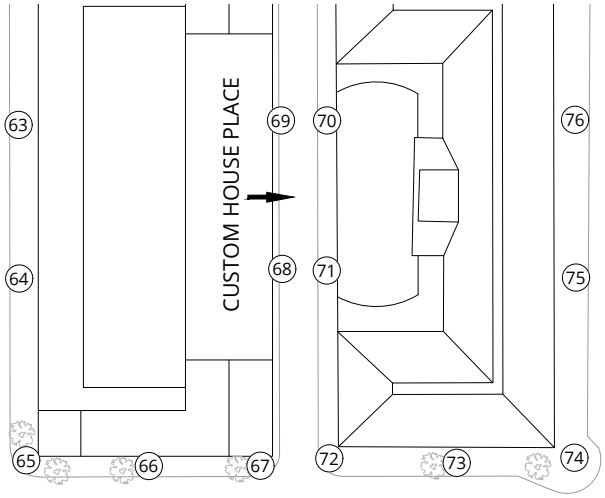
True North

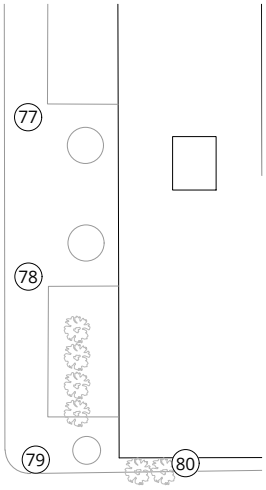
Project #2405271

Drawn by: GRE	Figure: 2A
Approx. Scale:	1"=100'
Date Revised:	Jan. 13, 2025

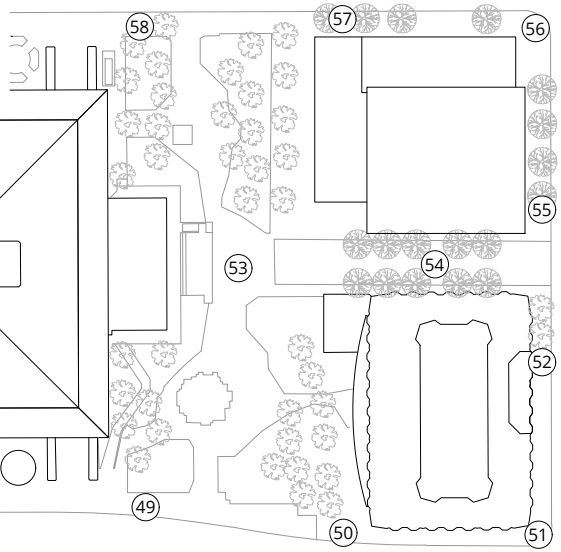




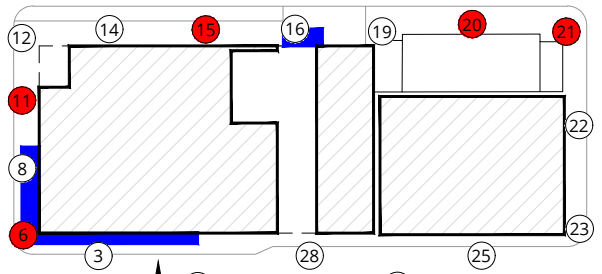


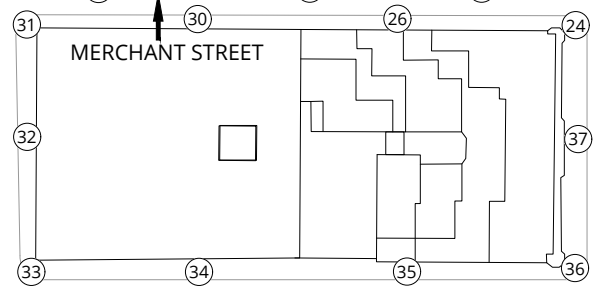


WASHINGTON STREET

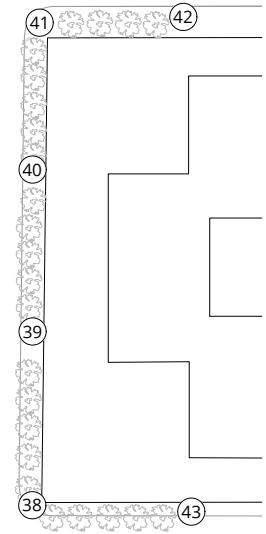


SANSOME STREET

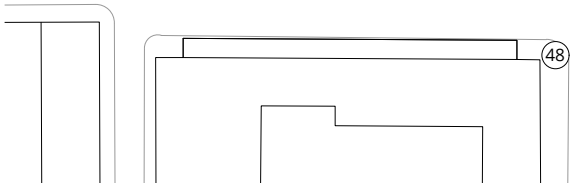


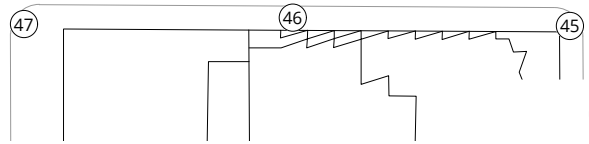


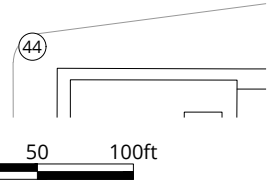
BATTERY STREET



CLAY STREET







LEGEND:

HAZARD CATEGORIES:

Pass

Exceeded

SENSOR LOCATION:

Grade Level Sensor

Building Above Removed for Clarity

LANDSCAPE/MITIGATION:

Existing Tree

Proposed Canopy (Solid)

0 50 100ft

Pedestrian Wind Hazard Conditions

Existing + Project

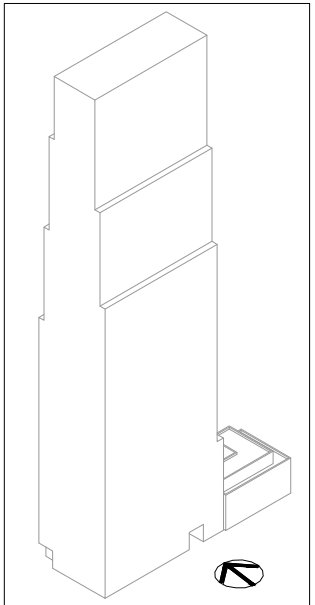
Annual

530 Sansome Street - San Francisco, CA

True North

Project #2405271

Drawn by:	GRE	Figure:	2B
Approx. Scale:	1"=100'		
Date Revised:	Jan. 13, 2025		



Isometric View of Building

LEGEND:

HAZARD CATEGORIES:

Pass

Exceeded

Grade Level Sensor

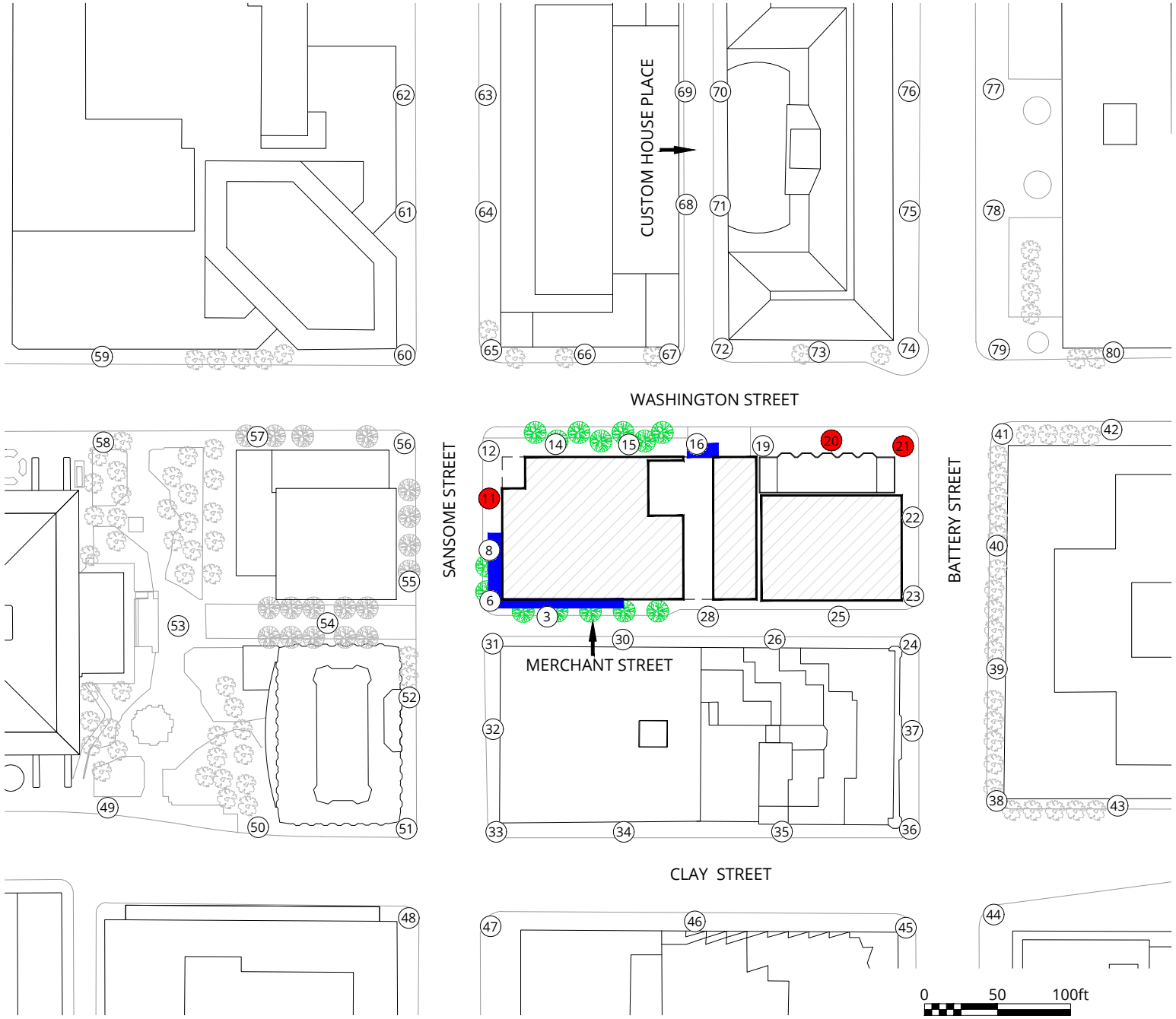
Building Above Removed for Clarity

LANDSCAPING:

Existing Tree

Proposed Tree

Proposed Canopy (Solid)



Pedestrian Wind Hazard Conditions

Existing + Project + Mitigation

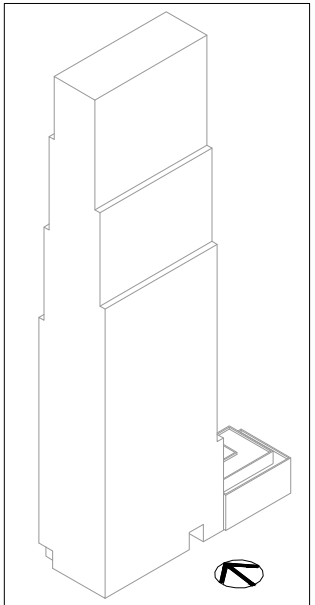
Annual

530 Sansome Street - San Francisco, CA

True North

Project #2405271

Drawn by:	GRE	Figure:	2C
Approx. Scale:	1"=100'		
Date Revised:	Feb. 6, 2025		



Isometric View of Building

LEGEND:

HAZARD CATEGORIES:

Pass

Exceeded

Grade Level Sensor

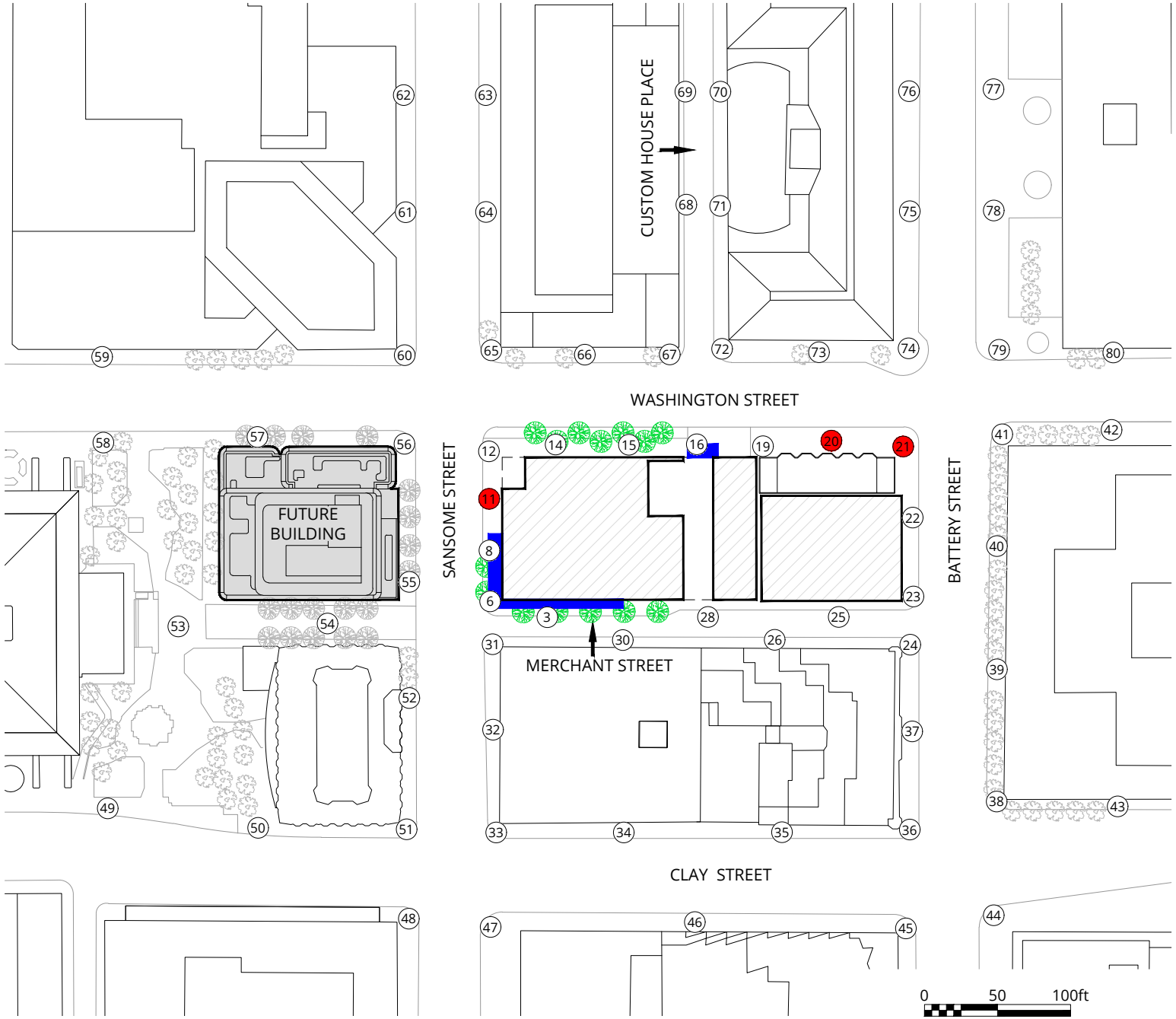
Building Above Removed for Clarity

LANDSCAPING:

Existing Tree

Proposed Tree

Proposed Canopy (Solid)



Pedestrian Wind Hazard Conditions

Project + Cumulative

Annual

530 Sansome Street - San Francisco, CA

True North

Project #2405271

Drawn by:	GRE	Figure:	2D
Approx. Scale:	1"=100'		
Date Revised:	Feb. 6, 2025		

TABLES

Table 1: Wind Comfort Conditions

Location	Existing			Existing + Project				Existing + Project + Mitigation				Project + Cumulative			
	Wind Speed Exceeded 10% of Time (mph)	% of Time Wind Speed Exceeds 11 mph (%)	Exceeds	Wind Speed Exceeded 10% of Time (mph)	% of Time Wind Speed Exceeds 11 mph (%)	Speed Change Relative to Existing (mph)	Exceeds	Wind Speed Exceeded 10% of Time (mph)	% of Time Wind Speed Exceeds 11 mph (%)	Speed Change Relative to Existing (mph)	Exceeds	Wind Speed Exceeded 10% of Time (mph)	% of Time Wind Speed Exceeds 11 mph (%)	Speed Change Relative to Existing (mph)	Exceeds
3	9	4		13	16	4	e	12	12	3	e	11	10	2	
6	11	10		15	27	4	e	13	18	2	e	13	18	2	e
8	13	19	e	14	20	1	e	14	19	1	e	14	20	1	e
11	18	31	e	19	37	1	e	19	36	1	e	20	40	2	e
12	17	30	e	16	30	-1	e	16	29	-1	e	16	31	-1	e
14	18	34	e	16	31	-2	e	16	29	-2	e	16	29	-2	e
15	20	37	e	18	35	-2	e	15	24	-5	e	15	26	-5	e
16	16	27	e	16	30	0	e	13	17	-3	e	13	18	-3	e
19	12	12	e	13	17	1	e	10	7	-2		10	7	-2	
20	13	14	e	13	18	0	e	9	5	-4		9	4	-4	
21	9	5		15	23	6	e	13	17	4	e	13	17	4	e
22	11	10		9	5	-2		9	6	-2		10	7	-1	
23	10	7		10	7	0		10	6	0		10	8	0	
24	11	10		11	10	0		10	8	-1		10	8	-1	
25	9	3		12	11	3	e	11	10	2		10	6	1	
26	8	2		12	13	4	e	12	13	4	e	11	10	3	
28	8	1		12	14	4	e	11	10	3		11	10	3	
30	7	1		13	17	6	e	13	15	6	e	12	11	5	e
31	11	10		12	14	1	e	12	12	1	e	12	12	1	e
32	10	8		13	20	3	e	13	19	3	e	13	19	3	e
33	11	10		14	21	3	e	14	21	3	e	13	18	2	e
34	12	15	e	12	15	0	e	13	16	1	e	13	17	1	e
35	11	10		10	7	-1		10	7	-1		10	8	-1	
36	9	6		9	5	0		9	5	0		9	5	0	
37	8	3		8	3	0		8	3	0		8	4	0	
38	8	2		8	2	0		8	2	0		8	2	0	
39	7	0		7	2	0		7	1	0		6	1	-1	
40	6	0		12	12	6	e	11	10	5		10	7	4	
41	10	7		12	13	2	e	12	13	2	e	12	13	2	e
42	14	19	e	15	21	1	e	14	20	0	e	14	19	0	e
43	8	2		8	3	0		8	3	0		8	3	0	
44	11	10		11	10	0		10	8	-1		10	8	-1	

Table 1: Wind Comfort Conditions

Location	Existing			Existing + Project				Existing + Project + Mitigation				Project + Cumulative			
	Wind Speed Exceeded 10% of Time (mph)	% of Time Wind Speed Exceeds 11 mph (%)	Exceeds	Wind Speed Exceeded 10% of Time (mph)	% of Time Wind Speed Exceeds 11 mph (%)	Speed Change Relative to Existing (mph)	Exceeds	Wind Speed Exceeded 10% of Time (mph)	% of Time Wind Speed Exceeds 11 mph (%)	Speed Change Relative to Existing (mph)	Exceeds	Wind Speed Exceeded 10% of Time (mph)	% of Time Wind Speed Exceeds 11 mph (%)	Speed Change Relative to Existing (mph)	Exceeds
45	11	10		11	10	0		11	10	0		10	7	-1	
46	8	3		11	10	3		11	10	3		11	10	3	
47	12	13	e	13	16	1	e	13	15	1	e	12	14	0	e
48	9	5		10	8	1		10	8	1		10	8	1	
49	12	15	e	13	18	1	e	14	21	2	e	14	21	2	e
50	11	10		11	10	0		11	10	0		11	10	0	
51	9	5		9	5	0		9	5	0		9	4	0	
52	9	3		9	3	0		8	2	-1		7	1	-2	
53	7	2		8	3	1		7	1	0		8	2	1	
54	8	2		8	1	0		7	1	-1		8	1	0	
55	9	4		10	5	1		10	6	1		7	2	-2	
56	13	17	e	13	16	0	e	13	16	0	e	13	15	0	e
57	7	1		6	0	-1		8	1	1		8	2	1	
58	10	6		9	5	-1		10	7	0		10	6	0	
59	7	1		6	1	-1		7	1	0		6	1	-1	
60	14	22	e	14	22	0	e	14	22	0	e	14	21	0	e
61	12	14	e	12	12	0	e	12	12	0	e	12	13	0	e
62	9	3		8	2	-1		8	2	-1		8	2	-1	
63	9	3		9	2	0		9	3	0		9	2	0	
64	13	19	e	13	16	0	e	13	16	0	e	13	17	0	e
65	16	28	e	17	32	1	e	17	31	1	e	17	32	1	e
66	9	4		12	13	3	e	12	15	3	e	12	13	3	e
67	11	10		16	27	5	e	17	32	6	e	17	32	6	e
68	7	2		7	2	0		7	1	0		6	1	-1	
69	8	4		8	2	0		6	1	-2		6	1	-2	
70	8	3		7	1	-1		5	1	-3		5	0	-3	
71	7	2		9	4	2		9	5	2		9	4	2	
72	11	10		12	13	1	e	12	15	1	e	12	15	1	e
73	10	7		11	10	1		11	10	1		11	10	1	
74	12	12	e	11	10	-1		11	10	-1		11	10	-1	
75	10	5		9	5	-1		10	5	0		10	5	0	
76	10	5		9	4	-1		9	5	-1		9	5	-1	

Table 1: Wind Comfort Conditions

Location	Existing			Existing + Project				Existing + Project + Mitigation				Project + Cumulative			
	Wind Speed Exceeded 10% of Time (mph)	% of Time Wind Speed Exceeds 11 mph (%)	Exceeds	Wind Speed Exceeded 10% of Time (mph)	% of Time Wind Speed Exceeds 11 mph (%)	Speed Change Relative to Existing (mph)	Exceeds	Wind Speed Exceeded 10% of Time (mph)	% of Time Wind Speed Exceeds 11 mph (%)	Speed Change Relative to Existing (mph)	Exceeds	Wind Speed Exceeded 10% of Time (mph)	% of Time Wind Speed Exceeds 11 mph (%)	Speed Change Relative to Existing (mph)	Exceeds
77	16	26	e	15	23	-1	e	15	23	-1	e	15	24	-1	e
78	15	23	e	14	21	-1	e	15	22	0	e	15	22	0	e
79	13	17	e	14	19	1	e	13	18	0	e	13	18	0	e
80	9	4		10	5	1		10	6	1		10	6	1	

Summary	Average (mph)	Average (%)	Total	Average (mph)	Average (%)	Speed Change (mph)	Total	Average (mph)	Average (%)	Speed Change (mph)	Total	Average (mph)	Average (%)	Speed Change (mph)	Total
	11	**10**	**21 ---- 68**	**12**	**13**	**1**	**35 ---- 68**	**11**	**12**	**0**	**30 ---- 68**	**11**	**11**	**0**	**28 ---- 68**

Table 2: Wind Hazard Conditions

Location	Existing			Existing + Project				Existing + Project + Mitigation				Project + Cumulative			
	Wind Speed Exceeded 1hr/year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Exceeds	Wind Speed Exceeded 1hr/year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1hr/year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1hr/year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Exceeds
3	23	0		33	0	0		26	0	0		28	0	0	
6	25	0		36	1	1	e	33	0	0		33	0	0	
8	27	0		35	0	0		34	0	0		35	0	0	
11	35	0		45	9	9	e	43	6	6	e	44	9	9	e
12	34	0		34	0	0		34	0	0		34	0	0	
14	35	0		34	0	0		31	0	0		31	0	0	
15	39	4	e	36	1	-3	e	29	0	-4		31	0	-4	
16	32	0		33	0	0		32	0	0		32	0	0	
19	26	0		32	0	0		35	0	0		35	0	0	
20	35	0		41	3	3	e	36	1	1	e	36	1	1	e
21	22	0		40	3	3	e	40	3	3	e	39	2	2	e
22	27	0		26	0	0		27	0	0		29	0	0	
23	28	0		29	0	0		29	0	0		31	0	0	
24	27	0		29	0	0		29	0	0		28	0	0	
25	20	0		30	0	0		30	0	0		30	0	0	
26	19	0		29	0	0		29	0	0		29	0	0	
28	20	0		31	0	0		35	0	0		34	0	0	
30	21	0		31	0	0		30	0	0		28	0	0	
31	25	0		30	0	0		30	0	0		29	0	0	
32	25	0		31	0	0		31	0	0		28	0	0	
33	27	0		30	0	0		30	0	0		29	0	0	
34	32	0		30	0	0		30	0	0		30	0	0	
35	30	0		27	0	0		26	0	0		26	0	0	
36	29	0		26	0	0		27	0	0		27	0	0	
37	25	0		25	0	0		25	0	0		27	0	0	
38	23	0		22	0	0		22	0	0		23	0	0	
39	14	0		24	0	0		23	0	0		23	0	0	
40	15	0		35	0	0		35	0	0		34	0	0	
41	23	0		32	0	0		33	0	0		31	0	0	
42	34	0		35	0	0		35	0	0		35	0	0	
43	23	0		25	0	0		26	0	0		26	0	0	
44	31	0		32	0	0		32	0	0		33	0	0	

Table 2: Wind Hazard Conditions

Location	Existing			Existing + Project				Existing + Project + Mitigation				Project + Cumulative			
	Wind Speed Exceeded 1hr/year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Exceeds	Wind Speed Exceeded 1hr/year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1hr/year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1hr/year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Exceeds
45	35	0		32	0	0		33	0	0		31	0	0	
46	21	0		24	0	0		26	0	0		27	0	0	
47	35	0		35	0	0		35	0	0		35	0	0	
48	29	0		31	0	0		33	0	0		32	0	0	
49	28	0		35	0	0		35	0	0		35	0	0	
50	29	0		31	0	0		32	0	0		28	0	0	
51	24	0		26	0	0		28	0	0		26	0	0	
52	18	0		22	0	0		23	0	0		23	0	0	
53	24	0		25	0	0		21	0	0		23	0	0	
54	16	0		19	0	0		19	0	0		18	0	0	
55	24	0		27	0	0		33	0	0		23	0	0	
56	25	0		31	0	0		32	0	0		35	0	0	
57	15	0		15	0	0		18	0	0		20	0	0	
58	26	0		26	0	0		27	0	0		26	0	0	
59	18	0		18	0	0		19	0	0		19	0	0	
60	28	0		30	0	0		30	0	0		29	0	0	
61	23	0		24	0	0		25	0	0		24	0	0	
62	28	0		25	0	0		24	0	0		25	0	0	
63	22	0		21	0	0		22	0	0		21	0	0	
64	27	0		26	0	0		26	0	0		26	0	0	
65	32	0		34	0	0		35	0	0		35	0	0	
66	20	0		25	0	0		26	0	0		25	0	0	
67	22	0		33	0	0		34	0	0		34	0	0	
68	24	0		25	0	0		22	0	0		22	0	0	
69	31	0		25	0	0		23	0	0		21	0	0	
70	26	0		22	0	0		18	0	0		17	0	0	
71	22	0		28	0	0		27	0	0		27	0	0	
72	24	0		27	0	0		27	0	0		27	0	0	
73	25	0		30	0	0		30	0	0		29	0	0	
74	28	0		30	0	0		31	0	0		29	0	0	
75	26	0		24	0	0		25	0	0		25	0	0	
76	27	0		25	0	0		27	0	0		26	0	0	

Table 2: Wind Hazard Conditions

Location	Existing			Existing + Project				Existing + Project + Mitigation				Project + Cumulative			
	Wind Speed Exceeded 1hr/year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Exceeds	Wind Speed Exceeded 1hr/year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1hr/year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1hr/year (mph)	Hours per Year Wind Speed Exceeds Hazard Criteria	Hours Change Relative to Existing	Exceeds
77	36	1	e	33	0	-1		33	0	-1		34	0	-1	
78	36	1	e	32	0	-1		32	0	-1		32	0	-1	
79	29	0		30	0	0		30	0	0		30	0	0	
80	23	0		24	0	0		26	0	0		26	0	0	

Summary	Average (mph)	Total Hours	Total	Average (mph)	Total Hours	Hours Change	Total	Average (mph)	Total Hours	Hours Change	Total	Average (mph)	Total Hours	Hours Change	Total
	26	**6**	**3 ---- 68**	**29**	**17**	**11**	**5 ---- 68**	**29**	**10**	**4**	**3 ---- 68**	**29**	**12**	**6**	**3 ---- 68**

APPENDIX A

San Francisco Planning Code Section 148

APPENDIX A:

San Francisco Planning Code Section 148
Reduction of Ground-Level Wind Currents In C-3 Districts

a) Requirement and Exception. In C-3 Districts, buildings and additions to existing buildings shall be shaped, or other wind-baffling measures shall be adopted, so that the developments will not cause ground-level wind currents to exceed, more than 10 percent of the time year round, between 7:00 a.m. and 6:00 p.m., the comfort level of 11 m.p.h. equivalent wind speed in areas of substantial pedestrian use and seven m.p.h. equivalent wind speed in public seating areas.

When preexisting ambient wind speeds exceed the comfort level, or when a proposed building or addition may cause ambient wind speeds to exceed the comfort level, the building shall be designed to reduce the ambient wind speeds to meet the requirements. An exception may be granted, in accordance with the provisions of Section 309, allowing the building or addition to add to the amount of time that the comfort level is exceed by the least practical amount if (1) it can be shown that a building or addition cannot be shaped and other wind-baffling measures cannot be adopted to meet the foregoing requirements without creating an unattractive and ungainly building form and without unduly restricting the development potential of the building site in question, and (2) it is concluded that, because of the limited amount by which the comfort level is exceeded, the limited location in which the comfort level is exceeded, or the limited time during which the comfort level is exceeded, the addition is insubstantial.

No exception shall be granted and no building or addition shall be permitted that causes equivalent wind speeds to reach or exceed the hazard level of 26 miles per hour for a single hour of the year.

b) Definition. The term "equivalent wind speed" shall mean an hourly mean wind speed adjusted to incorporate the effects of gustiness or turbulence on pedestrians.

c) Guidelines. Procedures and Methodologies for implementing this section shall be specified by the Office of Environmental Review of the Department of City Planning. (added by Ord. 414-85, App. 9/17/85)

APPENDIX H

Shadow Analysis Report

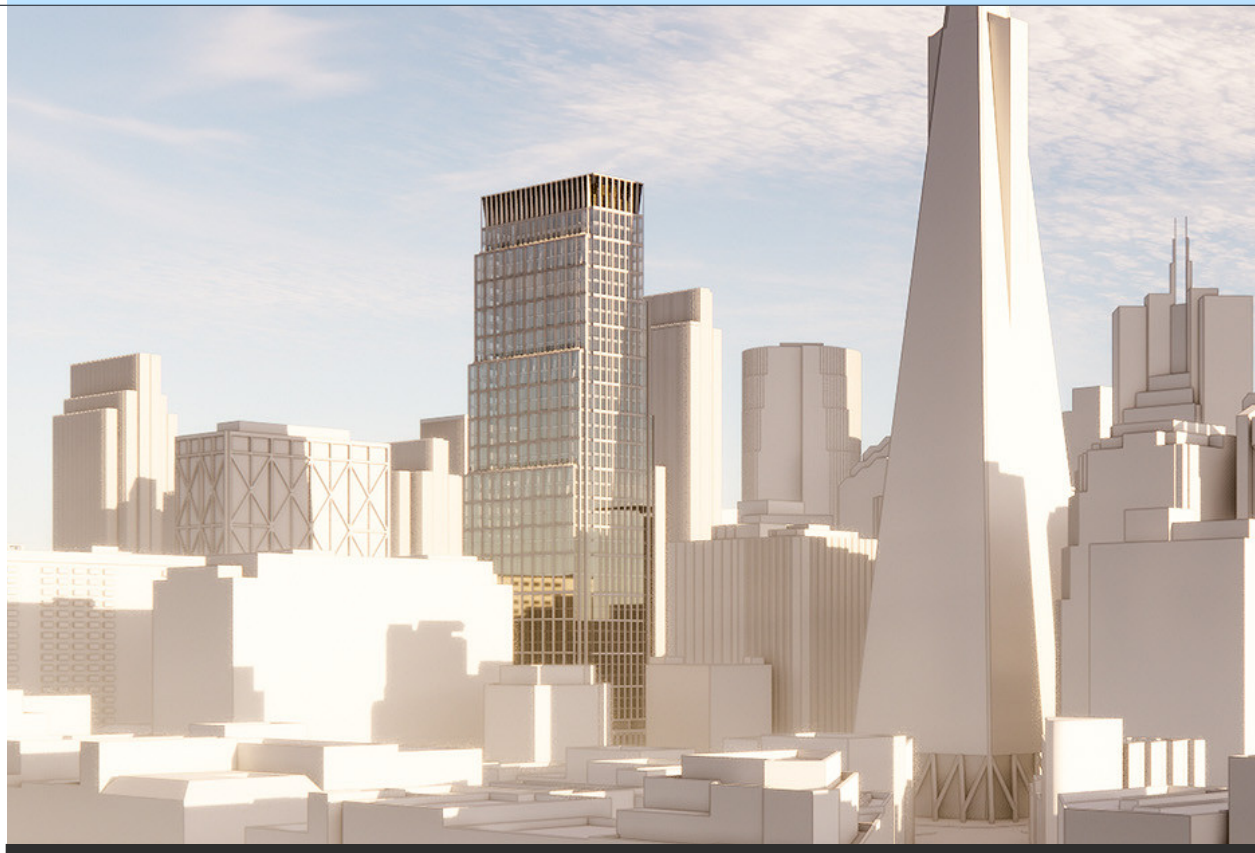
PREVISION DESIGN

JANUARY 24, 2025
FINAL

SHADOW ANALYSIS REPORT FOR THE PROPOSED 530 SANSOME STREET / 447 BATTERY STREET PROJECT

PER SAN FRANCISCO PLANNING DEPARTMENT STANDARDS

Planning Case Number 2024-007066ENV



FROM:
ADAM PHILLIPS
PRINCIPAL
PREVISION DESIGN

TO:
SHERIE GEORGE, PLANNING DEPARTMENT
49 SOUTH VAN NESS AVENUE, SUITE 1400
SAN FRANCISCO, CA 94103

CONTENTS

I. INTRODUCTION AND OVERVIEW

This report details the results of an analysis conducted by Prevision Design to identify shadow effects that would be caused by the proposed construction of two buildings: an approximately 573'-4" tall (including parapet), mixed-use project located at 530 Sansome Street and an adjoining 63-foot-tall firehouse located at 447 Battery Street, referred to collectively hereafter as "the project". The analysis focuses on the project's shadow effects on Washington Square, Willie "Woo Woo" Wong Playground, Maritime Plaza and Sue Bierman Park, publicly accessible open spaces under the jurisdiction of the San Francisco Recreation and Parks Department (RPD) subject to review under San Francisco Planning Code Section 295, as well as Transamerica Redwood Park and Sydney Walton Square, privately owned public open spaces (POPOS) subject to review for shadow under Planning Code Section 147.

The analysis was conducted according to criteria and methodology as described in (1) the February 3, 1989 memorandum titled "Proposition K – The Sunlight Ordinance" ("the 1989 memorandum") prepared by RPD and the San Francisco Planning Department ("Planning"), (2) the July 2014 memorandum titled "Shadow Analysis Procedures and Scope Requirements" ("the 2014 memorandum") prepared by Planning, and (3) direction from Planning and RPD staff regarding the appropriate approach, deliverables, and scope of analysis appropriate in consideration of the open spaces affected.

This report includes the results and discussion of all criteria factored into the analysis, including discussion of the analysis approach and methodology, a description and depictions of the project as proposed, description of the affected publicly accessible open space, and the results of the study, including quantitative and qualitative reporting of net new shadow generated by the project, graphical simulations of the location and extent of the project's net new shadow.

While this report does present certain qualitative observations, it is outside the scope of this analysis to present findings regarding whether the shadows that would be cast by the proposed project would be considered to have (1) an adverse impact on the use or enjoyment of properties under the jurisdiction of the Recreation and Park Commission pursuant to Planning Code Section 295 or (2) a substantial shadow impact on public plazas and other publicly accessible spaces other than those protected under Section 295, pursuant to Planning Code Section 147. ■

II. REGULATORY FRAMEWORK AND SIGNIFICANCE CRITERIA

While there are no specific federal nor state regulations which deal with solar access or shadow effects on publicly accessible open spaces, San Francisco has established several provisions, policies, and procedures that provide the framework by which shadow cast by proposed projects is evaluated.

San Francisco General Plan

The Recreation and Open Space Element of the City of San Francisco General Plan (2014) includes Policy 1.9 applicable to potential solar access or shading impacts of new development on public open spaces, excerpted below:

> *Solar access to public open space should be protected. In San Francisco, presence of the sun's warming rays is essential to enjoying open space. Climatic factors, including ambient temperature, humidity, and wind, generally combine to create a comfortable climate only when direct sunlight is present. Therefore, the shadows created by new development nearby can critically diminish the utility and comfort of the open space.*
>
> *Shadows are particularly a problem in downtown districts and in neighborhoods immediately adjacent to the downtown core, where there is a limited amount of open space, where there is pressure for new development, and where zoning controls allow tall buildings. But the problem potentially exists wherever tall buildings near open space are permitted.*
>
> *The City should support more specific protections elsewhere to maintain sunlight in these spaces during the hours of their most intensive use while balancing this with the need for new development to accommodate a growing population in the City.*

The project would be subject to evaluation of potential shadow effects on public spaces under the general plan.

San Francisco Planning Code

Section 295:

San Francisco Planning Code section 295, adopted in 1984 pursuant to voter approval of Proposition K (The Sunlight Ordinance), prohibits the issuance of building permits for structures over 40 feet in height that would cast net new shadow on property under the jurisdiction of, or designated to be acquired by, the Recreation and Park Commission between one hour after sunrise to one hour before sunset at any time of year, unless the Planning Commission determines that the net new shadow (1) would not have an adverse impact on the use of the property or (2) the impact would not be significant. Code section 295 provides that:

> *The City Planning Commission shall conduct a hearing and shall disapprove the issuance of any building permit governed by the provisions of this Section if it finds that the proposed project will have any adverse impact on the use of the property under the jurisdiction of, or designated for acquisition by, the Recreation and Park Commission because of the shading or shadowing that it will cause, unless it is determined that the impact would be insignificant. The City Planning Commission shall not make the determination required by the provisions of this Subsection until the general manager of the Recreation and Park Department in consultation with the Recreation and Park Commission has had an opportunity to review and comment to the City Planning Commission upon the proposed project.*

Net new shadow cast by the proposed project would affect four open spaces under the jurisdiction of the RPD; therefore, provisions of Section 295 apply. Additionally, three of the four affected open spaces have a listed annual "Absolute Cumulative Limit" for net new shadow listed in the 1989 Memorandum:

RPD Park/Open Space	Annual Absolute Cumulative Limit	Annual Project Shadow
Washington Square	0%	0.01%
Willie "Woo Woo" Wong Playground[1]	0%	0.01%
Maritime Plaza	0%	2.08%

TABLE 1: 1989 Memorandum Absolute Cumulative Limit Standards

As these Absolute Cumulative Limits for net new shadow would be exceeded by the construction of the proposed project, a joint hearing of the San Francisco Planning and Recreation and Parks commissions shall be convened to determine whether the project's

1 Referred to as "Chinese Playground" in the 1989 Memorandum (former name).

shadow would or would not be considered insignificant. If the project's shadow effects are deemed to not be adverse or expected to interfere with the use of one or more of the properties, the commissions may each resolve to adjust the Absolute Cumulative Limit for one or more of the affected parks to allow for the additional project-generated shadow.

Section 146:

Added in 1985, this section establishes additional design guidelines for buildings along certain streets in C-3 Downtown Commercial Districts for the purpose of maintaining direct sunlight on public sidewalks during critical periods of use.

The project site is located within the C-3 Downtown Commercial District; however, it is not located along a street frontage that is regulated by Section 146. Therefore, Planning Code Section 146 does not apply to the proposed project.

Section 147:

Added in 1985, this section establishes additional design guidelines for buildings in C-3 Downtown Commercial, South of Market Mixed Use, and Eastern Neighborhoods Mixed Use districts such that buildings taller than 50 feet be shaped, consistent with the dictates of good design and without unduly restricting the development potential of the site in question, to reduce substantial shadow impacts on public plazas and other publicly accessible spaces other than those protected under section 295.

The project site is located with the C-3 Downtown Commercial District and is taller than 50 feet, so the provisions of Section 147 apply.

Environmental Impacts under CEQA

A project that adds new shadow to sidewalks or a publicly accessible open space (whether subject to Section 295 or not) does not necessarily result in a significant impact under CEQA. The shadow impact analysis described in the city's Initial Study CEQA Checklist examines whether a project would "create new shadow that substantially and adversely affects the use and enjoyment of publicly accessible open spaces". ■

III. ANALYSIS METHODOLOGY

Technical Standards

The technical standards for evaluation of shadow effects follow the criteria adopted in 1987 and 1989 by the Recreation and Parks Commission and the Planning Commission, as stated below:

> *Shadow is quantitatively measured by multiplying the area of the shadow by the amount of time the shadow is present on the open space, in units called square foot-hours (sfh). Determining the annual net new shadow load generated by a project begins with a calculation of the number of square foot-hours that would theoretically fall on a qualifying publicly accessible open space each day from an hour after sunrise to an hour before sunset summed over the course of a year, ignoring all shadow from any source. This total is referred to as the Theoretical Annual Available Sunlight (TAAS) for that park. The second step is the calculation of the baseline (or current) shading conditions, which factors in the square foot-hours of shadow cast by existing buildings and other structures on the open space. Lastly, the shadow effects of the project are calculated, with the difference between the baseline shadow condition and project shadow condition considered being net new project shadow. The amount of shadow is defined as the shadow in square foot-hours cast by the project divided by the TAAS, expressed as a percentage.*
>
> *Further, in addition to quantitative criteria, the adopted criteria set forth qualitative criteria for evaluation of shadow. Those criteria for assessing net new shadow are based on existing shadow profiles* [graphics]*, important times of day, important seasons in the year, location of the net new shadow, size, and duration of net new shadows and the public good served by buildings casting net new shadow.*

There are not broadly established or accepted methodologies for technical evaluation of shadow effects under CEQA, so for review of shadow impacts on open spaces not subject to section 295, Planning typically adapts these technical standards for use in evaluation of potential effects under Section 147 and/or CEQA. For this analysis, the San Francisco Planning Department directed Prevision Design to use many of the

standards for review of shadow established under Section 295 of the Planning Code, as described in Section IV below.

3D Modeling Assumptions

For the purposes of this analysis, Prevision Design built a 3D computer model reflecting representation of the local San Francisco urban context and landform surrounding the project generated by Light Intensity Distance and Ranging [or Laser Imaging Detection and Ranging] (LIDAR). This model reflects actual building massing and articulation from circa 2019, therefore, to show buildings built[2] after that date, Prevision Design has generated models using available architectural plans and records. Prevision Design also obtained or generated 3D models of reasonably foreseeable future projects[3] that would have the potential to generate additional net new shadow on the same publicly accessible open spaces that were shown to be affected by the project (cumulative condition projects).

Precise locations, boundaries, and sizes of the affected open spaces were generated using GIS data provided by Planning with input and boundary verification by RPD.

The model for the proposed project was provided to Prevision Design by the project architect on 5/17/2024 and reflects the project design as shown in the drawing set dated June 2024, which has been confirmed by the project sponsor as the most up-to-date project massing[4]. ■

2 The final form of buildings currently under construction are included as if they are complete for the purposes of this study.

3 Qualifying cumulative projects are those that are currently in some stage of the planning or permitting process or have been approved but are not yet under construction.

4 The 3D model used in this analysis includes an opaque mechanical rooftop screening; however, the final screening design will likely include some translucent materials. While modelling translucent elements as opaque is consistent with established shadow analysis methodology, on a practical basis the use of translucent materials would reduce some of the shadow effects of the project.

IV. SCOPE OF WORK AND STUDIES PERFORMED

Initial Scoping Study

To establish the scope of review and approach to analysis and deliverables, Prevision Design followed the guidelines as encoded in the 1989 and 2014 memoranda as modified for project-specific considerations via input and direction from Planning and RPD staff.

To determine the area and features that would be affected by net new project shadow, Prevision Design used the 3D context model to generate a full-year shadow location and durations diagram, which depicts all areas that would receive net new shadow (factoring in the presence of current, intervening shadow from existing buildings) between one hour after sunrise through one hour before sunset ("the daily analysis period") throughout the year along with affected areas color-coded to indicate the duration of shadow that would be experienced in each location. In addition to providing an annualized location and duration diagram These graphics appear as Exhibit A and show the net new shadow for the proposed project.

Prevision Design additionally received and verified a list of qualifying cumulative projects in the vicinity of this project that have the potential to generate net new shadow on one or more of the open spaces affected by the proposed project, as listed below in Table 2.

CUMULATIVE PROJECT ADDRESS (PLANNING CASE NUMBER)	PROJECT HEIGHT	DATE OF DESIGN DATA	PROJECT DESCRIPTION
545 Sansome Street (2020-001410)	Approx. 223'	02/16/2023	Horizontal/penthouse addition to existing 9-story building
50 Main Street (2021-012562)	Approx. 992'	08/26/2022	New 85-story mixed-use building with 808 dwelling units
955 Sansome Street (2023-008196)	Approx. 283'	04/30/2024	New 24-story mixed-use building with 132 dwelling units
Transbay Parcel F (542-550 Howard) (2016-013312)	Approx. 800'	12/20/2019	New 61-story mixed-use building with 165 dwelling units + hotel and office uses
530 Howard Street (2023-010883)	Approx. 824'	11/10/2023	New 72-story residential building with 672 dwelling units

TABLE 2: Cumulative Projects List

Prevision Design generated a draft scope of work and analysis methodology, which was submitted for review on 9/23/24 and approved with comments and additions from Planning on 12/09/2024. The approved scope of work for this analysis is discussed below:

Quantitative Calculations

Using the 3D project and an urban context model developed as part of the scoping study, Prevision Design performed snapshot shadow measurements for RPD open spaces (Washington Square, Willie "Woo Woo" Wong Playground, Maritime Plaza and Sue Bierman Park) at 15-minute intervals within the daily analysis period, repeating these daily measurements every seven days between the Summer Solstice (June 21st) and Winter Solstice (December 20th), with interim times and dates extrapolated to approximate shadow conditions on other days and times. This half-year period (between the Summer and Winter solstices) is referred to locally as the "solar year." As the path of the sun is roughly mirrored over the second half of the year (December 21st through June 20th), analysis of this half-year period allows for a reasonable extrapolation to arrive at a full year estimated calculation of the areas and durations of existing (baseline) shadow that currently falls on the affected open spaces.

In addition to the quantitative analysis of existing shadow conditions, calculations were generated to reflect the addition of the project with the difference between the baseline conditions and those with the project representing the net new shadow effect.

Lastly, 3D models of the approved cumulative projects were added to the model to generate the baseline + project + cumulative scenario, depicting the reasonably foreseeable combined shadow effect of all projects in the current development pipeline.

Shadow Profile Graphics

To provide a spatial and contextual understanding of the location, size, and features affected by net new shadow, Prevision Design prepared graphics showing "snapshot" shadow profiles at hourly intervals over the entire area affected by the project. Graphics differentiate between existing shadow, net new project shadow, and cumulative condition shadow within the daily analysis period on the Summer Solstice (June 21st), the approximate equinoxes (March 22nd / September 20th), and the Winter Solstice (December 20th). On the dates with the greatest amount of quantitative net new project shadow for each affected RPD open space, detail graphics are additionally provided showing the affected open space at a larger scale and at 15-minute intervals when project shadow falls on or near the affected open space.

Qualitative Analysis

To gain an understanding of how net new project shadow could affect existing patterns of use, Prevision Design conducted six 30-minute site visits to Maritime Plaza and Sue Bierman Park to observe the nature and intensity of uses[5]. Two site visits (one on a weekday and one on a weekend) were performed in the morning, two at midday, and two in the afternoon.

The qualitative effects of net new shadow on the affected open spaces are discussed based on the size, location, timing, and duration of net new shadow and how such shadow might potentially affect existing uses in Washington Square, Willie "Woo Woo" Wong Playground, Maritime Plaza, Sue Bierman Park, Transamerica Redwood Plaza and Sydney Walton Square. ■

5 It was determined in consultation with SF Planning that due to the small area and short duration of shadow effects on Washington Square and Willie "Woo Woo" Wong Park that site observations were not necessary to inform the discussion of qualitative shadow effects. Observations were not required for Transamerica Redwood Park nor Sydney Walton Square as those open spaces are not under the jurisdiction of RPD.

V. PROJECT DESCRIPTION

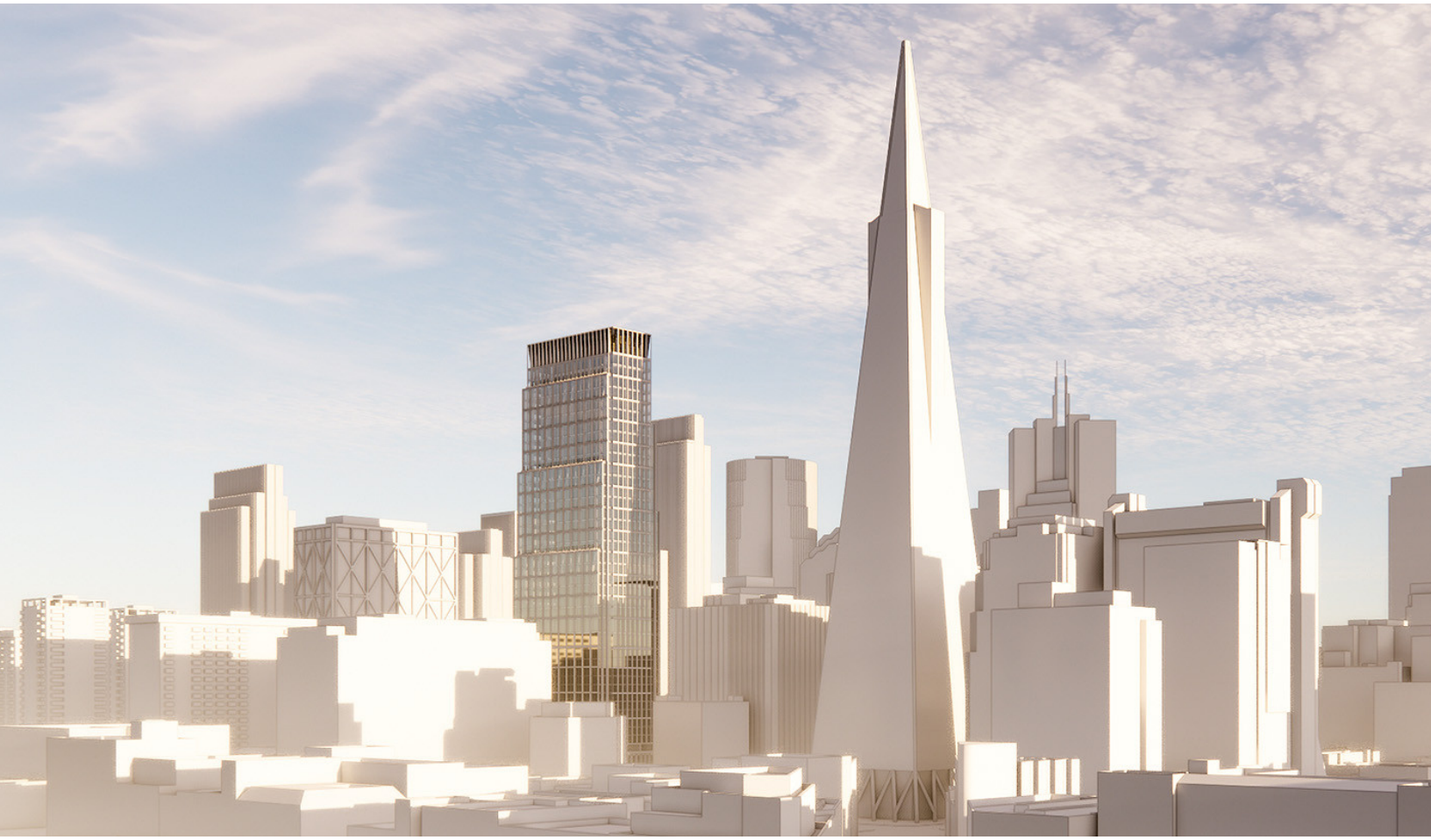


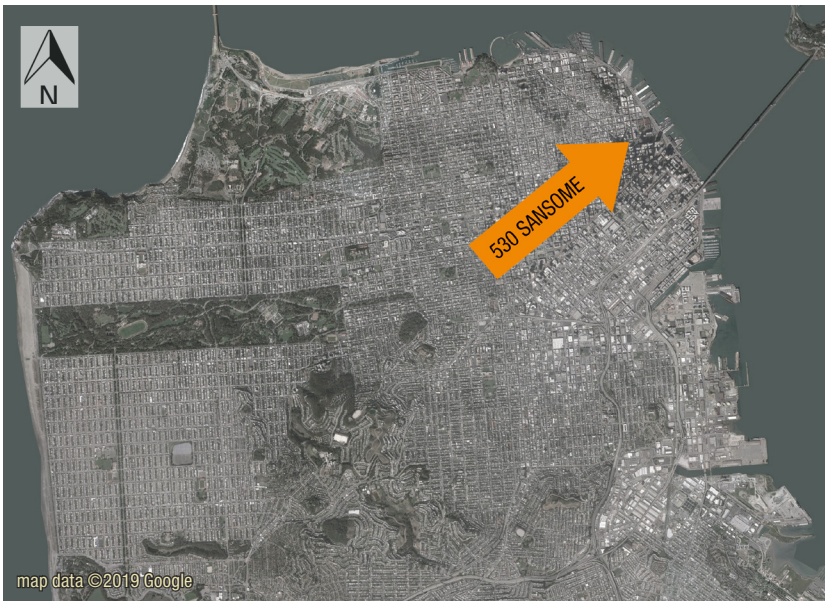
FIGURE 1: 530 Sansome rendering within downtown urban building context

The proposed project (Figures 1 & 2) would be located on a 24,830-sf site in the Financial District neighborhood of San Francisco. The project site is located on the block bound by Sansome Street to the west, Washington Street to the north, Battery Street to the east, and Merchant Street to the south (Assessor's Block 0206, Lots 2, 13, 14, and 17). The site is located within the Downtown Area Plan, C-3-O zoning and a 200-S Height and Bulk District. Figure 3 shows a vicinity map.

FIGURE 2: 447 Battery Rendering

The proposed project would involve demolition of the existing 17,800-square foot, 3-story commercial building at 425 Washington Street (Block/Lot 0206/014); the 12,862-square foot, 2-story commercial building at 439-445 Washington Street (Block/Lot 0206/013); the 20,154-square foot, 3-story commercial building at 447 Battery Street (Block/Lot 0206/002); and the 18,626-square-foot fire station at 530 Sansome Street (Block/Lot 0206/017). The 20,154-square-foot, 3-story commercial building located at 447 Battery Street is currently designated as a historical landmark under Article 10 of the San Francisco Planning Code. Fire Station 13 operations would relocate to existing San Francisco Fire Department facilities as close to the project site as possible during project construction. No interruption of fire department service would occur.

The project would involve the construction of a 4-story replacement fire station and a separate high-rise building up to 41-stories tall. The replacement fire station would be located on the 447 Battery Street parcel and would include approximately 31,200 square feet (including basement) in a 4-story, approximately 45-foot-tall building (57 feet total to the roof, including rooftop mechanical equipment) on the eastern portion of the project site. There would be one below-grade level under the 4-story replacement fire station, which would provide parking spaces and mechanical, electrical, and plumbing space. The up to 41-story, approximately 544-foot-tall building (575 feet total, including rooftop mechanical equipment) would be located on the remaining three parcels and would include retail/restaurant space; office space (including office amenity space); ballroom/pre-function/meeting space; and hotel space. There would be three below-



530 Sansome / 447 Battery (Project)

Open Spaces (Jurisdiction)

1. Washington Square (RPD)
2. Willie "Woo Woo" Wong Playground (RPD)
3. Portsmouth Square (RPD)
4. Transamerica Redwood Park (POPOS)
5. Maritime Plaza (RPD)
6. Sydney Walton Square (POPOS)
7. Sue Bierman Park (RPD)
8. Embarcadero Plaza (RPD)
9. Harry Bridge's Plaza (POPOS)

Cumulative Projects

1. 955 Sansome Street
2. 545 Sansome Street
3. 50 Main Street
4. Transbay Parcel F (outside map area)
5. 530 Howard Street (outside map area)

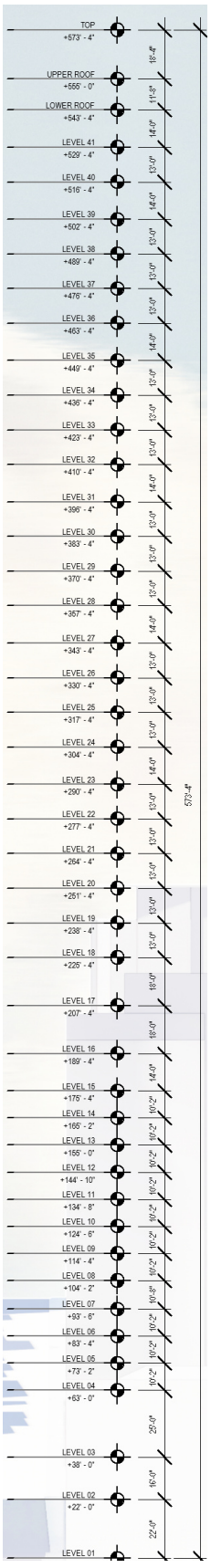
FIGURE 3: Vicinity Map

FIGURE 4: Project Site Plan

grade levels under the high-rise building, which would provide vehicle parking spaces, bicycle parking spaces, and utility rooms.

The project sponsors include the San Francisco Fire Department, the San Francisco Bureau of Real Estate, and EQX JACKSON SQ HOLDCO LLC. The project architect is Skidmore Owings & Merrill.

A project site plan is shown as Figure 4, and project elevations are included as Figures 5-8. ■



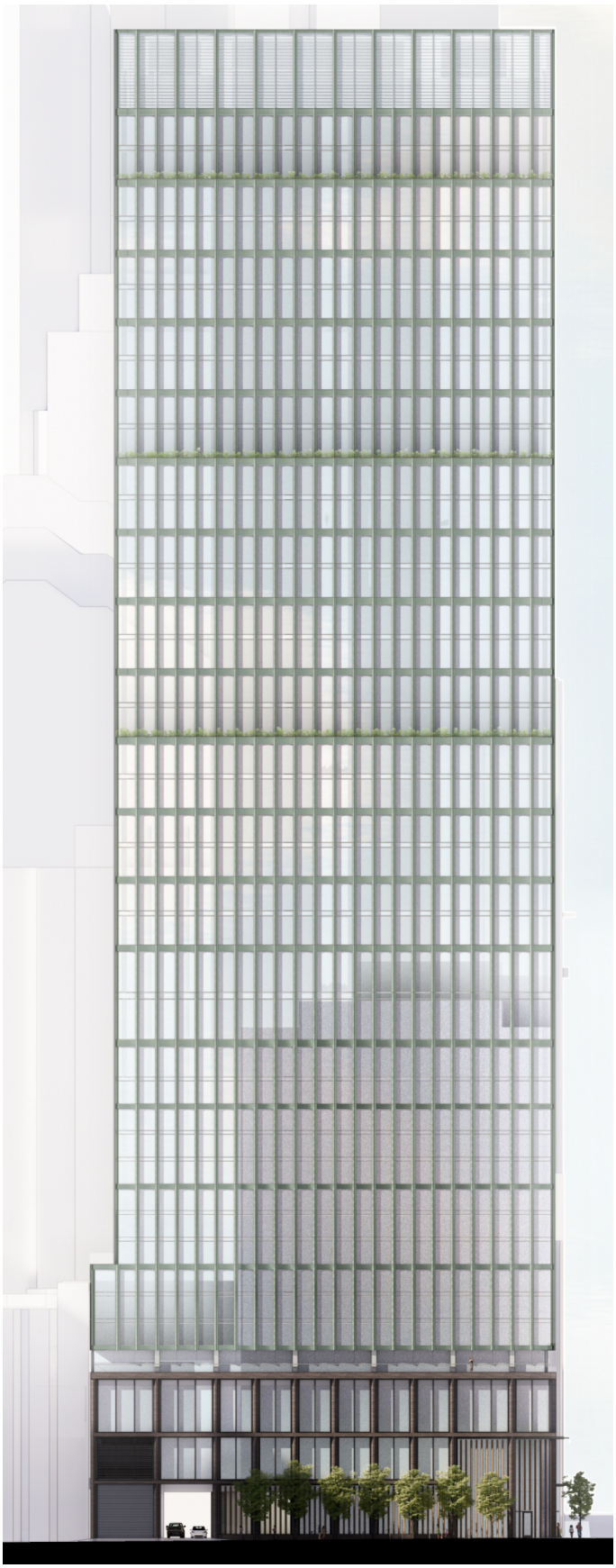


FIGURE 5: East (Battery St.) Elevation

FIGURE 6: North (Washington St.) Elevation

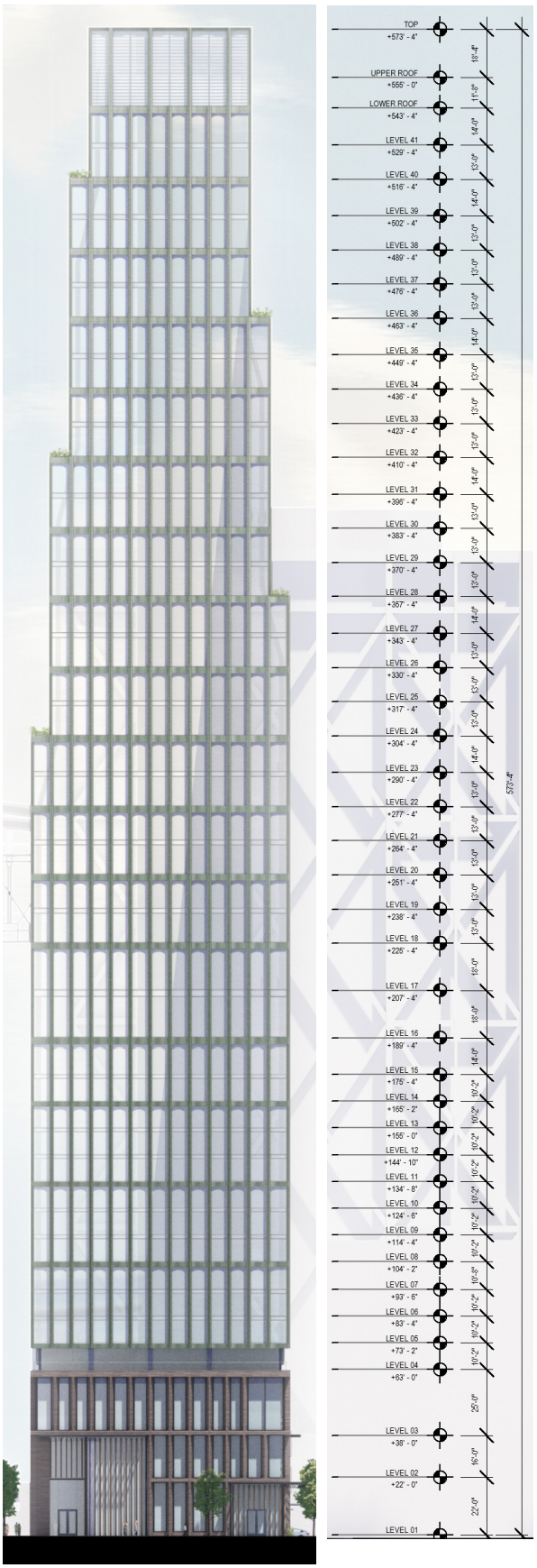


FIGURE 7: West (Sansome St.) Elevation

FIGURE 8: South (Merchant St.) Elevation

VI. AFFECTED PARKS AND OPEN SPACES

FIGURE 9: Washington Square Aerial View

Washington Square

Washington Square is a 2.26 acre (98,334 sf) urban plaza located in the North Beach District of San Francisco on Assessor's Block 0102 / Lots 001 and 002 and is under the jurisdiction of RPD. The park is bounded by Filbert Street to the north, Stockton Street to the east, Union Street to the south, Powell Street to the west with the southwestern corner of the park bisected by Columbus Avenue and the majority of the park area on the northeast side and just a small triangular landscaped island to the southwest.

As shown by Figure 9, Washington Square features include a large central grass area with a stand of trees in the center which is bounded by a paved walkway with multiple connections to surrounding sidewalks. Between this walkway and the sidewalks are

LEGEND

1. Central Lawn
2. Grass/Landscape Areas
3. Statue
4. Children's Play Area
5. Bathrooms
6. Park Entries

FIGURE 10: Washington Square Plan

groups of large mature trees along with smaller grass and landscaped areas bounded by numerous long benches located through the park. In the northwest corner of the park, on the east side of Columbus Ave, there is a small children's play area, a bronze statue, and a restroom building. Figure 10 shows a park map.

The park is not fenced, and the official hours of operation are from 5 a.m. to 12 a.m. (midnight). The official park website is https://sfrecpark.org/Facilities/Facility/Details/Washington-Square-388.

FIGURE 11: Willie “Woo Woo” Wong Playground Aerial View

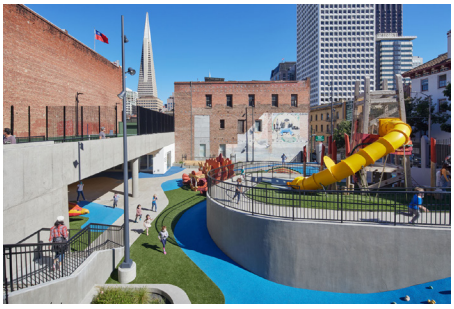


FIGURE 12: Playground Detail

Willie “Woo Woo” Wong Playground

Willie “Woo Woo” Wong Playground is a 0.61 acre (26,412 sf) urban playground located in the Chinatown Neighborhood of San Francisco on Assessor’s Block 0225 / Lot 018 and is under the jurisdiction of RPD. The playground is located mid-block with its primary frontage along Sacramento Street to the south but additionally borders Hang Ah Alley to the west with a portion extending out to Waverly Place to the east with street-level access to the clubhouse (located beneath the tennis court area). The east, north and west sides of the playground are bounded by 4-5 story existing buildings.

The playground spans 40 vertical feet and consists of three levels: an upper court, middle playground, and lower level which includes a clubhouse. The upper court area contains full-sized basketball and tennis courts along with other play equipment, while the middle and lower levels contain three separate playground areas as well as an entry from the playground area to the upper level of the clubhouse.

LEGEND

1. Park Entries
2. Sport Courts
3. Playground Areas
4. Hang Ah Street

FIGURE 13: Willie “Woo Woo” Wong Playground Plan

The official listed hours of operation are from 5 a.m. to 12 a.m. (midnight). The official park website is https://sfrecpark.org/facilities/facility/details/Willie-Woo-Woo-Wong-Playground-271.

FIGURE 14: Maritime Plaza West Courtyard Aerial View

Maritime Plaza

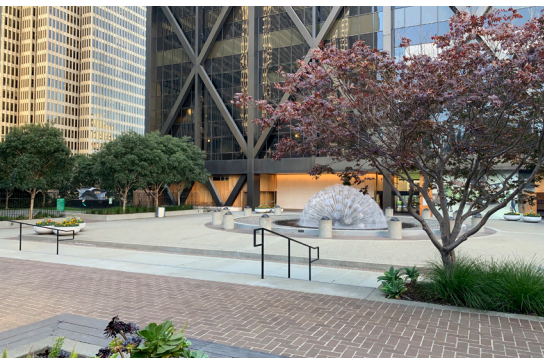
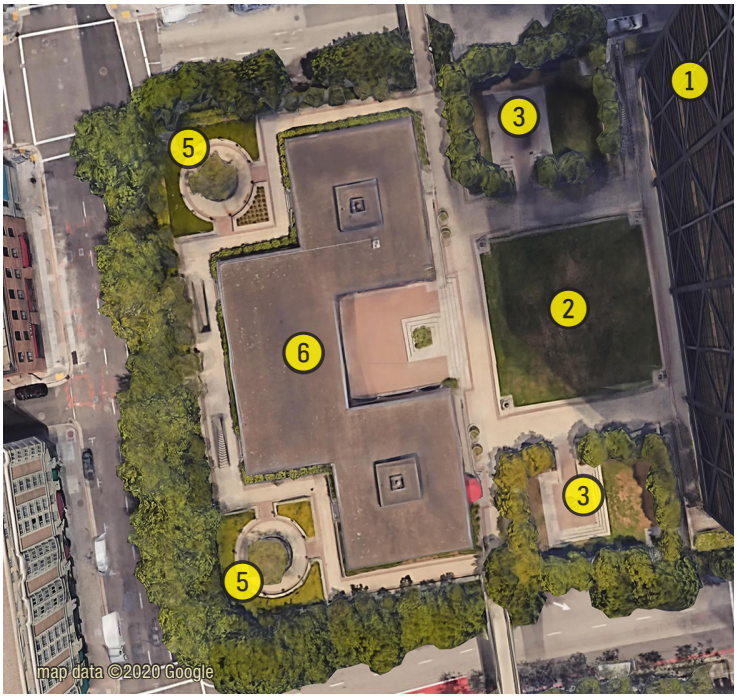


FIGURE 15: East Courtyard

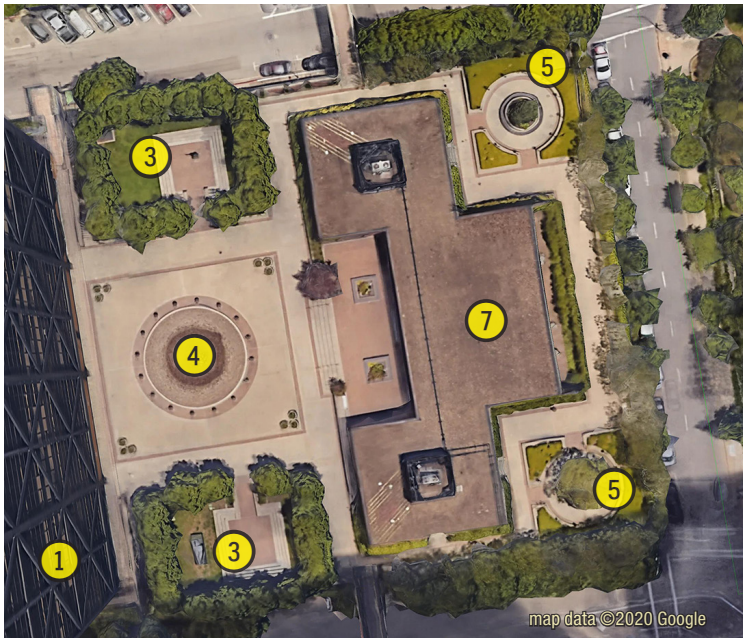
Maritime Plaza is a 1.99 acre (86,676 sf) urban plaza located in the Financial District of San Francisco on Assessor's Block 0204 / Lots 020 and 022 and is under the jurisdiction of RPD. The plaza is elevated above street level above a parking structure and consists of two separate sections of the double-block between Washington and Clay streets, the west section bordering Battery Street and east section bordering Davis Street. Public access to Maritime Plaza is via public stairwells located at Washington and Clay streets as well as elevated walkways that connect across Washington and Clay streets to adjacent properties to the north and south. Connection between the two portions of the plaza is via breezeway through the Alcoa building (One Maritime Plaza). The official hours of operation are from 5 a.m. to 12 a.m. (midnight). The official park website is https://sfrecpark.org/facilities/facility/details/maritimeplaza-350.

As shown in Figures 14 and 15, the park contains a large fountain on the eastern side and a wide plaza area with a square lawn on the western portion. Flanking these plaza areas are fenced rectangular sculpture areas with seating which are ringed by small trees. Each side of the plaza includes a one-story building, with the Punchline Comedy



< MARITIME PLAZA WEST (BATTERY BLOCK)

MARITIME PLAZA EAST (DAVIS BLOCK) >



LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

FIGURE 16: Maritime Plaza Plan

club on the western side and the Allsteel furniture showroom on the eastern side. Behind each of these buildings, connected to the main plaza area by walkways are two other landscaped seating areas. Figure 16 shows a plan diagram of Maritime Plaza.

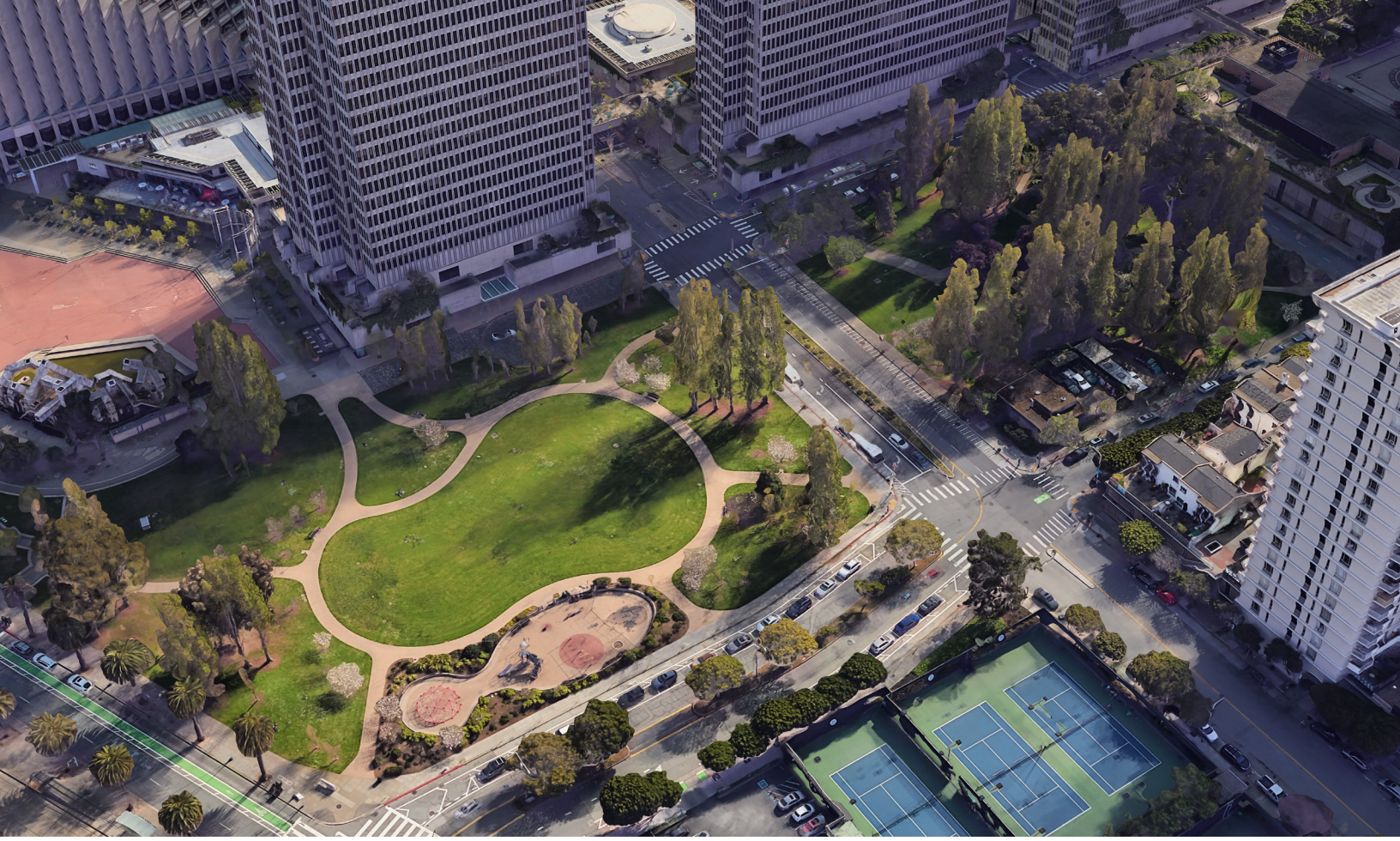


FIGURE 17: Sue Bierman Park Aerial View (looking southwest)

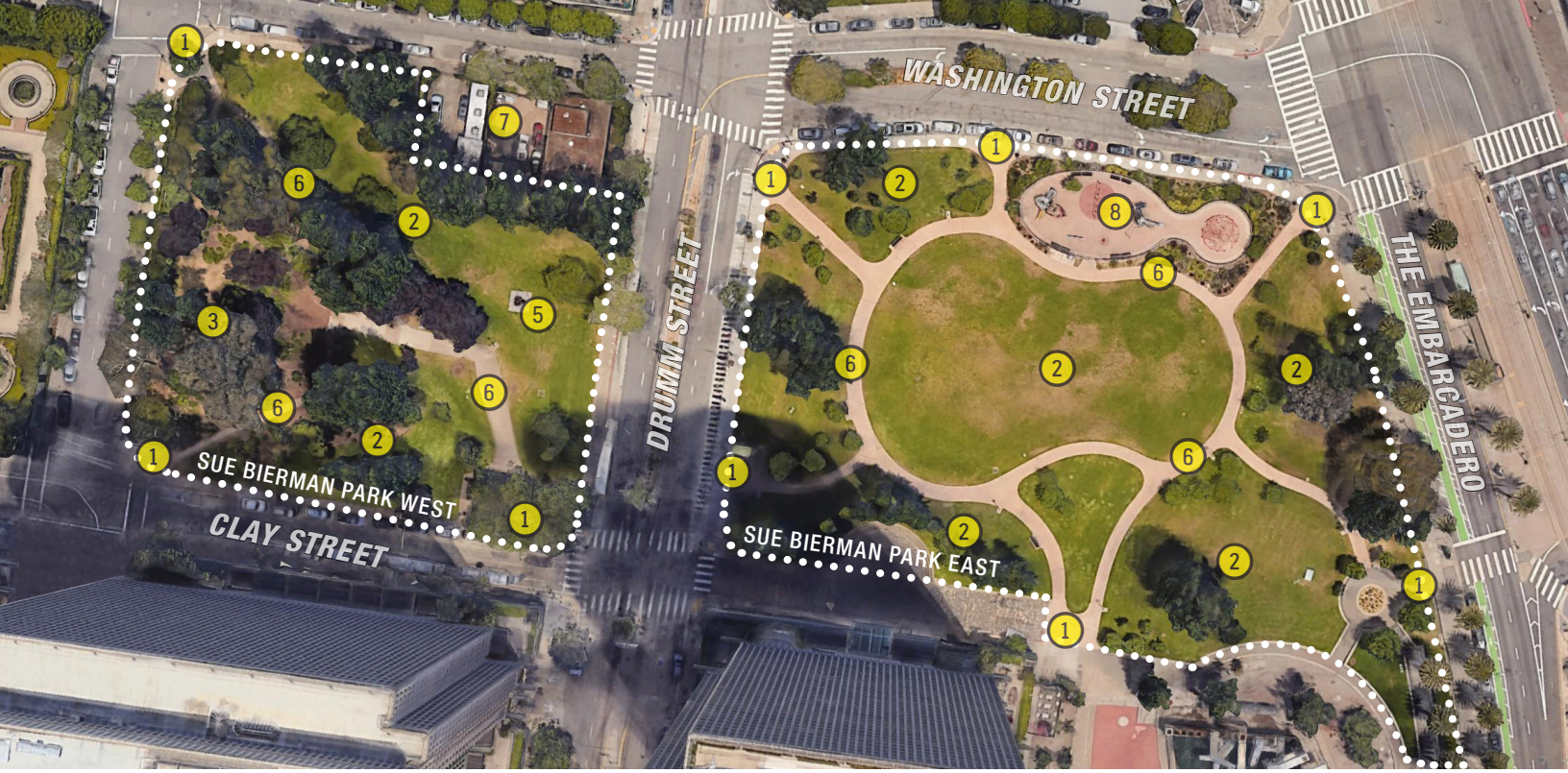
FIGURE 18: Playground (East)

FIGURE 19: Trees/Landscape (West)

Sue Bierman Park

Sue Bierman Park is a 4.1 acre (178,458 sf) urban park located in the Financial District of San Francisco on Assessor's Block 0203 / Lot 014 and Block 0202 / Lots 006, 015, 018, and 020, and is under RPD jurisdiction. The park is physically divided by Drumm Street into two parts, the western portion is bounded by Washington Street to the north, Clay Street to the south, Drumm Street to the east, and Davis Street to the west, while the eastern portion is bounded by Washington Street to the north, Clay Street and Embarcadero Plaza to the south, the Embarcadero to the east, and Drumm Street to the west.

The eastern portion of Sue Bierman Park contains open grassy areas and stands of trees on the periphery with paved walkways circling an oblong central lawn branching out to connect with surrounding sidewalks and Embarcadero Plaza to the south. In the northeast corner of the park is a fenced off children's play areas surrounded by landscaping (Figure 18). The western portion of Sue Bierman Park contains grassy and heavily vegetated landscaped areas (Figure 19), divided by three paved walkways connecting the northwest, southwest, and southeast corners of the park. A large sculpture is located in the center of the larger grass area on the eastern side of the



1 Park Entries
2 Lawn/Grassy Areas
3 Natural Area
4 Landscape/Grassy Areas
5 Sculpture
6 Pedestrian Pathway
7 SFPUC Property (not part of park)
8 Children's Play Area

FIGURE 20: Sue Bierman Park Map

park. The southwestern half of the park area is heavily wooded with unpaved trails through this natural area. To the northeast, the park's border features a stand of tall trees surrounding a small utility building complex owned by the San Francisco Public Utilities Commission (SFPUC) which is located outside the park boundary. Figure 20 above shows a map diagram of Sue Bierman Park.

The park is not fenced, and the official hours of operation are from 5 am to 12 am (midnight). The official park website is https://sfrecpark.org/facilities/facility/details/suebiermanpark-378.

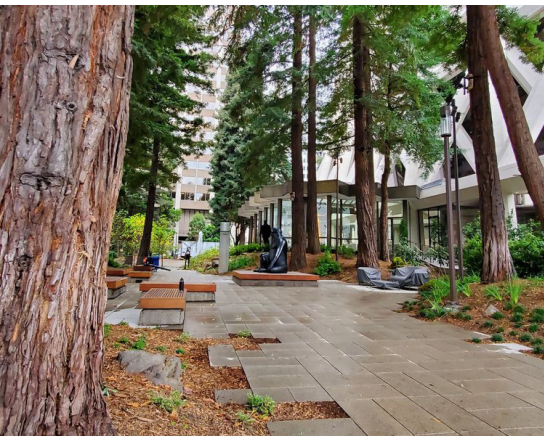


FIGURE 21: Transamerica Redwood Park

Transamerica Redwood Park

The Transamerica Redwood Park (Figure 21) is an approximately 1.25 acre (55,880 sf) mid-block privately owned public open space located on Assessor's Block 0207 / Lot 033 between the Transamerica Building (600 Montgomery) to the west, Washington Street to the North, the 500-block of Sansome Street to the east and Clay Street to the south. Public entrances are located on the north and south street frontages along with an east-west pedestrian walkway between buildings connecting to Sansome Street. The park was recently renovated (completed in September 2024) and is comprised of over fifty mature redwood trees along with other landscape plantings, 20 pieces of artwork, a fountain with a reflecting pool, a performance stage area, and numerous fixed benches and points of access to the surrounding buildings.

FIGURE 22: Sydney Walton Square

Sydney Walton Square

Sydney B. Walton Square (Figure 22) is an approximately 1.7 acre (72,235 sf) mid-block privately owned public open space located on Assessor's Block 010 / Lot 033 between Jackson Street to the south, Front Street to the west, Davis Street to the east and a multifamily residential property to the north. The park includes open expanses of lawn separated by curvilinear, concrete paths, groves of pines, willows, and poplars. The park features several art installations including a bronze statue, a sculptural fountain and an old masonry arch salvaged from San Francisco's historical produce district. The park is fenced with entry points from the surrounding streets on the east, west and south sides of the park along with an elevated walkway bridging Jackson Street providing podium-level access to an adjacent residential development.

Other Nearby Parks and Open Spaces

Project shadow would not affect the RPD properties of Portsmouth Square nor Embarcadero Plaza due to intervening buildings. ■

VII. WASHINGTON SQUARE ANALYSIS FINDINGS

Table 3 summarizes the existing condition data and quantitative shadow effects of the proposed project on Washington Square. The full quantitative calculations for shadow conditions on all 27 analysis dates are included as Exhibit C.

Existing Conditions

The park area is 98,334 square feet and currently experiences 27,339,246 annual square-foot-hours (sfh) of shadow. Based on a theoretical annual available sunlight (TAAS) of 365,940,148 sfh, the park's current annual shadow load is 7.47%. Under existing conditions, the park experiences morning and late afternoon shadow and is substantially to completely unshaded for several hours near midday throughout the year.

Increase in Annual Shadow from the Project

The proposed project would result in net new shadow falling on the park, adding approximately 23,581 net new annual sfh of shadow and increasing the annual shadow load by 0.01% above current levels, which would result in a new annual total shadow load of 7.48%.

Timing and Location of Shadow from the Project

Net new shadow from the project would occur for up to approximately 56 days a year between approximately November 23rd through January 17th. Shadow would fall only on the northern entry area along Filbert Street and a portion of the central lawn area. Net new shadow would be cast only during early mornings and would leave the park prior to 8:30 a.m.

The days of maximum net new sfh on the park due to the project would occur on or around December 13th and 28th. On those dates, shadow from the proposed project would be present on Washington Square at 8:15 a.m. (the beginning of the analysis period) and retreat southward off the park and be gone before 8:30 a.m.

The dates with the single largest net new project shadow area would occur on December 6th and January 4th, when a 6,828-sf new shadow would be cast at 8:10 a.m. covering 7% of the total park area.

WASHINGTON SQUARE ANNUAL SHADOW LOADS / SQUARE FOOT HOURS (sfh)			
Existing / Current Shadow	Project Net New Shadow	Cumulative Net New Shadow	Remaining Sunlight w/ Project
7.47%	**0.01%**	**0.02%**	**92.52%**
27,339,246 sfh	23,581 sfh	56,828 sfh	338,577,320 sfh

Washington Square Annual Shadow Load with Project (sfh)	7.48% (27,362,827 sfh)
Washington Square Annual Shadow Load with Project + Cumulative (sfh)	7.49% (27,396,074 sfh)

EXISTING SHADOW DETAILS	
Range in existing shadow area coverage throughout the year	Between 1% - 100%
Time of year / time of day most affected by existing shadow	Fall / Early Morning (before 8:00 AM)

PROJECT NET NEW SHADOW DETAILS	
Days net new shadow would occur (date range)	56 days annually (November 23 - January 17)
Date(s) with most sfh net new shadow	December 13 & December 28
Season / Time of day most affected by net new shadow	Fall / Morning (8:00-11:00 AM)
Area of largest net new shadow (date and time)	6,828 sf (December 6 & January 4 @ 8:10 AM)
Percentage of Washington Square covered by largest shadow	6.94%
Range in shadow coverage throughout the year (area range)	Between 0% - 7% (0 - 6,828 sf)
Average shadow size across affected dates (percent coverage)	5,405 sf (5.50%)
Date(s) with the longest duration of net new shadow (duration)	December 13 & December 28 (8 min +/- 7 min)
Range in daily net new shadow duration across affected dates	Between zero minutes up to 8 min (+/- 7 min)
Average daily net new shadow duration across affected dates	5.5 minutes

PROJECT + CUMULATIVE NET NEW SHADOW DETAILS	
Days net new shadow would occur (date range)	70 days annually (November 16 - January 24)
Date(s) with most sfh net new shadow	November 29 & January 11
Season / Time of day most affected by net new shadow	Fall / Morning (8:00-11:00 AM)
Area of largest net new shadow (date and time)	10,897 sf (Nov 29/Jan 11 @ 8:04 AM)
Percentage of Washington Square covered by largest shadow	11.08%
Range in shadow coverage throughout the year (area range)	Between 0% - 11% (0 - 10,897 sf)
Average shadow size across affected dates (percent coverage)	6,453 sf (6.56%)
Date(s) with the longest duration of net new shadow (duration)	Dec 6/Jan 4 (13 min +/- 7 min)
Range in daily net new shadow duration across affected dates	Between zero minutes up to 13 min (+/- 7 min)
Average daily net new shadow duration across affected dates	8.5 minutes

TABLE 3: Quantitative project shadow summary for Washington Square

The duration of project-generated net new shadow would also vary from November 23rd to January 17th, with net new shadow lasting between zero minutes up to approximately 8 minutes (occurring on December 13th and 28th).

Figure 23 depicts existing vs. project net new shadow conditions on Washington Square for the dates of maximum net new SFH of shadow (December 13th and 28th) at 15-minute intervals when shadow falls on or near the park.

Project Shadow Characteristics and the Value of Sunlight

The portions of Washington Square that would likely be the most sensitive to the addition of new shadow would be those elements that are fixed in location, conducive to more stationary activities (i.e., users remain in one area rather than pass through) and are well used by the public. By this criteria, the children's play area and the park's fixed benches would potentially be more sensitive to the addition of net new shadow.

Throughout the year, net new shadow due to the project would occur only within a small portion of Washington Square with net new shadow (when occurring) being present for under 15 minutes before 8:30 a.m. The shadow would fall in an area containing a park entry, two fixed park benches and a portion of the central lawn area. The children's play area would not be affected at any time. While project shadow would affect potentially more sensitive features such as park benches, they would be affected early in the morning for a short period of time across a limited number of dates a year, which would make it less likely most park users would notice the additional shadow contributed by the project.

Increase in Shadow under Cumulative Scenarios

Under the cumulative scenario, the project at 50 Main Street would also affect Washington Square. Net new shadow from the project combined with shadow from 50 Main Street would result in an increase of 56,828 sfh of shadow on Washington Square (0.02% additional annual shadow load), representing an additional 33,247 sfh (0.01%) of shadow as compared to the annual shadow increase from the project alone. Under the cumulative condition, the increase in sfh would result in a new shadow load of 7.49%.

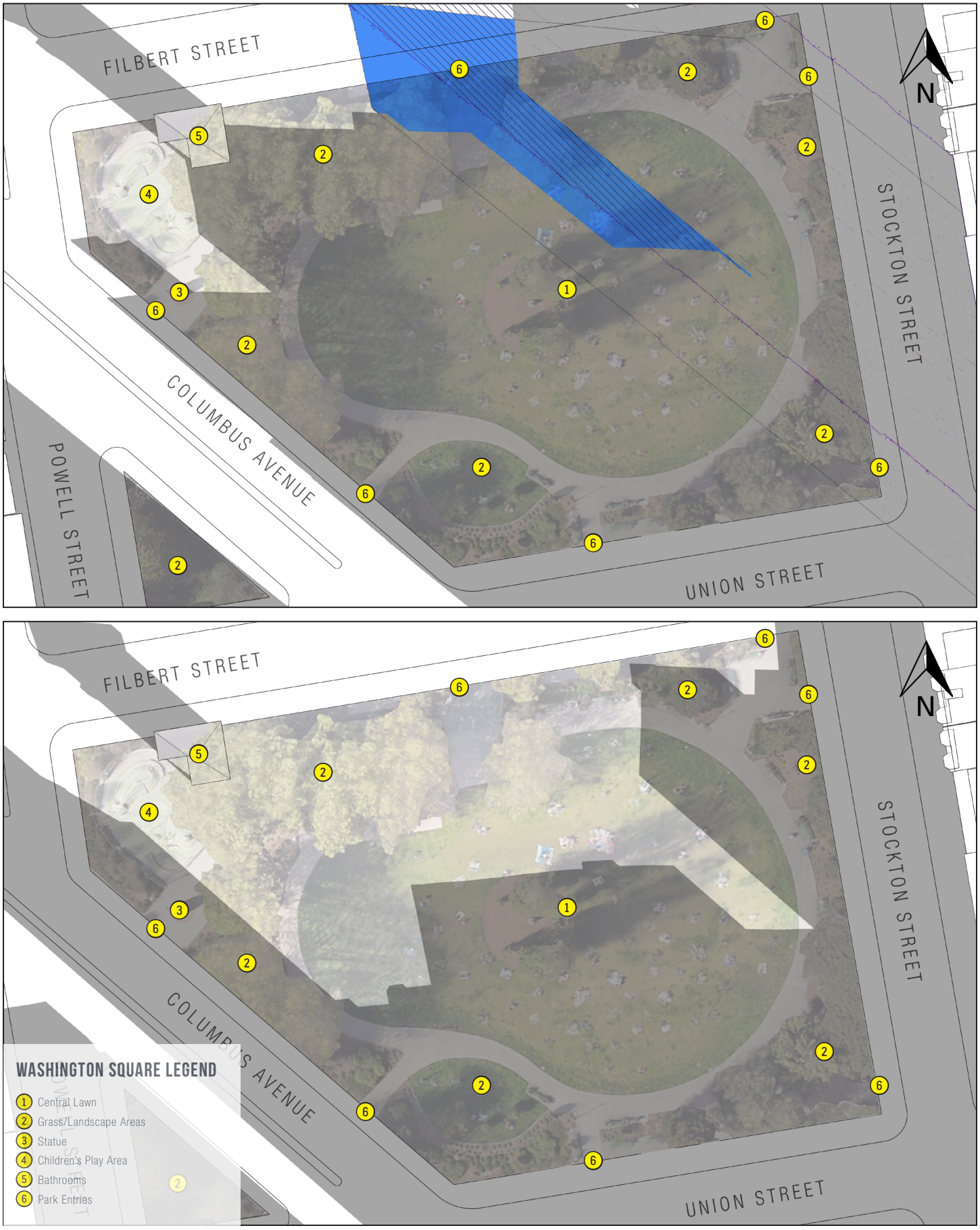


FIGURE 23: December 13th & 28th at 8:15am (top) and 8:30am (bottom)

NOTE: All net new project shadow has retreated out of the frame by 8:30 am.

Timing and Locations of New Shadow Under the Cumulative Scenario

Net new shadow cast under the cumulative scenario would occur for approximately 70 days a year between approximately November 16th and January 24th, an increase of 14 days a year more than under the project-only scenario. Like the project scenario, cumulative shadow would fall only on the northern entry area along Filbert Street and a portion of the central lawn area, but additionally on landscape and pathway areas in the northeast corner of the park. Net new cumulative shadow would be cast only early morning hours during the affected dates, and would leave the park prior to 8:30 a.m.

The days of maximum net new square foot hours of shadow on the park under the cumulative scenario would occur on November 29th and January 11th. On those dates, cumulative scenario shadow would be present on Washington Square at 8:04 a.m. (the beginning of the analysis period) and retreat southward off the park and be gone before 8:15 a.m.

The dates with the single largest net new shadow area in the cumulative scenarios would also occur on or around on November 29th and January 11th, when a 10,897-sf new shadow would be cast at 8:04 a.m. covering 11% of the total park area.

The duration of cumulative scenario net new shadow would vary from November 29th to January 11th, with net new shadow lasting between zero up to approximately 13 minutes (occurring on December 6th and January 4th).

Other Factors Affecting Sunlight

Per Planning Department methodology, shadows cast by trees or other landscape features are considered “impermanent” and were not factored into the quantitative analysis nor depicted in the shadow diagrams. On a practical basis however, the dense foliage of mature trees at the southeastern corner of the park does contribute to the existing shadow conditions that are experienced by park users. As these trees are in a direct line between the project and the shadow affected areas of the park, the shadows cast by the proposed project would have markedly diminished real-world effect due to the fact these areas would already be cast in (at least partial) shadow from the existing tree canopies. ■

VIII. WILLIE "WOO WOO" WONG PLAYGROUND ANALYSIS FINDINGS

Table 4 summarizes the existing condition data and quantitative shadow effects of the proposed project on Willie "Woo Woo" Wong Playground. The full quantitative calculations for shadow conditions on all 27 analysis dates are included as Exhibit D.

Existing Conditions

The playground area is 26,412 square feet and currently experiences 47,210,735 annual square-foot-hours (sfh) of shadow. Based on a theoretical annual available sunlight (TAAS) of 98,291,073 sfh, the playground's current annual shadow load is 48.03%. Under existing conditions, the playground is substantially cast in shadow during early morning and again in the late afternoon with more sunlight access around midday.

Increase in Annual Shadow from the Project

The proposed project would result in net new shadow falling on the playground, adding approximately 12,097 net new annual sfh of shadow and increasing the annual shadow load by 0.01% above current levels, which would result in a new annual total shadow load of 48.04%.

Timing and Location of Shadow from the Project

Net new shadow from the project would occur for up to approximately 41 days a year between approximately June 1st through July 11th. Shadow would fall only across a narrow horizontal band affecting the tennis court area, some of the play structures and the entry area off Hang Ah Alley. Net new shadow would be cast only during early mornings and would leave the playground prior to 7 a.m.

The date of maximum net new sfh on the playground due to the project would occur on or around June 21st. On that date, shadow from the proposed project would be present on Willie "Woo Woo" Wong Playground at 6:46 a.m. (the beginning of the analysis period) and retreat northward off the playground and be gone before 7 a.m.

WILLIE "WOO WOO" WONG PLAYGROUND ANNUAL SHADOW LOADS / SQUARE FOOT HOURS (sfh)			
Existing / Current Shadow	Project Net New Shadow	Cumulative Net New Shadow	Remaining Sunlight w/ Project
48.03%	**0.01%**	**0.03%**	**51.96%**
47,210,735 sfh	12,097 sfh	24,946 sfh	51,068,242 sfh

Willie "Woo Woo" Wong Playground Annual Shadow Load with Project (sfh)	48.04% (47,222,832 sfh)
Willie "Woo Woo" Wong Playground Shadow w/ Project+ Cumulative (sfh)	48.06% (47,235,681 sfh)

EXISTING SHADOW DETAILS	
Range in existing shadow area coverage throughout the year	Between 2% - 100%
Time of year / time of day most affected by existing shadow	Fall / Early Morning (before 8:00 AM)

PROJECT NET NEW SHADOW DETAILS	
Days net new shadow would occur (date range)	41 days annually (June 1 - July 11)
Date(s) with most sfh net new shadow	June 21
Season / Time of day most affected by net new shadow	Summer / Early Morning (before 8:00 AM)
Area of largest net new shadow (date and time)	4,461 sf (June 21 @ 6:46 AM)
Percentage of Willie "Woo Woo" Wong Playground w/ largest shadow	16.9%
Range in shadow coverage throughout the year (area range)	Between 0% - 17% (0 - 4,461 sf)
Average shadow size across affected dates (percent coverage)	2,580 sf (9.77%)
Date(s) with the longest duration of net new shadow (duration)	June 21 (7 min +/- 6 min)
Range in daily net new shadow duration across affected dates	Between zero minutes up to 7 min (+/- 6 min)
Average daily net new shadow duration across affected dates	5.9 minutes

PROJECT+ CUMULATIVE NET NEW SHADOW DETAILS	
Days net new shadow would occur (date range)	107 days (3/16-4/4, 6/1-7/11, 9/7-9/26, 11/30-12/12 & 12/29-1/10)
Date(s) with most sfh net new shadow	September 13 & March 29
Season / Time of day most affected by net new shadow	Spring / Early Morning (before 8:00 AM)
Area of largest net new shadow (date and time)	4,461 sf (June 21 @ 6:46 AM)
Percentage of Willie "Woo Woo" Wong Playground w/ largest shadow	16.9%
Range in shadow coverage throughout the year (area range)	Between 0% - 17% (0 - 4,461 sf)
Average shadow size across affected dates (percent coverage)	1,787 sf (6.76%)
Date(s) with the longest duration of net new shadow (duration)	Sep 13/Mar 29 (27 min +/- 11 min)
Range in daily net new shadow duration across affected dates	Between zero minutes up to 27 min (+/- 11 min)
Average daily net new shadow duration across affected dates	9.8 minutes

TABLE 4: Quantitative project shadow summary for Willie “Woo Woo” Wong Playground

The date with the single largest net new project shadow area would also occur on June 21st, when a 4,461-sf new shadow would be cast at 6:46 a.m. covering 17% of the total playground area.

The duration of project-generated net new shadow would also vary from June 1st to July 11th, with net new shadow lasting between zero minutes up to approximately 7 minutes (occurring on June 21st).

Figure 24 depicts existing vs. project net new shadow conditions on Willie "Woo Woo" Wong Playground on the date of maximum net new SFH of shadow (June 21st) at 15-minute intervals when shadow falls on or near the playground.

Project Shadow Characteristics and the Value of Sunlight

The portions of Willie "Woo Woo" Wong Playground that would likely be the most sensitive to the addition of new shadow would be those elements that are fixed in location, conducive to more stationary activities (i.e., users remain in one area rather than pass through) and are well used by the public. By this criterion, most features within the playground area would potentially be sensitive to the addition of net new shadow.

Throughout the year, net new shadow due to the project would occur only within a small portion of Willie "Woo Woo" Wong Playground with net new shadow (when occurring) being present for under 15 minutes. The shadow would fall in an area containing a tennis court, playgrounds and a park entry. While project shadow would affect potentially sensitive features such as playground benches, they would be affected very early in the morning (outside of times of typically high use) for a short period of time across a limited number of dates a year, which would make it unlikely that most playground users would notice the additional shadow contributed by the project.

Increase in Shadow under Cumulative Scenarios

Under cumulative scenario, the project at 50 Main Street would also affect the Willie "Woo Woo" Wong Playground. Net new shadow from the project combined with shadow from 50 Main Street would result in an increase of 24,946 sfh of shadow on Willie "Woo Woo" Wong Playground (0.03% additional annual shadow load), representing an additional 12,849 sfh (0.02%) of shadow as compared to the annual shadow increase from the project alone. Under the cumulate condition, the increase in sfh would result in a new shadow load of 48.06%.

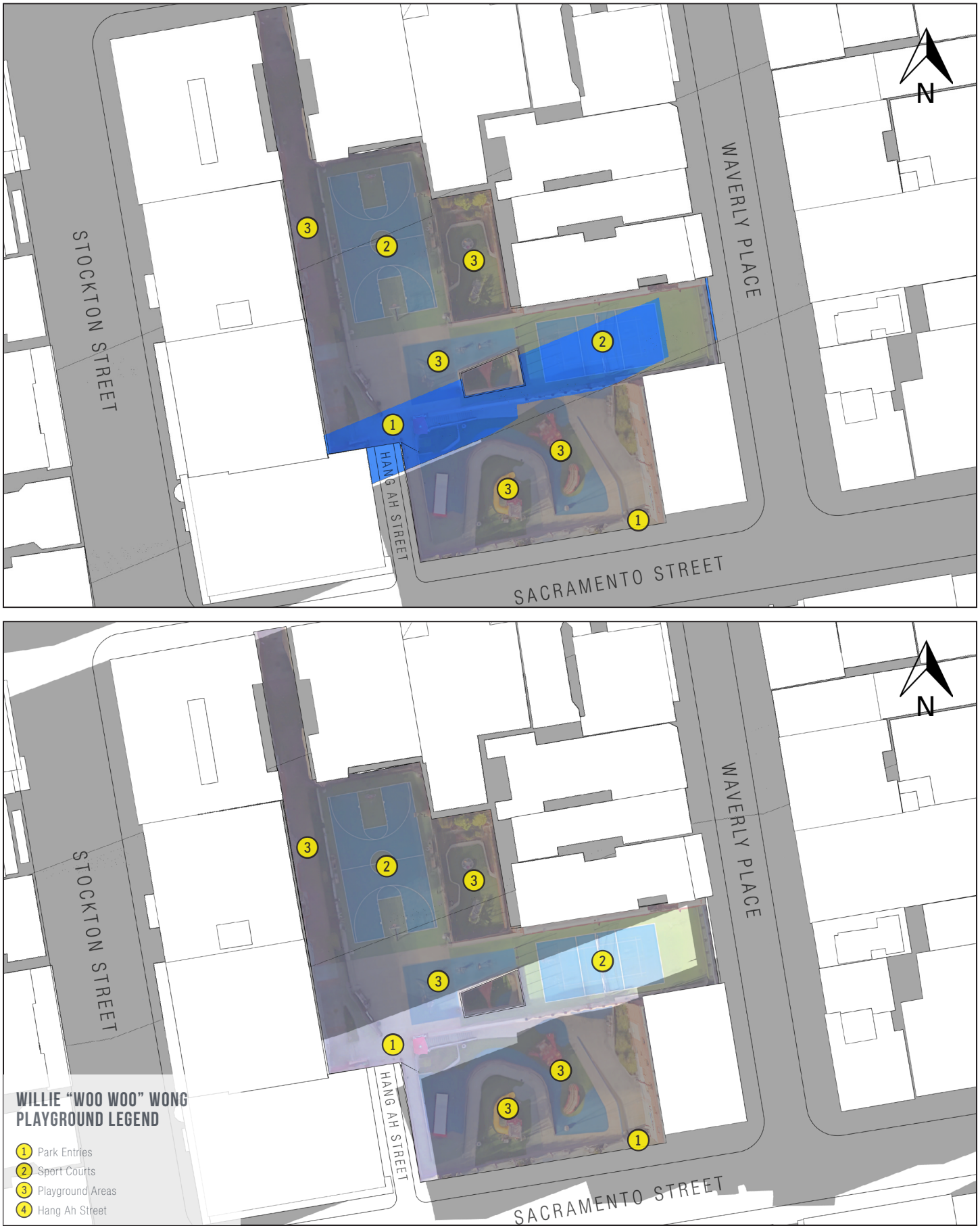


FIGURE 24: June 21st at 6:46am (top) and 7:00am (bottom)

NOTE: All net new project shadow has retreated out of the playground by 7:00 am.

Timing and Locations of New Shadow Under the Cumulative Scenario

Net new shadow cast under the cumulative scenario would occur for approximately 107 days a year affecting periods between approximately March 16th though April 4th, June 1st through July 11th, September 7th through September 26th, November 30th through December 12th, and December 29th through January 10th, an increase of 66 days a year more than under the project-only scenario. Beyond areas affected by the project scenario, cumulative shadow would also affect portions of the basketball court area. Net new cumulative shadow would be cast only early morning hours during the affected dates, and would leave the playground prior to 8:30 a.m.

The days of maximum net new square foot hours of shadow on the playground under the cumulative scenario would occur on or around September 13th and March 29th. On those dates, shadow from the proposed project would be present on Willie "Woo Woo" Wong Playground at around 8 a.m. and retreat to the northeast off the playground and be gone before 8:30 a.m.

The date with the single largest net new shadow area in the cumulative scenarios would be the same as under the project-only scenario (occurring on June 21st, when a 4,461-sf new shadow would be cast at 6:46 a.m. covering 17% of the total playground area).

The duration of cumulative scenario net new shadow would vary throughout the year, with net new shadow lasting between zero up to approximately 27 minutes (occurring on September 13th and March 29th). ■

IX. MARITIME PLAZA ANALYSIS FINDINGS

Table 5 summarizes the existing condition data and quantitative shadow effects of the proposed project on Maritime Plaza. The full quantitative calculations for shadow conditions on all 27 analysis dates are included as Exhibit E.

Existing Conditions

The plaza area is 86,676 square feet and currently experiences 218,824,091 annual square-foot-hours (sfh) of shadow. Based on a theoretical annual available sunlight (TAAS) of 322,556,066 sfh, the plaza's current annual shadow load is 67.84%. Under existing conditions, the plaza is substantially shaded in the mornings and afternoons with some increased areas of sun around midday during the spring, summer, and early fall. The plaza is almost entirely shaded throughout the day during late fall and winter months.

Increase in Annual Shadow from the Project

The proposed project would result in net new shadow falling on the plaza, adding approximately 6,714,143 net new annual sfh of shadow and increasing the annual shadow load by 2.08% above current levels, which would result in a new annual total shadow load of 69.92%.

Timing and Location of Shadow from the Project

Net new shadow from the project would occur for up to approximately 237 days a year between approximately February 23rd and October 17th. Shadow would fall primarily on the western portion of Maritime Plaza, with only a small band along the northern edge of the eastern portion of the plaza receiving any net new shadow. Net new shadow would be cast only during afternoon hours, no earlier than 2:15 p.m.

The date of maximum net new sfh on the plaza due to the project would occur on or around June 21st. On that date, shadow from the proposed project would be present on Maritime Plaza starting prior to 2:30 p.m. remain on the western portion plaza until just after 7:15 p.m.

MARITIME PLAZA ANNUAL SHADOW LOADS / SQUARE FOOT HOURS (sfh)			
Existing / Current Shadow	Project Net New Shadow	Cumulative Net New Shadow	Remaining Sunlight w/ Project
67.84%	**2.08%**	**2.19%**	**30.08%**
218,824,091 sfh	6,714,143 sfh	7,051,455 sfh	97,017,832 sfh

Maritime Plaza Annual Shadow Load with Project (sfh)	69.92% (225,538,234 sfh)
Maritime Plaza Annual Shadow Load with Project + Cumulative (sfh)	70.03% (225,875,547 sfh)

EXISTING SHADOW DETAILS	
Range in existing shadow area coverage throughout the year	Between 5% - 100%
Time of year / time of day most affected by existing shadow	Winter / Early Morning (before 8:00 AM)

PROJECT NET NEW SHADOW DETAILS	
Days net new shadow would occur (date range)	237 days annually (February 23 - October 17)
Date(s) with most sfh net new shadow	June 21
Season / Time of day most affected by net new shadow	Spring / Late Afternoon (after 4:30 PM)
Area of largest net new shadow (date and time)	18,061 sf (June 28 & June 14 @ 5:45 PM)
Percentage of Maritime Plaza covered by largest shadow	20.84%
Range in shadow coverage throughout the year (area range)	Between 0% - 21% (0 - 18,061 sf)
Average shadow size across affected dates (percent coverage)	7,961 sf (9.18%)
Date(s) with the longest duration of net new shadow (duration)	June 21 (5 hr 3 min +/- 17 min)
Range in daily net new shadow duration across affected dates	Between zero minutes up to 5 hr 3 min (+/- 17 min)
Average daily net new shadow duration across affected dates	3 hr 34 min

PROJECT + CUMULATIVE NET NEW SHADOW DETAILS	
Days net new shadow would occur (date range)	307 days annually (January 19 - November 21)
Date(s) with most sfh net new shadow	June 21
Season / Time of day most affected by net new shadow	Spring / Late Afternoon (after 4:30 PM)
Area of largest net new shadow (date and time)	18,061 sf (Jun 28/Jun 14 @ 5:45 PM)
Percentage of Maritime Plaza covered by largest shadow	20.84%
Range in shadow coverage throughout the year (area range)	Between 0% - 21% (0 - 18,061 sf)
Average shadow size across affected dates (percent coverage)	7,761 sf (8.95%)
Date(s) with the longest duration of net new shadow (duration)	June 21 (5 hr 3 min +/- 17 min)
Range in daily net new shadow duration across affected dates	Between zero minutes up to 5 hr 3 min (+/- 17 min)
Average daily net new shadow duration across affected dates	2 hr 58 min

TABLE 5: Quantitative project shadow summary for Maritime Plaza

The date with the single largest net new project shadow area would occur on or around June 14th and June 28th when an 18,061-sf new shadow would be cast at 5:45 p.m. covering 21% of the total plaza area.

The duration of project-generated net new shadow would also vary throughout the year, with net new shadow lasting between zero minutes up to approximately five hours and three minutes (occurring on June 21st).

Exhibit B depicts existing vs. project net new shadow conditions on Maritime Plaza on the date of maximum net new SFH of shadow (June 21st) at 15-minute intervals when shadow falls on or near the plaza.

Observed Uses

Within the six 30-minute observation periods conducted by Prevision Design on October 26th, 29th and 30th 2024, the number of users present in the plaza over the course of half an hour ranged from 10 to 108 users. The vast majority of the observed users of the plaza passed through without stopping, and for the few who remained in the plaza for extended periods, many were observed dog walking while other users occupied the seating areas or grassy areas for eating lunch or socializing. See Table 6 for an observation summary.

OBSERVATION TIMEFRAME	DATE OF VISIT	TOTAL USERS	ACTIVE USERS	TRANSITORY USERS
Weekday Morning 9:15-9:45 am	10/29/2024	108	15	93
Weekday Midday 12:15-12:45 pm	10/30/2024	75	4	71
Weekday Afternoon 3:15-3:45 pm	10/30/2024	75	11	64
Weekend Morning 10:15-10:45 am	10/26/2024	23	0	23
Weekend Midday 12:15-12:45 pm	10/26/2024	12	3	9
Weekend Afternoon 3:15-3:45 pm	10/26/2024	10	4	6

TABLE 6: Maritime Plaza Use Observation Summary

Overall, observed peak use at Maritime Plaza occurred during weekday morning and afternoon hours with significantly less activity observed on weekends. The observed intensity of use varied between the observation times but for active users of the plaza could be characterized as low to moderate.

Project Shadow Characteristics and the Value of Sunlight

The portions of Maritime Plaza that would likely be the most sensitive to the addition of new shadow would be those elements that are fixed in location, conducive to more stationary activities (i.e., users remain in one area rather than pass through) and were observed to be the most used by visitors. By this criterion, the seating areas around the landscaped areas and the steps adjacent to the Punchline Comedy Club and Allsteel Showroom would potentially be the most sensitive.

Throughout the year, net new shadow due to the project would occur primarily on the western half Maritime Plaza with net new shadow (when occurring) being present for about 3.5 hours on average (up to a maximum duration of just over 5 hours). The shadow would affect at various times throughout the affected period all areas on the western half of the plaza and a narrow band along the northern edge of the eastern half of the plaza. Project shadow would affect potentially sensitive features such as plaza seating areas at times of day where they were observed to be occupied under current conditions, however for the vast majority of times when project shadow would affect Maritime Plaza, sizable areas of the plaza would remain unshaded and offer alternatives to shade for those users seeking sunlight.

Increase in Shadow under Cumulative Scenarios

Under cumulative scenario, the project at 50 Main Street would also affect the Maritime Plaza. Net new shadow from the project combined with shadow from 50 Main Street would result in an increase of 7,051,455 sfh of shadow on Maritime Plaza (2.19% additional annual shadow load), representing an additional 337,313 sfh (0.10%) of shadow as compared to the annual shadow increase from the project alone. Under the cumulative scenario, the increase in sfh would result in a new shadow load of 70.03%.

Timing and Locations of New Shadow Under the Cumulative Scenario

Net new shadow cast under the cumulative scenario would occur for approximately 307 days a year between approximately January 19th and November 21st. Additional shadow from the 50 Main Project would fall only on the western portion of Maritime Plaza and would be cast only during morning hours between approximately 9 and 9:30 a.m.

The days of maximum net new square foot hours of shadow on the plaza, the dates with the single largest net new shadow area and the duration range of the cumulative scenario net new shadow would be the as they would be in the project scenario. ■

X. SUE BIERMAN PARK ANALYSIS FINDINGS

Table 7 summarizes the existing condition data and quantitative shadow effects of the proposed project on Sue Bierman Park. The full quantitative calculations for shadow conditions on all 27 analysis dates are included as Exhibit F.

Existing Conditions

The park area is 178,458 square feet and currently experiences 283,534,436 annual square-foot-hours (sfh) of shadow. Based on a theoretical annual available sunlight (TAAS) of 664,113,973 sfh, the park's current annual shadow load is 42.694%. Under existing conditions, the park receives more sunlight during the mornings and more shadow during the afternoon. This effect is more pronounced during spring and summer, with higher levels of shadow cast on the park throughout the day during fall and winter months.

Increase in Annual Shadow from the Project

The proposed project would result in net new shadow falling on the park, adding approximately 24,302 net new annual sfh of shadow and increasing the annual shadow load by 0.004% above current levels, which would result in a new annual total shadow load of 42.698%.

Timing and Location of Shadow from the Project

Net new shadow from the project would occur for up to approximately 82 days a year during two periods: between approximately March 16th and April 25th and August 17th and September 26th. Shadow would fall with a narrow band along the northern sides of both the western and eastern portions of Sue Bierman Park. Net new shadow would be cast only during the late afternoon timeframe for around 30 minutes between approximately 5 and 6 p.m. on the affected dates.

The dates of maximum net new sfh on the park due to the project would occur on or around March 22nd and September 20th. On those dates, shadow from the proposed project would be present at Sue Bierman Park starting prior to 5:45 p.m. remain until just after 6 p.m.

SUE BIERMAN PARK ANNUAL SHADOW LOADS / SQUARE FOOT HOURS (sfh)			
Existing / Current Shadow	Project Net New Shadow	Cumulative Net New Shadow	Remaining Sunlight w/ Project
42.694%	**0.004%**	**0.312%**	**57.302%**
283,534,436 sfh	24,302 sfh	2,070,884 sfh	380,555,234 sfh

Sue Bierman Park Annual Shadow Load with Project (sfh)	42.698% (283,558,739 sfh)
Sue Bierman Park Annual Shadow Load with Project + Cumulative (sfh)	43.006% (285,605,321 sfh)

EXISTING SHADOW DETAILS	
Range in existing shadow area coverage throughout the year	Between 0% - 100%
Time of year / time of day most affected by existing shadow	Fall / Afternoon (1:30-4:30 PM)

PROJECT NET NEW SHADOW DETAILS	
Days net new shadow would occur (date range)	82 days annually (3/16 - 4/25 & 8/17 - 9/26)
Date(s) with most sfh net new shadow	September 20 & March 22
Season / Time of day most affected by net new shadow	Spring / Late Afternoon (after 4:30 PM)
Area of largest net new shadow (date and time)	2,012 sf (September 20 & March 22 @ 6:00 PM)
Percentage of Sue Bierman Park covered by largest shadow	1.13%
Range in shadow coverage throughout the year (area range)	Between 0% - 1% (0 - 2,012 sf)
Average shadow size across affected dates (percent coverage)	836 sf (0.47%)
Date(s) with the longest duration of net new shadow (duration)	August 30 & April 12 (30 min +/- 28 min)
Range in daily net new shadow duration across affected dates	Between zero minutes up to 30 min (+/- 28 min)
Average daily net new shadow duration across affected dates	26.5 minutes

PROJECT + CUMULATIVE NET NEW SHADOW DETAILS	
Days net new shadow would occur (date range)	222 days annually (3/16 - 4/25 & 8/17 - 9/26 & 10/12 - 2/28)
Date(s) with most sfh net new shadow	December 13 & December 28
Season / Time of day most affected by net new shadow	Winter / Midday (11:00 AM-1:30 PM)
Area of largest net new shadow (date and time)	29,565 sf (Dec 13/Dec 28 @ 12:30 PM)
Percentage of Sue Bierman Park covered by largest shadow	16.57%
Range in shadow coverage throughout the year (area range)	Between 0% - 17% (0 - 29,565 sf)
Average shadow size across affected dates (percent coverage)	8,077 sf (4.53%)
Date(s) with the longest duration of net new shadow (duration)	Dec 13/Dec 28 (2 hr 15 min +/- 14 min)
Range in daily net new shadow duration across affected dates	Between zero minutes up to 2 hr 15 min (+/- 14 min)
Average daily net new shadow duration across affected dates	1 hr 16 min

TABLE 7: Quantitative project shadow summary for Sue Bierman Park

The dates with the single largest net new project shadow area would also occur on or around March 22nd and September 20th when a 2,012-sf new shadow would be cast at 6 p.m. covering 1% of the total park area.

The duration of project-generated net new shadow would also vary throughout the year, with net new shadow lasting between zero minutes up to approximately 30 minutes (occurring on April 12th and August 30th).

Figure 25 depicts existing vs. project net new shadow conditions on Sue Bierman Park on the dates of maximum net new SFH of shadow (March 22nd and September 20th) at 15-minute intervals when shadow falls on or near the park.

Observed Uses

Within the six 30-minute observation periods conducted by Prevision Design on October 27th and 29th, 2024, the number of users present in the park over the course of half an hour ranged from 10 to 108 users. At all times majority of the observed users of the park passed through without stopping, and of those who remained in the park Most were observed sitting on the grass, benches or using the children's play area. See Table 8 for an observation summary.

OBSERVATION TIMEFRAME	DATE OF VISIT	TOTAL USERS	ACTIVE USERS	TRANSITORY USERS
Weekday Morning 9:45-10:15 am	10/29/2024	57	9	48
Weekday Midday 12:15-12:45 pm	10/29/2024	44	14	30
Weekday Afternoon 2:15-2:45 pm	10/29/2024	88	20	68
Weekend Morning 9:00-9:30 am	10/27/2024	62	4	58
Weekend Midday 12:15-12:45 pm	10/27/2024	55	8	47
Weekend Afternoon 3:15-3:45 pm	10/27/2024	41	1	40

TABLE 8: Sue Bierman Park Use Observation Summary

Overall, observed peak use at Sue Bierman Park occurred during weekday midday and afternoon hours with somewhat less activity observed on weekends. The observed intensity of use varied between the observation times but for active users of the park could be characterized as moderate.

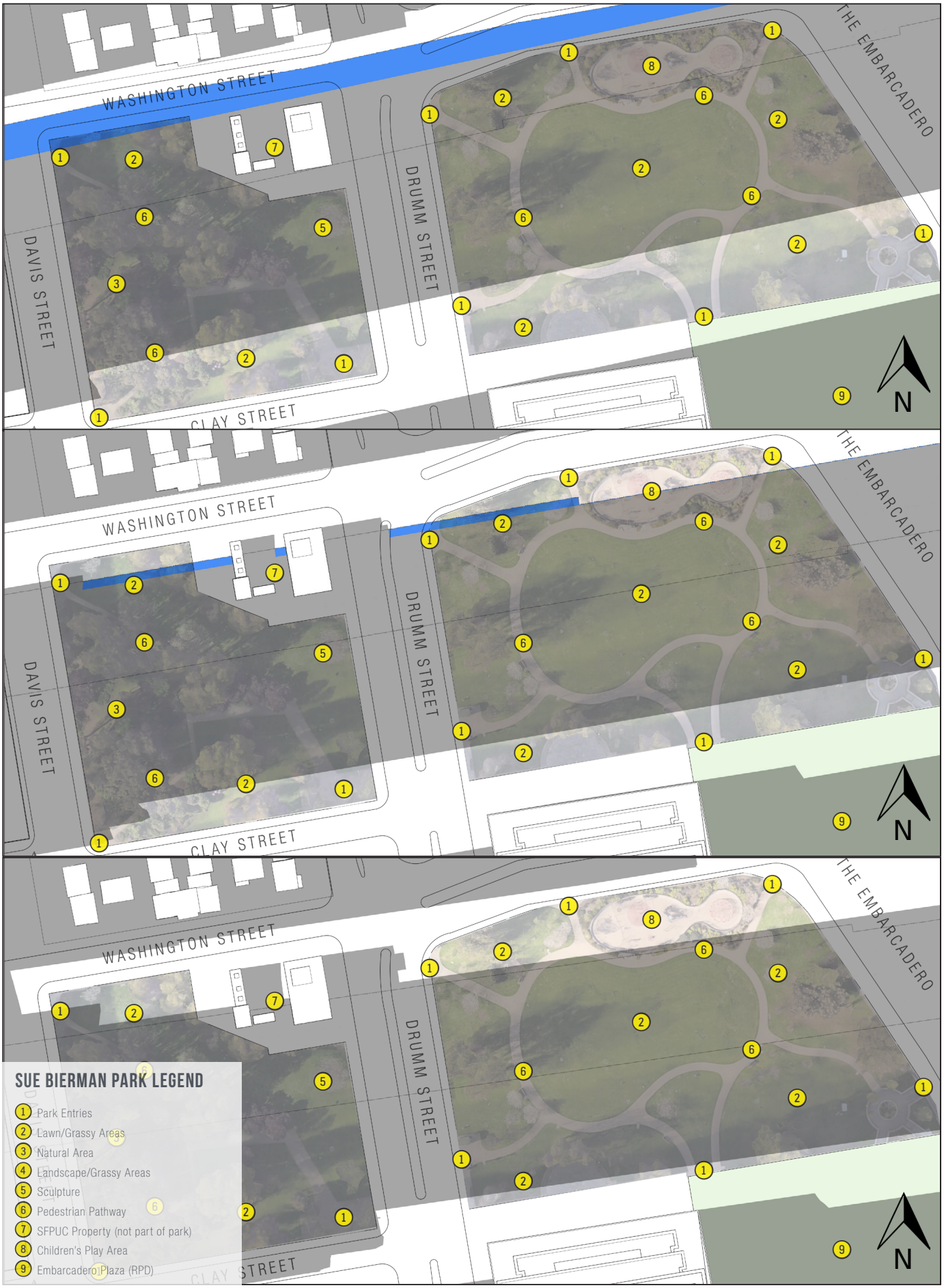


FIGURE 25: March 22 & September 20 at 5:45/6:00/6:09pm (top to bottom)

Project Shadow Characteristics and the Value of Sunlight

The portions of Sue Bierman Park that would likely be the most sensitive to the addition of new shadow would be those elements that are fixed in location, conducive to more stationary activities (i.e., users remain in one area rather than pass through) and were observed to me the most used by visitors. By this criterion, the fixed seating areas and the children's play area would potentially be the most sensitive.

During the affected period, net new shadow due to the project would occur only along a narrow band near the northern edge of the park being present for under 15 minutes, affecting portions of the grassy/landscaped areas and the northwest park entries on both the western and eastern portions of the park. Project shadow would not affect potentially more sensitive features such as park seating areas or the children's play area and due to this along with the small affected area and short duration would not likely be noticeable for most park users.

Increase in Shadow under Cumulative Scenarios

Under cumulative scenario, the project at 50 Main Street would also affect Sue Bierman Park. Net new shadow from the project combined with shadow from 50 Main Street would result in an increase of 2,070,884 sfh of shadow on Sue Bierman Park (0.312% additional annual shadow load), representing an additional 2,046,582 sfh (0.308%) of shadow as compared to the annual shadow increase from the project alone. Under the cumulative scenario, the increase in sfh would result in a new shadow load of 43.006%.

Timing and Locations of New Shadow Under the Cumulative Scenario

Net new shadow cast under the cumulative scenario would occur for approximately 222 days a year affecting periods between approximately March 16th though April 4th, August 17th through September 26th, and October 12th through February 28th. Additional shadow from the 50 Main Project would fall across the eastern edge of the western half of the park and western and eastern edges of the eastern half of park. 50 Main Street shadow would be cast during midday hours between approximately 11 a.m. and 1 p.m. ■

XI. TRANSAMERICA REDWOOD PARK ANALYSIS FINDINGS

Existing Conditions

Under existing conditions, the park is predominantly shaded throughout the day due to shadows cast by existing buildings as well as substantial tree canopy cover.

Increase in Annual Shadow from the Project

Setting aside presence of shadow from existing trees, the project would generate small amounts net new shadow on Redwood Park from approximately mid-April through late August, with the largest amount of shadow occurring on or near the summer solstice (June 21st).

Increase in Annual Shadow from the Project plus Cumulative Scenario

In addition to the shadow cast by the project, the cumulative condition project at 545 Sansome Street would generate net new shadow on the northern portion of Redwood Park during morning hours from spring through fall, with the largest amount of shadow occurring mid-morning on or near the summer solstice (June 21st).

Timing and Location of Shadow from the Project

Net new shadow from the project/variant would be cast in the morning lasting from between a few minutes in the spring and fall up to about 4 hours on the summer solstice. The amount of area affected by such shadow would cover approximately 5% or less of the park area at any given time. The portions of the park that would be affected include the northern quarter of the park along Washington Street and a narrow section in the middle of the space. Exhibit A1.1 shows the locations and durations of net new shadow on the park on the date with the most net new shadow (June 21st).

The Value of Sunlight

Features of the open space that would be considered to be more sensitive to the addition of new shadow would be some areas of fixed seating, some of which are in areas affected by net new project shadow, however while shadow analysis methodology does

not take into account the presence of trees, the dense redwood canopy is both a defining feature of this open space and would also serve to capture a substantial amount of the shadow cast by the project, making the change in shading conditions less noticeable by users of this open space and therefore reducing the importance of sunlight on these affected features. ■

XII. SYDNEY WALTON SQUARE ANALYSIS FINDINGS

Existing Conditions

Under existing conditions, Sydney Walton Square receives the most sunlight during midday hours and is more substantially shaded during morning and evening hours. During summer months the park has little to no shadow during these midday hours with increasing levels of shadow encroaching during spring and fall leading to winter months when no less than half the park is cast in shadow throughout the day.

Increase in Annual Shadow from the Project

The project would generate some areas of net new shadow on Sydney Walton Square from approximately late September through mid-March, with the largest amount of net new shadow occurring in late October and again in mid-February.

Increase in Annual Shadow from the Project plus Cumulative Scenario

In addition to the shadow cast by the project, the project at 50 Main Street would generate a small amount of net new shadow falling across multiple areas of the during late morning to midday hours on dates near the winter solstice (December 21st).

Timing and Location of Shadow from the Project

Net new shadow from the project would be cast on Sydney Walton Square in the afternoon timeframe after approximately 2 p.m. On dates with the most net new shadow (near November 1st and February 8th), up to approximately 70% of the total park area would be affected by net new project shadow at some point during the day, with the duration of shadow lasting under 30 minutes in most areas with a few sections

in the northwestern corner of the park receiving between 30 minutes to 1 hour of new shadow. Exhibit A1.3 shows the locations and durations of net new shadow on the park on the approximate dates with the most net new shadow.

The Value of Sunlight

Features of Sydney Walton Square that could be more sensitive to the addition of new shadow would be areas used for fixed seating, including stones around the central fountain and concrete walls surrounding two tree wells, both of which would receive net new shadow from the project. The grass areas would also be affected and are also used for seating, but at most times of year there would remain both shaded and sunny areas available for park users even with the addition of net new project shadow. Finally, while not officially taken into account for shadow analysis, the presence of over 40 mature trees contributes to the user-experienced existing shadow conditions in the park and would reduce the perceived increase in shadow caused by the project. ■

EXHIBIT A: NET NEW SHADOW EXTENTS & DURATIONS

A1.0 Annual net new shadow locations and annual duration ranges (daily average & total annual) from the project

A1.1 Net new project shadow locations and duration ranges on **June 21st**
Summer solstice & Max shadow date for Maritime Plaza and Willie "Woo Woo" Wong Park.

A1.2 Net new project shadow locations and duration ranges on **March 22nd & September 20th**
Spring/Fall Equinoxes & Max shadow dates for Sue Bierman Park

A1.3 Net new project shadow locations and duration ranges on **November 1st & February 8th**
Max shadow dates for Sydney Walton Square

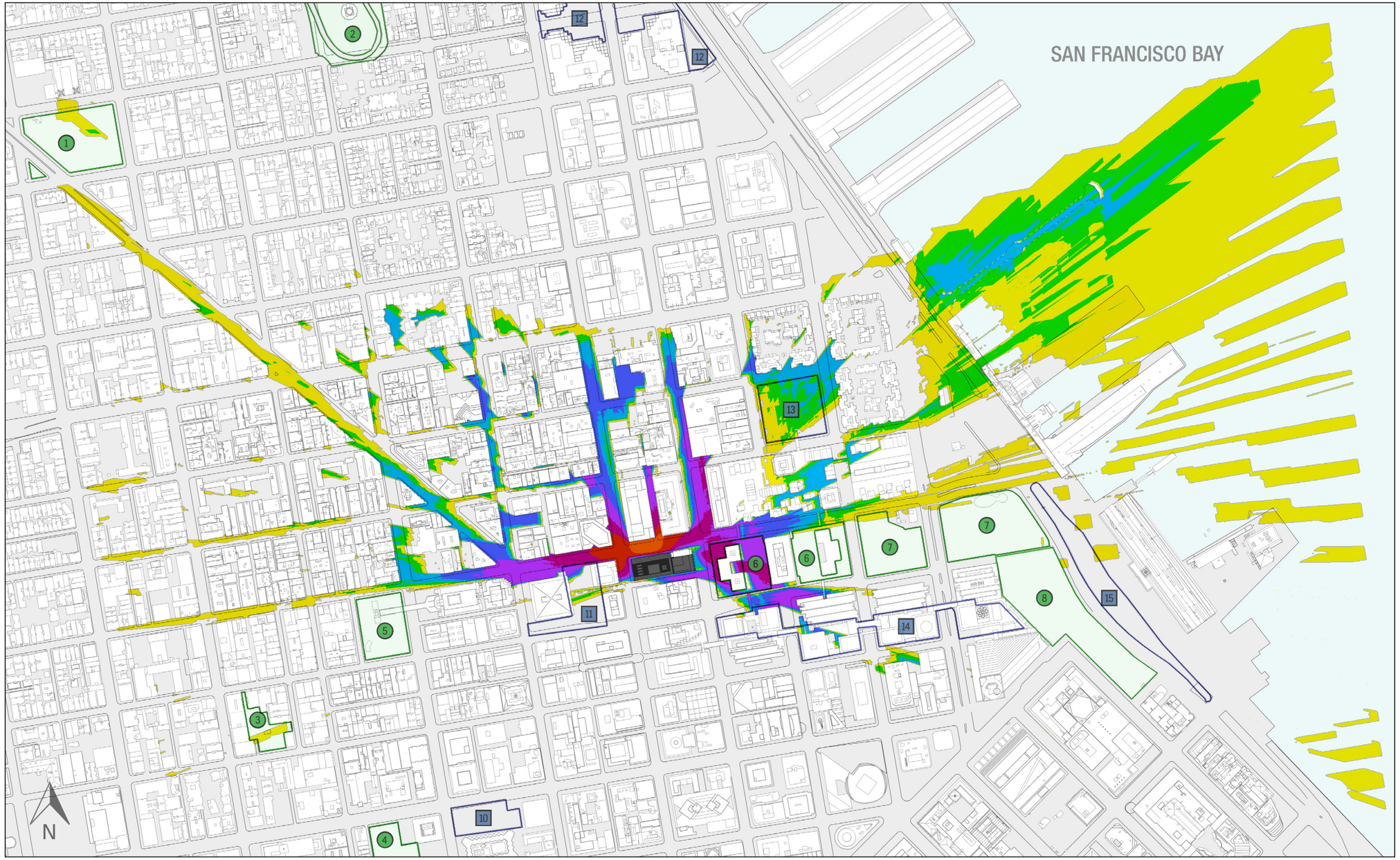
A1.4 Net new project shadow locations and duration ranges on **December 13th & 28th**
Max shadow dates for Washington Square

A1.5 Net new project shadow locations and duration ranges on **December 20th & 21st**
Winter Solstice

A1.0 530 SANSOME STREET & 447 BATTERY STREET

NET NEW SHADOW LOCATIONS & DURATION RANGES

PREVISION DESIGN



FULL YEAR

SHADOWFAN ANALYSIS

ANNUAL EXTENTS AND AVERAGE DURATION RANGES OF NET NEW SHADOW CAST BETWEEN 1-HOUR AFTER SUNRISE THROUGH 1-HOUR BEFORE SUNSET

Net New Shadow Daily Average (annual totals)

- Under 2 min/day (Under 13 hrs/year)
- 2 - 4 min/day (13 - 25 hrs/year)
- 4 - 8 min/day (25 - 49 hrs/year)
- 8 - 16 min/day (49 - 98 hrs/year)
- 16 - 32 min/day (98 - 195 hrs/year)
- 32 - 64 min/day (195 - 390 hrs/year)
- 64 - 128 min/day (390 - 779 hrs/year)
- Over 128 min/day (Over 779 hours/year)

RPD Parks and Open Spaces

1. Washington Square Park
2. Telegraph Hill / Pioneer Park
3. Willie "Woo Woo" Wong Park
4. St. Mary's Square
5. Portsmouth Square
6. Maritime Plaza
7. Sue Bierman Park
8. Embarcadero Plaza

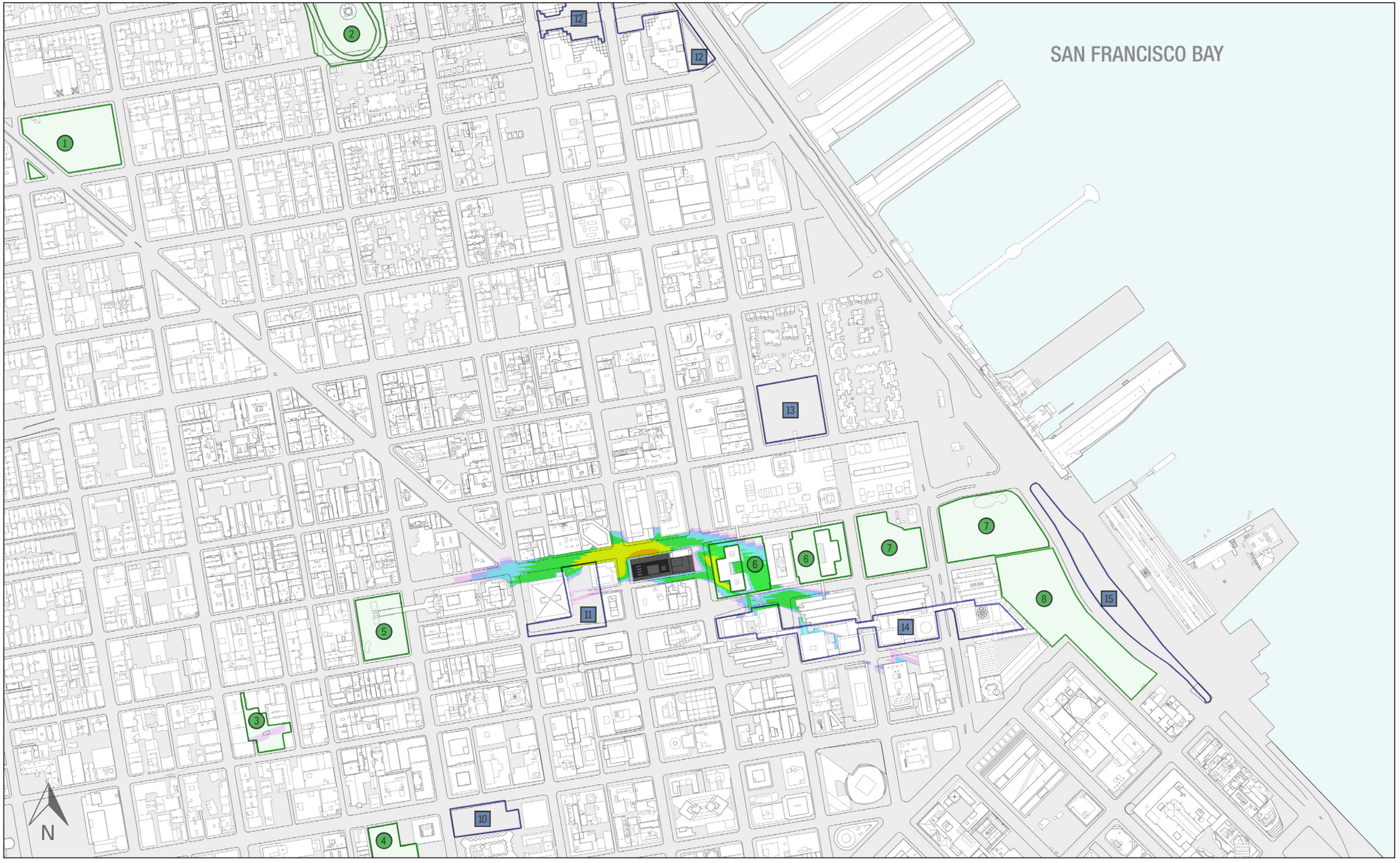
Other Open Spaces

10. 555 California St. Plaza
11. Redwood Transamerica Park
12. Levi's Plaza
13. Sydney Walton Park
14. Embarcadero Center Plazas
15. Harry Bridge's Plaza

A1.1 530 SANSOME STREET & 447 BATTERY STREET

NET NEW SHADOW LOCATIONS & DURATION RANGES

PREVISION DESIGN



JUNE 21

SHADOWFAN ANALYSIS

EXTENTS AND DURATION OF NET NEW SHADOW CAST BETWEEN 1-HOUR AFTER SUNRISE THROUGH 1-HOUR BEFORE SUNSET ON SUMMER SOLSTICE & DATE WITH MOST SFH OF NET NEW SHADOW ON WILLIE "WOO WOO" WONG PLAYGROUND, MARITIME PLAZA, AND TRANSAMERICA REDWOOD PARK.

Duration Range of Net New Shadow

- 1 min - 15 min
- 15 min - 30 min
- 30 min - 1 hr
- 1 hr - 2 hr
- 2 hr - 4 hr
- 4 hr - 8 hr
- 8 hr - 16 hr
- 16 hr or longer

RPD Parks and Open Spaces

1. Washington Square Park
2. Telegraph Hill / Pioneer Park
3. Willie "Woo Woo" Wong Park
4. St. Mary's Square
5. Portsmouth Square
6. Maritime Plaza
7. Sue Bierman Park
8. Embarcadero Plaza

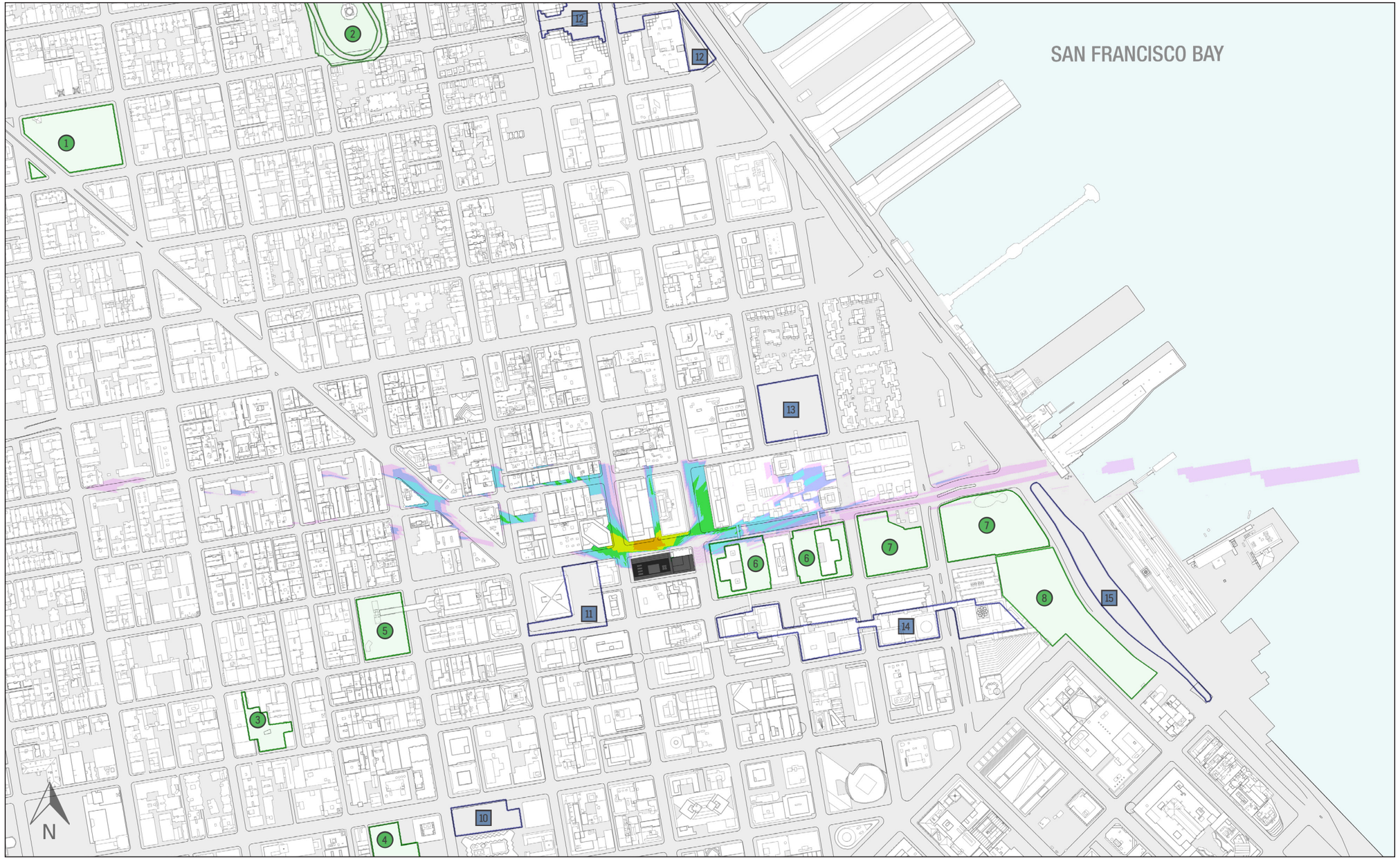
Other Open Spaces

10. 555 California St. Plaza
11. Redwood Transamerica Park
12. Levi's Plaza
13. Sydney Walton Park
14. Embarcadero Center Plazas
15. Harry Bridge's Plaza

A1.2 530 SANSOME STREET & 447 BATTERY STREET

NET NEW SHADOW LOCATIONS & DURATION RANGES

PREVISION DESIGN



MARCH 22 & SEPTEMBER 20

SHADOWFAN ANALYSIS

EXTENTS AND DURATION OF NET NEW SHADOW CAST BETWEEN 1-HOUR AFTER SUNRISE THROUGH 1-HOUR BEFORE SUNSET ON EQUINOXES & DATE WITH MOST SFH OF NET NEW SHADOW ON SUE BIERMAN PARK

Duration Range of Net New Shadow

- 1 min - 15 min
- 15 min - 30 min
- 30 min - 1 hr
- 1 hr - 2 hr
- 2 hr - 4 hr
- 4 hr - 8 hr
- 8 hr - 16 hr
- 16 hr or longer

RPD Parks and Open Spaces

1. Washington Square Park
2. Telegraph Hill / Pioneer Park
3. Willie "Woo Woo" Wong Park
4. St. Mary's Square
5. Portsmouth Square
6. Maritime Plaza
7. Sue Bierman Park
8. Embarcadero Plaza

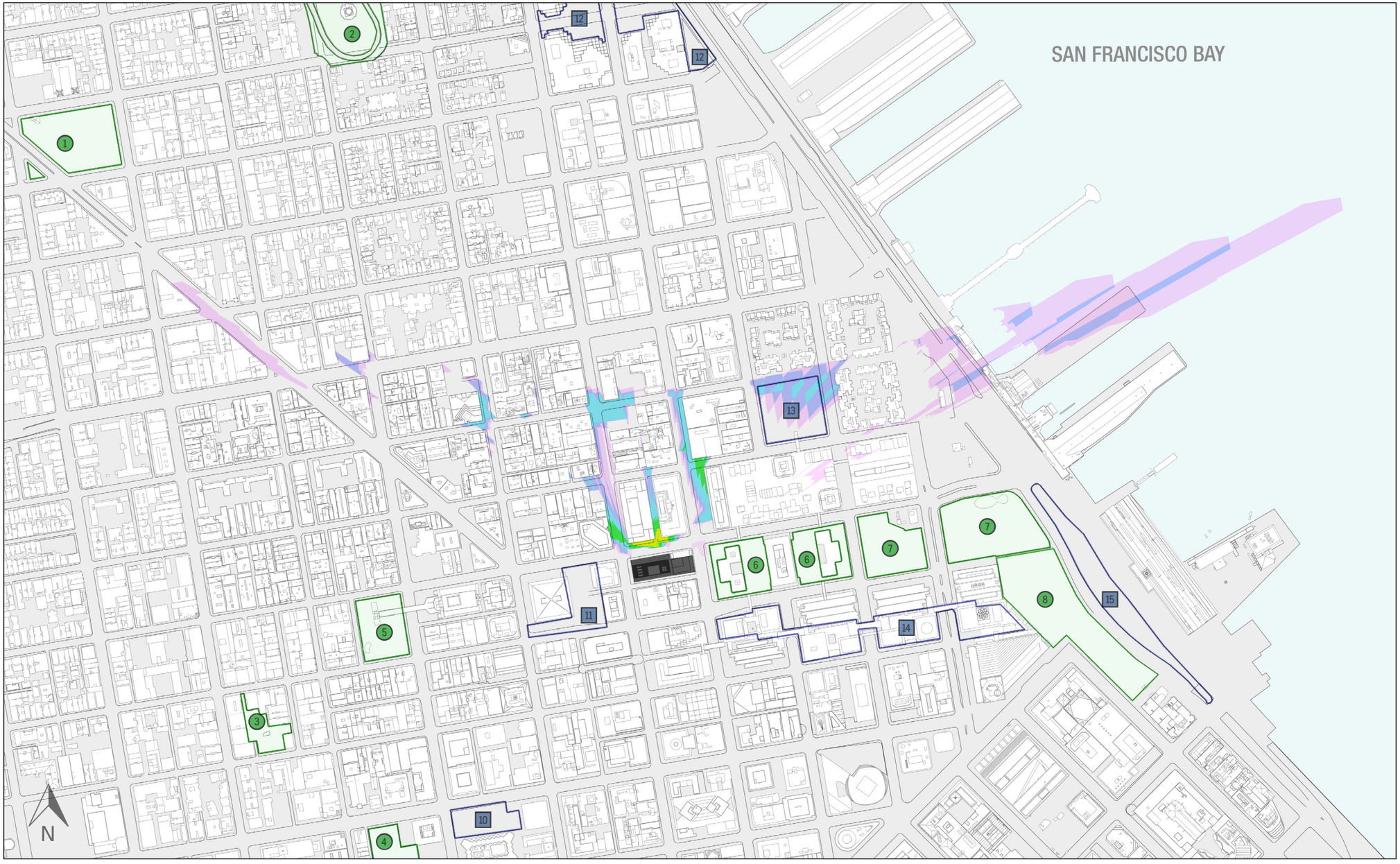
Other Open Spaces

10. 555 California St. Plaza
11. Redwood Transamerica Park
12. Levi's Plaza
13. Sydney Walton Park
14. Embarcadero Center Plazas
15. Harry Bridge's Plaza

A1.3 530 SANSOME STREET & 447 BATTERY STREET

NET NEW SHADOW LOCATIONS & DURATION RANGES

PREVISION DESIGN



NOVEMBER 1 & FEBRUARY 8

SHADOWFAN ANALYSIS

EXTENTS AND DURATION OF NET NEW SHADOW CAST BETWEEN 1-HOUR AFTER SUNRISE THROUGH 1-HOUR BEFORE SUNSET ON EQUINOXES & DATE WITH MOST NET NEW SHADOW ON SYDNEY WALTON PARK

Duration Range of Net New Shadow

- 1 min - 15 min
- 15 min - 30 min
- 30 min - 1 hr
- 1 hr - 2 hr
- 2 hr - 4 hr
- 4 hr - 8 hr
- 8 hr - 16 hr
- 16 hr or longer

RPD Parks and Open Spaces

1. Washington Square Park
2. Telegraph Hill / Pioneer Park
3. Willie "Woo Woo" Wong Park
4. St. Mary's Square
5. Portsmouth Square
6. Maritime Plaza
7. Sue Bierman Park
8. Embarcadero Plaza

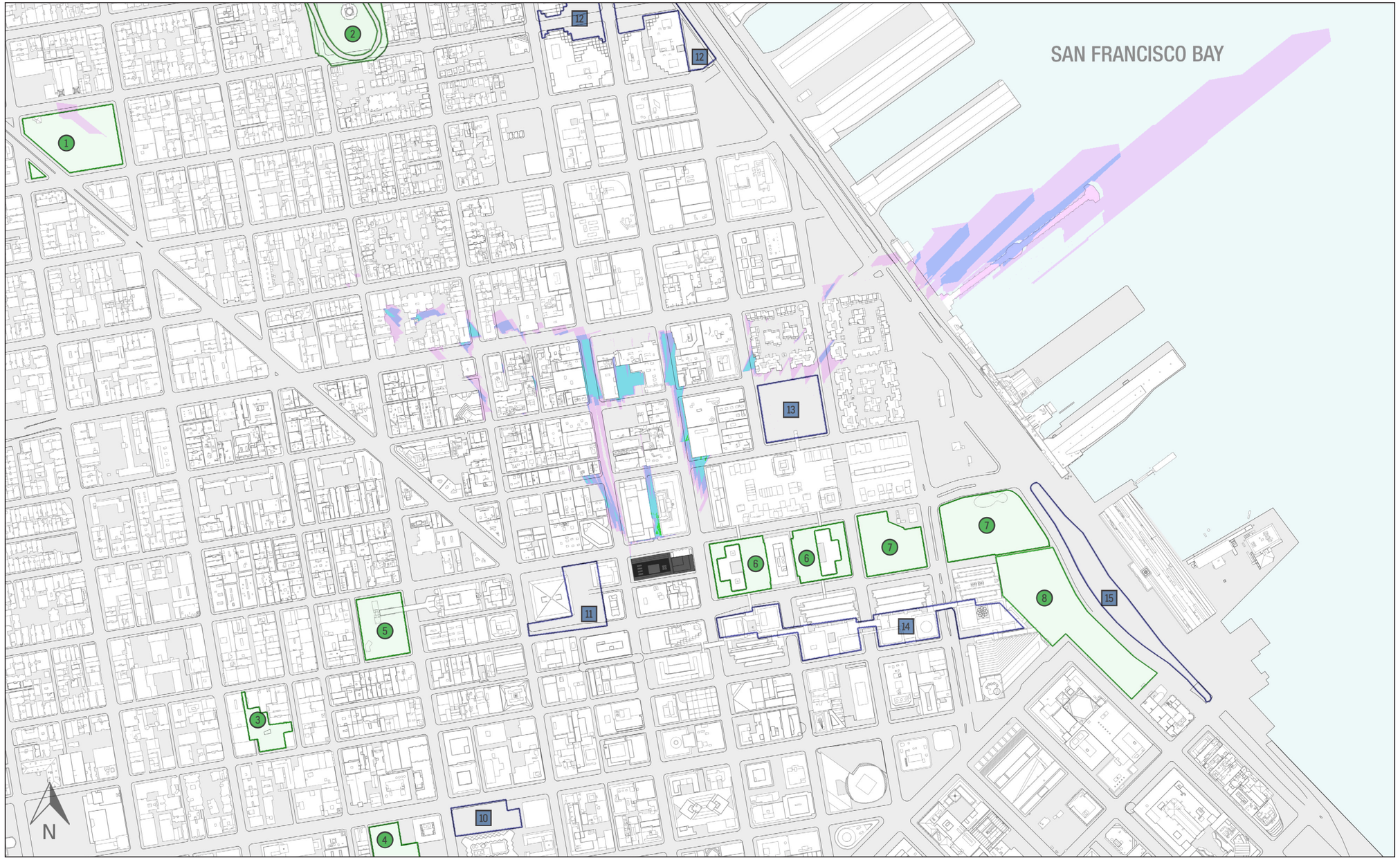
Other Open Spaces

10. 555 California St. Plaza
11. Redwood Transamerica Park
12. Levi's Plaza
13. Sydney Walton Park
14. Embarcadero Center Plazas
15. Harry Bridge's Plaza

A1.4 530 SANSOME STREET & 447 BATTERY STREET

NET NEW SHADOW LOCATIONS & DURATION RANGES

PREVISION DESIGN



DECEMBER 13 & DECEMBER 28

SHADOWFAN ANALYSIS

EXTENTS AND DURATION OF NET NEW SHADOW CAST BETWEEN 1-HOUR AFTER SUNRISE THROUGH 1-HOUR BEFORE SUNSET ON DATE WITH MOST SFH OF NET NEW SHADOW ON WASHINGTON SQUARE

Duration Range of Net New Shadow

- 1 min - 15 min
- 15 min - 30 min
- 30 min - 1 hr
- 1 hr - 2 hr
- 2 hr - 4 hr
- 4 hr - 8 hr
- 8 hr - 16 hr
- 16 hr or longer

RPD Parks and Open Spaces

1. Washington Square Park
2. Telegraph Hill / Pioneer Park
3. Willie "Woo Woo" Wong Park
4. St. Mary's Square
5. Portsmouth Square
6. Maritime Plaza
7. Sue Bierman Park
8. Embarcadero Plaza

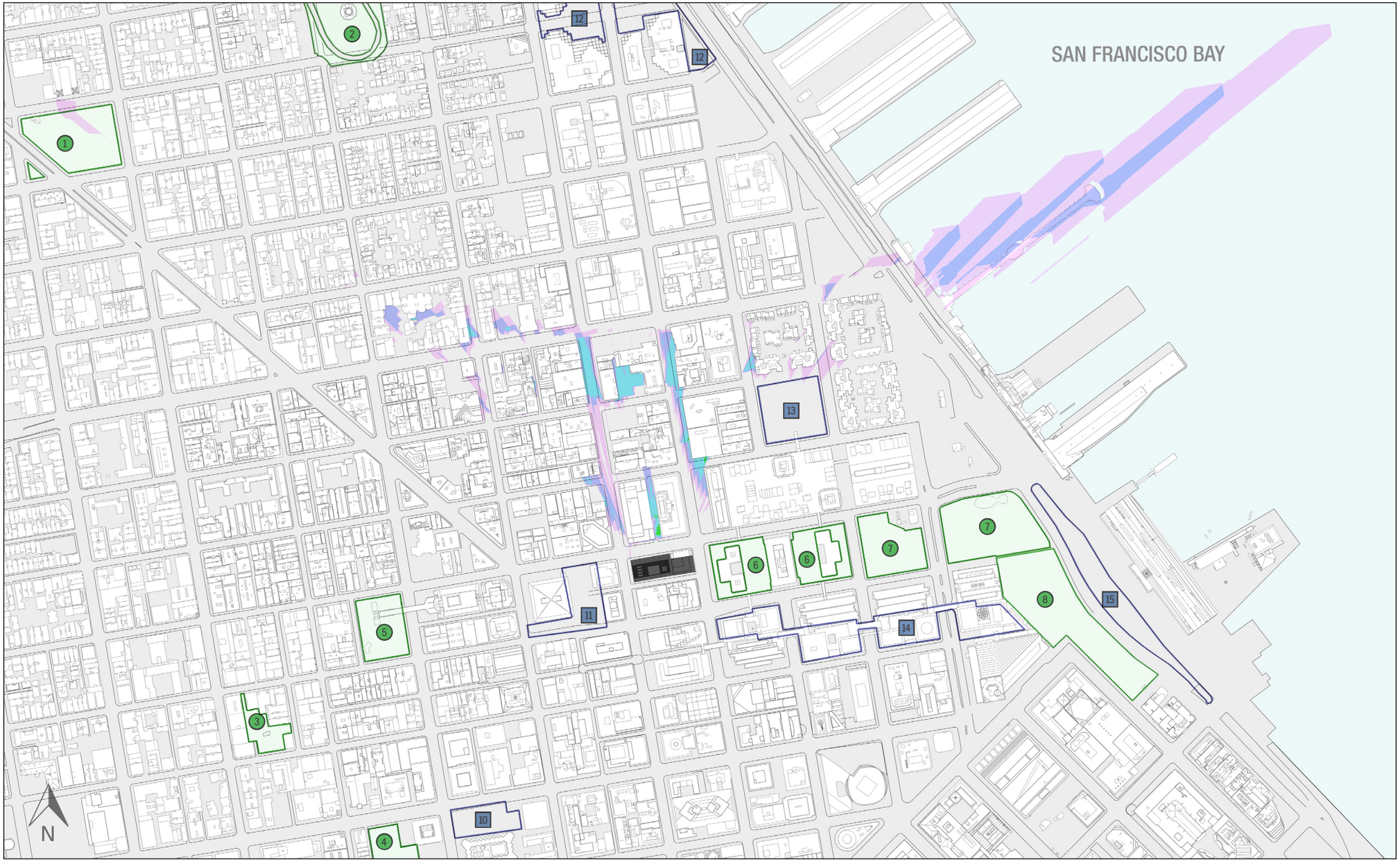
Other Open Spaces

10. 555 California St. Plaza
11. Redwood Transamerica Park
12. Levi's Plaza
13. Sydney Walton Park
14. Embarcadero Center Plazas
15. Harry Bridge's Plaza

A1.5 530 SANSOME STREET & 447 BATTERY STREET

NET NEW SHADOW LOCATIONS & DURATION RANGES

PREVISION DESIGN



DECEMBER 20 & DECEMBER 21

SHADOWFAN ANALYSIS

EXTENTS AND DURATION OF NET NEW SHADOW CAST BETWEEN 1-HOUR AFTER SUNRISE THROUGH 1-HOUR BEFORE SUNSET ON WINTER SOLSTICE

Duration Range of Net New Shadow

- 1 min - 15 min
- 15 min - 30 min
- 30 min - 1 hr
- 1 hr - 2 hr
- 2 hr - 4 hr
- 4 hr - 8 hr
- 8 hr - 16 hr
- 16 hr or longer

RPD Parks and Open Spaces

1. Washington Square Park
2. Telegraph Hill / Pioneer Park
3. Willie "Woo Woo" Wong Park
4. St. Mary's Square
5. Portsmouth Square
6. Maritime Plaza
7. Sue Bierman Park
8. Embarcadero Plaza

Other Open Spaces

10. 555 California St. Plaza
11. Redwood Transamerica Park
12. Levi's Plaza
13. Sydney Walton Park
14. Embarcadero Center Plazas
15. Harry Bridge's Plaza

EXHIBIT B: DATE OF MAXIMUM SFH NET NEW SHADOW MARITIME PLAZA

B1 June 21st

Diagrams at 15-minute intervals when project shadow falls on or near the park between one hour after sunrise through one hour prior to sunset.

B.1 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

PREVISION DESIGN

2:15 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

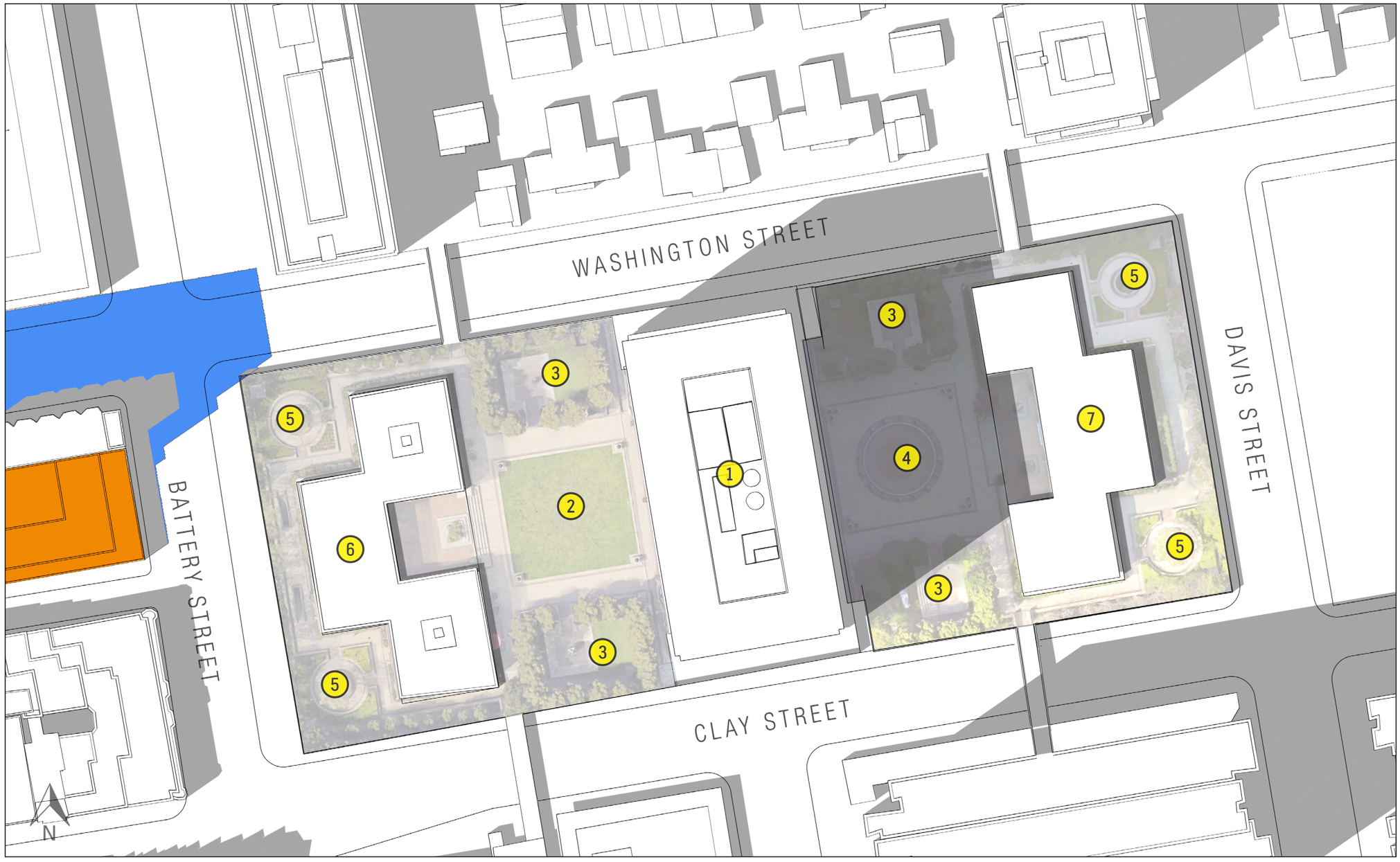
MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

B.2 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

PREVISION DESIGN



2:30 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

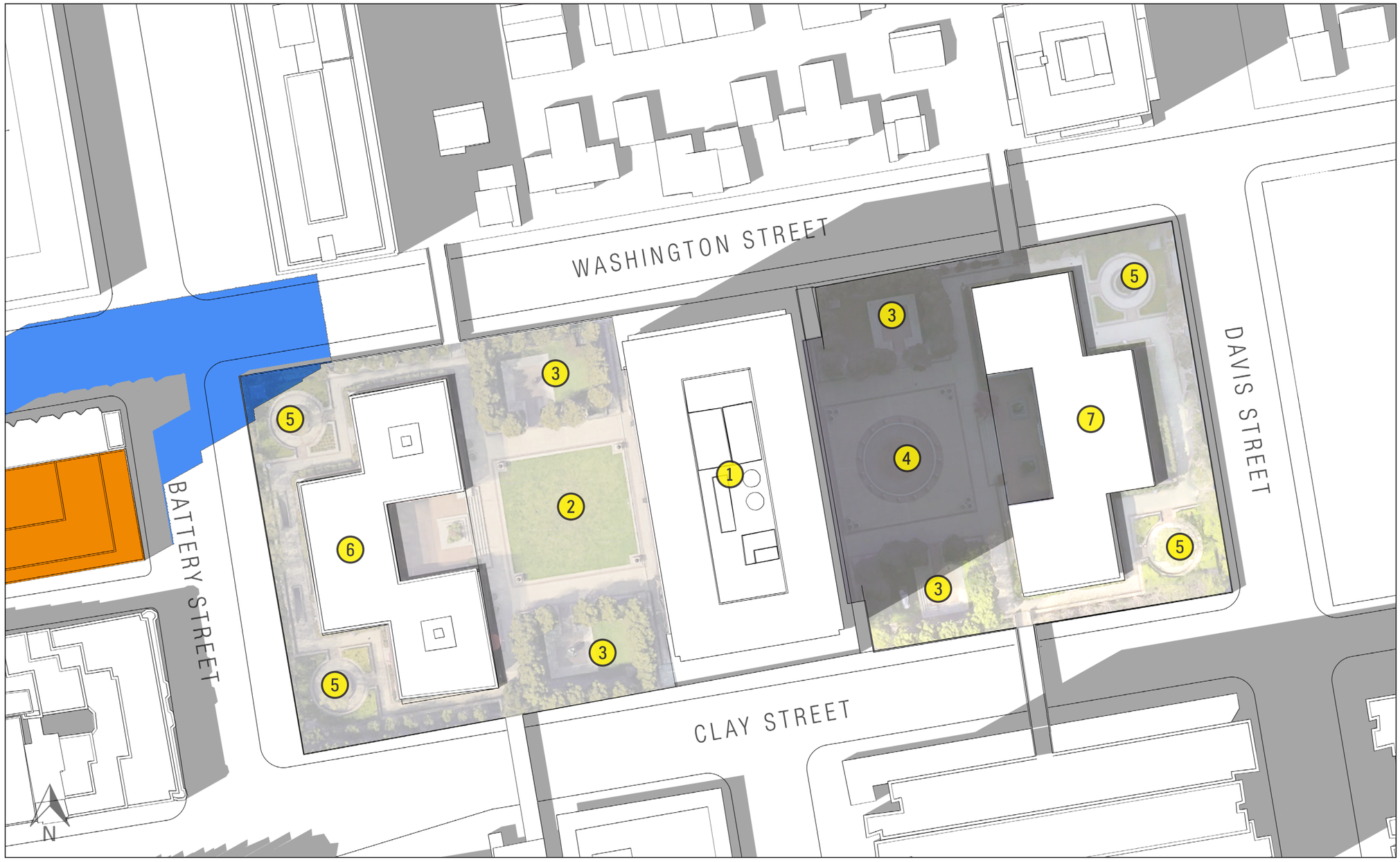
MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

B.3 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

PREVISION DESIGN



2:45 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

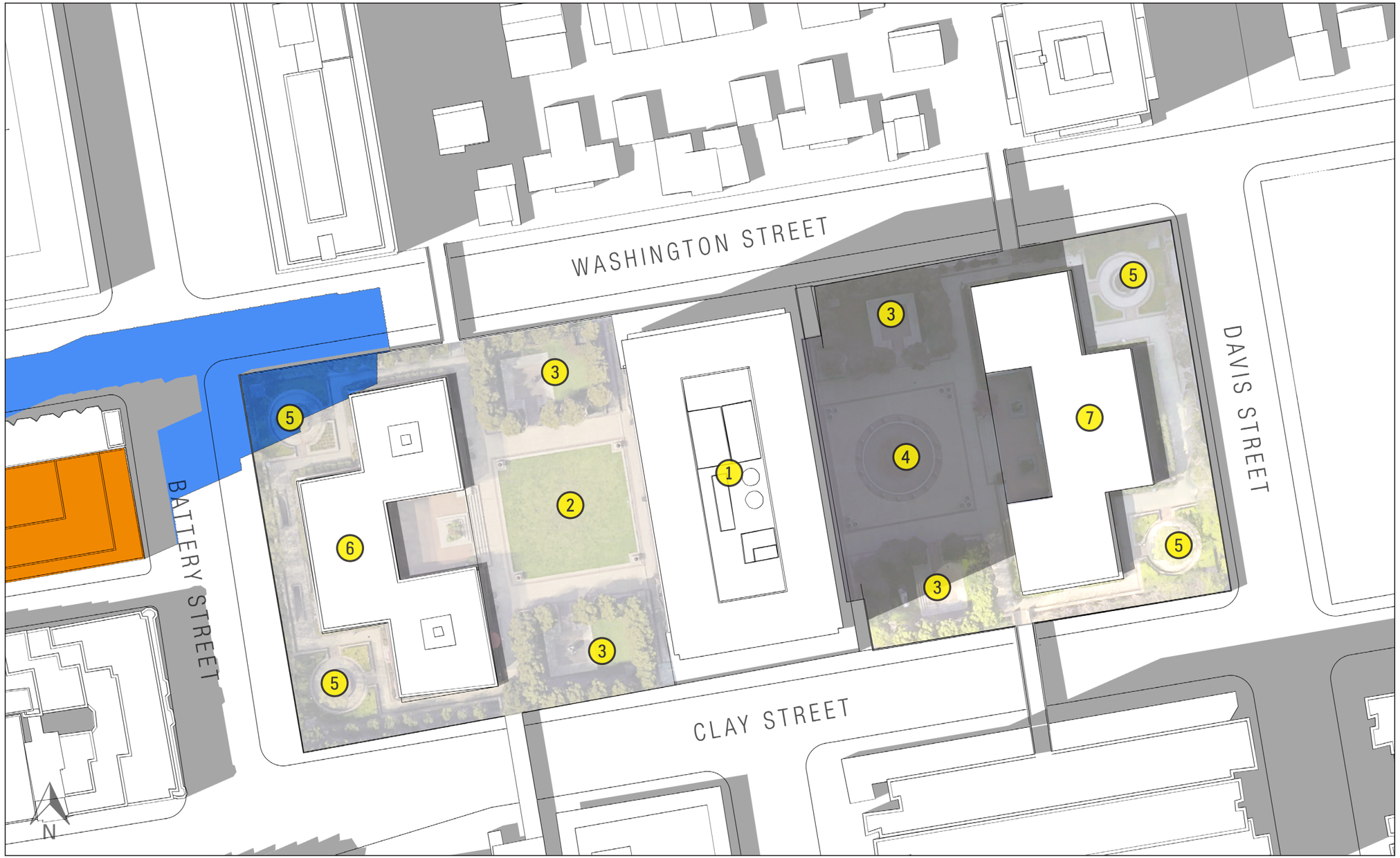
MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

B.4 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

PREVISION DESIGN



3:00 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

PREVISION DESIGN

B.5 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

3:15 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

B.6 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

PREVISION DESIGN

3:30 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

B.7 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

PREVISION DESIGN

3:45 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

B.8 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

PREVISION DESIGN

4:00 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

B.9

530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

PREVISION DESIGN

4:15 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

B.10 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

PREVISION DESIGN

4:30 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

B.11 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

PREVISION DESIGN

4:45 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

B.12 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

PREVISION DESIGN

5:00 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

B.13 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

PREVISION DESIGN

5:15 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

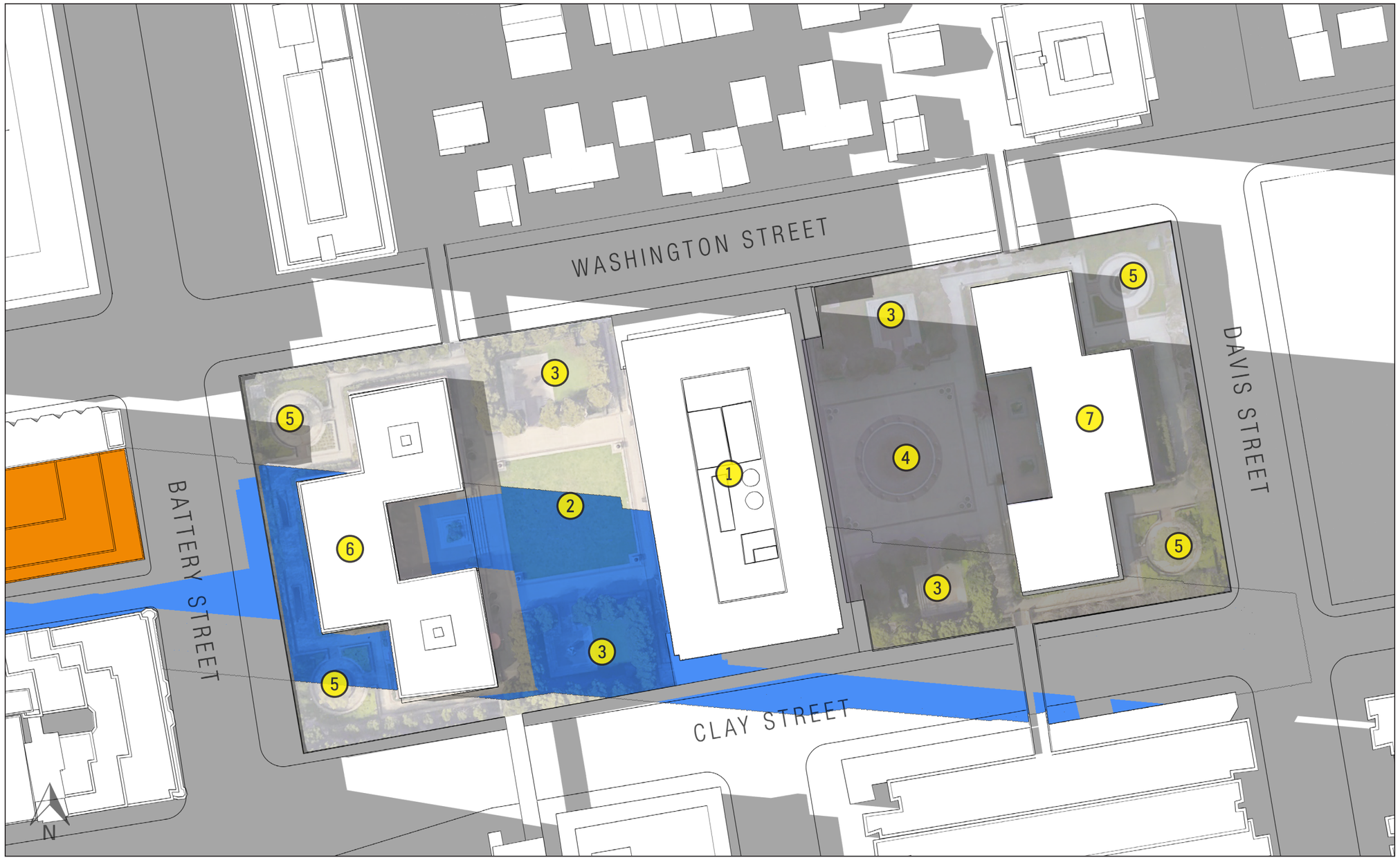
MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

B.14 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

PREVISION DESIGN



5:30 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

B.15 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

PREVISION DESIGN

5:45 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

B.16 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

PREVISION DESIGN

6:00 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

B.17 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

PREVISION DESIGN

6:15 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

B.18 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

6:30 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

B.19 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

PREVISION DESIGN

6:45 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

B.20 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

PREVISION DESIGN

7:00 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

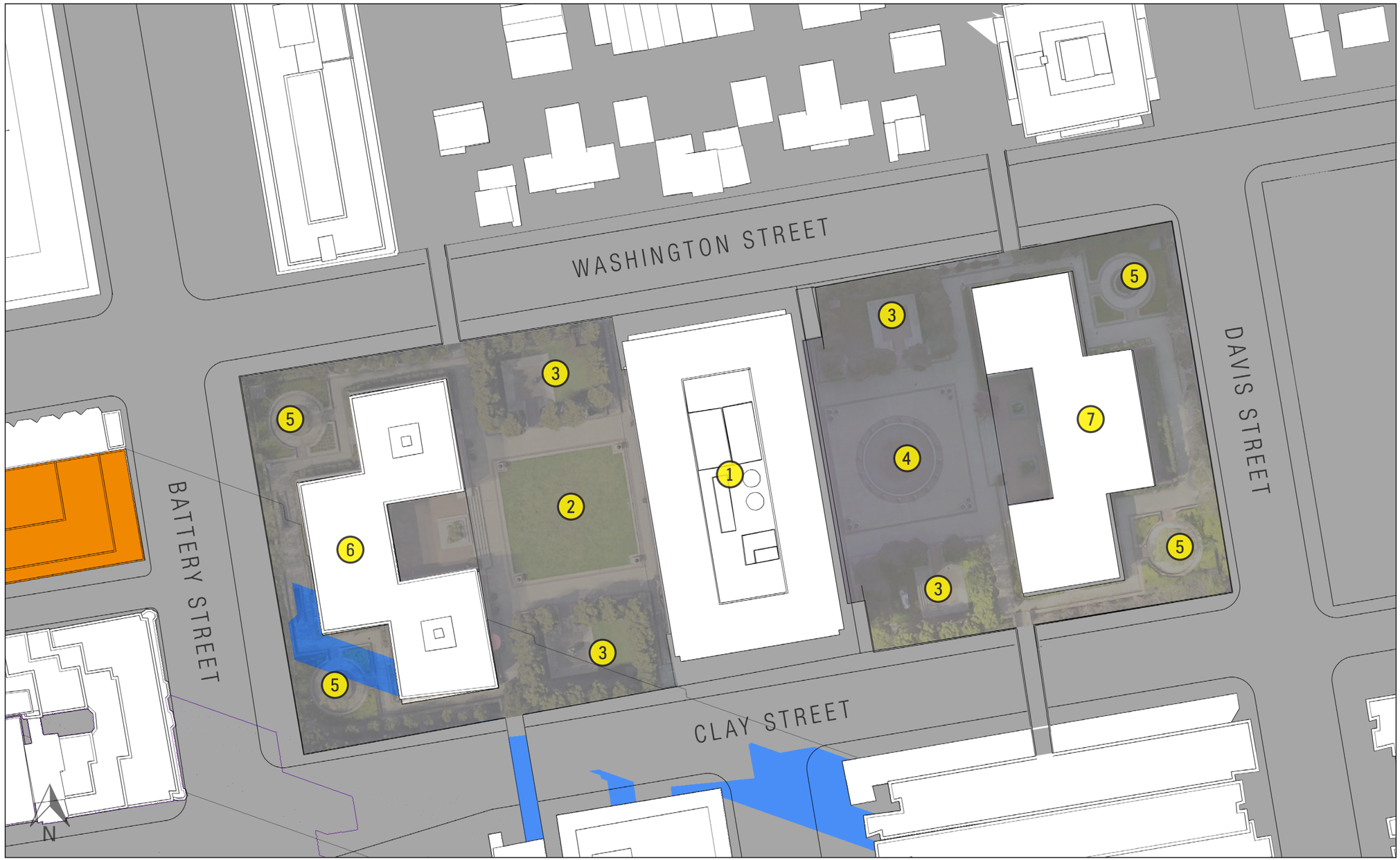
MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

B.21 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

PREVISION DESIGN



7:15 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

B.22 530 SANSOME STREET & 447 BATTERY STREET

DIAGRAMS ON DATE OF MAX SHADOW FOR MARITIME PLAZA

PREVISION DESIGN

7:36 PM

JUNE 21

SUMMER SOLSTICE

Existing (current) Shadow
Net New Shadow from Project
Net New Shadow from Cumulative Projects

MARITIME PLAZA LEGEND

1. Alcoa Building (One Maritime Plaza)
2. Lawn
3. Sculpture Garden
4. Fountain
5. Landscape/Seating Areas
6. Punchline Comedy Club (private)
7. Allsteel Showroom (private)

EXHIBIT C: FULL QUANTITATIVE SHADOW DATA WASHINGTON SQUARE

Annual Shadow Data

Charts with shadow data showing shadow sizes and square foot hours (sfh) of existing shadow conditions, net new shadow from project, and project + cumulative condition shadow that fall within the boundary of Washington Square.

Measurements are taken every 7 days between the summer solstice (6/21) and winter solstice (12/20) at 15-minute intervals between one hour after sunrise through one hour before sunset. This data is extrapolated for all other remaining dates and times to determine annual net new quantitative shadow effects of the project and the project + cumulative projects on Washington Square.

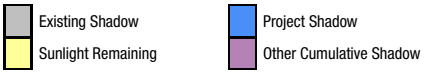
PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

JUNE 21

Summer solstice

Analysis hours: 6:46 AM-7:36 PM (PDT)

Shadow / Sunlight Balance Key



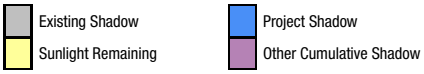
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
6:46 AM	71,840 sf	73.06%	0 sf	0.00%	0 sf	0.00%	
7:00 AM	48,959 sf	49.79%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	27,360 sf	27.82%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	19,094 sf	19.42%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	13,123 sf	13.35%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	8,754 sf	8.90%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	5,705 sf	5.80%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	3,976 sf	4.04%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	2,521 sf	2.56%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	1,593 sf	1.62%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	1,110 sf	1.13%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	1,056 sf	1.07%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	1,011 sf	1.03%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	973 sf	0.99%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	937 sf	0.95%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	909 sf	0.92%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	882 sf	0.90%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	859 sf	0.87%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	836 sf	0.85%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	816 sf	0.83%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	795 sf	0.81%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	782 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	768 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	756 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	745 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	734 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	750 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	769 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	788 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	808 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	828 sf	0.84%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	849 sf	0.86%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	871 sf	0.89%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	894 sf	0.91%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	917 sf	0.93%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	943 sf	0.96%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	969 sf	0.99%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	996 sf	1.01%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	1,032 sf	1.05%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	1,072 sf	1.09%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	1,116 sf	1.13%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	1,168 sf	1.19%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	1,226 sf	1.25%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	1,295 sf	1.32%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	1,550 sf	1.58%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	1,929 sf	1.96%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	2,728 sf	2.77%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	3,913 sf	3.98%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	5,370 sf	5.46%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	6,920 sf	7.04%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	8,843 sf	8.99%	0 sf	0.00%	0 sf	0.00%	
7:36 PM	14,888 sf	15.14%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

JUNE 28

Mirror date: June 14
Analysis hours: 6:48 AM-7:36 PM (PDT)

Shadow / Sunlight Balance Key



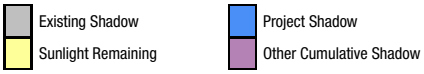
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
6:48 AM	71,780 sf	73.00%	0 sf	0.00%	0 sf	0.00%	
7:00 AM	51,329 sf	52.20%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	28,767 sf	29.25%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	20,042 sf	20.38%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	13,839 sf	14.07%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	9,227 sf	9.38%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	6,024 sf	6.13%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	4,179 sf	4.25%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	2,677 sf	2.72%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	1,680 sf	1.71%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	1,116 sf	1.13%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	1,062 sf	1.08%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	1,015 sf	1.03%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	975 sf	0.99%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	940 sf	0.96%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	911 sf	0.93%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	884 sf	0.90%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	861 sf	0.88%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	839 sf	0.85%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	818 sf	0.83%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	797 sf	0.81%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	783 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	769 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	757 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	745 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	735 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	747 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	767 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	787 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	806 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	826 sf	0.84%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	847 sf	0.86%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	869 sf	0.88%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	892 sf	0.91%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	915 sf	0.93%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	940 sf	0.96%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	966 sf	0.98%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	993 sf	1.01%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	1,029 sf	1.05%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	1,068 sf	1.09%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	1,112 sf	1.13%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	1,163 sf	1.18%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	1,222 sf	1.24%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	1,283 sf	1.30%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	1,530 sf	1.56%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	1,890 sf	1.92%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	2,642 sf	2.69%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	3,769 sf	3.83%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	5,208 sf	5.30%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	6,740 sf	6.85%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	8,538 sf	8.68%	0 sf	0.00%	0 sf	0.00%	
7:36 PM	14,666 sf	14.91%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

JULY 5

Mirror date: June 7
Analysis hours: 6:52 AM-7:36 PM (PDT)

Shadow / Sunlight Balance Key



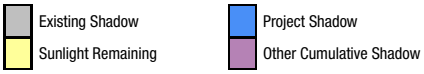
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
6:52 AM	71,353 sf	72.56%	0 sf	0.00%	0 sf	0.00%	
7:00 AM	54,433 sf	55.35%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	30,557 sf	31.08%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	21,546 sf	21.91%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	14,938 sf	15.19%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	9,941 sf	10.11%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	6,546 sf	6.66%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	4,461 sf	4.54%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	2,894 sf	2.94%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	1,795 sf	1.83%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	1,139 sf	1.16%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	1,062 sf	1.08%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	1,017 sf	1.03%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	978 sf	0.99%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	942 sf	0.96%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	912 sf	0.93%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	885 sf	0.90%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	861 sf	0.88%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	839 sf	0.85%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	819 sf	0.83%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	798 sf	0.81%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	784 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	769 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	758 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	747 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	735 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	744 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	766 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	785 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	805 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	825 sf	0.84%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	846 sf	0.86%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	868 sf	0.88%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	891 sf	0.91%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	915 sf	0.93%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	939 sf	0.96%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	966 sf	0.98%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	993 sf	1.01%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	1,026 sf	1.04%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	1,066 sf	1.08%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	1,110 sf	1.13%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	1,160 sf	1.18%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	1,219 sf	1.24%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	1,285 sf	1.31%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	1,530 sf	1.56%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	1,897 sf	1.93%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	2,586 sf	2.63%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	3,641 sf	3.70%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	5,043 sf	5.13%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	6,536 sf	6.65%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	8,202 sf	8.34%	0 sf	0.00%	0 sf	0.00%	
7:36 PM	13,981 sf	14.22%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

JULY 12

Mirror date: May 31
Analysis hours: 6:56 AM-7:33 PM (PDT)

Shadow / Sunlight Balance Key



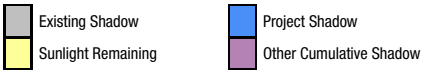
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
6:56 AM	69,018 sf	70.19%	0 sf	0.00%	0 sf	0.00%	
7:00 AM	58,295 sf	59.28%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	33,510 sf	34.08%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	23,680 sf	24.08%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	16,470 sf	16.75%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	10,993 sf	11.18%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	7,276 sf	7.40%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	4,824 sf	4.91%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	3,176 sf	3.23%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	1,942 sf	1.98%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	1,210 sf	1.23%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	1,067 sf	1.09%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	1,020 sf	1.04%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	979 sf	1.00%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	944 sf	0.96%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	913 sf	0.93%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	885 sf	0.90%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	862 sf	0.88%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	839 sf	0.85%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	818 sf	0.83%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	798 sf	0.81%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	784 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	769 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	758 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	746 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	736 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	742 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	765 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	785 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	805 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	825 sf	0.84%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	846 sf	0.86%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	868 sf	0.88%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	891 sf	0.91%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	915 sf	0.93%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	940 sf	0.96%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	966 sf	0.98%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	994 sf	1.01%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	1,024 sf	1.04%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	1,064 sf	1.08%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	1,108 sf	1.13%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	1,158 sf	1.18%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	1,216 sf	1.24%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	1,304 sf	1.33%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	1,548 sf	1.57%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	1,956 sf	1.99%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	2,594 sf	2.64%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	3,555 sf	3.62%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	4,893 sf	4.98%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	6,325 sf	6.43%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	7,897 sf	8.03%	0 sf	0.00%	0 sf	0.00%	
7:33 PM	12,933 sf	13.15%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

JULY 19

Mirror date: May 24
Analysis hours: 7:01 AM-7:30 PM (PDT)

Shadow / Sunlight Balance Key



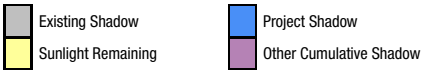
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:01 AM	57,849 sf	58.83%	0 sf	0.00%	0 sf	0.00%	
7:16 AM	36,675 sf	37.30%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	26,459 sf	26.91%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	18,388 sf	18.70%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	12,352 sf	12.56%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	8,159 sf	8.30%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	5,253 sf	5.34%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	3,506 sf	3.57%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	2,137 sf	2.17%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	1,332 sf	1.35%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	1,068 sf	1.09%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	1,019 sf	1.04%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	979 sf	1.00%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	942 sf	0.96%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	911 sf	0.93%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	883 sf	0.90%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	859 sf	0.87%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	837 sf	0.85%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	816 sf	0.83%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	797 sf	0.81%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	783 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	769 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	758 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	747 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	736 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	742 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	765 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	785 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	806 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	826 sf	0.84%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	847 sf	0.86%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	869 sf	0.88%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	892 sf	0.91%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	916 sf	0.93%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	942 sf	0.96%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	969 sf	0.99%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	997 sf	1.01%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	1,029 sf	1.05%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	1,065 sf	1.08%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	1,109 sf	1.13%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	1,159 sf	1.18%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	1,218 sf	1.24%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	1,348 sf	1.37%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	1,584 sf	1.61%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	2,068 sf	2.10%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	2,711 sf	2.76%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	3,568 sf	3.63%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	4,788 sf	4.87%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	6,147 sf	6.25%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	7,619 sf	7.75%	0 sf	0.00%	0 sf	0.00%	
7:30 PM	11,733 sf	11.93%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

JULY 26

Mirror date: May 17
Analysis hours: 7:07 AM-7:25 PM (PDT)

Shadow / Sunlight Balance Key



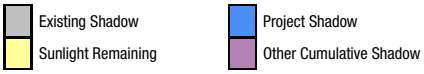
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:07 AM	53,492 sf	54.40%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	43,947 sf	44.69%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	30,099 sf	30.61%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	20,792 sf	21.14%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	14,066 sf	14.30%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	9,146 sf	9.30%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	5,825 sf	5.92%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	3,894 sf	3.96%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	2,393 sf	2.43%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	1,474 sf	1.50%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	1,067 sf	1.09%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	1,017 sf	1.03%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	976 sf	0.99%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	940 sf	0.96%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	908 sf	0.92%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	882 sf	0.90%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	857 sf	0.87%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	834 sf	0.85%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	812 sf	0.83%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	795 sf	0.81%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	782 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	768 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	756 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	746 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	736 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	745 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	767 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	786 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	807 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	827 sf	0.84%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	849 sf	0.86%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	871 sf	0.89%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	894 sf	0.91%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	919 sf	0.93%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	945 sf	0.96%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	973 sf	0.99%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	1,002 sf	1.02%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	1,034 sf	1.05%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	1,068 sf	1.09%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	1,111 sf	1.13%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	1,163 sf	1.18%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	1,221 sf	1.24%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	1,395 sf	1.42%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	1,655 sf	1.68%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	2,236 sf	2.27%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	2,920 sf	2.97%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	3,683 sf	3.75%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	4,770 sf	4.85%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	6,025 sf	6.13%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	7,495 sf	7.62%	0 sf	0.00%	0 sf	0.00%	
7:25 PM	10,577 sf	10.76%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

AUGUST 2

Mirror date: May 10
Analysis hours: 7:12 AM-7:18 PM (PDT)

Shadow / Sunlight Balance Key



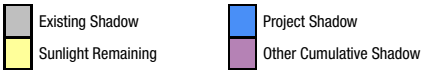
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:12 AM	54,456 sf	55.38%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	51,200 sf	52.07%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	34,784 sf	35.37%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	23,659 sf	24.06%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	15,939 sf	16.21%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	10,261 sf	10.44%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	6,559 sf	6.67%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	4,310 sf	4.38%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	2,678 sf	2.72%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	1,613 sf	1.64%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	1,063 sf	1.08%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	1,013 sf	1.03%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	972 sf	0.99%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	935 sf	0.95%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	904 sf	0.92%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	877 sf	0.89%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	852 sf	0.87%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	830 sf	0.84%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	809 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	793 sf	0.81%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	780 sf	0.79%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	767 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	755 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	745 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	736 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	749 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	768 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	789 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	809 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	830 sf	0.84%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	852 sf	0.87%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	874 sf	0.89%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	898 sf	0.91%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	923 sf	0.94%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	949 sf	0.97%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	978 sf	0.99%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	1,008 sf	1.03%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	1,042 sf	1.06%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	1,078 sf	1.10%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	1,118 sf	1.14%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	1,171 sf	1.19%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	1,242 sf	1.26%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	1,445 sf	1.47%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	1,836 sf	1.87%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	2,496 sf	2.54%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	3,204 sf	3.26%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	3,975 sf	4.04%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	4,925 sf	5.01%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	6,022 sf	6.12%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	8,365 sf	8.51%	0 sf	0.00%	0 sf	0.00%	
7:18 PM	9,713 sf	9.88%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

AUGUST 9

Mirror date: May 3
Analysis hours: 7:19 AM-7:10 PM (PDT)

Shadow / Sunlight Balance Key



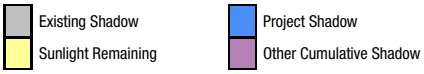
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:19 AM	55,552 sf	56.49%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	40,766 sf	41.46%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	27,025 sf	27.48%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	18,000 sf	18.30%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	11,636 sf	11.83%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	7,464 sf	7.59%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	4,781 sf	4.86%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	3,006 sf	3.06%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	1,764 sf	1.79%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	1,070 sf	1.09%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	1,006 sf	1.02%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	964 sf	0.98%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	928 sf	0.94%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	897 sf	0.91%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	871 sf	0.89%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	847 sf	0.86%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	823 sf	0.84%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	806 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	790 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	777 sf	0.79%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	763 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	753 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	744 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	734 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	752 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	772 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	792 sf	0.81%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	813 sf	0.83%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	834 sf	0.85%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	856 sf	0.87%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	879 sf	0.89%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	903 sf	0.92%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	928 sf	0.94%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	956 sf	0.97%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	984 sf	1.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	1,017 sf	1.03%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	1,051 sf	1.07%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	1,090 sf	1.11%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	1,132 sf	1.15%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	1,184 sf	1.20%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	1,306 sf	1.33%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	1,534 sf	1.56%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	2,131 sf	2.17%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	2,820 sf	2.87%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	3,578 sf	3.64%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	4,405 sf	4.48%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	5,275 sf	5.36%	0 sf	0.00%	0 sf	0.00%	
7:10 PM	9,167 sf	9.32%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

AUGUST 16

Mirror date: April 26
Analysis hours: 7:25 AM-7:02 PM (PDT)

Shadow / Sunlight Balance Key



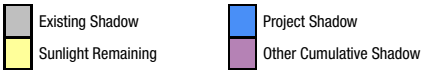
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:25 AM	55,356 sf	56.29%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	48,063 sf	48.88%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	30,800 sf	31.32%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	20,402 sf	20.75%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	13,289 sf	13.51%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	8,470 sf	8.61%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	5,321 sf	5.41%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	3,384 sf	3.44%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	1,944 sf	1.98%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	1,137 sf	1.16%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	996 sf	1.01%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	956 sf	0.97%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	920 sf	0.94%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	890 sf	0.91%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	863 sf	0.88%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	840 sf	0.85%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	817 sf	0.83%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	801 sf	0.81%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	786 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	774 sf	0.79%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	760 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	751 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	742 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	735 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	755 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	775 sf	0.79%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	796 sf	0.81%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	817 sf	0.83%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	838 sf	0.85%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	861 sf	0.88%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	885 sf	0.90%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	909 sf	0.92%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	935 sf	0.95%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	963 sf	0.98%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	994 sf	1.01%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	1,026 sf	1.04%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	1,062 sf	1.08%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	1,103 sf	1.12%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	1,148 sf	1.17%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	1,212 sf	1.23%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	1,376 sf	1.40%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	1,784 sf	1.81%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	2,478 sf	2.52%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	3,251 sf	3.31%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	4,063 sf	4.13%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	4,981 sf	5.07%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	6,298 sf	6.40%	0 sf	0.00%	0 sf	0.00%	
7:02 PM	9,581 sf	9.74%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

AUGUST 23

Mirror date: April 19
Analysis hours: 7:31 AM-6:52 PM (PDT)

Shadow / Sunlight Balance Key



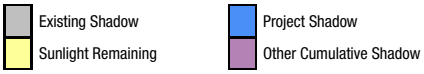
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:31 AM	52,609 sf	53.50%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	35,260 sf	35.86%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	23,034 sf	23.42%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	15,043 sf	15.30%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	9,517 sf	9.68%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	5,931 sf	6.03%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	3,764 sf	3.83%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	2,151 sf	2.19%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	1,239 sf	1.26%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	984 sf	1.00%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	944 sf	0.96%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	908 sf	0.92%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	879 sf	0.89%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	853 sf	0.87%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	828 sf	0.84%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	810 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	795 sf	0.81%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	780 sf	0.79%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	769 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	757 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	748 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	742 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	735 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	760 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	780 sf	0.79%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	801 sf	0.81%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	822 sf	0.84%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	844 sf	0.86%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	868 sf	0.88%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	891 sf	0.91%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	916 sf	0.93%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	943 sf	0.96%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	973 sf	0.99%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	1,003 sf	1.02%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	1,038 sf	1.06%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	1,076 sf	1.09%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	1,119 sf	1.14%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	1,174 sf	1.19%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	1,294 sf	1.32%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	1,527 sf	1.55%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	2,179 sf	2.22%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	2,950 sf	3.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	3,788 sf	3.85%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	4,748 sf	4.83%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	6,223 sf	6.33%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	8,568 sf	8.71%	0 sf	0.00%	0 sf	0.00%	
6:52 PM	10,728 sf	10.91%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

AUGUST 30

Mirror date: April 12
Analysis hours: 7:37 AM-6:42 PM (PDT)

Shadow / Sunlight Balance Key



Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:37 AM	49,776 sf	50.62%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	40,224 sf	40.91%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	26,130 sf	26.57%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	17,011 sf	17.30%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	10,739 sf	10.92%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	6,709 sf	6.82%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	4,191 sf	4.26%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	2,402 sf	2.44%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	1,350 sf	1.37%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	970 sf	0.99%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	930 sf	0.95%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	896 sf	0.91%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	868 sf	0.88%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	842 sf	0.86%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	820 sf	0.83%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	802 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	788 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	775 sf	0.79%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	763 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	753 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	745 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	739 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	737 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	764 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	785 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	806 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	828 sf	0.84%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	851 sf	0.86%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	874 sf	0.89%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	899 sf	0.91%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	925 sf	0.94%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	953 sf	0.97%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	983 sf	1.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	1,016 sf	1.03%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	1,051 sf	1.07%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	1,092 sf	1.11%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	1,148 sf	1.17%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	1,234 sf	1.25%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	1,372 sf	1.40%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	1,933 sf	1.97%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	2,675 sf	2.72%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	3,515 sf	3.57%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	4,569 sf	4.65%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	6,190 sf	6.29%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	8,434 sf	8.58%	0 sf	0.00%	0 sf	0.00%	
6:42 PM	12,043 sf	12.25%	0 sf	0.00%	0 sf	0.00%	

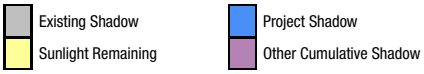
PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

SEPTEMBER 6

Mirror date: April 5

Analysis hours: 7:44 AM-6:31 PM (PDT)

Shadow / Sunlight Balance Key



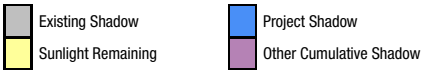
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:44 AM	46,264 sf	47.05%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	29,308 sf	29.80%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	19,080 sf	19.40%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	12,147 sf	12.35%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	7,592 sf	7.72%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	4,672 sf	4.75%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	2,689 sf	2.73%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	1,468 sf	1.49%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	952 sf	0.97%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	915 sf	0.93%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	881 sf	0.90%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	854 sf	0.87%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	829 sf	0.84%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	810 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	793 sf	0.81%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	780 sf	0.79%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	768 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	758 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	748 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	743 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	737 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	750 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	770 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	790 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	812 sf	0.83%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	835 sf	0.85%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	858 sf	0.87%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	882 sf	0.90%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	907 sf	0.92%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	934 sf	0.95%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	963 sf	0.98%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	994 sf	1.01%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	1,029 sf	1.05%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	1,070 sf	1.09%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	1,124 sf	1.14%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	1,192 sf	1.21%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	1,282 sf	1.30%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	1,698 sf	1.73%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	2,419 sf	2.46%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	3,287 sf	3.34%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	4,463 sf	4.54%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	6,147 sf	6.25%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	8,423 sf	8.57%	0 sf	0.00%	0 sf	0.00%	
6:31 PM	13,520 sf	13.75%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

SEPTEMBER 13

Mirror date: March 29
Analysis hours: 7:50 AM-6:21 PM (PDT)

Shadow / Sunlight Balance Key



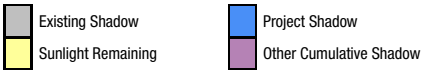
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:50 AM	43,642 sf	44.38%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	32,744 sf	33.30%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	21,109 sf	21.47%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	13,457 sf	13.68%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	8,362 sf	8.50%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	5,120 sf	5.21%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	3,005 sf	3.06%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	1,590 sf	1.62%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	930 sf	0.95%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	895 sf	0.91%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	865 sf	0.88%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	838 sf	0.85%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	817 sf	0.83%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	799 sf	0.81%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	784 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	771 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	760 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	753 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	745 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	741 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	734 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	755 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	776 sf	0.79%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	797 sf	0.81%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	819 sf	0.83%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	842 sf	0.86%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	865 sf	0.88%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	890 sf	0.90%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	916 sf	0.93%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	944 sf	0.96%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	974 sf	0.99%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	1,008 sf	1.03%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	1,050 sf	1.07%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	1,100 sf	1.12%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	1,163 sf	1.18%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	1,240 sf	1.26%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	1,507 sf	1.53%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	2,164 sf	2.20%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	3,009 sf	3.06%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	4,319 sf	4.39%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	6,136 sf	6.24%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	8,423 sf	8.57%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	12,398 sf	12.61%	0 sf	0.00%	0 sf	0.00%	
6:21 PM	14,979 sf	15.23%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

SEPTEMBER 20

Fall equinox (Spring equinox on March 22 similar)
Analysis hours: 7:57 AM-6:09 PM (PDT)

Shadow / Sunlight Balance Key



Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:57 AM	42,786 sf	43.51%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	38,501 sf	39.15%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	23,573 sf	23.97%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	14,962 sf	15.22%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	9,214 sf	9.37%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	5,556 sf	5.65%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	3,309 sf	3.36%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	1,725 sf	1.75%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	915 sf	0.93%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	874 sf	0.89%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	846 sf	0.86%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	823 sf	0.84%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	803 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	788 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	774 sf	0.79%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	762 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	754 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	747 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	743 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	740 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	737 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	760 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	781 sf	0.79%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	804 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	826 sf	0.84%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	849 sf	0.86%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	873 sf	0.89%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	898 sf	0.91%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	925 sf	0.94%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	954 sf	0.97%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	990 sf	1.01%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	1,029 sf	1.05%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	1,075 sf	1.09%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	1,131 sf	1.15%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	1,202 sf	1.22%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	1,359 sf	1.38%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	1,956 sf	1.99%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	2,784 sf	2.83%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	4,129 sf	4.20%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	5,908 sf	6.01%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	8,411 sf	8.55%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	12,181 sf	12.39%	0 sf	0.00%	0 sf	0.00%	
6:09 PM	16,220 sf	16.49%	0 sf	0.00%	0 sf	0.00%	

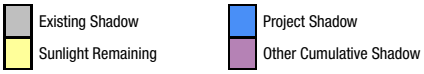
PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

SEPTEMBER 27

Mirror date: March 15

Analysis hours: 8:03 AM-5:58 PM (PDT)

Shadow / Sunlight Balance Key



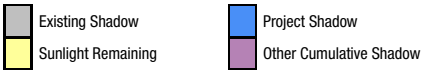
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:03 AM	43,518 sf	44.26%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	28,398 sf	28.88%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	16,901 sf	17.19%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	10,213 sf	10.39%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	6,159 sf	6.26%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	3,670 sf	3.73%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	1,912 sf	1.94%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	943 sf	0.96%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	851 sf	0.87%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	826 sf	0.84%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	807 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	789 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	774 sf	0.79%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	762 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	755 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	750 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	744 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	741 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	741 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	746 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	767 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	788 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	809 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	832 sf	0.85%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	856 sf	0.87%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	880 sf	0.89%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	907 sf	0.92%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	936 sf	0.95%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	967 sf	0.98%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	1,017 sf	1.03%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	1,058 sf	1.08%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	1,104 sf	1.12%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	1,160 sf	1.18%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	1,256 sf	1.28%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	1,762 sf	1.79%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	2,653 sf	2.70%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	3,950 sf	4.02%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	5,721 sf	5.82%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	8,162 sf	8.30%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	12,063 sf	12.27%	0 sf	0.00%	0 sf	0.00%	
5:58 PM	17,833 sf	18.14%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

OCTOBER 4

Mirror date: March 8
Analysis hours: 8:09 AM-5:47 PM (PDT)

Shadow / Sunlight Balance Key



Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:09 AM	44,431 sf	45.18%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	36,227 sf	36.84%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	21,372 sf	21.73%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	12,571 sf	12.78%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	7,137 sf	7.26%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	4,140 sf	4.21%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	2,204 sf	2.24%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	1,042 sf	1.06%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	830 sf	0.84%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	806 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	787 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	771 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	759 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	752 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	747 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	743 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	741 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	739 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	739 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	751 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	770 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	792 sf	0.81%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	815 sf	0.83%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	838 sf	0.85%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	863 sf	0.88%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	888 sf	0.90%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	916 sf	0.93%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	945 sf	0.96%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	989 sf	1.01%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	1,045 sf	1.06%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	1,093 sf	1.11%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	1,140 sf	1.16%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	1,197 sf	1.22%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	1,602 sf	1.63%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	2,485 sf	2.53%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	3,775 sf	3.84%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	5,477 sf	5.57%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	7,943 sf	8.08%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	11,673 sf	11.87%	0 sf	0.00%	0 sf	0.00%	
5:47 PM	19,691 sf	20.02%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

OCTOBER 11

Mirror date: March 1

Analysis hours: 8:16 AM-5:37 PM (PDT)

Shadow / Sunlight Balance Key

Existing Shadow | Project Shadow | Sunlight Remaining | Other Cumulative Shadow

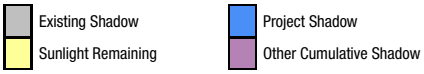
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:16 AM	45,823 sf	46.60%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	27,857 sf	28.33%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	16,756 sf	17.04%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	9,804 sf	9.97%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	5,600 sf	5.70%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	2,984 sf	3.03%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	1,358 sf	1.38%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	868 sf	0.88%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	800 sf	0.81%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	773 sf	0.79%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	757 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	748 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	742 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	739 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	738 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	738 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	737 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	734 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	755 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	776 sf	0.79%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	798 sf	0.81%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	821 sf	0.83%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	844 sf	0.86%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	868 sf	0.88%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	895 sf	0.91%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	924 sf	0.94%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	960 sf	0.98%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	1,019 sf	1.04%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	1,080 sf	1.10%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	1,130 sf	1.15%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	1,195 sf	1.22%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	1,454 sf	1.48%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	2,301 sf	2.34%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	3,507 sf	3.57%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	6,546 sf	6.66%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	11,889 sf	12.09%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	11,361 sf	11.55%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	17,099 sf	17.39%	0 sf	0.00%	0 sf	0.00%	
5:37 PM	21,424 sf	21.79%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

OCTOBER 18

Mirror date: February 22
Analysis hours: 8:22 AM-5:27 PM (PDT)

Shadow / Sunlight Balance Key



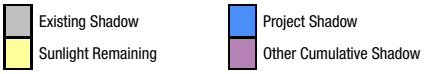
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:22 AM	47,858 sf	48.67%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	36,876 sf	37.50%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	22,443 sf	22.82%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	13,690 sf	13.92%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	8,626 sf	8.77%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	5,047 sf	5.13%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	2,491 sf	2.53%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	1,318 sf	1.34%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	994 sf	1.01%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	854 sf	0.87%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	785 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	745 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	738 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	734 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	734 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	734 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	737 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	737 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	759 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	781 sf	0.79%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	802 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	825 sf	0.84%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	848 sf	0.86%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	874 sf	0.89%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	901 sf	0.92%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	931 sf	0.95%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	985 sf	1.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	1,053 sf	1.07%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	1,115 sf	1.13%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	1,195 sf	1.22%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	3,178 sf	3.23%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	4,008 sf	4.08%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	10,013 sf	10.18%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	14,136 sf	14.38%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	21,863 sf	22.23%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	41,165 sf	41.86%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	25,417 sf	25.85%	0 sf	0.00%	0 sf	0.00%	
5:27 PM	24,165 sf	24.57%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

OCTOBER 25

Mirror date: February 15
Analysis hours: 7:30 AM-4:18 PM (PST)

Shadow / Sunlight Balance Key



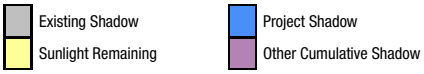
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:30 AM	51,901 sf	52.78%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	30,897 sf	31.42%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	19,006 sf	19.33%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	12,441 sf	12.65%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	8,016 sf	8.15%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	4,824 sf	4.91%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	2,659 sf	2.70%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	1,796 sf	1.83%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	1,316 sf	1.34%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	1,058 sf	1.08%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	871 sf	0.89%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	816 sf	0.83%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	762 sf	0.77%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	743 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	734 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	736 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	739 sf	0.75%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	763 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	784 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	806 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	828 sf	0.84%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	852 sf	0.87%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	878 sf	0.89%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	906 sf	0.92%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	943 sf	0.96%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	1,017 sf	1.03%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	1,088 sf	1.11%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	1,172 sf	1.19%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	1,566 sf	1.59%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	5,068 sf	5.15%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	16,942 sf	17.23%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	30,966 sf	31.49%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	32,981 sf	33.54%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	59,634 sf	60.64%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	61,464 sf	62.51%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	45,485 sf	46.26%	0 sf	0.00%	0 sf	0.00%	
4:18 PM	45,992 sf	46.77%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

NOVEMBER 1

Mirror date: February 8
Analysis hours: 7:36 AM-4:10 PM (PST)

Shadow / Sunlight Balance Key



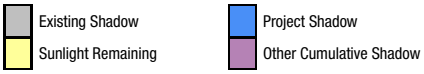
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:36 AM	57,891 sf	58.87%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	43,770 sf	44.51%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	26,383 sf	26.83%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	17,608 sf	17.91%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	11,614 sf	11.81%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	7,557 sf	7.69%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	4,615 sf	4.69%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	3,494 sf	3.55%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	2,510 sf	2.55%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	1,819 sf	1.85%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	1,364 sf	1.39%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	1,154 sf	1.17%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	932 sf	0.95%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	862 sf	0.88%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	814 sf	0.83%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	790 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	770 sf	0.78%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	778 sf	0.79%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	789 sf	0.80%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	808 sf	0.82%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	830 sf	0.84%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	854 sf	0.87%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	882 sf	0.90%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	910 sf	0.93%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	965 sf	0.98%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	1,050 sf	1.07%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	1,123 sf	1.14%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	1,286 sf	1.31%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	3,074 sf	3.13%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	16,983 sf	17.27%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	33,752 sf	34.32%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	49,619 sf	50.46%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	55,447 sf	56.39%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	79,952 sf	81.31%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	77,938 sf	79.26%	0 sf	0.00%	0 sf	0.00%	
4:10 PM	72,060 sf	73.28%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

NOVEMBER 8

Mirror date: February 1
Analysis hours: 7:43 AM-4:03 PM (PST)

Shadow / Sunlight Balance Key



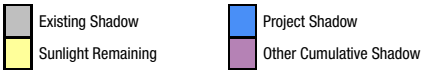
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:43 AM	65,001 sf	66.10%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	62,640 sf	63.70%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	37,585 sf	38.22%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	24,399 sf	24.81%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	16,286 sf	16.56%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	10,711 sf	10.89%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	6,906 sf	7.02%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	5,292 sf	5.38%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	4,117 sf	4.19%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	3,292 sf	3.35%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	2,482 sf	2.52%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	1,935 sf	1.97%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	1,477 sf	1.50%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	1,281 sf	1.30%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	1,092 sf	1.11%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	978 sf	0.99%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	892 sf	0.91%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	888 sf	0.90%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	878 sf	0.89%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	890 sf	0.91%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	892 sf	0.91%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	915 sf	0.93%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	931 sf	0.95%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	966 sf	0.98%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	1,045 sf	1.06%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	1,147 sf	1.17%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	1,252 sf	1.27%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	1,616 sf	1.64%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	11,206 sf	11.40%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	30,305 sf	30.82%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	49,032 sf	49.86%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	57,955 sf	58.94%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	66,735 sf	67.87%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	81,267 sf	82.64%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	91,716 sf	93.27%	0 sf	0.00%	0 sf	0.00%	
4:03 PM	92,131 sf	93.69%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

NOVEMBER 15

Mirror date: January 25
Analysis hours: 7:51 AM-3:57 PM (PST)

Shadow / Sunlight Balance Key



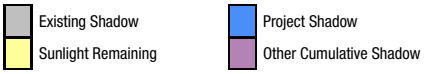
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:51 AM	71,146 sf	72.35%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	52,511 sf	53.40%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	33,754 sf	34.33%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	21,951 sf	22.32%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	14,845 sf	15.10%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	9,616 sf	9.78%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	7,179 sf	7.30%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	5,745 sf	5.84%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	4,770 sf	4.85%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	3,834 sf	3.90%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	3,196 sf	3.25%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	2,534 sf	2.58%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	2,102 sf	2.14%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	1,646 sf	1.67%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	1,459 sf	1.48%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	1,278 sf	1.30%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	1,204 sf	1.22%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	1,114 sf	1.13%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	1,094 sf	1.11%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	1,050 sf	1.07%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	1,071 sf	1.09%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	1,068 sf	1.09%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	1,129 sf	1.15%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	1,236 sf	1.26%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	1,384 sf	1.41%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	1,630 sf	1.66%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	4,884 sf	4.97%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	16,413 sf	16.69%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	34,024 sf	34.60%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	53,291 sf	54.19%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	62,595 sf	63.66%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	68,459 sf	69.62%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	84,899 sf	86.34%	0 sf	0.00%	0 sf	0.00%	
3:57 PM	97,539 sf	99.19%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

NOVEMBER 22

Mirror date: January 18
Analysis hours: 7:57 AM-3:54 PM (PST)

Shadow / Sunlight Balance Key



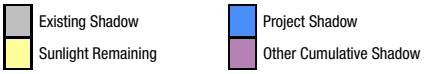
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:57 AM	75,928 sf	77.21%	0 sf	0.00%	3,033 sf	3.08%	
8:00 AM	71,390 sf	72.60%	0 sf	0.00%	6,083 sf	6.19%	
8:15 AM	45,712 sf	46.49%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	29,049 sf	29.54%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	19,495 sf	19.83%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	13,141 sf	13.36%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	9,245 sf	9.40%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	7,413 sf	7.54%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	6,223 sf	6.33%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	5,141 sf	5.23%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	4,406 sf	4.48%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	3,664 sf	3.73%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	3,177 sf	3.23%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	2,638 sf	2.68%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	2,305 sf	2.34%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	1,895 sf	1.93%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	1,681 sf	1.71%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	1,499 sf	1.52%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	1,442 sf	1.47%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	1,343 sf	1.37%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	1,342 sf	1.36%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	1,317 sf	1.34%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	1,412 sf	1.44%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	1,540 sf	1.57%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	1,742 sf	1.77%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	2,164 sf	2.20%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	5,806 sf	5.90%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	15,644 sf	15.91%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	30,677 sf	31.20%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	50,428 sf	51.28%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	63,965 sf	65.05%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	69,373 sf	70.55%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	89,195 sf	90.71%	0 sf	0.00%	0 sf	0.00%	
3:54 PM	97,803 sf	99.46%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

NOVEMBER 29

Mirror date: January 11
Analysis hours: 8:04 AM-3:51 PM (PST)

Shadow / Sunlight Balance Key



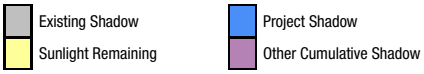
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:04 AM	80,150 sf	81.51%	2,079 sf	2.11%	10,897 sf	11.08%	
8:15 AM	59,349 sf	60.35%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	40,428 sf	41.11%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	25,851 sf	26.29%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	16,794 sf	17.08%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	11,814 sf	12.01%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	9,113 sf	9.27%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	7,630 sf	7.76%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	6,365 sf	6.47%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	5,511 sf	5.60%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	4,680 sf	4.76%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	4,131 sf	4.20%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	3,543 sf	3.60%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	3,170 sf	3.22%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	2,704 sf	2.75%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	2,446 sf	2.49%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	2,151 sf	2.19%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	2,020 sf	2.05%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	1,818 sf	1.85%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	1,785 sf	1.82%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	1,728 sf	1.76%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	1,859 sf	1.89%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	2,001 sf	2.03%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	2,273 sf	2.31%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	2,873 sf	2.92%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	5,507 sf	5.60%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	13,078 sf	13.30%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	26,560 sf	27.01%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	46,090 sf	46.87%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	63,027 sf	64.10%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	71,551 sf	72.76%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	94,942 sf	96.55%	0 sf	0.00%	0 sf	0.00%	
3:51 PM	98,281 sf	99.95%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

DECEMBER 6

Mirror date: January 4
Analysis hours: 8:10 AM-3:51 PM (PST)

Shadow / Sunlight Balance Key



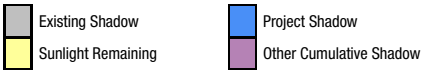
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:10 AM	83,246 sf	84.66%	6,828 sf	6.94%	8,818 sf	8.97%	
8:15 AM	73,655 sf	74.90%	0 sf	0.00%	3,625 sf	3.69%	
8:30 AM	51,295 sf	52.16%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	35,410 sf	36.01%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	20,442 sf	20.79%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	14,522 sf	14.77%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	10,916 sf	11.10%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	8,937 sf	9.09%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	7,457 sf	7.58%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	6,475 sf	6.59%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	5,535 sf	5.63%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	4,928 sf	5.01%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	4,285 sf	4.36%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	3,876 sf	3.94%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	3,361 sf	3.42%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	3,039 sf	3.09%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	2,669 sf	2.71%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	2,516 sf	2.56%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	2,305 sf	2.34%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	2,240 sf	2.28%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	2,182 sf	2.22%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	2,296 sf	2.34%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	2,420 sf	2.46%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	2,708 sf	2.75%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	3,409 sf	3.47%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	5,451 sf	5.54%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	10,768 sf	10.95%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	22,902 sf	23.29%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	40,613 sf	41.30%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	59,775 sf	60.79%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	73,194 sf	74.43%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	96,395 sf	98.03%	0 sf	0.00%	0 sf	0.00%	
3:51 PM	98,334 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

DECEMBER 13

Mirror date: December 28
Analysis hours: 8:15 AM-3:52 PM (PST)

Shadow / Sunlight Balance Key



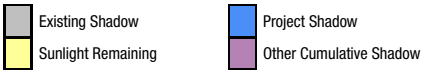
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:15 AM	85,210 sf	86.65%	6,731 sf	6.84%	6,731 sf	6.84%	
8:30 AM	60,853 sf	61.88%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	43,339 sf	44.07%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	24,047 sf	24.45%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	16,993 sf	17.28%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	12,431 sf	12.64%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	10,153 sf	10.32%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	8,307 sf	8.45%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	7,236 sf	7.36%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	6,194 sf	6.30%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	5,515 sf	5.61%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	4,825 sf	4.91%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	4,389 sf	4.46%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	3,843 sf	3.91%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	3,480 sf	3.54%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	3,078 sf	3.13%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	2,882 sf	2.93%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	2,634 sf	2.68%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	2,545 sf	2.59%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	2,482 sf	2.52%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	2,585 sf	2.63%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	2,681 sf	2.73%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	2,965 sf	3.02%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	3,674 sf	3.74%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	5,238 sf	5.33%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	9,306 sf	9.46%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	19,578 sf	19.91%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	35,522 sf	36.12%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	55,181 sf	56.12%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	71,994 sf	73.21%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	94,229 sf	95.83%	0 sf	0.00%	0 sf	0.00%	
3:52 PM	98,334 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Washington Square (98,334 sf)

DECEMBER 20

Winter solstice (December 21 similar)
Analysis hours: 8:19 AM-3:54 PM (PST)

Shadow / Sunlight Balance Key



Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:19 AM	85,940 sf	87.40%	5,983 sf	6.08%	5,983 sf	6.08%	
8:30 AM	66,028 sf	67.15%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	50,222 sf	51.07%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	30,727 sf	31.25%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	18,928 sf	19.25%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	13,503 sf	13.73%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	10,968 sf	11.15%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	8,885 sf	9.04%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	7,696 sf	7.83%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	6,593 sf	6.70%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	5,853 sf	5.95%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	5,119 sf	5.21%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	4,663 sf	4.74%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	4,100 sf	4.17%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	3,710 sf	3.77%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	3,276 sf	3.33%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	3,058 sf	3.11%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	2,788 sf	2.84%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	2,684 sf	2.73%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	2,595 sf	2.64%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	2,690 sf	2.74%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	2,754 sf	2.80%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	3,032 sf	3.08%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	3,635 sf	3.70%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	4,998 sf	5.08%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	8,346 sf	8.49%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	16,662 sf	16.94%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	31,229 sf	31.76%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	50,540 sf	51.40%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	68,896 sf	70.06%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	91,049 sf	92.59%	0 sf	0.00%	0 sf	0.00%	
3:54 PM	98,334 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

EXHIBIT D: FULL QUANTITATIVE SHADOW DATA WILLIE "WOO WOO" WONG PLAYGROUND

Annual Shadow Data

Charts with shadow data showing shadow sizes and square foot hours (sfh) of existing shadow conditions, net new shadow from project, and project + cumulative condition shadow that fall within the boundary of Willie "Woo Woo" Wong Playground.

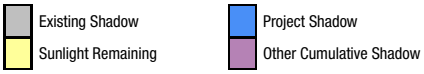
Measurements are taken every 7 days between the summer solstice (6/21) and winter solstice (12/20) at 15-minute intervals between one hour after sunrise through one hour before sunset. This data is extrapolated for all other remaining dates and times to determine annual net new quantitative shadow effects of the project and the project + cumulative projects on Willie "Woo Woo" Wong Playground.

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

JUNE 21

Summer solstice
Analysis hours: 6:46 AM-7:36 PM (PDT)

Shadow / Sunlight Balance Key



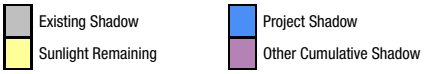
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
6:46 AM	21,900 sf	82.92%	4,461 sf	16.89%	4,461 sf	16.89%	
7:00 AM	20,445 sf	77.41%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	19,146 sf	72.49%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	17,540 sf	66.41%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	15,814 sf	59.87%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	14,355 sf	54.35%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	12,566 sf	47.58%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	11,208 sf	42.43%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	10,171 sf	38.51%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	9,184 sf	34.77%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	8,305 sf	31.44%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	7,558 sf	28.61%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	6,928 sf	26.23%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	6,360 sf	24.08%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	5,826 sf	22.06%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	5,395 sf	20.42%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	5,007 sf	18.96%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	4,558 sf	17.26%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	4,054 sf	15.35%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	3,524 sf	13.34%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	2,902 sf	10.99%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	2,309 sf	8.74%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	1,725 sf	6.53%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	1,221 sf	4.62%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	811 sf	3.07%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	600 sf	2.27%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	956 sf	3.62%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	1,473 sf	5.58%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	2,094 sf	7.93%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	2,716 sf	10.28%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	3,536 sf	13.39%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	4,374 sf	16.56%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	5,091 sf	19.28%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	5,780 sf	21.88%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	6,540 sf	24.76%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	7,343 sf	27.80%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	8,243 sf	31.21%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	9,074 sf	34.35%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	10,167 sf	38.49%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	11,340 sf	42.93%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	12,632 sf	47.82%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	14,302 sf	54.15%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	16,000 sf	60.58%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	17,420 sf	65.95%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	18,280 sf	69.21%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	19,345 sf	73.24%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	20,470 sf	77.50%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	22,491 sf	85.15%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	24,538 sf	92.90%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	26,168 sf	99.07%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
7:36 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

JUNE 28

Mirror date: June 14
Analysis hours: 6:48 AM-7:36 PM (PDT)

Shadow / Sunlight Balance Key



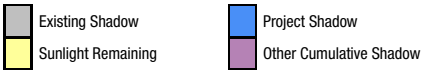
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
6:48 AM	21,879 sf	82.84%	3,802 sf	14.39%	3,802 sf	14.39%	
7:00 AM	20,565 sf	77.86%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	19,339 sf	73.22%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	17,745 sf	67.18%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	15,985 sf	60.52%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	14,495 sf	54.88%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	12,728 sf	48.19%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	11,331 sf	42.90%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	10,297 sf	38.99%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	9,293 sf	35.19%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	8,403 sf	31.81%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	7,633 sf	28.90%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	6,994 sf	26.48%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	6,420 sf	24.31%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	5,883 sf	22.27%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	5,438 sf	20.59%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	5,048 sf	19.11%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	4,610 sf	17.45%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	4,113 sf	15.57%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	3,581 sf	13.56%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	2,968 sf	11.24%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	2,373 sf	8.98%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	1,784 sf	6.75%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	1,273 sf	4.82%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	846 sf	3.20%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	626 sf	2.37%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	919 sf	3.48%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	1,427 sf	5.40%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	2,048 sf	7.75%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	2,670 sf	10.11%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	3,482 sf	13.18%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	4,310 sf	16.32%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	5,044 sf	19.10%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	5,727 sf	21.68%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	6,486 sf	24.56%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	7,284 sf	27.58%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	8,179 sf	30.97%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	9,015 sf	34.13%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	10,079 sf	38.16%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	11,255 sf	42.61%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	12,520 sf	47.40%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	14,187 sf	53.71%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	15,908 sf	60.23%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	17,337 sf	65.64%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	18,242 sf	69.07%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	19,262 sf	72.93%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	20,410 sf	77.28%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	22,281 sf	84.36%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	24,402 sf	92.39%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	26,077 sf	98.73%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
7:36 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

JULY 5

Mirror date: June 7
Analysis hours: 6:52 AM-7:36 PM (PDT)

Shadow / Sunlight Balance Key



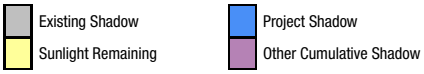
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
6:52 AM	21,806 sf	82.56%	417 sf	1.58%	417 sf	1.58%	
7:00 AM	20,784 sf	78.69%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	19,515 sf	73.89%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	17,948 sf	67.95%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	16,171 sf	61.22%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	14,621 sf	55.36%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	12,855 sf	48.67%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	11,489 sf	43.50%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	10,456 sf	39.59%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	9,429 sf	35.70%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	8,513 sf	32.23%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	7,722 sf	29.24%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	7,072 sf	26.78%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	6,487 sf	24.56%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	5,945 sf	22.51%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	5,484 sf	20.76%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	5,092 sf	19.28%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	4,672 sf	17.69%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	4,177 sf	15.81%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	3,640 sf	13.78%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	3,036 sf	11.50%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	2,438 sf	9.23%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	1,848 sf	7.00%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	1,328 sf	5.03%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	890 sf	3.37%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	657 sf	2.49%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	911 sf	3.45%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	1,418 sf	5.37%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	2,043 sf	7.73%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	2,668 sf	10.10%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	3,479 sf	13.17%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	4,301 sf	16.28%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	5,045 sf	19.10%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	5,727 sf	21.68%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	6,492 sf	24.58%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	7,291 sf	27.60%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	8,181 sf	30.97%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	9,070 sf	34.34%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	10,061 sf	38.09%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	11,244 sf	42.57%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	12,531 sf	47.44%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	14,217 sf	53.83%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	15,949 sf	60.38%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	17,396 sf	65.86%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	18,287 sf	69.24%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	19,272 sf	72.97%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	20,461 sf	77.47%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	22,187 sf	84.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	24,397 sf	92.37%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	26,080 sf	98.74%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	26,411 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
7:36 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

JULY 12

Mirror date: May 31
Analysis hours: 6:56 AM-7:33 PM (PDT)

Shadow / Sunlight Balance Key



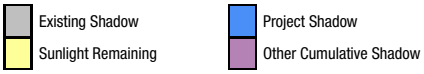
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
6:56 AM	21,616 sf	81.84%	0 sf	0.00%	0 sf	0.00%	
7:00 AM	21,139 sf	80.03%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	19,621 sf	74.29%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	18,120 sf	68.60%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	16,375 sf	62.00%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	14,700 sf	55.65%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	12,950 sf	49.03%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	11,682 sf	44.23%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	10,630 sf	40.25%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	9,585 sf	36.29%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	8,657 sf	32.77%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	7,827 sf	29.63%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	7,159 sf	27.10%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	6,561 sf	24.84%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	6,009 sf	22.75%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	5,529 sf	20.93%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	5,137 sf	19.45%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	4,738 sf	17.94%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	4,239 sf	16.05%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	3,702 sf	14.02%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	3,106 sf	11.76%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	2,503 sf	9.48%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	1,914 sf	7.25%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	1,386 sf	5.25%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	939 sf	3.56%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	699 sf	2.65%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	934 sf	3.54%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	1,447 sf	5.48%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	2,079 sf	7.87%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	2,712 sf	10.27%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	3,529 sf	13.36%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	4,359 sf	16.50%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	5,098 sf	19.30%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	5,784 sf	21.90%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	6,546 sf	24.78%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	7,364 sf	27.88%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	8,257 sf	31.26%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	9,219 sf	34.90%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	10,142 sf	38.40%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	11,325 sf	42.88%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	12,667 sf	47.96%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	14,406 sf	54.54%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	16,122 sf	61.04%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	17,602 sf	66.64%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	18,409 sf	69.70%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	19,381 sf	73.38%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	20,615 sf	78.05%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	22,233 sf	84.18%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	24,526 sf	92.86%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	26,208 sf	99.23%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
7:33 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

JULY 19

Mirror date: May 24
Analysis hours: 7:01 AM-7:30 PM (PDT)

Shadow / Sunlight Balance Key



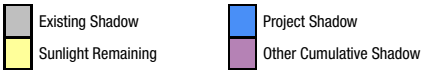
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:01 AM	22,503 sf	85.20%	0 sf	0.00%	0 sf	0.00%	
7:16 AM	19,594 sf	74.18%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	18,281 sf	69.21%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	16,584 sf	62.79%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	14,700 sf	55.66%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	13,149 sf	49.78%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	11,900 sf	45.05%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	10,803 sf	40.90%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	9,752 sf	36.92%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	8,795 sf	33.30%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	7,949 sf	30.10%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	7,246 sf	27.43%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	6,631 sf	25.11%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	6,070 sf	22.98%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	5,569 sf	21.08%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	5,178 sf	19.61%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	4,797 sf	18.16%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	4,290 sf	16.24%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	3,757 sf	14.23%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	3,166 sf	11.99%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	2,562 sf	9.70%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	1,972 sf	7.47%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	1,440 sf	5.45%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	990 sf	3.75%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	749 sf	2.84%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	996 sf	3.77%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	1,522 sf	5.76%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	2,165 sf	8.20%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	2,810 sf	10.64%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	3,641 sf	13.79%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	4,487 sf	16.99%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	5,211 sf	19.73%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	5,903 sf	22.35%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	6,675 sf	25.27%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	7,505 sf	28.41%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	8,420 sf	31.88%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	9,390 sf	35.55%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	10,429 sf	39.48%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	11,505 sf	43.56%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	12,950 sf	49.03%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	14,740 sf	55.81%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	16,453 sf	62.29%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	17,855 sf	67.60%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	18,615 sf	70.48%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	19,589 sf	74.17%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	20,901 sf	79.13%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	22,438 sf	84.95%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	24,837 sf	94.04%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	26,315 sf	99.63%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
7:30 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

JULY 26

Mirror date: May 17
Analysis hours: 7:07 AM-7:25 PM (PDT)

Shadow / Sunlight Balance Key



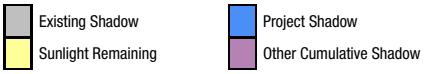
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:07 AM	23,464 sf	88.84%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	19,911 sf	75.38%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	18,506 sf	70.07%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	16,805 sf	63.62%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	14,677 sf	55.57%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	13,415 sf	50.79%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	12,163 sf	46.05%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	11,012 sf	41.69%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	9,935 sf	37.61%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	8,944 sf	33.86%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	8,077 sf	30.58%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	7,336 sf	27.77%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	6,702 sf	25.37%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	6,127 sf	23.20%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	5,604 sf	21.22%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	5,214 sf	19.74%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	4,843 sf	18.34%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	4,339 sf	16.43%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	3,809 sf	14.42%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	3,221 sf	12.19%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	2,614 sf	9.90%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	2,027 sf	7.67%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	1,492 sf	5.65%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	1,043 sf	3.95%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	810 sf	3.07%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	1,092 sf	4.14%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	1,641 sf	6.21%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	2,298 sf	8.70%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	2,959 sf	11.20%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	3,809 sf	14.42%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	4,664 sf	17.66%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	5,376 sf	20.36%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	6,087 sf	23.04%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	6,872 sf	26.02%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	7,711 sf	29.19%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	8,654 sf	32.77%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	9,647 sf	36.53%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	10,783 sf	40.83%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	11,841 sf	44.83%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	13,381 sf	50.66%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	15,257 sf	57.77%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	16,946 sf	64.16%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	18,251 sf	69.10%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	18,894 sf	71.54%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	19,886 sf	75.29%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	21,292 sf	80.61%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	22,760 sf	86.17%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	25,318 sf	95.86%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	26,383 sf	99.89%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
7:25 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

AUGUST 2

Mirror date: May 10
Analysis hours: 7:12 AM-7:18 PM (PDT)

Shadow / Sunlight Balance Key



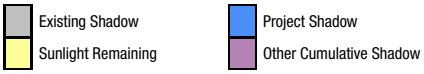
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:12 AM	20,815 sf	78.81%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	20,419 sf	77.31%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	18,708 sf	70.83%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	16,758 sf	63.45%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	14,944 sf	56.58%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	13,683 sf	51.80%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	12,479 sf	47.25%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	11,237 sf	42.55%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	10,123 sf	38.33%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	9,080 sf	34.38%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	8,192 sf	31.01%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	7,415 sf	28.07%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	6,763 sf	25.60%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	6,172 sf	23.37%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	5,630 sf	21.32%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	5,239 sf	19.84%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	4,867 sf	18.43%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	4,375 sf	16.56%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	3,847 sf	14.57%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	3,259 sf	12.34%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	2,653 sf	10.04%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	2,070 sf	7.84%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	1,535 sf	5.81%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	1,096 sf	4.15%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	881 sf	3.33%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	1,234 sf	4.67%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	1,811 sf	6.86%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	2,489 sf	9.42%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	3,196 sf	12.10%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	4,057 sf	15.36%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	4,911 sf	18.59%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	5,609 sf	21.24%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	6,342 sf	24.01%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	7,151 sf	27.07%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	8,012 sf	30.33%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	8,965 sf	33.94%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	10,014 sf	37.91%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	11,182 sf	42.33%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	12,491 sf	47.29%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	14,014 sf	53.06%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	15,886 sf	60.15%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	17,609 sf	66.67%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	18,534 sf	70.17%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	19,261 sf	72.92%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	20,310 sf	76.89%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	21,692 sf	82.13%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	23,253 sf	88.04%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	26,029 sf	98.55%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	26,405 sf	99.97%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
7:18 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

AUGUST 9

Mirror date: May 3
Analysis hours: 7:19 AM-7:10 PM (PDT)

Shadow / Sunlight Balance Key



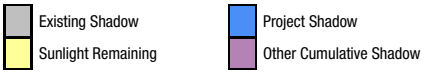
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:19 AM	20,603 sf	78.01%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	18,825 sf	71.27%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	17,233 sf	65.25%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	15,383 sf	58.24%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	14,030 sf	53.12%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	12,849 sf	48.65%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	11,500 sf	43.54%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	10,312 sf	39.04%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	9,204 sf	34.85%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	8,294 sf	31.40%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	7,487 sf	28.35%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	6,816 sf	25.81%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	6,216 sf	23.54%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	5,655 sf	21.41%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	5,253 sf	19.89%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	4,886 sf	18.50%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	4,403 sf	16.67%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	3,875 sf	14.67%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	3,284 sf	12.43%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	2,680 sf	10.15%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	2,103 sf	7.96%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	1,573 sf	5.96%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	1,148 sf	4.35%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	961 sf	3.64%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	1,422 sf	5.38%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	2,035 sf	7.70%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	2,734 sf	10.35%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	3,501 sf	13.26%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	4,357 sf	16.49%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	5,188 sf	19.64%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	5,904 sf	22.35%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	6,663 sf	25.23%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	7,511 sf	28.44%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	8,419 sf	31.87%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	9,379 sf	35.51%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	10,449 sf	39.56%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	11,687 sf	44.25%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	13,160 sf	49.83%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	15,039 sf	56.94%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	16,620 sf	62.92%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	18,231 sf	69.02%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	18,906 sf	71.58%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	19,674 sf	74.49%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	20,839 sf	78.90%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	22,136 sf	83.81%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	24,031 sf	90.98%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	26,318 sf	99.64%	0 sf	0.00%	0 sf	0.00%	
7:10 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

AUGUST 16

Mirror date: April 26
Analysis hours: 7:25 AM-7:02 PM (PDT)

Shadow / Sunlight Balance Key



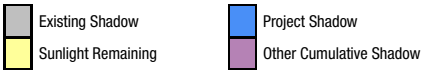
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:25 AM	26,039 sf	98.59%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	24,885 sf	94.22%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	17,397 sf	65.87%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	15,913 sf	60.25%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	14,453 sf	54.72%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	13,278 sf	50.27%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	11,811 sf	44.72%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	10,501 sf	39.76%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	9,431 sf	35.71%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	9,786 sf	37.05%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	9,539 sf	36.12%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	7,933 sf	30.03%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	6,311 sf	23.89%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	5,674 sf	21.48%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	5,252 sf	19.88%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	4,882 sf	18.48%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	4,405 sf	16.68%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	3,882 sf	14.70%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	3,290 sf	12.46%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	2,696 sf	10.21%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	2,131 sf	8.07%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	1,609 sf	6.09%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	1,209 sf	4.58%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	1,109 sf	4.20%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	1,649 sf	6.24%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	2,305 sf	8.73%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	3,041 sf	11.51%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	3,867 sf	14.64%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	4,759 sf	18.02%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	5,511 sf	20.87%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	6,258 sf	23.69%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	7,047 sf	26.68%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	7,959 sf	30.13%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	8,916 sf	33.76%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	9,936 sf	37.62%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	11,006 sf	41.67%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	12,257 sf	46.41%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	13,990 sf	52.97%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	15,903 sf	60.21%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	17,656 sf	66.85%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	18,814 sf	71.23%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	19,343 sf	73.24%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	20,246 sf	76.65%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	21,636 sf	81.92%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	22,623 sf	85.65%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	24,919 sf	94.35%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	26,395 sf	99.94%	0 sf	0.00%	0 sf	0.00%	
7:02 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

AUGUST 23

Mirror date: April 19
Analysis hours: 7:31 AM-6:52 PM (PDT)

Shadow / Sunlight Balance Key



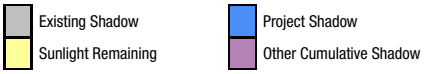
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:31 AM	25,181 sf	95.34%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	18,175 sf	68.81%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	16,342 sf	61.87%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	14,851 sf	56.23%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	13,557 sf	51.33%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	12,120 sf	45.89%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	10,783 sf	40.83%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	11,649 sf	44.10%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	12,636 sf	47.84%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	11,968 sf	45.31%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	9,025 sf	34.17%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	6,391 sf	24.20%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	5,667 sf	21.46%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	5,225 sf	19.78%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	4,846 sf	18.35%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	4,376 sf	16.57%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	3,855 sf	14.60%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	3,263 sf	12.35%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	2,680 sf	10.15%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	2,132 sf	8.07%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	1,630 sf	6.17%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	1,277 sf	4.84%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	1,294 sf	4.90%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	1,935 sf	7.33%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	2,641 sf	10.00%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	3,418 sf	12.94%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	4,294 sf	16.26%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	5,190 sf	19.65%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	5,904 sf	22.35%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	6,684 sf	25.31%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	7,516 sf	28.46%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	8,522 sf	32.26%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	9,515 sf	36.03%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	10,600 sf	40.13%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	11,742 sf	44.46%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	13,142 sf	49.76%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	14,921 sf	56.49%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	16,726 sf	63.33%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	19,302 sf	73.08%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	20,405 sf	77.25%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	19,872 sf	75.24%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	22,165 sf	83.92%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	22,497 sf	85.18%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	23,349 sf	88.40%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	25,847 sf	97.86%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
6:52 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

AUGUST 30

Mirror date: April 12
Analysis hours: 7:37 AM-6:42 PM (PDT)

Shadow / Sunlight Balance Key



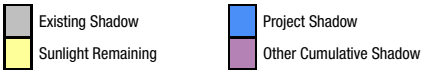
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:37 AM	24,032 sf	90.99%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	21,530 sf	81.52%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	16,813 sf	63.66%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	15,157 sf	57.39%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	13,733 sf	51.99%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	12,531 sf	47.44%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	13,088 sf	49.55%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	14,925 sf	56.51%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	16,136 sf	61.09%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	15,394 sf	58.28%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	10,800 sf	40.89%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	6,577 sf	24.90%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	5,660 sf	21.43%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	5,196 sf	19.67%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	4,805 sf	18.19%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	4,338 sf	16.43%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	3,819 sf	14.46%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	3,231 sf	12.23%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	2,664 sf	10.08%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	2,136 sf	8.09%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	1,657 sf	6.27%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	1,376 sf	5.21%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	1,583 sf	5.99%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	2,288 sf	8.66%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	3,028 sf	11.46%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	3,877 sf	14.68%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	4,758 sf	18.02%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	5,611 sf	21.24%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	6,348 sf	24.03%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	7,167 sf	27.13%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	8,079 sf	30.59%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	9,106 sf	34.48%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	10,165 sf	38.49%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	11,356 sf	42.99%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	12,538 sf	47.47%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	14,160 sf	53.61%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	15,864 sf	60.06%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	17,921 sf	67.85%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	21,729 sf	82.27%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	22,822 sf	86.41%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	21,992 sf	83.26%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	24,642 sf	93.30%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	23,892 sf	90.46%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	24,481 sf	92.69%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	26,411 sf	99.99%	0 sf	0.00%	0 sf	0.00%	
6:42 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

SEPTEMBER 6

Mirror date: April 5
Analysis hours: 7:44 AM-6:31 PM (PDT)

Shadow / Sunlight Balance Key



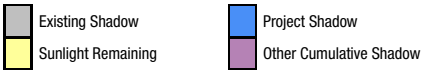
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:44 AM	23,721 sf	89.81%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	17,842 sf	67.55%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	16,732 sf	63.35%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	14,115 sf	53.44%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	15,132 sf	57.29%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	16,279 sf	61.63%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	18,665 sf	70.67%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	21,352 sf	80.84%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	21,432 sf	81.14%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	14,839 sf	56.18%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	8,117 sf	30.73%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	5,655 sf	21.41%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	5,167 sf	19.56%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	4,763 sf	18.03%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	4,299 sf	16.28%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	3,782 sf	14.32%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	3,203 sf	12.13%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	2,654 sf	10.05%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	2,149 sf	8.14%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	1,695 sf	6.42%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	1,504 sf	5.69%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	1,927 sf	7.30%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	2,691 sf	10.19%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	3,483 sf	13.19%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	4,409 sf	16.69%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	5,295 sf	20.05%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	6,071 sf	22.99%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	6,846 sf	25.92%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	7,705 sf	29.17%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	8,710 sf	32.98%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	9,744 sf	36.89%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	10,853 sf	41.09%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	12,031 sf	45.55%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	13,449 sf	50.92%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	15,224 sf	57.64%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	16,848 sf	63.79%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	20,857 sf	78.97%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	24,758 sf	93.74%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	26,307 sf	99.60%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	23,984 sf	90.81%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	25,090 sf	94.99%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	25,661 sf	97.15%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	26,399 sf	99.95%	0 sf	0.00%	0 sf	0.00%	
6:31 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

SEPTEMBER 13

Mirror date: March 29
Analysis hours: 7:50 AM-6:21 PM (PDT)

Shadow / Sunlight Balance Key



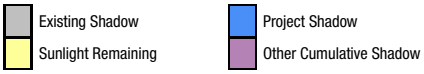
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:50 AM	23,164 sf	87.70%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	20,725 sf	78.47%	0 sf	0.00%	1,030 sf	3.90%	
8:15 AM	19,391 sf	73.42%	0 sf	0.00%	1,976 sf	7.48%	
8:30 AM	17,001 sf	64.37%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	18,044 sf	68.32%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	19,792 sf	74.94%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	23,233 sf	87.96%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	25,304 sf	95.80%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	24,802 sf	93.90%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	14,894 sf	56.39%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	7,761 sf	29.38%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	5,745 sf	21.75%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	5,138 sf	19.45%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	4,720 sf	17.87%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	4,264 sf	16.14%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	3,763 sf	14.25%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	3,203 sf	12.13%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	2,676 sf	10.13%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	2,204 sf	8.34%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	1,798 sf	6.81%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	1,713 sf	6.49%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	2,336 sf	8.84%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	3,164 sf	11.98%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	4,011 sf	15.19%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	4,970 sf	18.82%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	5,801 sf	21.96%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	6,577 sf	24.90%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	7,391 sf	27.98%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	8,344 sf	31.59%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	9,364 sf	35.45%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	10,448 sf	39.56%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	11,606 sf	43.94%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	12,794 sf	48.44%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	14,377 sf	54.43%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	16,030 sf	60.69%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	18,572 sf	70.32%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	21,800 sf	82.54%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	26,012 sf	98.48%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	25,469 sf	96.43%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	24,643 sf	93.30%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	26,387 sf	99.90%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	26,382 sf	99.89%	0 sf	0.00%	0 sf	0.00%	
6:21 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

SEPTEMBER 20

Fall equinox (Spring equinox on March 22 similar)
Analysis hours: 7:57 AM-6:09 PM (PDT)

Shadow / Sunlight Balance Key



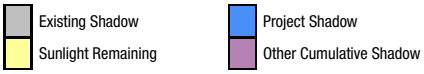
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:57 AM	23,837 sf	90.25%	0 sf	0.00%	2,575 sf	9.75%	
8:00 AM	25,184 sf	95.35%	0 sf	0.00%	1,227 sf	4.65%	
8:15 AM	26,185 sf	99.14%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	20,486 sf	77.56%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	21,228 sf	80.37%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	24,013 sf	90.92%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	26,031 sf	98.56%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	14,791 sf	56.00%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	7,777 sf	29.44%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	5,905 sf	22.36%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	5,125 sf	19.40%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	4,709 sf	17.83%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	4,276 sf	16.19%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	3,810 sf	14.42%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	3,286 sf	12.44%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	2,803 sf	10.61%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	2,389 sf	9.04%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	2,059 sf	7.80%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	2,202 sf	8.34%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	2,969 sf	11.24%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	3,870 sf	14.65%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	4,777 sf	18.09%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	5,722 sf	21.66%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	6,474 sf	24.51%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	7,288 sf	27.59%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	8,114 sf	30.72%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	9,147 sf	34.63%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	10,127 sf	38.34%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	11,253 sf	42.61%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	12,323 sf	46.66%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	13,715 sf	51.93%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	15,290 sf	57.89%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	16,887 sf	63.94%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	20,488 sf	77.57%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	23,980 sf	90.79%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	25,108 sf	95.06%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	26,408 sf	99.98%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	25,840 sf	97.83%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	26,408 sf	99.98%	0 sf	0.00%	0 sf	0.00%	
6:09 PM	26,388 sf	99.91%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

SEPTEMBER 27

Mirror date: March 15
Analysis hours: 8:03 AM-5:58 PM (PDT)

Shadow / Sunlight Balance Key



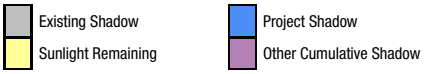
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:03 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	24,309 sf	92.04%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	24,887 sf	94.22%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	26,055 sf	98.65%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	25,725 sf	97.40%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	11,933 sf	45.18%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	7,479 sf	28.32%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	5,783 sf	21.89%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	5,167 sf	19.56%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	4,757 sf	18.01%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	4,353 sf	16.48%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	3,928 sf	14.87%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	3,454 sf	13.08%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	3,028 sf	11.47%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	2,675 sf	10.13%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	2,425 sf	9.18%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	2,906 sf	11.00%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	3,776 sf	14.30%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	4,733 sf	17.92%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	5,672 sf	21.47%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	6,551 sf	24.80%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	7,300 sf	27.64%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	8,163 sf	30.90%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	9,145 sf	34.62%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	10,261 sf	38.85%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	11,342 sf	42.94%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	12,460 sf	47.18%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	13,399 sf	50.73%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	14,816 sf	56.09%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	16,164 sf	61.20%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	18,102 sf	68.54%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	20,854 sf	78.96%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	24,043 sf	91.03%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	26,263 sf	99.43%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
5:58 PM	25,901 sf	98.06%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

OCTOBER 4

Mirror date: March 8
Analysis hours: 8:09 AM-5:47 PM (PDT)

Shadow / Sunlight Balance Key



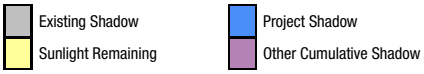
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:09 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	26,391 sf	99.92%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	26,409 sf	99.99%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	26,411 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	26,151 sf	99.01%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	19,302 sf	73.08%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	8,754 sf	33.14%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	6,876 sf	26.03%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	5,795 sf	21.94%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	5,287 sf	20.02%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	4,868 sf	18.43%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	4,491 sf	17.00%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	4,111 sf	15.56%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	3,693 sf	13.98%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	3,338 sf	12.64%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	3,061 sf	11.59%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	2,910 sf	11.02%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	3,581 sf	13.56%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	4,463 sf	16.90%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	5,572 sf	21.10%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	6,546 sf	24.78%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	7,390 sf	27.98%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	8,186 sf	30.99%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	9,149 sf	34.64%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	10,286 sf	38.94%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	11,484 sf	43.48%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	12,689 sf	48.04%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	13,629 sf	51.60%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	14,783 sf	55.97%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	16,061 sf	60.81%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	17,505 sf	66.28%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	19,565 sf	74.08%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	22,572 sf	85.46%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	25,885 sf	98.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
5:47 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

OCTOBER 11

Mirror date: March 1
Analysis hours: 8:16 AM-5:37 PM (PDT)

Shadow / Sunlight Balance Key



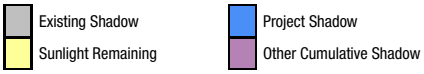
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:16 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	26,358 sf	99.79%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	22,311 sf	84.47%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	12,058 sf	45.65%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	8,517 sf	32.25%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	6,832 sf	25.87%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	6,117 sf	23.16%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	5,601 sf	21.21%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	5,168 sf	19.57%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	4,805 sf	18.19%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	4,444 sf	16.82%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	4,078 sf	15.44%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	3,766 sf	14.26%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	3,544 sf	13.42%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	3,502 sf	13.26%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	4,458 sf	16.88%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	5,457 sf	20.66%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	6,598 sf	24.98%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	7,455 sf	28.23%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	8,330 sf	31.54%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	9,178 sf	34.75%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	10,430 sf	39.49%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	11,619 sf	43.99%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	12,950 sf	49.03%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	13,951 sf	52.82%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	14,947 sf	56.59%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	16,119 sf	61.03%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	17,450 sf	66.07%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	19,298 sf	73.07%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	21,734 sf	82.29%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	25,096 sf	95.02%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	26,383 sf	99.89%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
5:37 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

OCTOBER 18

Mirror date: February 22
Analysis hours: 8:22 AM-5:27 PM (PDT)

Shadow / Sunlight Balance Key



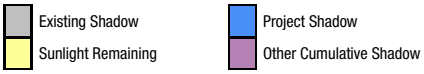
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:22 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	24,890 sf	94.23%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	16,215 sf	61.39%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	10,375 sf	39.28%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	8,513 sf	32.23%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	7,449 sf	28.20%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	6,643 sf	25.15%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	6,098 sf	23.09%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	5,660 sf	21.43%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	5,318 sf	20.14%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	4,972 sf	18.82%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	4,666 sf	17.67%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	4,390 sf	16.62%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	4,207 sf	15.93%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	4,322 sf	16.36%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	5,428 sf	20.55%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	6,462 sf	24.47%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	7,628 sf	28.88%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	8,427 sf	31.90%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	9,350 sf	35.40%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	10,311 sf	39.04%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	11,721 sf	44.38%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	13,005 sf	49.24%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	14,412 sf	54.57%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	15,302 sf	57.93%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	16,523 sf	62.56%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	17,717 sf	67.08%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	19,473 sf	73.73%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	21,437 sf	81.16%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	24,385 sf	92.32%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	26,386 sf	99.90%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
5:27 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

OCTOBER 25

Mirror date: February 15
Analysis hours: 7:30 AM-4:18 PM (PST)

Shadow / Sunlight Balance Key



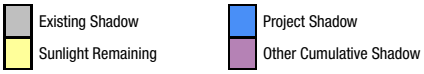
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:30 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	21,999 sf	83.29%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	12,689 sf	48.04%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	10,812 sf	40.94%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	9,182 sf	34.76%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	8,256 sf	31.26%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	7,396 sf	28.00%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	6,826 sf	25.84%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	6,373 sf	24.13%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	6,023 sf	22.80%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	5,665 sf	21.45%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	5,411 sf	20.49%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	5,179 sf	19.61%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	5,057 sf	19.15%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	5,377 sf	20.36%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	6,563 sf	24.85%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	7,633 sf	28.90%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	8,732 sf	33.06%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	9,523 sf	36.06%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	10,489 sf	39.71%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	11,684 sf	44.24%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	13,075 sf	49.50%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	14,426 sf	54.62%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	15,745 sf	59.61%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	16,814 sf	63.66%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	18,173 sf	68.80%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	19,581 sf	74.14%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	21,422 sf	81.11%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	23,407 sf	88.62%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	25,951 sf	98.25%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
4:18 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

NOVEMBER 1

Mirror date: February 8
Analysis hours: 7:36 AM-4:10 PM (PST)

Shadow / Sunlight Balance Key



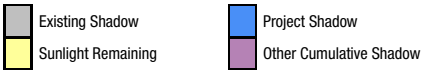
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:36 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	26,306 sf	99.60%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	20,380 sf	77.16%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	13,570 sf	51.38%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	11,174 sf	42.30%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	9,839 sf	37.25%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	8,989 sf	34.03%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	8,199 sf	31.04%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	7,656 sf	28.99%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	7,214 sf	27.31%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	6,884 sf	26.06%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	6,525 sf	24.70%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	6,304 sf	23.87%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	6,099 sf	23.09%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	6,006 sf	22.74%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	6,474 sf	24.51%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	7,701 sf	29.16%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	8,824 sf	33.41%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	9,853 sf	37.30%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	10,662 sf	40.37%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	11,684 sf	44.24%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	13,148 sf	49.78%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	14,602 sf	55.28%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	16,022 sf	60.66%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	17,265 sf	65.37%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	18,404 sf	69.68%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	19,785 sf	74.91%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	21,226 sf	80.36%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	22,894 sf	86.68%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	24,885 sf	94.22%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	26,127 sf	98.92%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
4:10 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

NOVEMBER 8

Mirror date: February 1
Analysis hours: 7:43 AM-4:03 PM (PST)

Shadow / Sunlight Balance Key



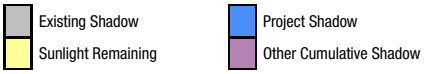
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:43 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	19,694 sf	74.56%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	14,544 sf	55.07%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	12,102 sf	45.82%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	10,574 sf	40.03%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	9,808 sf	37.13%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	9,020 sf	34.15%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	8,565 sf	32.43%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	8,150 sf	30.86%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	7,771 sf	29.42%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	7,446 sf	28.19%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	7,262 sf	27.49%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	7,110 sf	26.92%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	7,054 sf	26.71%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	7,588 sf	28.73%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	8,838 sf	33.46%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	10,002 sf	37.87%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	10,984 sf	41.59%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	11,816 sf	44.74%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	13,001 sf	49.22%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	14,542 sf	55.06%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	16,083 sf	60.89%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	17,402 sf	65.89%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	18,590 sf	70.39%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	19,735 sf	74.72%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	21,004 sf	79.52%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	22,275 sf	84.33%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	23,857 sf	90.33%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	25,292 sf	95.76%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	26,178 sf	99.11%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
4:03 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

NOVEMBER 15

Mirror date: January 25
Analysis hours: 7:51 AM-3:57 PM (PST)

Shadow / Sunlight Balance Key



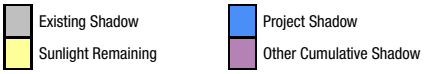
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:51 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	19,486 sf	73.78%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	17,089 sf	64.70%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	13,519 sf	51.18%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	11,564 sf	43.78%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	10,815 sf	40.95%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	10,051 sf	38.06%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	9,595 sf	36.33%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	9,114 sf	34.51%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	8,660 sf	32.79%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	8,347 sf	31.60%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	8,191 sf	31.01%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	8,098 sf	30.66%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	8,096 sf	30.65%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	8,648 sf	32.74%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	9,922 sf	37.57%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	11,116 sf	42.09%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	12,071 sf	45.70%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	12,925 sf	48.94%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	14,270 sf	54.03%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	15,728 sf	59.55%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	17,195 sf	65.10%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	18,381 sf	69.59%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	19,457 sf	73.66%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	20,600 sf	77.99%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	21,807 sf	82.56%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	22,868 sf	86.58%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	24,175 sf	91.53%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	25,018 sf	94.72%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	26,398 sf	99.94%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:57 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

NOVEMBER 22

Mirror date: January 18
Analysis hours: 7:57 AM-3:54 PM (PST)

Shadow / Sunlight Balance Key



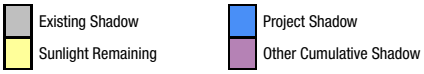
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:57 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	25,915 sf	98.12%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	25,151 sf	95.22%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	14,983 sf	56.73%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	12,706 sf	48.10%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	11,983 sf	45.37%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	11,151 sf	42.22%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	10,615 sf	40.19%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	9,997 sf	37.85%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	9,472 sf	35.86%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	9,132 sf	34.58%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	8,958 sf	33.92%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	8,913 sf	33.74%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	8,974 sf	33.98%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	9,496 sf	35.95%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	10,760 sf	40.74%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	11,956 sf	45.27%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	12,877 sf	48.75%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	13,708 sf	51.90%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	15,074 sf	57.07%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	16,396 sf	62.08%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	17,783 sf	67.33%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	18,974 sf	71.84%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	20,067 sf	75.98%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	21,160 sf	80.12%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	22,182 sf	83.98%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	23,078 sf	87.37%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	24,212 sf	91.67%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	24,771 sf	93.79%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	26,225 sf	99.29%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:54 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

NOVEMBER 29

Mirror date: January 11
Analysis hours: 8:04 AM-3:51 PM (PST)

Shadow / Sunlight Balance Key



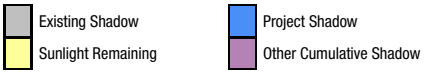
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:04 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	17,471 sf	66.15%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	14,236 sf	53.90%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	12,894 sf	48.82%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	12,086 sf	45.76%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	11,618 sf	43.99%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	10,825 sf	40.98%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	10,257 sf	38.83%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	9,806 sf	37.13%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	9,534 sf	36.10%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	9,464 sf	35.83%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	9,574 sf	36.25%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	10,061 sf	38.09%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	11,272 sf	42.68%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	12,370 sf	46.83%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	13,416 sf	50.80%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	14,275 sf	54.05%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	15,630 sf	59.18%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	16,842 sf	63.77%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	18,158 sf	68.75%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	19,369 sf	73.33%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	20,494 sf	77.59%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	21,494 sf	81.38%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	22,433 sf	84.94%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	23,165 sf	87.71%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	24,043 sf	91.03%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	24,730 sf	93.63%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	25,847 sf	97.86%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:51 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

DECEMBER 6

Mirror date: January 4
Analysis hours: 8:10 AM-3:51 PM (PST)

Shadow / Sunlight Balance Key



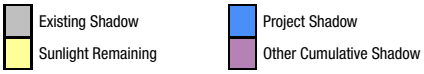
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:10 AM	26,169 sf	99.08%	0 sf	0.00%	142 sf	0.54%	
8:15 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	19,477 sf	73.74%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	16,176 sf	61.24%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	13,999 sf	53.00%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	12,927 sf	48.94%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	12,220 sf	46.27%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	11,531 sf	43.66%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	10,888 sf	41.22%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	10,413 sf	39.42%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	10,114 sf	38.29%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	9,895 sf	37.46%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	10,021 sf	37.94%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	10,347 sf	39.18%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	11,747 sf	44.47%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	12,994 sf	49.20%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	13,936 sf	52.76%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	14,691 sf	55.62%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	15,950 sf	60.39%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	17,081 sf	64.67%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	18,332 sf	69.41%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	19,584 sf	74.15%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	20,721 sf	78.45%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	21,693 sf	82.13%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	22,558 sf	85.41%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	23,169 sf	87.72%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	23,994 sf	90.85%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	24,745 sf	93.69%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	25,699 sf	97.30%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:51 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

DECEMBER 13

Mirror date: December 28
Analysis hours: 8:15 AM-3:52 PM (PST)

Shadow / Sunlight Balance Key



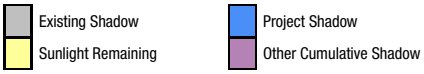
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:15 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	22,920 sf	86.78%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	18,450 sf	69.85%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	15,018 sf	56.86%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	13,422 sf	50.82%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	12,660 sf	47.93%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	12,013 sf	45.48%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	11,360 sf	43.01%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	10,842 sf	41.05%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	10,533 sf	39.88%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	10,238 sf	38.76%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	10,338 sf	39.14%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	10,418 sf	39.45%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	11,812 sf	44.72%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	13,052 sf	49.42%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	14,138 sf	53.53%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	14,880 sf	56.34%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	16,013 sf	60.63%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	17,133 sf	64.87%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	18,308 sf	69.32%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	19,600 sf	74.21%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	20,761 sf	78.60%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	21,730 sf	82.27%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	22,604 sf	85.58%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	23,133 sf	87.58%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	23,921 sf	90.57%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	24,679 sf	93.44%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	25,694 sf	97.28%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:52 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Willie "Woo Woo" Wong Playground (26,412 sf)

DECEMBER 20

Winter solstice (December 21 similar)
Analysis hours: 8:19 AM-3:54 PM (PST)

Shadow / Sunlight Balance Key



Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT+ CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:19 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	25,639 sf	97.07%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	19,936 sf	75.48%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	16,058 sf	60.80%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	13,813 sf	52.30%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	12,966 sf	49.09%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	12,281 sf	46.50%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	11,657 sf	44.14%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	11,071 sf	41.91%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	10,748 sf	40.69%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	10,380 sf	39.30%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	10,445 sf	39.55%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	10,411 sf	39.42%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	11,629 sf	44.03%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	12,891 sf	48.81%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	14,095 sf	53.37%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	14,836 sf	56.17%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	15,853 sf	60.02%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	17,018 sf	64.43%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	18,147 sf	68.71%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	19,411 sf	73.49%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	20,618 sf	78.06%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	21,614 sf	81.83%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	22,552 sf	85.38%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	23,043 sf	87.24%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	23,801 sf	90.11%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	24,527 sf	92.86%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	25,555 sf	96.76%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:54 PM	26,412 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

EXHIBIT E: FULL QUANTITATIVE SHADOW DATA MARITIME PLAZA

Annual Shadow Data

Charts with shadow data showing shadow sizes and square foot hours (sfh) of existing shadow conditions, net new shadow from project, and project + cumulative condition shadow that fall within the boundary of Maritime Plaza.

Measurements are taken every 7 days between the summer solstice (6/21) and winter solstice (12/20) at 15-minute intervals between one hour after sunrise through one hour before sunset. This data is extrapolated for all other remaining dates and times to determine annual net new quantitative shadow effects of the project and the project + cumulative projects on Maritime Plaza.

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

JUNE 21

Summer solstice

Analysis hours: 6:46 AM-7:36 PM (PDT)

Shadow / Sunlight Balance Key

Existing Shadow | Project Shadow | Sunlight Remaining | Other Cumulative Shadow

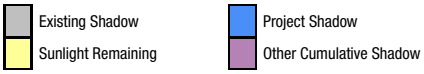
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
6:46 AM	70,758 sf	82.59%	0 sf	0.00%	0 sf	0.00%	
7:00 AM	65,571 sf	76.54%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	58,406 sf	68.18%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	52,508 sf	61.29%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	49,403 sf	57.67%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	46,758 sf	54.58%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	44,256 sf	51.66%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	43,351 sf	50.60%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	43,501 sf	50.78%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	42,447 sf	49.55%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	42,973 sf	50.16%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	42,332 sf	49.41%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	40,946 sf	47.79%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	39,941 sf	46.62%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	39,762 sf	46.41%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	39,241 sf	45.80%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	36,259 sf	42.32%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	33,003 sf	38.52%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	31,015 sf	36.20%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	28,649 sf	33.44%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	26,073 sf	30.43%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	21,158 sf	24.70%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	16,703 sf	19.50%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	12,244 sf	14.29%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	8,106 sf	9.46%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	3,313 sf	3.87%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	5,082 sf	5.93%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	7,759 sf	9.06%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	11,767 sf	13.73%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	16,488 sf	19.25%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	21,274 sf	24.83%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	24,299 sf	28.36%	9 sf	0.01%	9 sf	0.01%	
2:45 PM	26,083 sf	30.45%	766 sf	0.89%	766 sf	0.89%	
3:00 PM	27,664 sf	32.29%	2,983 sf	3.48%	2,983 sf	3.48%	
3:15 PM	30,163 sf	35.21%	5,179 sf	6.04%	5,179 sf	6.04%	
3:30 PM	34,637 sf	40.43%	8,059 sf	9.41%	8,059 sf	9.41%	
3:45 PM	39,528 sf	46.14%	11,047 sf	12.89%	11,047 sf	12.89%	
4:00 PM	38,507 sf	44.95%	12,118 sf	14.15%	12,118 sf	14.15%	
4:15 PM	40,015 sf	46.71%	12,555 sf	14.66%	12,555 sf	14.66%	
4:30 PM	41,265 sf	48.17%	13,508 sf	15.77%	13,508 sf	15.77%	
4:45 PM	43,454 sf	50.72%	14,619 sf	17.06%	14,619 sf	17.06%	
5:00 PM	40,589 sf	47.38%	15,487 sf	18.08%	15,487 sf	18.08%	
5:15 PM	40,226 sf	46.95%	16,933 sf	19.77%	16,933 sf	19.77%	
5:30 PM	41,021 sf	47.88%	17,887 sf	20.88%	17,887 sf	20.88%	
5:45 PM	44,063 sf	51.43%	17,948 sf	20.95%	17,948 sf	20.95%	
6:00 PM	50,004 sf	58.37%	16,243 sf	18.96%	16,243 sf	18.96%	
6:15 PM	54,883 sf	64.06%	13,246 sf	15.46%	13,246 sf	15.46%	
6:30 PM	63,053 sf	73.60%	9,479 sf	11.06%	9,479 sf	11.06%	
6:45 PM	75,634 sf	88.29%	6,466 sf	7.55%	6,466 sf	7.55%	
7:00 PM	81,438 sf	95.06%	3,957 sf	4.62%	3,957 sf	4.62%	
7:15 PM	83,761 sf	97.77%	1,906 sf	2.22%	1,906 sf	2.22%	
7:36 PM	85,667 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

JUNE 28

Mirror date: June 14
Analysis hours: 6:48 AM-7:36 PM (PDT)

Shadow / Sunlight Balance Key



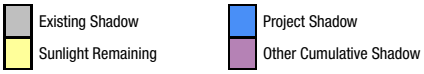
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
6:48 AM	70,654 sf	82.47%	0 sf	0.00%	0 sf	0.00%	
7:00 AM	66,382 sf	77.49%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	59,055 sf	68.93%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	52,959 sf	61.82%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	49,704 sf	58.02%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	47,011 sf	54.87%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	44,487 sf	51.93%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	43,467 sf	50.74%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	43,634 sf	50.93%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	42,573 sf	49.69%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	43,251 sf	50.49%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	42,642 sf	49.77%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	41,412 sf	48.34%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	40,534 sf	47.31%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	40,344 sf	47.09%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	39,706 sf	46.35%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	36,961 sf	43.14%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	33,624 sf	39.25%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	31,477 sf	36.74%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	29,084 sf	33.95%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	26,672 sf	31.13%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	21,782 sf	25.43%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	17,251 sf	20.14%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	12,862 sf	15.01%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	8,792 sf	10.26%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	3,885 sf	4.53%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	5,007 sf	5.84%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	7,616 sf	8.89%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	11,384 sf	13.29%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	16,010 sf	18.69%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	20,822 sf	24.30%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	24,143 sf	28.18%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	25,914 sf	30.25%	564 sf	0.66%	564 sf	0.66%	
3:00 PM	27,538 sf	32.14%	2,661 sf	3.11%	2,661 sf	3.11%	
3:15 PM	29,864 sf	34.86%	4,905 sf	5.73%	4,905 sf	5.73%	
3:30 PM	34,087 sf	39.79%	7,671 sf	8.95%	7,671 sf	8.95%	
3:45 PM	39,522 sf	46.13%	11,003 sf	12.84%	11,003 sf	12.84%	
4:00 PM	38,555 sf	45.00%	12,262 sf	14.31%	12,262 sf	14.31%	
4:15 PM	39,710 sf	46.35%	12,513 sf	14.61%	12,513 sf	14.61%	
4:30 PM	41,303 sf	48.21%	13,355 sf	15.59%	13,355 sf	15.59%	
4:45 PM	43,482 sf	50.76%	14,506 sf	16.93%	14,506 sf	16.93%	
5:00 PM	41,051 sf	47.92%	15,260 sf	17.81%	15,260 sf	17.81%	
5:15 PM	40,308 sf	47.05%	16,725 sf	19.52%	16,725 sf	19.52%	
5:30 PM	40,942 sf	47.79%	17,741 sf	20.71%	17,741 sf	20.71%	
5:45 PM	43,728 sf	51.04%	18,061 sf	21.08%	18,061 sf	21.08%	
6:00 PM	49,556 sf	57.85%	16,527 sf	19.29%	16,527 sf	19.29%	
6:15 PM	54,553 sf	63.68%	13,696 sf	15.99%	13,696 sf	15.99%	
6:30 PM	62,197 sf	72.60%	9,920 sf	11.58%	9,920 sf	11.58%	
6:45 PM	74,906 sf	87.44%	6,768 sf	7.90%	6,768 sf	7.90%	
7:00 PM	81,069 sf	94.63%	4,193 sf	4.89%	4,193 sf	4.89%	
7:15 PM	83,764 sf	97.78%	1,902 sf	2.22%	1,902 sf	2.22%	
7:36 PM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

JULY 5

Mirror date: June 7
Analysis hours: 6:52 AM-7:36 PM (PDT)

Shadow / Sunlight Balance Key



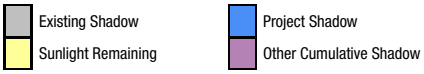
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
6:52 AM	70,060 sf	81.78%	0 sf	0.00%	0 sf	0.00%	
7:00 AM	67,121 sf	78.35%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	59,545 sf	69.51%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	53,405 sf	62.34%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	50,119 sf	58.50%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	47,202 sf	55.10%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	44,594 sf	52.05%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	43,868 sf	51.21%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	43,830 sf	51.16%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	43,026 sf	50.22%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	44,331 sf	51.75%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	43,738 sf	51.05%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	43,201 sf	50.43%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	42,540 sf	49.66%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	42,033 sf	49.06%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	40,924 sf	47.77%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	38,377 sf	44.80%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	34,817 sf	40.64%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	32,387 sf	37.80%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	29,911 sf	34.91%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	27,363 sf	31.94%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	22,593 sf	26.37%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	17,886 sf	20.88%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	13,782 sf	16.09%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	9,766 sf	11.40%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	4,992 sf	5.83%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	5,598 sf	6.53%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	8,090 sf	9.44%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	11,852 sf	13.83%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	15,650 sf	18.27%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	20,432 sf	23.85%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	23,909 sf	27.91%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	25,706 sf	30.01%	310 sf	0.36%	310 sf	0.36%	
3:00 PM	27,376 sf	31.96%	2,191 sf	2.56%	2,191 sf	2.56%	
3:15 PM	29,635 sf	34.59%	4,564 sf	5.33%	4,564 sf	5.33%	
3:30 PM	33,809 sf	39.46%	7,215 sf	8.42%	7,215 sf	8.42%	
3:45 PM	39,286 sf	45.86%	10,814 sf	12.62%	10,814 sf	12.62%	
4:00 PM	38,930 sf	45.44%	12,836 sf	14.98%	12,836 sf	14.98%	
4:15 PM	39,331 sf	45.91%	12,501 sf	14.59%	12,501 sf	14.59%	
4:30 PM	41,456 sf	48.39%	13,185 sf	15.39%	13,185 sf	15.39%	
4:45 PM	42,783 sf	49.94%	14,362 sf	16.76%	14,362 sf	16.76%	
5:00 PM	42,395 sf	49.49%	15,110 sf	17.64%	15,110 sf	17.64%	
5:15 PM	40,765 sf	47.58%	16,395 sf	19.14%	16,395 sf	19.14%	
5:30 PM	41,005 sf	47.86%	17,543 sf	20.48%	17,543 sf	20.48%	
5:45 PM	43,751 sf	51.07%	17,992 sf	21.00%	17,992 sf	21.00%	
6:00 PM	49,373 sf	57.63%	16,850 sf	19.67%	16,850 sf	19.67%	
6:15 PM	54,534 sf	63.66%	14,281 sf	16.67%	14,281 sf	16.67%	
6:30 PM	62,298 sf	72.72%	10,474 sf	12.23%	10,474 sf	12.23%	
6:45 PM	74,400 sf	86.85%	7,082 sf	8.27%	7,082 sf	8.27%	
7:00 PM	80,798 sf	94.31%	4,407 sf	5.14%	4,407 sf	5.14%	
7:15 PM	83,703 sf	97.70%	1,963 sf	2.29%	1,963 sf	2.29%	
7:36 PM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

JULY 12

Mirror date: May 31
Analysis hours: 6:56 AM-7:33 PM (PDT)

Shadow / Sunlight Balance Key



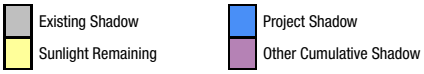
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
6:56 AM	69,106 sf	80.67%	0 sf	0.00%	0 sf	0.00%	
7:00 AM	67,668 sf	78.99%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	59,968 sf	70.00%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	54,027 sf	63.06%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	50,626 sf	59.09%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	47,354 sf	55.28%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	44,789 sf	52.28%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	44,632 sf	52.10%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	44,104 sf	51.48%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	45,125 sf	52.67%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	45,974 sf	53.66%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	45,792 sf	53.45%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	46,254 sf	53.99%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	45,812 sf	53.48%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	44,995 sf	52.52%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	42,973 sf	50.16%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	40,454 sf	47.22%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	36,543 sf	42.66%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	33,909 sf	39.58%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	31,349 sf	36.59%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	28,473 sf	33.24%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	23,622 sf	27.57%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	18,710 sf	21.84%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	14,649 sf	17.10%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	10,787 sf	12.59%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	6,428 sf	7.50%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	6,799 sf	7.94%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	9,188 sf	10.72%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	12,721 sf	14.85%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	15,893 sf	18.55%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	20,202 sf	23.58%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	23,685 sf	27.65%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	25,535 sf	29.81%	100 sf	0.12%	100 sf	0.12%	
3:00 PM	27,226 sf	31.78%	1,563 sf	1.82%	1,563 sf	1.82%	
3:15 PM	29,511 sf	34.45%	4,069 sf	4.75%	4,069 sf	4.75%	
3:30 PM	33,711 sf	39.35%	6,693 sf	7.81%	6,693 sf	7.81%	
3:45 PM	38,855 sf	45.35%	10,215 sf	11.92%	10,215 sf	11.92%	
4:00 PM	39,648 sf	46.28%	13,748 sf	16.05%	13,748 sf	16.05%	
4:15 PM	38,923 sf	45.43%	12,951 sf	15.12%	12,951 sf	15.12%	
4:30 PM	40,987 sf	47.84%	13,194 sf	15.40%	13,194 sf	15.40%	
4:45 PM	43,008 sf	50.20%	14,186 sf	16.56%	14,186 sf	16.56%	
5:00 PM	45,096 sf	52.64%	14,938 sf	17.44%	14,938 sf	17.44%	
5:15 PM	42,085 sf	49.12%	15,923 sf	18.59%	15,923 sf	18.59%	
5:30 PM	41,247 sf	48.15%	17,107 sf	19.97%	17,107 sf	19.97%	
5:45 PM	43,999 sf	51.36%	17,795 sf	20.77%	17,795 sf	20.77%	
6:00 PM	49,485 sf	57.76%	17,061 sf	19.91%	17,061 sf	19.91%	
6:15 PM	54,908 sf	64.09%	14,895 sf	17.39%	14,895 sf	17.39%	
6:30 PM	63,392 sf	74.00%	11,109 sf	12.97%	11,109 sf	12.97%	
6:45 PM	74,133 sf	86.53%	7,503 sf	8.76%	7,503 sf	8.76%	
7:00 PM	80,642 sf	94.13%	4,536 sf	5.29%	4,536 sf	5.29%	
7:15 PM	83,516 sf	97.49%	2,151 sf	2.51%	2,151 sf	2.51%	
7:33 PM	85,634 sf	99.96%	32 sf	0.04%	32 sf	0.04%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

JULY 19

Mirror date: May 24
Analysis hours: 7:01 AM-7:30 PM (PDT)

Shadow / Sunlight Balance Key



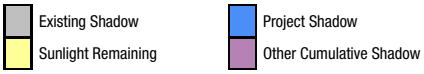
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:01 AM	67,548 sf	78.85%	0 sf	0.00%	0 sf	0.00%	
7:16 AM	59,951 sf	69.98%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	54,975 sf	64.17%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	50,895 sf	59.41%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	47,442 sf	55.38%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	45,640 sf	53.27%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	45,490 sf	53.10%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	44,921 sf	52.44%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	47,898 sf	55.91%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	49,048 sf	57.25%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	50,094 sf	58.47%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	50,604 sf	59.07%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	50,173 sf	58.57%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	48,342 sf	56.43%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	45,571 sf	53.19%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	43,476 sf	50.75%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	38,933 sf	45.45%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	36,036 sf	42.06%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	33,291 sf	38.86%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	29,948 sf	34.96%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	24,683 sf	28.81%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	19,673 sf	22.96%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	15,666 sf	18.29%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	11,998 sf	14.01%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	7,817 sf	9.12%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	8,200 sf	9.57%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	10,783 sf	12.59%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	14,211 sf	16.59%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	17,211 sf	20.09%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	21,023 sf	24.54%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	23,415 sf	27.33%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	25,358 sf	29.60%	35 sf	0.04%	35 sf	0.04%	
3:00 PM	27,052 sf	31.58%	937 sf	1.09%	937 sf	1.09%	
3:15 PM	29,463 sf	34.39%	3,087 sf	3.60%	3,087 sf	3.60%	
3:30 PM	33,953 sf	39.63%	6,050 sf	7.06%	6,050 sf	7.06%	
3:45 PM	38,330 sf	44.74%	9,414 sf	10.99%	9,414 sf	10.99%	
4:00 PM	39,658 sf	46.29%	13,385 sf	15.62%	13,385 sf	15.62%	
4:15 PM	39,504 sf	46.11%	13,994 sf	16.33%	13,994 sf	16.33%	
4:30 PM	40,587 sf	47.38%	13,267 sf	15.49%	13,267 sf	15.49%	
4:45 PM	43,331 sf	50.58%	13,890 sf	16.21%	13,890 sf	16.21%	
5:00 PM	47,397 sf	55.32%	14,773 sf	17.24%	14,773 sf	17.24%	
5:15 PM	45,064 sf	52.60%	15,462 sf	18.05%	15,462 sf	18.05%	
5:30 PM	42,449 sf	49.55%	16,571 sf	19.34%	16,571 sf	19.34%	
5:45 PM	44,356 sf	51.78%	17,558 sf	20.49%	17,558 sf	20.49%	
6:00 PM	49,864 sf	58.21%	16,954 sf	19.79%	16,954 sf	19.79%	
6:15 PM	55,879 sf	65.23%	15,296 sf	17.86%	15,296 sf	17.86%	
6:30 PM	66,201 sf	77.27%	11,774 sf	13.74%	11,774 sf	13.74%	
6:45 PM	74,203 sf	86.62%	8,043 sf	9.39%	8,043 sf	9.39%	
7:00 PM	80,325 sf	93.76%	4,550 sf	5.31%	4,550 sf	5.31%	
7:15 PM	83,391 sf	97.34%	2,275 sf	2.66%	2,275 sf	2.66%	
7:30 PM	85,460 sf	99.76%	207 sf	0.24%	207 sf	0.24%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

JULY 26

Mirror date: May 17
Analysis hours: 7:07 AM-7:25 PM (PDT)

Shadow / Sunlight Balance Key



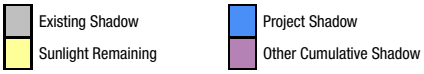
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:07 AM	64,672 sf	75.49%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	61,804 sf	72.14%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	55,936 sf	65.29%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	51,090 sf	59.64%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	47,692 sf	55.67%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	47,067 sf	54.94%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	47,350 sf	55.27%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	50,742 sf	59.23%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	52,678 sf	61.49%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	55,119 sf	64.34%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	55,957 sf	65.32%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	55,089 sf	64.30%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	54,374 sf	63.47%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	52,405 sf	61.17%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	48,664 sf	56.80%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	46,794 sf	54.62%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	41,910 sf	48.92%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	38,582 sf	45.04%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	35,532 sf	41.48%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	31,813 sf	37.13%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	26,098 sf	30.46%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	20,793 sf	24.27%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	16,992 sf	19.83%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	13,555 sf	15.82%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	9,498 sf	11.09%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	10,021 sf	11.70%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	12,451 sf	14.53%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	15,665 sf	18.28%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	18,870 sf	22.03%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	22,507 sf	26.27%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	24,175 sf	28.22%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	25,369 sf	29.61%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	26,994 sf	31.51%	523 sf	0.61%	523 sf	0.61%	
3:15 PM	29,674 sf	34.64%	2,047 sf	2.39%	2,047 sf	2.39%	
3:30 PM	34,378 sf	40.13%	4,991 sf	5.83%	4,991 sf	5.83%	
3:45 PM	37,745 sf	44.06%	8,191 sf	9.56%	8,191 sf	9.56%	
4:00 PM	39,168 sf	45.72%	11,895 sf	13.88%	11,895 sf	13.88%	
4:15 PM	40,491 sf	47.26%	14,199 sf	16.57%	14,199 sf	16.57%	
4:30 PM	40,116 sf	46.83%	14,013 sf	16.36%	14,013 sf	16.36%	
4:45 PM	42,966 sf	50.15%	13,741 sf	16.04%	13,741 sf	16.04%	
5:00 PM	47,167 sf	55.06%	14,437 sf	16.85%	14,437 sf	16.85%	
5:15 PM	49,332 sf	57.58%	15,149 sf	17.68%	15,149 sf	17.68%	
5:30 PM	45,596 sf	53.22%	15,908 sf	18.57%	15,908 sf	18.57%	
5:45 PM	45,179 sf	52.74%	16,777 sf	19.58%	16,777 sf	19.58%	
6:00 PM	50,487 sf	58.93%	16,621 sf	19.40%	16,621 sf	19.40%	
6:15 PM	57,539 sf	67.16%	15,328 sf	17.89%	15,328 sf	17.89%	
6:30 PM	67,862 sf	79.21%	12,458 sf	14.54%	12,458 sf	14.54%	
6:45 PM	74,394 sf	86.84%	8,510 sf	9.93%	8,510 sf	9.93%	
7:00 PM	79,984 sf	93.36%	4,703 sf	5.49%	4,703 sf	5.49%	
7:15 PM	83,554 sf	97.53%	2,115 sf	2.47%	2,115 sf	2.47%	
7:25 PM	84,627 sf	98.78%	1,039 sf	1.21%	1,039 sf	1.21%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

AUGUST 2

Mirror date: May 10
Analysis hours: 7:12 AM-7:18 PM (PDT)

Shadow / Sunlight Balance Key



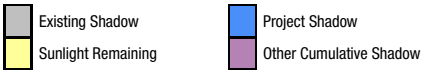
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:12 AM	63,493 sf	74.11%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	62,668 sf	73.15%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	56,617 sf	66.09%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	51,407 sf	60.01%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	49,319 sf	57.57%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	50,620 sf	59.09%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	54,504 sf	63.62%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	56,990 sf	66.52%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	59,314 sf	69.24%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	60,876 sf	71.06%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	61,520 sf	71.81%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	59,758 sf	69.75%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	58,400 sf	68.17%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	56,636 sf	66.11%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	51,679 sf	60.32%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	49,572 sf	57.86%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	44,842 sf	52.34%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	41,354 sf	48.27%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	37,936 sf	44.28%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	33,566 sf	39.18%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	27,432 sf	32.02%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	21,944 sf	25.61%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	18,452 sf	21.54%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	15,292 sf	17.85%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	11,477 sf	13.40%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	12,422 sf	14.50%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	14,594 sf	17.04%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	17,580 sf	20.52%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	20,337 sf	23.74%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	23,952 sf	27.96%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	25,398 sf	29.65%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	26,367 sf	30.78%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	27,238 sf	31.79%	156 sf	0.18%	156 sf	0.18%	
3:15 PM	30,016 sf	35.04%	1,313 sf	1.53%	1,313 sf	1.53%	
3:30 PM	35,211 sf	41.10%	3,762 sf	4.39%	3,762 sf	4.39%	
3:45 PM	37,124 sf	43.33%	6,518 sf	7.61%	6,518 sf	7.61%	
4:00 PM	38,638 sf	45.10%	10,305 sf	12.03%	10,305 sf	12.03%	
4:15 PM	41,008 sf	47.87%	11,986 sf	13.99%	11,986 sf	13.99%	
4:30 PM	41,400 sf	48.32%	14,652 sf	17.10%	14,652 sf	17.10%	
4:45 PM	43,614 sf	50.91%	14,133 sf	16.50%	14,133 sf	16.50%	
5:00 PM	47,322 sf	55.24%	13,880 sf	16.20%	13,880 sf	16.20%	
5:15 PM	51,540 sf	60.16%	14,894 sf	17.39%	14,894 sf	17.39%	
5:30 PM	50,237 sf	58.64%	15,527 sf	18.12%	15,527 sf	18.12%	
5:45 PM	47,970 sf	55.99%	15,798 sf	18.44%	15,798 sf	18.44%	
6:00 PM	51,442 sf	60.05%	15,986 sf	18.66%	15,986 sf	18.66%	
6:15 PM	59,622 sf	69.59%	14,747 sf	17.21%	14,747 sf	17.21%	
6:30 PM	68,894 sf	80.42%	12,723 sf	14.85%	12,723 sf	14.85%	
6:45 PM	74,882 sf	87.41%	8,693 sf	10.15%	8,693 sf	10.15%	
7:00 PM	79,708 sf	93.04%	5,007 sf	5.84%	5,007 sf	5.84%	
7:15 PM	84,542 sf	98.68%	1,125 sf	1.31%	1,125 sf	1.31%	
7:18 PM	84,730 sf	98.90%	936 sf	1.09%	936 sf	1.09%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

AUGUST 9

Mirror date: May 3
Analysis hours: 7:19 AM-7:10 PM (PDT)

Shadow / Sunlight Balance Key



Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:19 AM	61,664 sf	71.98%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	57,491 sf	67.11%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	53,240 sf	62.15%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	52,509 sf	61.29%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	56,482 sf	65.93%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	59,700 sf	69.69%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	62,473 sf	72.92%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	65,105 sf	76.00%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	67,066 sf	78.28%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	67,656 sf	78.97%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	65,398 sf	76.34%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	62,691 sf	73.18%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	60,514 sf	70.64%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	54,631 sf	63.77%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	52,191 sf	60.92%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	47,821 sf	55.82%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	43,727 sf	51.04%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	40,143 sf	46.86%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	35,097 sf	40.97%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	28,694 sf	33.49%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	23,270 sf	27.16%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	20,179 sf	23.55%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	17,329 sf	20.23%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	13,812 sf	16.12%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	15,323 sf	17.89%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	17,167 sf	20.04%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	19,705 sf	23.00%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	22,166 sf	25.87%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	25,044 sf	29.23%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	26,427 sf	30.85%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	27,570 sf	32.18%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	28,462 sf	33.22%	15 sf	0.02%	15 sf	0.02%	
3:15 PM	31,068 sf	36.26%	722 sf	0.84%	722 sf	0.84%	
3:30 PM	35,139 sf	41.02%	2,570 sf	3.00%	2,570 sf	3.00%	
3:45 PM	36,551 sf	42.66%	5,106 sf	5.96%	5,106 sf	5.96%	
4:00 PM	38,094 sf	44.47%	8,385 sf	9.79%	8,385 sf	9.79%	
4:15 PM	41,432 sf	48.36%	9,451 sf	11.03%	9,451 sf	11.03%	
4:30 PM	43,509 sf	50.79%	11,275 sf	13.16%	11,275 sf	13.16%	
4:45 PM	44,854 sf	52.36%	14,192 sf	16.57%	14,192 sf	16.57%	
5:00 PM	47,363 sf	55.29%	13,958 sf	16.29%	13,958 sf	16.29%	
5:15 PM	51,070 sf	59.61%	14,522 sf	16.95%	14,522 sf	16.95%	
5:30 PM	55,167 sf	64.40%	15,045 sf	17.56%	15,045 sf	17.56%	
5:45 PM	52,232 sf	60.97%	15,021 sf	17.53%	15,021 sf	17.53%	
6:00 PM	53,887 sf	62.90%	14,842 sf	17.32%	14,842 sf	17.32%	
6:15 PM	62,183 sf	72.58%	14,249 sf	16.63%	14,249 sf	16.63%	
6:30 PM	70,069 sf	81.79%	12,107 sf	14.13%	12,107 sf	14.13%	
6:45 PM	75,651 sf	88.31%	8,759 sf	10.22%	8,759 sf	10.22%	
7:10 PM	84,946 sf	99.16%	721 sf	0.84%	721 sf	0.84%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

AUGUST 16

Mirror date: April 26
Analysis hours: 7:25 AM-7:02 PM (PDT)

Shadow / Sunlight Balance Key

Existing Shadow
Project Shadow
Sunlight Remaining
Other Cumulative Shadow

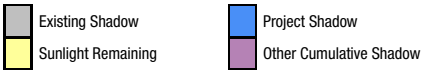
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:25 AM	60,427 sf	70.54%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	59,683 sf	69.67%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	56,864 sf	66.38%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	59,588 sf	69.56%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	61,937 sf	72.30%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	63,801 sf	74.47%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	67,149 sf	78.38%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	70,735 sf	82.57%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	72,911 sf	85.11%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	73,689 sf	86.02%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	70,923 sf	82.79%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	66,510 sf	77.64%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	63,904 sf	74.59%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	57,567 sf	67.20%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	54,836 sf	64.01%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	50,297 sf	58.71%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	46,027 sf	53.73%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	42,615 sf	49.74%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	37,846 sf	44.18%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	31,860 sf	37.19%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	26,974 sf	31.49%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	23,581 sf	27.53%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	20,930 sf	24.43%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	17,015 sf	19.86%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	18,550 sf	21.65%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	19,965 sf	23.30%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	22,118 sf	25.82%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	24,119 sf	28.15%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	26,275 sf	30.67%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	27,603 sf	32.22%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	28,809 sf	33.63%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	30,123 sf	35.16%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	32,874 sf	38.37%	410 sf	0.48%	410 sf	0.48%	
3:30 PM	34,861 sf	40.69%	1,662 sf	1.94%	1,662 sf	1.94%	
3:45 PM	36,022 sf	42.05%	3,648 sf	4.26%	3,648 sf	4.26%	
4:00 PM	37,692 sf	44.00%	6,424 sf	7.50%	6,424 sf	7.50%	
4:15 PM	39,856 sf	46.52%	8,800 sf	10.27%	8,800 sf	10.27%	
4:30 PM	45,645 sf	53.28%	7,212 sf	8.42%	7,212 sf	8.42%	
4:45 PM	47,420 sf	55.35%	9,370 sf	10.94%	9,370 sf	10.94%	
5:00 PM	48,520 sf	56.64%	12,938 sf	15.10%	12,938 sf	15.10%	
5:15 PM	51,621 sf	60.26%	13,461 sf	15.71%	13,461 sf	15.71%	
5:30 PM	55,291 sf	64.54%	14,208 sf	16.59%	14,208 sf	16.59%	
5:45 PM	56,803 sf	66.30%	14,392 sf	16.80%	14,392 sf	16.80%	
6:00 PM	56,600 sf	66.07%	13,913 sf	16.24%	13,913 sf	16.24%	
6:15 PM	64,152 sf	74.88%	13,048 sf	15.23%	13,048 sf	15.23%	
6:30 PM	70,802 sf	82.65%	11,527 sf	13.45%	11,527 sf	13.45%	
6:45 PM	77,497 sf	90.46%	8,005 sf	9.34%	8,005 sf	9.34%	
7:02 PM	84,358 sf	98.47%	1,308 sf	1.53%	1,308 sf	1.53%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

AUGUST 23

Mirror date: April 19
Analysis hours: 7:31 AM-6:52 PM (PDT)

Shadow / Sunlight Balance Key



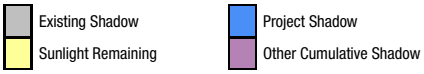
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:31 AM	63,881 sf	74.57%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	65,251 sf	76.17%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	65,624 sf	76.60%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	66,225 sf	77.30%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	68,618 sf	80.10%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	71,978 sf	84.02%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	75,955 sf	88.66%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	78,026 sf	91.08%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	79,879 sf	93.24%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	76,929 sf	89.80%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	71,506 sf	83.47%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	67,811 sf	79.15%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	60,840 sf	71.02%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	57,308 sf	66.89%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	52,362 sf	61.12%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	48,133 sf	56.18%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	45,239 sf	52.81%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	41,840 sf	48.84%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	35,795 sf	41.78%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	31,300 sf	36.54%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	29,091 sf	33.96%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	27,937 sf	32.61%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	25,314 sf	29.55%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	25,431 sf	29.68%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	24,462 sf	28.55%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	25,195 sf	29.41%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	26,166 sf	30.54%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	27,734 sf	32.37%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	29,013 sf	33.87%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	30,374 sf	35.45%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	32,135 sf	37.51%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	34,438 sf	40.20%	115 sf	0.13%	115 sf	0.13%	
3:30 PM	34,830 sf	40.66%	1,004 sf	1.17%	1,004 sf	1.17%	
3:45 PM	35,854 sf	41.85%	2,690 sf	3.14%	2,690 sf	3.14%	
4:00 PM	37,380 sf	43.63%	4,778 sf	5.58%	4,778 sf	5.58%	
4:15 PM	38,933 sf	45.45%	7,512 sf	8.77%	7,512 sf	8.77%	
4:30 PM	44,429 sf	51.86%	6,636 sf	7.75%	6,636 sf	7.75%	
4:45 PM	49,994 sf	58.36%	4,521 sf	5.28%	4,521 sf	5.28%	
5:00 PM	51,147 sf	59.70%	9,350 sf	10.91%	9,350 sf	10.91%	
5:15 PM	52,740 sf	61.56%	11,160 sf	13.03%	11,160 sf	13.03%	
5:30 PM	57,007 sf	66.54%	11,913 sf	13.91%	11,913 sf	13.91%	
5:45 PM	60,732 sf	70.89%	13,525 sf	15.79%	13,525 sf	15.79%	
6:00 PM	59,199 sf	69.10%	13,224 sf	15.44%	13,224 sf	15.44%	
6:15 PM	64,571 sf	75.37%	12,075 sf	14.09%	12,075 sf	14.09%	
6:30 PM	73,148 sf	85.38%	9,972 sf	11.64%	9,972 sf	11.64%	
6:45 PM	80,274 sf	93.70%	5,191 sf	6.06%	5,191 sf	6.06%	
6:52 PM	83,284 sf	97.22%	2,382 sf	2.78%	2,382 sf	2.78%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

AUGUST 30

Mirror date: April 12
Analysis hours: 7:37 AM-6:42 PM (PDT)

Shadow / Sunlight Balance Key



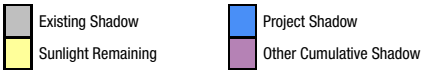
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:37 AM	72,928 sf	85.13%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	71,765 sf	83.77%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	69,961 sf	81.66%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	71,019 sf	82.90%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	73,386 sf	85.66%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	76,858 sf	89.71%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	80,039 sf	93.43%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	82,948 sf	96.82%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	85,452 sf	99.75%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	82,022 sf	95.74%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	76,563 sf	89.37%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	71,222 sf	83.14%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	64,350 sf	75.11%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	59,204 sf	69.11%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	54,081 sf	63.13%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	50,403 sf	58.83%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	48,446 sf	56.55%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	45,787 sf	53.45%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	39,575 sf	46.20%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	36,284 sf	42.35%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	35,462 sf	41.39%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	35,970 sf	41.99%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	33,351 sf	38.93%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	31,902 sf	37.24%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	30,521 sf	35.63%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	30,705 sf	35.84%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	30,647 sf	35.77%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	30,871 sf	36.03%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	31,193 sf	36.41%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	32,769 sf	38.25%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	34,701 sf	40.51%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	35,496 sf	41.43%	5 sf	0.01%	5 sf	0.01%	
3:30 PM	35,242 sf	41.14%	472 sf	0.55%	472 sf	0.55%	
3:45 PM	35,956 sf	41.97%	1,617 sf	1.89%	1,617 sf	1.89%	
4:00 PM	37,181 sf	43.40%	3,677 sf	4.29%	3,677 sf	4.29%	
4:15 PM	38,659 sf	45.13%	5,812 sf	6.78%	5,812 sf	6.78%	
4:30 PM	41,163 sf	48.05%	7,907 sf	9.23%	7,907 sf	9.23%	
4:45 PM	49,273 sf	57.52%	3,458 sf	4.04%	3,458 sf	4.04%	
5:00 PM	53,978 sf	63.01%	3,339 sf	3.90%	3,339 sf	3.90%	
5:15 PM	56,214 sf	65.62%	8,945 sf	10.44%	8,945 sf	10.44%	
5:30 PM	60,572 sf	70.70%	9,509 sf	11.10%	9,509 sf	11.10%	
5:45 PM	63,638 sf	74.28%	10,351 sf	12.08%	10,351 sf	12.08%	
6:00 PM	62,629 sf	73.11%	12,007 sf	14.02%	12,007 sf	14.02%	
6:15 PM	64,567 sf	75.37%	10,503 sf	12.26%	10,503 sf	12.26%	
6:30 PM	75,411 sf	88.03%	7,514 sf	8.77%	7,514 sf	8.77%	
6:42 PM	82,392 sf	96.17%	3,259 sf	3.80%	3,259 sf	3.80%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

SEPTEMBER 6

Mirror date: April 5
Analysis hours: 7:44 AM-6:31 PM (PDT)

Shadow / Sunlight Balance Key



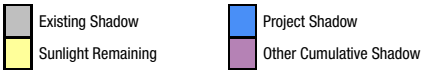
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:44 AM	75,530 sf	88.16%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	74,495 sf	86.96%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	75,537 sf	88.17%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	78,019 sf	91.07%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	80,729 sf	94.23%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	83,056 sf	96.95%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	85,507 sf	99.81%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	85,303 sf	99.57%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	81,190 sf	94.77%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	77,682 sf	90.68%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	71,994 sf	84.04%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	66,857 sf	78.04%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	61,028 sf	71.24%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	55,852 sf	65.20%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	53,044 sf	61.92%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	52,728 sf	61.55%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	48,884 sf	57.06%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	42,369 sf	49.46%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	41,124 sf	48.00%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	42,270 sf	49.34%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	44,794 sf	52.29%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	41,068 sf	47.94%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	38,447 sf	44.88%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	36,496 sf	42.60%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	37,005 sf	43.19%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	36,084 sf	42.12%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	35,808 sf	41.80%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	35,894 sf	41.90%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	38,366 sf	44.78%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	39,484 sf	46.09%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	38,346 sf	44.76%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	37,240 sf	43.47%	168 sf	0.20%	168 sf	0.20%	
3:45 PM	37,483 sf	43.75%	908 sf	1.06%	908 sf	1.06%	
4:00 PM	37,510 sf	43.79%	2,474 sf	2.89%	2,474 sf	2.89%	
4:15 PM	38,605 sf	45.06%	4,338 sf	5.06%	4,338 sf	5.06%	
4:30 PM	40,353 sf	47.10%	6,729 sf	7.85%	6,729 sf	7.85%	
4:45 PM	45,855 sf	53.53%	5,451 sf	6.36%	5,451 sf	6.36%	
5:00 PM	54,999 sf	64.20%	749 sf	0.87%	749 sf	0.87%	
5:15 PM	61,149 sf	71.38%	2,835 sf	3.31%	2,835 sf	3.31%	
5:30 PM	65,022 sf	75.90%	8,468 sf	9.88%	8,468 sf	9.88%	
5:45 PM	69,208 sf	80.79%	7,471 sf	8.72%	7,471 sf	8.72%	
6:00 PM	68,952 sf	80.49%	7,734 sf	9.03%	7,734 sf	9.03%	
6:15 PM	71,260 sf	83.18%	4,582 sf	5.35%	4,582 sf	5.35%	
6:31 PM	78,404 sf	91.52%	3,607 sf	4.21%	3,607 sf	4.21%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

SEPTEMBER 13

Mirror date: March 29
Analysis hours: 7:50 AM-6:21 PM (PDT)

Shadow / Sunlight Balance Key



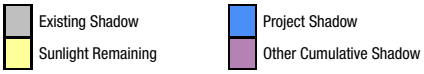
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:50 AM	78,117 sf	91.18%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	78,154 sf	91.23%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	79,229 sf	92.48%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	81,136 sf	94.71%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	83,395 sf	97.35%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	85,530 sf	99.84%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	85,452 sf	99.75%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	84,887 sf	99.09%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	81,663 sf	95.32%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	78,688 sf	91.85%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	75,303 sf	87.90%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	70,663 sf	82.48%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	63,818 sf	74.49%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	58,822 sf	68.66%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	57,366 sf	66.96%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	56,767 sf	66.26%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	52,305 sf	61.05%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	46,035 sf	53.74%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	47,262 sf	55.17%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	50,697 sf	59.18%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	53,428 sf	62.37%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	48,459 sf	56.56%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	45,294 sf	52.87%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	42,754 sf	49.91%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	43,234 sf	50.47%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	41,482 sf	48.42%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	40,662 sf	47.46%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	40,617 sf	47.41%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	43,069 sf	50.27%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	44,471 sf	51.91%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	43,234 sf	50.47%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	41,737 sf	48.72%	25 sf	0.03%	25 sf	0.03%	
3:45 PM	40,922 sf	47.77%	449 sf	0.52%	449 sf	0.52%	
4:00 PM	40,530 sf	47.31%	1,550 sf	1.81%	1,550 sf	1.81%	
4:15 PM	40,804 sf	47.63%	3,221 sf	3.76%	3,221 sf	3.76%	
4:30 PM	40,705 sf	47.51%	5,090 sf	5.94%	5,090 sf	5.94%	
4:45 PM	44,087 sf	51.46%	6,544 sf	7.64%	6,544 sf	7.64%	
5:00 PM	54,563 sf	63.69%	2,417 sf	2.82%	2,417 sf	2.82%	
5:15 PM	62,540 sf	73.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	70,464 sf	82.25%	2,145 sf	2.50%	2,145 sf	2.50%	
5:45 PM	75,373 sf	87.98%	6,400 sf	7.47%	6,400 sf	7.47%	
6:00 PM	77,326 sf	90.26%	1,246 sf	1.45%	1,246 sf	1.45%	
6:15 PM	76,382 sf	89.16%	783 sf	0.91%	783 sf	0.91%	
6:21 PM	76,798 sf	89.64%	713 sf	0.83%	713 sf	0.83%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

SEPTEMBER 20

Fall equinox (Spring equinox on March 22 similar)
Analysis hours: 7:57 AM-6:09 PM (PDT)

Shadow / Sunlight Balance Key



Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:57 AM	80,375 sf	93.82%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	80,464 sf	93.92%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	81,552 sf	95.19%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	83,645 sf	97.64%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	85,587 sf	99.90%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	85,451 sf	99.74%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	85,669 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	85,668 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	81,487 sf	95.12%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	78,847 sf	92.04%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	77,801 sf	90.82%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	73,784 sf	86.13%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	67,672 sf	78.99%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	62,359 sf	72.79%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	62,863 sf	73.38%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	61,152 sf	71.38%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	56,762 sf	66.26%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	51,294 sf	59.87%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	55,634 sf	64.94%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	61,400 sf	71.67%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	62,117 sf	72.51%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	56,433 sf	65.87%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	52,657 sf	61.47%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	49,361 sf	57.62%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	49,169 sf	57.39%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	46,544 sf	54.33%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	44,649 sf	52.12%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	44,352 sf	51.77%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	46,260 sf	54.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	48,176 sf	56.23%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	48,179 sf	56.24%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	46,079 sf	53.79%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	45,631 sf	53.26%	175 sf	0.20%	175 sf	0.20%	
4:00 PM	44,231 sf	51.63%	899 sf	1.05%	899 sf	1.05%	
4:15 PM	45,312 sf	52.89%	2,182 sf	2.55%	2,182 sf	2.55%	
4:30 PM	45,914 sf	53.59%	3,903 sf	4.56%	3,903 sf	4.56%	
4:45 PM	48,929 sf	57.11%	5,394 sf	6.30%	5,394 sf	6.30%	
5:00 PM	56,297 sf	65.71%	3,000 sf	3.50%	3,000 sf	3.50%	
5:15 PM	65,554 sf	76.52%	319 sf	0.37%	319 sf	0.37%	
5:30 PM	76,250 sf	89.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	79,500 sf	92.80%	630 sf	0.74%	630 sf	0.74%	
6:00 PM	83,027 sf	96.92%	1,707 sf	1.99%	1,707 sf	1.99%	
6:09 PM	80,226 sf	93.65%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

SEPTEMBER 27

Mirror date: March 15
Analysis hours: 8:03 AM-5:58 PM (PDT)

Shadow / Sunlight Balance Key

Existing Shadow
Project Shadow
Sunlight Remaining
Other Cumulative Shadow

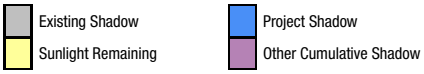
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:03 AM	82,343 sf	96.12%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	84,029 sf	98.09%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	85,620 sf	99.94%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	85,462 sf	99.76%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	85,667 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	85,430 sf	99.72%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	81,493 sf	95.13%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	79,575 sf	92.89%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	76,300 sf	89.06%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	71,464 sf	83.42%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	67,360 sf	78.63%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	64,603 sf	75.41%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	65,247 sf	76.16%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	65,680 sf	76.67%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	61,642 sf	71.95%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	59,799 sf	69.80%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	68,079 sf	79.47%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	75,848 sf	88.54%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	72,319 sf	84.42%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	64,952 sf	75.82%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	60,627 sf	70.77%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	56,305 sf	65.72%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	55,367 sf	64.63%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	50,899 sf	59.41%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	47,930 sf	55.95%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	46,843 sf	54.68%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	48,226 sf	56.29%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	50,368 sf	58.79%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	51,925 sf	60.61%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	50,210 sf	58.61%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	50,564 sf	59.02%	36 sf	0.04%	36 sf	0.04%	
4:00 PM	50,086 sf	58.46%	473 sf	0.55%	473 sf	0.55%	
4:15 PM	50,025 sf	58.39%	1,380 sf	1.61%	1,380 sf	1.61%	
4:30 PM	52,484 sf	61.26%	2,782 sf	3.25%	2,782 sf	3.25%	
4:45 PM	58,742 sf	68.57%	2,204 sf	2.57%	2,204 sf	2.57%	
5:00 PM	63,960 sf	74.66%	2,931 sf	3.42%	2,931 sf	3.42%	
5:15 PM	80,820 sf	94.34%	396 sf	0.46%	396 sf	0.46%	
5:30 PM	81,126 sf	94.70%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	81,059 sf	94.62%	0 sf	0.00%	0 sf	0.00%	
5:58 PM	81,995 sf	95.71%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

OCTOBER 4

Mirror date: March 8
Analysis hours: 8:09 AM-5:47 PM (PDT)

Shadow / Sunlight Balance Key



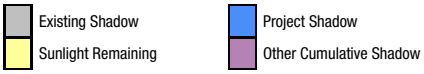
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:09 AM	85,413 sf	99.70%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	85,650 sf	99.98%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	85,471 sf	99.77%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	85,498 sf	99.80%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	84,568 sf	98.71%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	83,416 sf	97.37%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	80,413 sf	93.86%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	74,234 sf	86.65%	0 sf	0.00%	189 sf	0.22%	
10:30 AM	70,419 sf	82.20%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	67,217 sf	78.46%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	65,441 sf	76.39%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	66,737 sf	77.90%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	66,866 sf	78.05%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	62,728 sf	73.22%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	64,039 sf	74.75%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	73,544 sf	85.85%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	84,155 sf	98.23%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	78,332 sf	91.43%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	72,508 sf	84.64%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	68,051 sf	79.43%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	62,743 sf	73.24%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	60,894 sf	71.08%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	54,667 sf	63.81%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	51,197 sf	59.76%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	50,081 sf	58.46%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	50,805 sf	59.30%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	52,291 sf	61.04%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	53,676 sf	62.66%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	53,950 sf	62.97%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	55,599 sf	64.90%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	56,297 sf	65.71%	198 sf	0.23%	198 sf	0.23%	
4:15 PM	56,096 sf	65.48%	820 sf	0.96%	820 sf	0.96%	
4:30 PM	59,636 sf	69.61%	517 sf	0.60%	517 sf	0.60%	
4:45 PM	65,448 sf	76.40%	83 sf	0.10%	83 sf	0.10%	
5:00 PM	77,728 sf	90.73%	129 sf	0.15%	129 sf	0.15%	
5:15 PM	84,578 sf	98.73%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	84,761 sf	98.94%	0 sf	0.00%	0 sf	0.00%	
5:47 PM	85,668 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

OCTOBER 11

Mirror date: March 1
Analysis hours: 8:16 AM-5:37 PM (PDT)

Shadow / Sunlight Balance Key



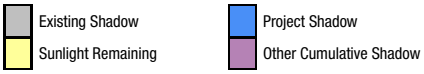
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:16 AM	85,667 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	85,616 sf	99.94%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	84,631 sf	98.79%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	84,716 sf	98.89%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	83,832 sf	97.86%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	79,747 sf	93.09%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	73,598 sf	85.91%	0 sf	0.00%	4,520 sf	5.28%	
10:30 AM	69,499 sf	81.12%	0 sf	0.00%	7,137 sf	8.33%	
10:45 AM	66,994 sf	78.20%	0 sf	0.00%	8 sf	0.01%	
11:00 AM	65,890 sf	76.91%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	67,361 sf	78.63%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	66,776 sf	77.95%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	64,575 sf	75.38%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	67,592 sf	78.90%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	76,708 sf	89.54%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	83,572 sf	97.55%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	76,898 sf	89.76%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	71,733 sf	83.73%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	68,076 sf	79.46%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	64,347 sf	75.11%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	63,256 sf	73.84%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	57,122 sf	66.68%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	53,811 sf	62.81%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	52,902 sf	61.75%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	53,225 sf	62.13%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	53,940 sf	62.96%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	55,936 sf	65.29%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	58,413 sf	68.18%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	60,478 sf	70.59%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	61,856 sf	72.20%	49 sf	0.06%	49 sf	0.06%	
4:15 PM	62,019 sf	72.39%	34 sf	0.04%	34 sf	0.04%	
4:30 PM	65,251 sf	76.17%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	73,711 sf	86.04%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	81,813 sf	95.50%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	84,391 sf	98.51%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	85,665 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
5:37 PM	85,668 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

OCTOBER 18

Mirror date: February 22
Analysis hours: 8:22 AM-5:27 PM (PDT)

Shadow / Sunlight Balance Key



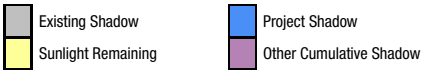
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:22 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	85,667 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	84,911 sf	99.11%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	84,634 sf	98.79%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	84,686 sf	98.85%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	81,030 sf	94.58%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	78,407 sf	91.52%	0 sf	0.00%	3,911 sf	4.57%	
10:15 AM	73,078 sf	85.30%	0 sf	0.00%	8,997 sf	10.50%	
10:30 AM	68,280 sf	79.70%	0 sf	0.00%	12,109 sf	14.13%	
10:45 AM	66,532 sf	77.66%	0 sf	0.00%	389 sf	0.45%	
11:00 AM	66,922 sf	78.12%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	67,538 sf	78.84%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	66,447 sf	77.56%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	67,115 sf	78.34%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	70,252 sf	82.00%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	79,230 sf	92.48%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	82,115 sf	95.85%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	76,050 sf	88.77%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	71,415 sf	83.36%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	67,967 sf	79.34%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	64,988 sf	75.86%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	64,424 sf	75.20%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	58,465 sf	68.25%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	55,083 sf	64.30%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	54,098 sf	63.15%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	54,251 sf	63.33%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	55,790 sf	65.12%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	58,955 sf	68.82%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	64,164 sf	74.90%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	65,599 sf	76.57%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	66,828 sf	78.01%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	68,545 sf	80.01%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	73,544 sf	85.85%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	78,118 sf	91.19%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	82,709 sf	96.54%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	85,492 sf	99.79%	0 sf	0.00%	0 sf	0.00%	
5:27 PM	85,667 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

OCTOBER 25

Mirror date: February 15
Analysis hours: 7:30 AM-4:18 PM (PST)

Shadow / Sunlight Balance Key



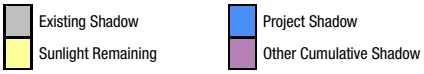
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:30 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	85,238 sf	99.50%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	84,600 sf	98.75%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	85,011 sf	99.23%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	84,712 sf	98.88%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	81,833 sf	95.52%	0 sf	0.00%	709 sf	0.83%	
9:00 AM	77,055 sf	89.94%	0 sf	0.00%	4,462 sf	5.21%	
9:15 AM	70,679 sf	82.50%	0 sf	0.00%	13,338 sf	15.57%	
9:30 AM	67,984 sf	79.36%	0 sf	0.00%	9,619 sf	11.23%	
9:45 AM	66,925 sf	78.12%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	67,489 sf	78.78%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	67,300 sf	78.56%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	67,389 sf	78.66%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	70,624 sf	82.44%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	72,245 sf	84.33%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	81,120 sf	94.69%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	81,071 sf	94.63%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	75,512 sf	88.14%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	71,484 sf	83.44%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	69,199 sf	80.77%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	67,435 sf	78.72%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	67,565 sf	78.87%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	61,280 sf	71.53%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	57,810 sf	67.48%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	56,018 sf	65.39%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	56,055 sf	65.43%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	57,837 sf	67.51%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	62,243 sf	72.66%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	67,681 sf	79.00%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	74,290 sf	86.72%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	76,153 sf	88.89%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	77,219 sf	90.14%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	79,279 sf	92.54%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	82,702 sf	96.54%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
4:18 PM	85,667 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

NOVEMBER 1

Mirror date: February 8
Analysis hours: 7:36 AM-4:10 PM (PST)

Shadow / Sunlight Balance Key



Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:36 AM	85,667 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	84,668 sf	98.83%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	84,857 sf	99.05%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	84,734 sf	98.91%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	85,594 sf	99.91%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	78,649 sf	91.80%	0 sf	0.00%	5,454 sf	6.37%	
9:15 AM	69,762 sf	81.43%	0 sf	0.00%	13,874 sf	16.20%	
9:30 AM	67,610 sf	78.92%	0 sf	0.00%	3,908 sf	4.56%	
9:45 AM	68,151 sf	79.55%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	72,270 sf	84.36%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	69,789 sf	81.46%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	68,389 sf	79.83%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	73,245 sf	85.50%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	73,451 sf	85.74%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	82,453 sf	96.25%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	80,395 sf	93.84%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	75,239 sf	87.82%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	72,371 sf	84.48%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	71,838 sf	83.85%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	71,033 sf	82.92%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	71,075 sf	82.96%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	65,497 sf	76.45%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	62,801 sf	73.31%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	61,403 sf	71.67%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	61,180 sf	71.41%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	62,010 sf	72.38%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	66,078 sf	77.13%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	74,249 sf	86.67%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	82,606 sf	96.42%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	82,426 sf	96.21%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	84,632 sf	98.79%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	80,736 sf	94.24%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	82,758 sf	96.60%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	85,669 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
4:10 PM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

NOVEMBER 8

Mirror date: February 1

Analysis hours: 7:43 AM-4:03 PM (PST)

Shadow / Sunlight Balance Key

Existing Shadow
Project Shadow
Sunlight Remaining
Other Cumulative Shadow

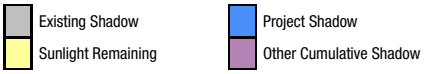
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:43 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	85,330 sf	99.60%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	84,896 sf	99.10%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	85,307 sf	99.58%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	82,383 sf	96.16%	0 sf	0.00%	2,310 sf	2.70%	
9:15 AM	74,687 sf	87.18%	0 sf	0.00%	6,454 sf	7.53%	
9:30 AM	67,822 sf	79.17%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	70,157 sf	81.89%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	78,820 sf	92.01%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	75,804 sf	88.48%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	71,069 sf	82.96%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	74,205 sf	86.62%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	74,344 sf	86.78%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	83,190 sf	97.11%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	80,101 sf	93.50%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	75,251 sf	87.84%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	73,690 sf	86.02%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	74,300 sf	86.73%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	72,843 sf	85.03%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	74,232 sf	86.65%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	71,283 sf	83.21%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	68,278 sf	79.70%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	67,063 sf	78.28%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	67,209 sf	78.45%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	67,413 sf	78.69%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	70,554 sf	82.36%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	80,194 sf	93.61%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	85,043 sf	99.27%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	85,196 sf	99.45%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	84,394 sf	98.51%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	82,676 sf	96.51%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	83,230 sf	97.15%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	85,530 sf	99.84%	0 sf	0.00%	0 sf	0.00%	
4:03 PM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

NOVEMBER 15

Mirror date: January 25
Analysis hours: 7:51 AM-3:57 PM (PST)

Shadow / Sunlight Balance Key



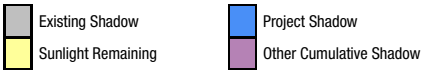
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:51 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	85,668 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	85,667 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	85,667 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	84,373 sf	98.49%	0 sf	0.00%	1,066 sf	1.24%	
9:15 AM	80,467 sf	93.93%	0 sf	0.00%	1,479 sf	1.73%	
9:30 AM	69,241 sf	80.82%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	73,351 sf	85.62%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	84,286 sf	98.39%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	81,273 sf	94.87%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	74,324 sf	86.76%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	74,691 sf	87.19%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	75,016 sf	87.56%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	83,409 sf	97.36%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	80,129 sf	93.53%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	75,483 sf	88.11%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	75,406 sf	88.02%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	75,718 sf	88.38%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	74,129 sf	86.53%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	76,368 sf	89.14%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	76,084 sf	88.81%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	72,807 sf	84.99%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	70,568 sf	82.37%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	70,853 sf	82.71%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	70,594 sf	82.40%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	71,750 sf	83.75%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	76,319 sf	89.09%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	85,614 sf	99.94%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	85,345 sf	99.62%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	85,407 sf	99.69%	0 sf	0.00%	0 sf	0.00%	
3:57 PM	85,668 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

NOVEMBER 22

Mirror date: January 18
Analysis hours: 7:57 AM-3:54 PM (PST)

Shadow / Sunlight Balance Key



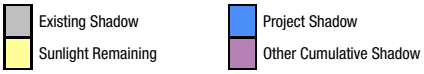
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:57 AM	85,668 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	85,667 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	85,669 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	84,756 sf	98.93%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	82,197 sf	95.95%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	71,714 sf	83.71%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	74,492 sf	86.95%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	85,667 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	85,432 sf	99.72%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	77,211 sf	90.13%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	74,791 sf	87.30%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	75,365 sf	87.97%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	83,148 sf	97.06%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	80,522 sf	93.99%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	76,281 sf	89.04%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	78,127 sf	91.20%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	77,279 sf	90.21%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	74,888 sf	87.41%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	77,687 sf	90.68%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	79,458 sf	92.75%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	77,297 sf	90.23%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	73,664 sf	85.99%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	72,966 sf	85.17%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	71,908 sf	83.94%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	71,683 sf	83.67%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	73,346 sf	85.61%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	83,724 sf	97.73%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	85,665 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	85,667 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	85,650 sf	99.98%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	85,667 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:54 PM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

NOVEMBER 29

Mirror date: January 11
Analysis hours: 8:04 AM-3:51 PM (PST)

Shadow / Sunlight Balance Key



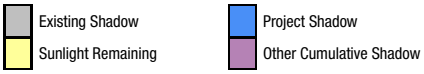
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:04 AM	85,668 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	85,668 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	84,680 sf	98.84%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	82,391 sf	96.17%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	73,970 sf	86.34%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	74,964 sf	87.50%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	85,669 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	80,233 sf	93.65%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	74,573 sf	87.05%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	75,533 sf	88.17%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	82,425 sf	96.21%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	81,327 sf	94.93%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	76,907 sf	89.77%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	79,846 sf	93.20%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	79,373 sf	92.65%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	76,114 sf	88.85%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	78,030 sf	91.08%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	82,320 sf	96.09%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	81,007 sf	94.56%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	76,550 sf	89.36%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	74,466 sf	86.92%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	72,558 sf	84.70%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	72,031 sf	84.08%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	73,223 sf	85.47%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	80,279 sf	93.71%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	85,667 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	85,668 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:51 PM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

DECEMBER 6

Mirror date: January 4
Analysis hours: 8:10 AM-3:51 PM (PST)

Shadow / Sunlight Balance Key



Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:10 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	84,711 sf	98.88%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	83,206 sf	97.12%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	76,477 sf	89.27%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	74,643 sf	87.13%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	82,332 sf	96.10%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	74,058 sf	86.45%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	76,212 sf	88.96%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	81,303 sf	94.90%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	82,482 sf	96.28%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	77,276 sf	90.20%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	80,786 sf	94.30%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	80,827 sf	94.35%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	78,518 sf	91.65%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	78,136 sf	91.21%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	83,866 sf	97.89%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	83,552 sf	97.53%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	79,271 sf	92.53%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	76,103 sf	88.83%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	73,548 sf	85.85%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	72,617 sf	84.76%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	73,367 sf	85.64%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	77,315 sf	90.25%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	85,667 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	85,668 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	85,668 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:51 PM	85,669 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

DECEMBER 13

Mirror date: December 28

Analysis hours: 8:15 AM-3:52 PM (PST)

Shadow / Sunlight Balance Key

Existing Shadow | Project Shadow | Sunlight Remaining | Other Cumulative Shadow

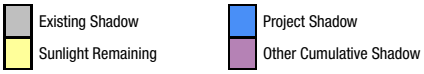
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:15 AM	85,668 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	85,667 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	85,669 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	84,936 sf	99.14%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	83,822 sf	97.84%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	78,701 sf	91.87%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	73,722 sf	86.05%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	85,593 sf	99.91%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	84,474 sf	98.60%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	76,311 sf	89.08%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	76,778 sf	89.62%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	79,816 sf	93.17%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	83,772 sf	97.78%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	78,299 sf	91.40%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	80,766 sf	94.28%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	81,421 sf	95.04%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	79,661 sf	92.99%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	78,620 sf	91.77%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	83,388 sf	97.34%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	84,810 sf	99.00%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	81,404 sf	95.02%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	77,670 sf	90.66%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	74,508 sf	86.97%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	73,094 sf	85.32%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	73,492 sf	85.79%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	76,349 sf	89.12%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	85,667 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:52 PM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Maritime Plaza (86,676 sf)

DECEMBER 20

Winter solstice (December 21 similar)
Analysis hours: 8:19 AM-3:54 PM (PST)

Shadow / Sunlight Balance Key



Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:19 AM	85,667 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	85,668 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	85,668 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	85,489 sf	99.79%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	84,215 sf	98.30%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	80,094 sf	93.49%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	72,486 sf	84.61%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	82,963 sf	96.84%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	79,520 sf	92.82%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	77,039 sf	89.93%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	78,089 sf	91.15%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	84,414 sf	98.53%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	79,173 sf	92.42%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	79,916 sf	93.28%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	81,602 sf	95.25%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	80,212 sf	93.63%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	78,568 sf	91.71%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	82,339 sf	96.11%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	85,246 sf	99.51%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	82,715 sf	96.55%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	78,915 sf	92.12%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	75,463 sf	88.09%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	73,557 sf	85.86%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	73,390 sf	85.67%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	75,524 sf	88.16%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	85,455 sf	99.75%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	85,669 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:54 PM	85,666 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

EXHIBIT F: FULL QUANTITATIVE SHADOW DATA SUE BIERMAN PARK

Annual Shadow Data

Charts with shadow data showing shadow sizes and square foot hours (sfh) of existing shadow conditions, net new shadow from project, and project + cumulative condition shadow that fall within the boundary of Sue Bierman Park.

Measurements are taken every 7 days between the summer solstice (6/21) and winter solstice (12/20) at 15-minute intervals between one hour after sunrise through one hour before sunset. This data is extrapolated for all other remaining dates and times to determine annual net new quantitative shadow effects of the project and the project + cumulative projects on Sue Bierman Park.

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

JUNE 21

Summer solstice

Analysis hours: 6:46 AM-7:36 PM (PDT)

Shadow / Sunlight Balance Key

Existing Shadow
Project Shadow
Sunlight Remaining
Other Cumulative Shadow

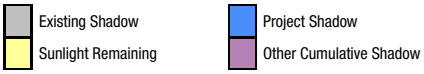
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
6:46 AM	3,797 sf	2.13%	0 sf	0.00%	0 sf	0.00%	
7:00 AM	315 sf	0.18%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	136 sf	0.08%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	64 sf	0.04%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	32 sf	0.02%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	12 sf	0.01%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	5 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	180 sf	0.10%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	2,875 sf	1.61%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	7,163 sf	4.01%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	11,809 sf	6.62%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	15,657 sf	8.77%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	19,227 sf	10.77%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	21,268 sf	11.92%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	22,486 sf	12.60%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	21,932 sf	12.29%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	21,440 sf	12.01%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	20,426 sf	11.45%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	20,510 sf	11.49%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	19,349 sf	10.84%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	20,041 sf	11.23%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	21,067 sf	11.81%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	24,288 sf	13.61%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	23,205 sf	13.00%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	22,940 sf	12.85%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	19,517 sf	10.94%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	18,322 sf	10.27%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	14,603 sf	8.18%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	12,817 sf	7.18%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	8,137 sf	4.56%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	5,748 sf	3.22%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	2,837 sf	1.59%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	447 sf	0.25%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	3,715 sf	2.08%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	11,249 sf	6.30%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	18,416 sf	10.32%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	24,481 sf	13.72%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	29,658 sf	16.62%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	33,290 sf	18.65%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	32,858 sf	18.41%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	33,301 sf	18.66%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	43,446 sf	24.35%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	63,293 sf	35.47%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	94,408 sf	52.90%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	136,779 sf	76.65%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	174,917 sf	98.02%	0 sf	0.00%	0 sf	0.00%	
7:36 PM	177,325 sf	99.37%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

JUNE 28

Mirror date: June 14
Analysis hours: 6:48 AM-7:36 PM (PDT)

Shadow / Sunlight Balance Key



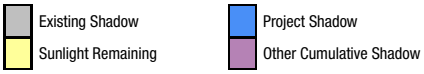
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
6:48 AM	3,775 sf	2.12%	0 sf	0.00%	0 sf	0.00%	
7:00 AM	366 sf	0.20%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	149 sf	0.08%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	67 sf	0.04%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	33 sf	0.02%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	12 sf	0.01%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	5 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	152 sf	0.09%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	2,791 sf	1.56%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	7,063 sf	3.96%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	11,782 sf	6.60%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	15,706 sf	8.80%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	19,443 sf	10.90%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	21,579 sf	12.09%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	22,993 sf	12.88%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	22,481 sf	12.60%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	21,989 sf	12.32%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	20,898 sf	11.71%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	20,984 sf	11.76%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	19,835 sf	11.11%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	20,403 sf	11.43%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	21,335 sf	11.96%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	24,691 sf	13.84%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	23,954 sf	13.42%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	23,674 sf	13.27%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	20,337 sf	11.40%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	19,123 sf	10.72%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	15,452 sf	8.66%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	13,772 sf	7.72%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	9,140 sf	5.12%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	6,366 sf	3.57%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	3,411 sf	1.91%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	961 sf	0.54%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	3,247 sf	1.82%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	10,714 sf	6.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	18,131 sf	10.16%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	24,353 sf	13.65%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	29,636 sf	16.61%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	33,465 sf	18.75%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	33,430 sf	18.73%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	33,551 sf	18.80%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	42,171 sf	23.63%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	61,360 sf	34.38%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	90,898 sf	50.94%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	133,765 sf	74.96%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	173,074 sf	96.98%	0 sf	0.00%	0 sf	0.00%	
7:36 PM	177,500 sf	99.46%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

JULY 5

Mirror date: June 7
Analysis hours: 6:52 AM-7:36 PM (PDT)

Shadow / Sunlight Balance Key



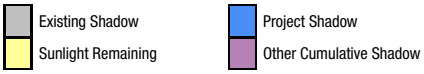
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
6:52 AM	3,695 sf	2.07%	0 sf	0.00%	0 sf	0.00%	
7:00 AM	575 sf	0.32%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	163 sf	0.09%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	73 sf	0.04%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	37 sf	0.02%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	16 sf	0.01%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	5 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	368 sf	0.21%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	3,370 sf	1.89%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	7,804 sf	4.37%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	12,653 sf	7.09%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	16,694 sf	9.35%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	20,644 sf	11.57%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	22,993 sf	12.88%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	24,633 sf	13.80%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	24,110 sf	13.51%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	23,545 sf	13.19%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	22,327 sf	12.51%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	22,355 sf	12.53%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	21,205 sf	11.88%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	21,707 sf	12.16%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	22,686 sf	12.71%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	26,241 sf	14.70%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	25,955 sf	14.54%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	25,637 sf	14.37%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	22,375 sf	12.54%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	21,151 sf	11.85%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	17,567 sf	9.84%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	16,022 sf	8.98%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	11,508 sf	6.45%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	8,250 sf	4.62%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	4,702 sf	2.63%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	2,079 sf	1.16%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	3,288 sf	1.84%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	10,755 sf	6.03%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	18,741 sf	10.50%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	25,214 sf	14.13%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	30,663 sf	17.18%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	34,710 sf	19.45%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	34,769 sf	19.48%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	34,863 sf	19.54%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	41,950 sf	23.51%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	60,421 sf	33.86%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	89,616 sf	50.22%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	133,767 sf	74.96%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	172,726 sf	96.79%	0 sf	0.00%	0 sf	0.00%	
7:36 PM	177,974 sf	99.73%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

JULY 12

Mirror date: May 31
Analysis hours: 6:56 AM-7:33 PM (PDT)

Shadow / Sunlight Balance Key



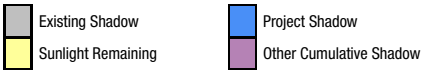
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
6:56 AM	3,561 sf	2.00%	0 sf	0.00%	0 sf	0.00%	
7:00 AM	1,835 sf	1.03%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	187 sf	0.10%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	83 sf	0.05%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	36 sf	0.02%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	18 sf	0.01%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	5 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	1,052 sf	0.59%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	4,693 sf	2.63%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	9,376 sf	5.25%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	14,409 sf	8.07%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	18,630 sf	10.44%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	22,827 sf	12.79%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	25,498 sf	14.29%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	27,445 sf	15.38%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	26,768 sf	15.00%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	26,064 sf	14.61%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	24,666 sf	13.82%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	24,598 sf	13.78%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	23,448 sf	13.14%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	23,945 sf	13.42%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	25,108 sf	14.07%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	28,959 sf	16.23%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	29,176 sf	16.35%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	28,816 sf	16.15%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	25,597 sf	14.34%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	24,357 sf	13.65%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	20,945 sf	11.74%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	19,588 sf	10.98%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	15,298 sf	8.57%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	12,209 sf	6.84%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	6,777 sf	3.80%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	3,902 sf	2.19%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	570 sf	0.32%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	3,835 sf	2.15%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	11,467 sf	6.43%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	20,318 sf	11.39%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	27,138 sf	15.21%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	32,836 sf	18.40%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	37,170 sf	20.83%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	36,841 sf	20.64%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	37,337 sf	20.92%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	43,018 sf	24.11%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	60,643 sf	33.98%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	90,687 sf	50.82%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	136,882 sf	76.70%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	173,095 sf	97.00%	0 sf	0.00%	0 sf	0.00%	
7:33 PM	178,449 sf	99.99%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

JULY 19

Mirror date: May 24
Analysis hours: 7:01 AM-7:30 PM (PDT)

Shadow / Sunlight Balance Key



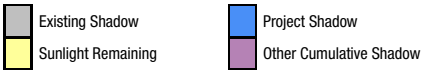
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:01 AM	3,359 sf	1.88%	0 sf	0.00%	0 sf	0.00%	
7:16 AM	202 sf	0.11%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	94 sf	0.05%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	42 sf	0.02%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	18 sf	0.01%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	5 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	104 sf	0.06%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	2,553 sf	1.43%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	6,934 sf	3.89%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	11,799 sf	6.61%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	17,080 sf	9.57%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	21,600 sf	12.10%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	26,109 sf	14.63%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	29,105 sf	16.31%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	31,494 sf	17.65%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	30,522 sf	17.10%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	29,582 sf	16.58%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	27,919 sf	15.64%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	27,699 sf	15.52%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	26,514 sf	14.86%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	27,116 sf	15.19%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	28,660 sf	16.06%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	32,899 sf	18.44%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	33,549 sf	18.80%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	33,155 sf	18.58%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	29,962 sf	16.79%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	28,677 sf	16.07%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	25,534 sf	14.31%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	24,537 sf	13.75%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	20,581 sf	11.53%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	17,847 sf	10.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	11,169 sf	6.26%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	6,403 sf	3.59%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	2,403 sf	1.35%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	88 sf	0.05%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	5,029 sf	2.82%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	12,987 sf	7.28%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	22,526 sf	12.62%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	30,322 sf	16.99%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	36,488 sf	20.45%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	41,167 sf	23.07%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	39,539 sf	22.16%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	41,269 sf	23.13%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	46,090 sf	25.83%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	62,518 sf	35.03%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	95,002 sf	53.24%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	143,469 sf	80.39%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	172,661 sf	96.75%	0 sf	0.00%	0 sf	0.00%	
7:30 PM	178,457 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

JULY 26

Mirror date: May 17
Analysis hours: 7:07 AM-7:25 PM (PDT)

Shadow / Sunlight Balance Key



Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:07 AM	3,086 sf	1.73%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	279 sf	0.16%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	104 sf	0.06%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	50 sf	0.03%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	19 sf	0.01%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	7 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	1 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	1,348 sf	0.76%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	5,060 sf	2.84%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	9,970 sf	5.59%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	15,004 sf	8.41%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	20,612 sf	11.55%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	25,586 sf	14.34%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	30,476 sf	17.08%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	33,858 sf	18.97%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	36,635 sf	20.53%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	35,363 sf	19.82%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	34,122 sf	19.12%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	32,094 sf	17.98%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	31,732 sf	17.78%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	30,458 sf	17.07%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	31,208 sf	17.49%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	33,352 sf	18.69%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	38,066 sf	21.33%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	39,085 sf	21.90%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	38,647 sf	21.66%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	35,487 sf	19.89%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	34,261 sf	19.20%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	31,413 sf	17.60%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	30,893 sf	17.31%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	27,584 sf	15.46%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	25,036 sf	14.03%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	18,031 sf	10.10%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	11,725 sf	6.57%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	5,007 sf	2.81%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	1,705 sf	0.96%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	227 sf	0.13%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	6,884 sf	3.86%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	15,302 sf	8.57%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	25,036 sf	14.03%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	34,888 sf	19.55%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	41,657 sf	23.34%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	46,631 sf	26.13%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	42,766 sf	23.96%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	47,047 sf	26.36%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	52,009 sf	29.14%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	66,591 sf	37.31%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	103,515 sf	58.01%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	151,364 sf	84.82%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	174,174 sf	97.60%	0 sf	0.00%	0 sf	0.00%	
7:25 PM	178,457 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

AUGUST 2

Mirror date: May 10

Analysis hours: 7:12 AM-7:18 PM (PDT)

Shadow / Sunlight Balance Key

Existing Shadow | Project Shadow | Sunlight Remaining | Other Cumulative Shadow

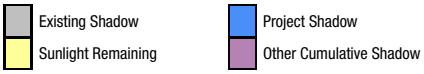
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:12 AM	2,659 sf	1.49%	0 sf	0.00%	0 sf	0.00%	
7:15 AM	1,137 sf	0.64%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	127 sf	0.07%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	55 sf	0.03%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	23 sf	0.01%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	7 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	675 sf	0.38%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	4,041 sf	2.26%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	8,644 sf	4.84%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	13,784 sf	7.72%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	19,027 sf	10.66%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	25,134 sf	14.08%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	30,650 sf	17.17%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	35,994 sf	20.17%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	39,812 sf	22.31%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	42,711 sf	23.93%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	41,237 sf	23.11%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	39,399 sf	22.08%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	37,008 sf	20.74%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	36,528 sf	20.47%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	35,163 sf	19.70%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	36,296 sf	20.34%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	39,309 sf	22.03%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	44,576 sf	24.98%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	45,730 sf	25.63%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	45,207 sf	25.33%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	42,060 sf	23.57%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	40,948 sf	22.95%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	38,615 sf	21.64%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	38,773 sf	21.73%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	36,336 sf	20.36%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	33,839 sf	18.96%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	26,287 sf	14.73%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	19,696 sf	11.04%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	10,847 sf	6.08%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	4,155 sf	2.33%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	2,713 sf	1.52%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	9,634 sf	5.40%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	18,676 sf	10.47%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	28,512 sf	15.98%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	39,572 sf	22.17%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	48,446 sf	27.15%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	50,339 sf	28.21%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	47,882 sf	26.83%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	55,280 sf	30.98%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	61,749 sf	34.60%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	76,559 sf	42.90%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	116,771 sf	65.43%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	157,101 sf	88.03%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	177,091 sf	99.23%	0 sf	0.00%	0 sf	0.00%	
7:18 PM	178,455 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

AUGUST 9

Mirror date: May 3
Analysis hours: 7:19 AM-7:10 PM (PDT)

Shadow / Sunlight Balance Key



Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:19 AM	1,920 sf	1.08%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	146 sf	0.08%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	64 sf	0.04%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	24 sf	0.01%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	398 sf	0.22%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	3,397 sf	1.90%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	8,005 sf	4.49%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	12,914 sf	7.24%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	18,279 sf	10.24%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	23,915 sf	13.40%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	30,557 sf	17.12%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	36,770 sf	20.60%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	42,684 sf	23.92%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	47,021 sf	26.35%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	49,892 sf	27.96%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	48,044 sf	26.92%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	45,368 sf	25.42%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	42,630 sf	23.89%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	42,033 sf	23.55%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	40,751 sf	22.83%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	42,730 sf	23.94%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	46,610 sf	26.12%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	52,570 sf	29.46%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	53,540 sf	30.00%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	52,854 sf	29.62%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	49,654 sf	27.82%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	48,824 sf	27.36%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	47,057 sf	26.37%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	48,040 sf	26.92%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	46,601 sf	26.11%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	44,100 sf	24.71%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	36,333 sf	20.36%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	29,530 sf	16.55%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	20,186 sf	11.31%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	11,925 sf	6.68%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	6,940 sf	3.89%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	12,605 sf	7.06%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	23,140 sf	12.97%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	32,598 sf	18.27%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	42,650 sf	23.90%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	56,194 sf	31.49%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	54,141 sf	30.34%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	57,517 sf	32.23%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	66,507 sf	37.27%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	75,125 sf	42.10%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	92,443 sf	51.80%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	125,889 sf	70.54%	0 sf	0.00%	0 sf	0.00%	
7:10 PM	177,672 sf	99.56%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

AUGUST 16

Mirror date: April 26

Analysis hours: 7:25 AM-7:02 PM (PDT)

Shadow / Sunlight Balance Key

Existing Shadow
Project Shadow
Sunlight Remaining
Other Cumulative Shadow

Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:25 AM	844 sf	0.47%	0 sf	0.00%	0 sf	0.00%	
7:30 AM	174 sf	0.10%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	69 sf	0.04%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	285 sf	0.16%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	3,173 sf	1.78%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	7,618 sf	4.27%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	12,641 sf	7.08%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	17,749 sf	9.95%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	23,499 sf	13.17%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	29,636 sf	16.61%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	36,831 sf	20.64%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	43,900 sf	24.60%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	50,569 sf	28.34%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	55,470 sf	31.08%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	57,669 sf	32.32%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	53,896 sf	30.20%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	50,394 sf	28.24%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	47,753 sf	26.76%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	47,269 sf	26.49%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	47,109 sf	26.40%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	50,463 sf	28.28%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	55,302 sf	30.99%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	62,095 sf	34.80%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	62,681 sf	35.12%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	61,549 sf	34.49%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	58,261 sf	32.65%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	58,036 sf	32.52%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	56,953 sf	31.91%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	58,711 sf	32.90%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	57,342 sf	32.13%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	54,826 sf	30.72%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	47,585 sf	26.66%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	40,974 sf	22.96%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	31,529 sf	17.67%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	24,074 sf	13.49%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	19,209 sf	10.76%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	17,680 sf	9.91%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	26,315 sf	14.75%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	36,693 sf	20.56%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	45,626 sf	25.57%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	54,924 sf	30.78%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	59,736 sf	33.47%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	70,562 sf	39.54%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	81,962 sf	45.93%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	95,721 sf	53.64%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	111,103 sf	62.26%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	126,875 sf	71.10%	0 sf	0.00%	0 sf	0.00%	
7:02 PM	169,746 sf	95.12%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

AUGUST 23

Mirror date: April 19
Analysis hours: 7:31 AM-6:52 PM (PDT)

Shadow / Sunlight Balance Key

Existing Shadow
Project Shadow
Sunlight Remaining
Other Cumulative Shadow

Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:31 AM	246 sf	0.14%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	354 sf	0.20%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	3,227 sf	1.81%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	7,755 sf	4.35%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	12,635 sf	7.08%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	17,864 sf	10.01%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	23,333 sf	13.07%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	29,623 sf	16.60%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	36,278 sf	20.33%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	44,098 sf	24.71%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	52,086 sf	29.19%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	59,607 sf	33.40%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	63,781 sf	35.74%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	62,598 sf	35.08%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	58,012 sf	32.51%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	54,105 sf	30.32%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	51,524 sf	28.87%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	51,583 sf	28.90%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	53,494 sf	29.98%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	59,520 sf	33.35%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	65,688 sf	36.81%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	73,494 sf	41.18%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	73,123 sf	40.98%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	71,230 sf	39.91%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	67,840 sf	38.01%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	68,572 sf	38.42%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	68,388 sf	38.32%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	70,297 sf	39.39%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	68,567 sf	38.42%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	66,290 sf	37.15%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	59,639 sf	33.42%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	53,291 sf	29.86%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	44,077 sf	24.70%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	39,359 sf	22.05%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	34,761 sf	19.48%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	32,418 sf	18.17%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	30,487 sf	17.08%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	37,845 sf	21.21%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	49,017 sf	27.47%	114 sf	0.06%	114 sf	0.06%	
5:15 PM	51,633 sf	28.93%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	71,077 sf	39.83%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	87,401 sf	48.98%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	102,556 sf	57.47%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	120,975 sf	67.79%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	122,132 sf	68.44%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	132,339 sf	74.16%	0 sf	0.00%	0 sf	0.00%	
6:52 PM	156,341 sf	87.61%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

AUGUST 30

Mirror date: April 12
Analysis hours: 7:37 AM-6:42 PM (PDT)

Shadow / Sunlight Balance Key

Existing Shadow
Project Shadow
Sunlight Remaining
Other Cumulative Shadow

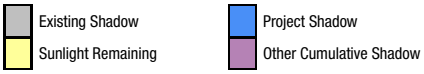
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:37 AM	1,909 sf	1.07%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	3,576 sf	2.00%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	8,041 sf	4.51%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	12,993 sf	7.28%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	18,061 sf	10.12%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	23,662 sf	13.26%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	29,626 sf	16.60%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	36,444 sf	20.42%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	43,654 sf	24.46%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	52,143 sf	29.22%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	60,999 sf	34.18%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	68,417 sf	38.34%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	69,805 sf	39.12%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	66,908 sf	37.49%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	61,742 sf	34.60%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	57,383 sf	32.15%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	54,505 sf	30.54%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	57,085 sf	31.99%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	62,108 sf	34.80%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	70,690 sf	39.61%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	77,782 sf	43.59%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	86,557 sf	48.50%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	84,422 sf	47.31%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	81,982 sf	45.94%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	78,935 sf	44.23%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	80,528 sf	45.12%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	81,170 sf	45.48%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	82,422 sf	46.19%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	80,316 sf	45.01%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	78,558 sf	44.02%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	72,724 sf	40.75%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	66,686 sf	37.37%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	59,030 sf	33.08%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	55,735 sf	31.23%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	51,367 sf	28.78%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	49,198 sf	27.57%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	44,341 sf	24.85%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	41,912 sf	23.49%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	45,728 sf	25.62%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	57,889 sf	32.44%	976 sf	0.55%	976 sf	0.55%	
5:30 PM	82,460 sf	46.21%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	111,454 sf	62.45%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	130,874 sf	73.34%	113 sf	0.06%	113 sf	0.06%	
6:15 PM	129,748 sf	72.71%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	128,230 sf	71.85%	0 sf	0.00%	0 sf	0.00%	
6:42 PM	151,376 sf	84.82%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

SEPTEMBER 6

Mirror date: April 5
Analysis hours: 7:44 AM-6:31 PM (PDT)

Shadow / Sunlight Balance Key



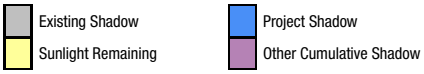
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:44 AM	8,510 sf	4.77%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	14,229 sf	7.97%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	19,282 sf	10.80%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	24,487 sf	13.72%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	30,336 sf	17.00%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	36,669 sf	20.55%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	43,947 sf	24.63%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	51,695 sf	28.97%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	60,739 sf	34.04%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	67,788 sf	37.99%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	69,970 sf	39.21%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	68,667 sf	38.48%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	65,359 sf	36.62%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	61,933 sf	34.70%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	59,159 sf	33.15%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	58,646 sf	32.86%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	63,915 sf	35.81%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	71,457 sf	40.04%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	82,320 sf	46.13%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	91,847 sf	51.47%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	100,154 sf	56.12%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	97,184 sf	54.46%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	94,180 sf	52.77%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	91,814 sf	51.45%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	93,929 sf	52.63%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	94,203 sf	52.79%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	94,850 sf	53.15%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	92,811 sf	52.01%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	91,613 sf	51.34%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	86,595 sf	48.52%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	81,578 sf	45.71%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	76,604 sf	42.93%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	73,264 sf	41.05%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	68,789 sf	38.55%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	65,445 sf	36.67%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	59,549 sf	33.37%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	54,268 sf	30.41%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	49,530 sf	27.75%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	67,041 sf	37.57%	8 sf	0.00%	8 sf	0.00%	
5:30 PM	99,808 sf	55.93%	1,227 sf	0.69%	1,227 sf	0.69%	
5:45 PM	136,610 sf	76.55%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	140,022 sf	78.46%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	135,035 sf	75.67%	0 sf	0.00%	0 sf	0.00%	
6:31 PM	151,657 sf	84.98%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

SEPTEMBER 13

Mirror date: March 29
Analysis hours: 7:50 AM-6:21 PM (PDT)

Shadow / Sunlight Balance Key



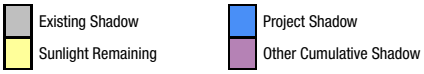
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:50 AM	24,752 sf	13.87%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	26,700 sf	14.96%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	30,107 sf	16.87%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	33,875 sf	18.98%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	39,060 sf	21.89%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	44,847 sf	25.13%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	51,973 sf	29.12%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	60,219 sf	33.74%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	67,586 sf	37.87%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	70,038 sf	39.25%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	68,887 sf	38.60%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	66,961 sf	37.52%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	63,755 sf	35.73%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	61,805 sf	34.63%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	61,306 sf	34.35%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	64,691 sf	36.25%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	72,362 sf	40.55%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	81,316 sf	45.57%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	92,020 sf	51.56%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	101,700 sf	56.99%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	107,408 sf	60.19%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	105,864 sf	59.32%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	103,987 sf	58.27%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	105,171 sf	58.93%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	107,634 sf	60.31%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	107,720 sf	60.36%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	108,105 sf	60.58%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	105,993 sf	59.39%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	105,154 sf	58.92%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	101,724 sf	57.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	99,231 sf	55.60%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	94,759 sf	53.10%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	91,457 sf	51.25%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	86,833 sf	48.66%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	81,910 sf	45.90%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	74,837 sf	41.94%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	68,167 sf	38.20%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	69,297 sf	38.83%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	82,805 sf	46.40%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	114,939 sf	64.41%	347 sf	0.19%	347 sf	0.19%	
5:45 PM	137,915 sf	77.28%	1,694 sf	0.95%	1,694 sf	0.95%	
6:00 PM	147,493 sf	82.65%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	143,330 sf	80.32%	0 sf	0.00%	0 sf	0.00%	
6:21 PM	151,513 sf	84.90%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

SEPTEMBER 20

Fall equinox (Spring equinox on March 22 similar)
Analysis hours: 7:57 AM-6:09 PM (PDT)

Shadow / Sunlight Balance Key



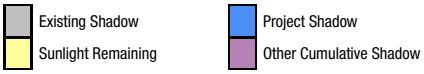
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:57 AM	41,276 sf	23.13%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	41,552 sf	23.28%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	43,058 sf	24.13%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	45,016 sf	25.23%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	48,612 sf	27.24%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	53,156 sf	29.79%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	60,320 sf	33.80%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	67,179 sf	37.64%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	70,043 sf	39.25%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	69,155 sf	38.75%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	67,320 sf	37.72%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	65,130 sf	36.50%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	62,986 sf	35.29%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	63,005 sf	35.31%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	65,806 sf	36.87%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	72,114 sf	40.41%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	81,570 sf	45.71%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	90,563 sf	50.75%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	100,270 sf	56.19%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	109,674 sf	61.46%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	111,895 sf	62.70%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	108,993 sf	61.07%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	107,443 sf	60.21%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	109,990 sf	61.63%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	114,174 sf	63.98%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	117,365 sf	65.77%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	119,586 sf	67.01%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	119,180 sf	66.78%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	119,729 sf	67.09%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	118,945 sf	66.65%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	117,988 sf	66.12%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	113,478 sf	63.59%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	110,910 sf	62.15%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	105,300 sf	59.01%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	99,326 sf	55.66%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	90,935 sf	50.96%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	87,520 sf	49.04%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	90,394 sf	50.65%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	102,735 sf	57.57%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	114,726 sf	64.29%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	128,671 sf	72.10%	1,030 sf	0.58%	1,030 sf	0.58%	
6:00 PM	140,892 sf	78.95%	2,012 sf	1.13%	2,012 sf	1.13%	
6:09 PM	152,531 sf	85.47%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

SEPTEMBER 27

Mirror date: March 15
Analysis hours: 8:03 AM-5:58 PM (PDT)

Shadow / Sunlight Balance Key



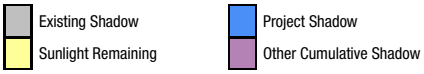
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:03 AM	53,535 sf	30.00%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	55,466 sf	31.08%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	56,072 sf	31.42%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	57,984 sf	32.49%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	61,553 sf	34.49%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	67,119 sf	37.61%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	70,012 sf	39.23%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	69,302 sf	38.83%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	67,744 sf	37.96%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	65,586 sf	36.75%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	63,387 sf	35.52%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	63,037 sf	35.32%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	64,774 sf	36.30%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	70,957 sf	39.76%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	79,720 sf	44.67%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	89,882 sf	50.37%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	99,053 sf	55.51%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	108,216 sf	60.64%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	116,526 sf	65.30%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	114,766 sf	64.31%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	110,713 sf	62.04%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	110,694 sf	62.03%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	114,481 sf	64.15%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	120,491 sf	67.52%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	125,941 sf	70.57%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	130,631 sf	73.20%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	132,337 sf	74.16%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	134,576 sf	75.41%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	135,603 sf	75.99%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	136,003 sf	76.21%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	132,917 sf	74.48%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	131,929 sf	73.93%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	125,516 sf	70.33%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	117,264 sf	65.71%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	109,371 sf	61.29%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	105,774 sf	59.27%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	107,552 sf	60.27%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	111,086 sf	62.25%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	115,913 sf	64.95%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	122,384 sf	68.58%	0 sf	0.00%	0 sf	0.00%	
5:58 PM	134,703 sf	75.48%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

OCTOBER 4

Mirror date: March 8
Analysis hours: 8:09 AM-5:47 PM (PDT)

Shadow / Sunlight Balance Key



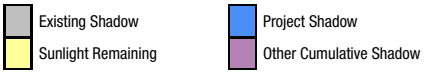
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:09 AM	65,866 sf	36.91%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	66,774 sf	37.42%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	66,185 sf	37.09%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	67,027 sf	37.56%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	68,542 sf	38.41%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	70,055 sf	39.26%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	69,512 sf	38.95%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	68,041 sf	38.13%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	66,125 sf	37.05%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	63,863 sf	35.79%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	62,850 sf	35.22%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	63,882 sf	35.80%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	67,794 sf	37.99%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	75,431 sf	42.27%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	84,571 sf	47.39%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	93,958 sf	52.65%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	102,696 sf	57.55%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	112,134 sf	62.83%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	118,420 sf	66.36%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	116,166 sf	65.09%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	112,499 sf	63.04%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	113,588 sf	63.65%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	119,238 sf	66.82%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	127,527 sf	71.46%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	135,832 sf	76.11%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	142,948 sf	80.10%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	145,863 sf	81.74%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	149,124 sf	83.56%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	151,355 sf	84.81%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	154,826 sf	86.76%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	154,865 sf	86.78%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	153,411 sf	85.96%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	146,877 sf	82.30%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	137,606 sf	77.11%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	128,559 sf	72.04%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	119,871 sf	67.17%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	114,091 sf	63.93%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	115,009 sf	64.45%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	130,645 sf	73.21%	0 sf	0.00%	0 sf	0.00%	
5:47 PM	148,847 sf	83.41%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

OCTOBER 11

Mirror date: March 1
Analysis hours: 8:16 AM-5:37 PM (PDT)

Shadow / Sunlight Balance Key



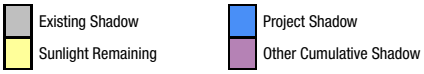
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:16 AM	75,244 sf	42.16%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	75,470 sf	42.29%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	74,910 sf	41.98%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	72,216 sf	40.47%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	69,778 sf	39.10%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	68,430 sf	38.35%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	66,583 sf	37.31%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	64,607 sf	36.20%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	62,941 sf	35.27%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	63,286 sf	35.46%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	65,583 sf	36.75%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	71,306 sf	39.96%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	79,805 sf	44.72%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	88,433 sf	49.55%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	97,342 sf	54.55%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	105,632 sf	59.19%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	114,643 sf	64.24%	0 sf	0.00%	0 sf	0.00%	
12:30 PM	117,591 sf	65.89%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	115,355 sf	64.64%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	112,324 sf	62.94%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	115,007 sf	64.44%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	120,988 sf	67.80%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	129,826 sf	72.75%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	141,436 sf	79.25%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	151,334 sf	84.80%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	156,867 sf	87.90%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	161,946 sf	90.75%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	166,758 sf	93.44%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	173,676 sf	97.32%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	176,161 sf	98.71%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	172,414 sf	96.61%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	167,053 sf	93.61%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	160,907 sf	90.17%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	146,669 sf	82.19%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	132,489 sf	74.24%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	118,563 sf	66.44%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	125,529 sf	70.34%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	145,260 sf	81.40%	0 sf	0.00%	0 sf	0.00%	
5:37 PM	161,044 sf	90.24%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

OCTOBER 18

Mirror date: February 22
Analysis hours: 8:22 AM-5:27 PM (PDT)

Shadow / Sunlight Balance Key



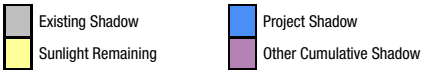
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:22 AM	80,632 sf	45.18%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	81,328 sf	45.57%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	78,938 sf	44.23%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	72,975 sf	40.89%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	68,779 sf	38.54%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	67,188 sf	37.65%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	65,250 sf	36.56%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	63,335 sf	35.49%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	63,537 sf	35.60%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	64,115 sf	35.93%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	68,313 sf	38.28%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	74,932 sf	41.99%	0 sf	0.00%	0 sf	0.00%	
11:15 AM	83,624 sf	46.86%	0 sf	0.00%	0 sf	0.00%	
11:30 AM	91,762 sf	51.42%	0 sf	0.00%	0 sf	0.00%	
11:45 AM	100,089 sf	56.09%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	108,151 sf	60.60%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	116,690 sf	65.39%	0 sf	0.00%	134 sf	0.07%	
12:30 PM	117,542 sf	65.87%	0 sf	0.00%	0 sf	0.00%	
12:45 PM	114,854 sf	64.36%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	112,996 sf	63.32%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	116,026 sf	65.02%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	121,981 sf	68.35%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	130,646 sf	73.21%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	143,867 sf	80.62%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	154,336 sf	86.48%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	159,800 sf	89.54%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	164,197 sf	92.01%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	167,423 sf	93.82%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	172,815 sf	96.84%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	178,416 sf	99.98%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	175,812 sf	98.52%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	170,811 sf	95.71%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	166,281 sf	93.18%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	156,192 sf	87.52%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	142,219 sf	79.69%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	128,369 sf	71.93%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	134,078 sf	75.13%	0 sf	0.00%	0 sf	0.00%	
5:27 PM	153,873 sf	86.22%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

OCTOBER 25

Mirror date: February 15
Analysis hours: 7:30 AM-4:18 PM (PST)

Shadow / Sunlight Balance Key



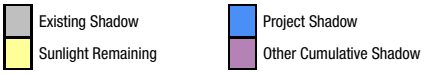
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:30 AM	82,049 sf	45.98%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	79,594 sf	44.60%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	72,795 sf	40.79%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	68,308 sf	38.28%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	66,073 sf	37.02%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	63,963 sf	35.84%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	63,566 sf	35.62%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	69,739 sf	39.08%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	66,967 sf	37.53%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	71,022 sf	39.80%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	78,254 sf	43.85%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	86,578 sf	48.51%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	94,395 sf	52.89%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	102,246 sf	57.29%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	110,102 sf	61.70%	0 sf	0.00%	2,459 sf	1.38%	
11:15 AM	118,089 sf	66.17%	0 sf	0.00%	1,678 sf	0.94%	
11:30 AM	117,437 sf	65.81%	0 sf	0.00%	1,100 sf	0.62%	
11:45 AM	114,523 sf	64.17%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	113,232 sf	63.45%	0 sf	0.00%	1,827 sf	1.02%	
12:15 PM	116,332 sf	65.19%	0 sf	0.00%	4,235 sf	2.37%	
12:30 PM	122,212 sf	68.48%	0 sf	0.00%	1,946 sf	1.09%	
12:45 PM	132,780 sf	74.40%	0 sf	0.00%	0 sf	0.00%	
1:00 PM	146,685 sf	82.20%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	157,460 sf	88.23%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	162,908 sf	91.29%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	166,902 sf	93.52%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	169,499 sf	94.98%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	171,046 sf	95.85%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	177,404 sf	99.41%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	177,409 sf	99.41%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	172,798 sf	96.83%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	168,795 sf	94.59%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	163,212 sf	91.46%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	149,990 sf	84.05%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	147,306 sf	82.54%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	168,396 sf	94.36%	0 sf	0.00%	0 sf	0.00%	
4:18 PM	178,264 sf	99.89%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

NOVEMBER 1

Mirror date: February 8
Analysis hours: 7:36 AM-4:10 PM (PST)

Shadow / Sunlight Balance Key



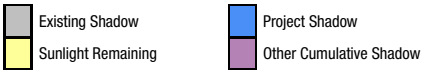
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:36 AM	80,002 sf	44.83%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	77,787 sf	43.59%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	72,674 sf	40.72%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	70,004 sf	39.23%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	65,403 sf	36.65%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	63,329 sf	35.49%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	72,116 sf	40.41%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	76,587 sf	42.92%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	72,502 sf	40.63%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	73,523 sf	41.20%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	80,992 sf	45.38%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	89,984 sf	50.42%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	96,984 sf	54.35%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	103,879 sf	58.21%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	111,536 sf	62.50%	0 sf	0.00%	5,131 sf	2.87%	
11:15 AM	118,966 sf	66.66%	0 sf	0.00%	3,168 sf	1.78%	
11:30 AM	117,262 sf	65.71%	0 sf	0.00%	2,962 sf	1.66%	
11:45 AM	114,330 sf	64.07%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	113,271 sf	63.47%	0 sf	0.00%	9,578 sf	5.37%	
12:15 PM	116,251 sf	65.14%	0 sf	0.00%	20,871 sf	11.70%	
12:30 PM	121,789 sf	68.25%	0 sf	0.00%	8,120 sf	4.55%	
12:45 PM	134,877 sf	75.58%	0 sf	0.00%	22 sf	0.01%	
1:00 PM	149,427 sf	83.73%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	160,297 sf	89.82%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	165,995 sf	93.02%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	169,604 sf	95.04%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	172,496 sf	96.66%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	170,258 sf	95.40%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	175,687 sf	98.45%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	178,285 sf	99.90%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	175,206 sf	98.18%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	176,860 sf	99.10%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	166,313 sf	93.19%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	158,675 sf	88.91%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	166,838 sf	93.49%	0 sf	0.00%	0 sf	0.00%	
4:10 PM	178,457 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

NOVEMBER 8

Mirror date: February 1
Analysis hours: 7:43 AM-4:03 PM (PST)

Shadow / Sunlight Balance Key



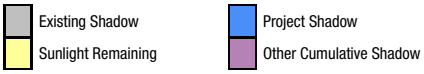
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:43 AM	76,591 sf	42.92%	0 sf	0.00%	0 sf	0.00%	
7:45 AM	76,329 sf	42.77%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	75,212 sf	42.15%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	74,407 sf	41.69%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	67,622 sf	37.89%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	63,594 sf	35.64%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	80,747 sf	45.25%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	84,761 sf	47.50%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	75,817 sf	42.48%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	75,585 sf	42.35%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	83,756 sf	46.93%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	96,678 sf	54.17%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	104,736 sf	58.69%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	109,690 sf	61.47%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	114,381 sf	64.09%	0 sf	0.00%	4,849 sf	2.72%	
11:15 AM	120,327 sf	67.43%	0 sf	0.00%	3,205 sf	1.80%	
11:30 AM	117,169 sf	65.66%	0 sf	0.00%	5,161 sf	2.89%	
11:45 AM	114,791 sf	64.32%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	113,855 sf	63.80%	0 sf	0.00%	16,236 sf	9.10%	
12:15 PM	116,030 sf	65.02%	0 sf	0.00%	28,036 sf	15.71%	
12:30 PM	121,166 sf	67.90%	0 sf	0.00%	11,439 sf	6.41%	
12:45 PM	136,142 sf	76.29%	0 sf	0.00%	420 sf	0.24%	
1:00 PM	151,971 sf	85.16%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	162,903 sf	91.28%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	168,991 sf	94.69%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	171,900 sf	96.33%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	174,050 sf	97.53%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	172,935 sf	96.90%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	173,940 sf	97.47%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	178,206 sf	99.86%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	178,458 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	178,457 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	174,314 sf	97.68%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	164,958 sf	92.44%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	169,356 sf	94.90%	0 sf	0.00%	0 sf	0.00%	
4:03 PM	175,656 sf	98.43%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

NOVEMBER 15

Mirror date: January 25
Analysis hours: 7:51 AM-3:57 PM (PST)

Shadow / Sunlight Balance Key



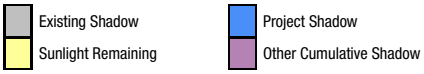
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:51 AM	75,689 sf	42.41%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	76,180 sf	42.69%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	77,443 sf	43.40%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	72,116 sf	40.41%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	70,946 sf	39.76%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	83,730 sf	46.92%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	87,011 sf	48.76%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	75,255 sf	42.17%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	77,693 sf	43.54%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	88,409 sf	49.54%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	105,215 sf	58.96%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	115,649 sf	64.80%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	121,132 sf	67.88%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	123,573 sf	69.24%	0 sf	0.00%	4,716 sf	2.64%	
11:15 AM	124,898 sf	69.99%	0 sf	0.00%	3,246 sf	1.82%	
11:30 AM	117,874 sf	66.05%	0 sf	0.00%	5,143 sf	2.88%	
11:45 AM	116,082 sf	65.05%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	115,295 sf	64.61%	0 sf	0.00%	17,697 sf	9.92%	
12:15 PM	116,854 sf	65.48%	0 sf	0.00%	29,059 sf	16.28%	
12:30 PM	120,781 sf	67.68%	0 sf	0.00%	13,773 sf	7.72%	
12:45 PM	136,311 sf	76.38%	0 sf	0.00%	1,206 sf	0.68%	
1:00 PM	153,670 sf	86.11%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	163,449 sf	91.59%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	168,662 sf	94.51%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	171,237 sf	95.95%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	174,858 sf	97.98%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	175,653 sf	98.43%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	172,204 sf	96.50%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	176,557 sf	98.93%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	178,458 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	178,457 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	178,457 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	169,072 sf	94.74%	0 sf	0.00%	0 sf	0.00%	
3:57 PM	169,662 sf	95.07%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

NOVEMBER 22

Mirror date: January 18
Analysis hours: 7:57 AM-3:54 PM (PST)

Shadow / Sunlight Balance Key



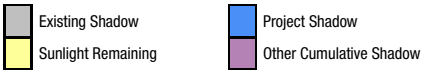
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
7:57 AM	76,949 sf	43.12%	0 sf	0.00%	0 sf	0.00%	
8:00 AM	77,061 sf	43.18%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	78,201 sf	43.82%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	78,303 sf	43.88%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	75,730 sf	42.44%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	84,462 sf	47.33%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	86,155 sf	48.28%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	75,202 sf	42.14%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	80,154 sf	44.91%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	93,991 sf	52.67%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	113,217 sf	63.44%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	126,487 sf	70.88%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	132,802 sf	74.42%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	133,652 sf	74.89%	0 sf	0.00%	4,730 sf	2.65%	
11:15 AM	129,425 sf	72.52%	0 sf	0.00%	3,202 sf	1.79%	
11:30 AM	119,881 sf	67.18%	0 sf	0.00%	4,898 sf	2.74%	
11:45 AM	117,759 sf	65.99%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	117,220 sf	65.68%	0 sf	0.00%	15,518 sf	8.70%	
12:15 PM	118,238 sf	66.26%	0 sf	0.00%	28,427 sf	15.93%	
12:30 PM	120,023 sf	67.26%	0 sf	0.00%	17,099 sf	9.58%	
12:45 PM	134,995 sf	75.65%	0 sf	0.00%	2,529 sf	1.42%	
1:00 PM	154,133 sf	86.37%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	162,825 sf	91.24%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	167,896 sf	94.08%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	170,536 sf	95.56%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	176,472 sf	98.89%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	178,072 sf	99.78%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	171,270 sf	95.97%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	174,930 sf	98.02%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	178,458 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	178,458 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	178,457 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	176,940 sf	99.15%	0 sf	0.00%	0 sf	0.00%	
3:54 PM	172,483 sf	96.65%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

NOVEMBER 29

Mirror date: January 11
Analysis hours: 8:04 AM-3:51 PM (PST)

Shadow / Sunlight Balance Key



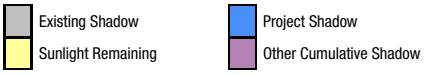
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:04 AM	78,026 sf	43.72%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	78,795 sf	44.15%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	79,412 sf	44.50%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	78,542 sf	44.01%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	84,889 sf	47.57%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	88,211 sf	49.43%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	78,377 sf	43.92%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	82,301 sf	46.12%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	97,812 sf	54.81%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	118,268 sf	66.27%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	135,117 sf	75.71%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	142,505 sf	79.85%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	140,964 sf	78.99%	0 sf	0.00%	4,873 sf	2.73%	
11:15 AM	133,028 sf	74.54%	0 sf	0.00%	3,166 sf	1.77%	
11:30 AM	121,505 sf	68.09%	0 sf	0.00%	4,461 sf	2.50%	
11:45 AM	119,347 sf	66.88%	0 sf	0.00%	0 sf	0.00%	
12:00 PM	119,258 sf	66.83%	0 sf	0.00%	9,637 sf	5.40%	
12:15 PM	120,398 sf	67.47%	0 sf	0.00%	26,741 sf	14.98%	
12:30 PM	118,847 sf	66.60%	0 sf	0.00%	21,344 sf	11.96%	
12:45 PM	132,343 sf	74.16%	0 sf	0.00%	4,466 sf	2.50%	
1:00 PM	151,901 sf	85.12%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	161,532 sf	90.52%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	166,989 sf	93.57%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	169,980 sf	95.25%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	176,361 sf	98.82%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	178,458 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	173,508 sf	97.23%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	173,756 sf	97.37%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	177,776 sf	99.62%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	178,457 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	178,457 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	178,457 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:51 PM	178,157 sf	99.83%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

DECEMBER 6

Mirror date: January 4
Analysis hours: 8:10 AM-3:51 PM (PST)

Shadow / Sunlight Balance Key



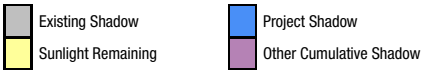
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:10 AM	78,863 sf	44.19%	0 sf	0.00%	0 sf	0.00%	
8:15 AM	79,194 sf	44.38%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	80,533 sf	45.13%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	80,238 sf	44.96%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	85,008 sf	47.63%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	91,492 sf	51.27%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	83,812 sf	46.96%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	85,964 sf	48.17%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	98,341 sf	55.11%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	118,925 sf	66.64%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	138,469 sf	77.59%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	149,826 sf	83.96%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	146,712 sf	82.21%	0 sf	0.00%	5,133 sf	2.88%	
11:15 AM	136,082 sf	76.25%	0 sf	0.00%	3,220 sf	1.80%	
11:30 AM	123,199 sf	69.04%	0 sf	0.00%	3,860 sf	2.16%	
11:45 AM	120,860 sf	67.72%	0 sf	0.00%	739 sf	0.41%	
12:00 PM	121,798 sf	68.25%	0 sf	0.00%	9,632 sf	5.40%	
12:15 PM	122,276 sf	68.52%	0 sf	0.00%	25,770 sf	14.44%	
12:30 PM	117,917 sf	66.08%	0 sf	0.00%	26,243 sf	14.71%	
12:45 PM	130,012 sf	72.85%	0 sf	0.00%	7,132 sf	4.00%	
1:00 PM	148,477 sf	83.20%	0 sf	0.00%	0 sf	0.00%	
1:15 PM	160,064 sf	89.69%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	165,616 sf	92.80%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	169,547 sf	95.01%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	176,469 sf	98.89%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	178,458 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	175,644 sf	98.42%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	172,750 sf	96.80%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	177,131 sf	99.26%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	178,458 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	178,457 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	178,456 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:51 PM	178,458 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

DECEMBER 13

Mirror date: December 28
Analysis hours: 8:15 AM-3:52 PM (PST)

Shadow / Sunlight Balance Key



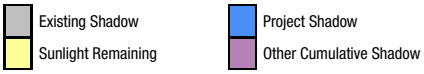
Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:15 AM	79,402 sf	44.49%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	80,588 sf	45.16%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	81,164 sf	45.48%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	84,817 sf	47.53%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	93,860 sf	52.60%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	88,269 sf	49.46%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	90,302 sf	50.60%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	97,145 sf	54.44%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	116,898 sf	65.50%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	136,620 sf	76.56%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	152,582 sf	85.50%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	151,425 sf	84.85%	0 sf	0.00%	5,093 sf	2.85%	
11:15 AM	139,135 sf	77.97%	0 sf	0.00%	3,350 sf	1.88%	
11:30 AM	125,405 sf	70.27%	0 sf	0.00%	3,108 sf	1.74%	
11:45 AM	119,822 sf	67.14%	0 sf	0.00%	4,990 sf	2.80%	
12:00 PM	123,107 sf	68.98%	0 sf	0.00%	4,176 sf	2.34%	
12:15 PM	123,686 sf	69.31%	0 sf	0.00%	22,968 sf	12.87%	
12:30 PM	119,106 sf	66.74%	0 sf	0.00%	29,565 sf	16.57%	
12:45 PM	127,444 sf	71.41%	0 sf	0.00%	10,568 sf	5.92%	
1:00 PM	144,626 sf	81.04%	0 sf	0.00%	576 sf	0.32%	
1:15 PM	158,550 sf	88.84%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	164,236 sf	92.03%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	168,714 sf	94.54%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	176,197 sf	98.73%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	178,457 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	177,686 sf	99.57%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	172,527 sf	96.68%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	176,451 sf	98.88%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	178,457 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	178,457 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	178,457 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:52 PM	178,457 sf	100.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: 530 Sansome / 447 Battery
OPEN SPACE: Sue Bierman Park (178,458 sf)

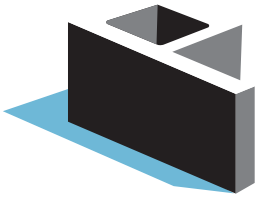
DECEMBER 20

Winter solstice (December 21 similar)
Analysis hours: 8:19 AM-3:54 PM (PST)

Shadow / Sunlight Balance Key



Analysis Time	EXISTING SHADOW		PROJECT NET NEW SHADOW		PROJECT + CUMULATIVE SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Relative levels of Shadow vs. Sun
8:19 AM	79,618 sf	44.61%	0 sf	0.00%	0 sf	0.00%	
8:30 AM	80,417 sf	45.06%	0 sf	0.00%	0 sf	0.00%	
8:45 AM	81,696 sf	45.78%	0 sf	0.00%	0 sf	0.00%	
9:00 AM	84,378 sf	47.28%	0 sf	0.00%	0 sf	0.00%	
9:15 AM	93,576 sf	52.44%	0 sf	0.00%	0 sf	0.00%	
9:30 AM	90,804 sf	50.88%	0 sf	0.00%	0 sf	0.00%	
9:45 AM	91,675 sf	51.37%	0 sf	0.00%	0 sf	0.00%	
10:00 AM	95,238 sf	53.37%	0 sf	0.00%	0 sf	0.00%	
10:15 AM	113,115 sf	63.38%	0 sf	0.00%	0 sf	0.00%	
10:30 AM	132,843 sf	74.44%	0 sf	0.00%	0 sf	0.00%	
10:45 AM	152,193 sf	85.28%	0 sf	0.00%	0 sf	0.00%	
11:00 AM	154,242 sf	86.43%	0 sf	0.00%	2,851 sf	1.60%	
11:15 AM	142,072 sf	79.61%	0 sf	0.00%	3,789 sf	2.12%	
11:30 AM	129,227 sf	72.41%	0 sf	0.00%	3,571 sf	2.00%	
11:45 AM	118,019 sf	66.13%	0 sf	0.00%	6,218 sf	3.48%	
12:00 PM	123,474 sf	69.19%	0 sf	0.00%	0 sf	0.00%	
12:15 PM	124,255 sf	69.63%	0 sf	0.00%	19,583 sf	10.97%	
12:30 PM	121,104 sf	67.86%	0 sf	0.00%	29,183 sf	16.35%	
12:45 PM	124,705 sf	69.88%	0 sf	0.00%	14,640 sf	8.20%	
1:00 PM	140,615 sf	78.79%	0 sf	0.00%	1,863 sf	1.04%	
1:15 PM	157,094 sf	88.03%	0 sf	0.00%	0 sf	0.00%	
1:30 PM	162,960 sf	91.32%	0 sf	0.00%	0 sf	0.00%	
1:45 PM	167,764 sf	94.01%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	174,746 sf	97.92%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	178,457 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	178,457 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	173,721 sf	97.35%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	175,711 sf	98.46%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	178,065 sf	99.78%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	178,457 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	178,457 sf	100.00%	0 sf	0.00%	0 sf	0.00%	
3:54 PM	178,458 sf	100.00%	0 sf	0.00%	0 sf	0.00%	



PREVISION
DESIGN

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APPENDIX I

Water Supply Assessment

PUBLIC UTILITIES COMMISSION

City and County of San Francisco

RESOLUTION NO. **25-0013**

WHEREAS, Under the California Environmental Quality Act (CEQA) and California Water Code Section 10910(g)(1), the San Francisco Public Utilities Commission (SFPUC) is required to prepare and approve a Water Supply Assessment of whether available water supplies are sufficient to serve the demand generated by projects of a specified size as well as the reasonably foreseeable cumulative demand in the region over the next 20 years under a range of hydrologic conditions; and

WHEREAS, The 447 Battery Street and 530 Sansome Street Project (Project) proposes to demolish four existing buildings and construct a 4-story replacement fire station with 31,200 square feet and a separate high-rise building up to 41 stories with approximately 7,405 square feet of retail/restaurant space, between approximately 372,035 and 417,230 square feet of office use, between approximately 127,710 and 188,820 square feet of hotel use, approximately 10,135 square feet of ballroom/pre-function/meeting space, and 12,695 square feet of privately-owned public open space along Merchant Street; and

WHEREAS, The Project requires the preparation of a Water Supply Assessment because it is a mixed-use development that includes more than 250,000 square feet of office space; and

WHEREAS, A Water Supply Assessment must be completed by the public water supplier that would serve the proposed project and be approved by its governing body at a public meeting; and

WHEREAS, A Water Supply Assessment is an informational document that assesses the adequacy of water supplies to serve a proposed project and is required to be prepared as part of the CEQA environmental review process; and

WHEREAS, The water demand associated with the Project is encompassed within the 2020 Urban Water Management Plan water demand projections; and

WHEREAS, The water demand associated with the Project is also encompassed within the 2023 Interim Water Demand Projections, which the SFPUC prepared after the 2020 Urban Water Management Plan to account for slightly higher housing unit projections associated with the Housing Element 2022 Update adopted by the City; and

WHEREAS, Approval of a Water Supply Assessment is not considered an approval action as defined in Section 15378 of the CEQA Guidelines and approval of the Water Supply Assessment does not constitute the Commission's approval of the proposed 447 Battery and 530 Sansome Street Project; and

WHEREAS, SFPUC staff prepared the attached Water Supply Assessment for the Project, analyzing water supply and demand under three scenarios: (1) No implementation of the Bay-Delta Plan Amendment (Scenario 1), (2) Implementation of the Healthy Rivers and Landscapes Agreement (Scenario 2), and (3) Implementation of the Bay-Delta Plan Amendment (Scenario 3); and

WHEREAS, The Water Supply Assessment concludes that the SFPUC's total projected water supplies through 2045 will (1) meet the demands of the Project in normal years under all three scenarios, (2) meet the demands of the Project in dry years without rationing beyond the SFPUC's level of service (LOS) goal of no more than 20% system-wide rationing under Scenario 1, (3) require water use reduction but to a lesser degree and in closer alignment to the LOS goal of no more than 20% system-wide water use reduction under Scenario 2 and in comparison to Scenario 3; and (4) not reliably meet the projected demands of the Project without rationing at a level greater than that required to achieve the LOS goal under Scenario 3; and

WHEREAS, In dry years, the Project may have lower levels of mandatory water use reduction compared to existing buildings because of the installation of water-efficient plumbing fixtures and non-potable water systems associated with new construction; and

WHEREAS, The Project is required to comply with the City's Non-potable Water Ordinance, Article 12C of the San Francisco Health Code, and as a result, the Project will offset a portion of its potable water use with alternate water sources; and

WHEREAS, The relatively small volume of water demand generated by the Project itself would not exacerbate the projected shortfalls resulting from implementation of the Bay-Delta Plan Amendment; now, therefore, be it

RESOLVED, This Commission hereby approves the attached Water Supply Assessment for the proposed 447 Battery Street and 530 Sansome Street Project pursuant to Water Code Section 10910(g).

I hereby certify that the foregoing resolution was adopted by the San Francisco Public Utilities Commission at its meeting of January 28, 2025.

Director of Commission Affairs
San Francisco Public Utilities Commission

San Francisco Water Power Sewer
Services of the San Francisco Public Utilities Commission

525 Golden Gate Avenue, 13th Floor
San Francisco, CA 94102
T 415.554.3155
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TTY 415.554.3488

DATE: December 31, 2024

TO: Commissioner Kate H. Stacy, President
Commissioner Joshua Arce, Vice President
Commissioner Avni Jamdar
Commissioner Steve Leveroni

THROUGH: Dennis J. Herrera, General Manager

FROM: Steven R. Ritchie, Assistant General Manager, Water

SUBJECT: Water Supply Assessment for the 447 Battery and 530 Sansome Street Project

---

1.0 Introduction

The California Water Code (Sections 10910 through 10915) requires urban water suppliers like the San Francisco Public Utilities Commission (SFPUC) to furnish a Water Supply Assessment (WSA) to the city or county that has jurisdiction to approve the environmental documentation for certain qualifying projects (as defined in Water Code Section 10912(a)) subject to the California Environmental Quality Act (CEQA). The WSA process typically relies on information contained in a water supplier's Urban Water Management Plan and involves answering specific questions related to the estimated water demand of the proposed project. This memo serves as the WSA for the proposed 447 Battery and 530 Sansome Street Project (proposed project), for use in the preparation of an environmental impact report by the San Francisco Planning Department (Case No. 2024-007066ENV, San Francisco Planning Department).

1.1 2020 Urban Water Management Plan and 2023 Interim Water Demand Projections

The SFPUC Commission (Commission), by Resolution No. 21-0100, adopted the 2020 Urban Water Management Plan (UWMP) for the City and County of San Francisco. The water demand projections in the UWMP incorporated housing unit growth projections from the Housing Element 2022 Update objective and employment growth projections from the 2017 Land Use Allocation (LUA 2017) with the San Francisco Planning Department providing both projections. Since the SFPUC's adoption of the 2020 UWMP in June 2021, the Planning Commission certified the Housing Element 2022 Update Environmental Impact Report (Housing Element EIR) in November 2022. The Housing Element EIR, which supported the City's adoption of the Housing Element in January 2023, assumed slightly higher housing unit projections than those used in the 2020 UWMP, but was still in line with the objective to produce an average of 5,000 housing units per year. Nonetheless, because of the slightly higher housing unit projections associated with the Housing Element EIR, the SFPUC determined that its 2020 UWMP no longer accounted for all projected retail water demands.

The SFPUC will not be updating its 2020 UWMP until the next five-year cycle, which is anticipated to begin in 2025. Therefore, during this interim period, the SFPUC has

prepared the 2023 Interim Water Demand Projections (Attachment A) to document the SFPUC's projected retail water supplies when compared to projected retail water demands associated with the adopted Housing Element 2022 Update. The San Francisco Planning Department provided the updated housing unit projections for SFPUC to update its water demand projections. The water demand projections are presented in five-year increments through 2045, meeting Water Code requirements.

Growth associated with the proposed project was encompassed within the growth projections used in the 2020 UWMP, and therefore encompassed within the updated growth projections used in the 2023 Interim Water Demand Projections. Consequently, water demand associated with the proposed project was encompassed within the water demand projections in the 2020 UWMP, and therefore encompassed within the 2023 Interim Water Demand Projections. In other words, the proposed project has already been accounted for in SFPUC's water supply planning.

The WSA for a qualifying project within the SFPUC's retail service area[1] may use information from the UWMP and, as applicable, the 2023 Interim Water Demand Projections. Therefore, the ***2020 UWMP and 2023 Interim Water Demand Projections are incorporated by reference throughout this WSA, as shown in bold, italicized text.*** The 2020 UWMP and 2023 Interim Water Demand Projections may be accessed at www.sfpuc.gov/uwmp.

As described in detail in ***Section 7.3.1*** of the UWMP, in December 2018, the State Water Resources Control Board (SWRCB) adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment). The City, along with multiple other water agencies, filed suit in early 2019 challenging the validity of the Bay-Delta Plan Amendment. That lawsuit, which is consolidated with other legal challenges, is currently pending before the California Court of Appeal, Third District. In January 2021, the SWRCB moved to implement the Bay-Delta Plan Amendment on the Tuolumne River by issuing a water quality certification under Section 401 of the Clean Water Act in the Federal Energy Regulatory Commission (FERC) licensing proceedings for the hydropower projects associated with the New Don Pedro and La Grange dams. The City and other water users on the Tuolumne River filed legal and administrative challenges to these SWRCB actions. The SWRCB has since set aside the water quality certification and withdrawn it from the FERC record, and FERC has not yet reissued a license for the New Don Pedro Hydropower Project. Alongside the water quality certification, on August 8, 2022, the SWRCB issued a CEQA Notice of Preparation for an alternative means of implementing the Bay-Delta Plan Amendment. Any future amendments to or implementation of the Bay-Delta Plan Amendment may be subject to further legal challenges.

Recognizing the obstacles to implementing the Bay-Delta Plan Amendment, the SWRCB, by Resolution No. 2018-0059 adopting the Bay-Delta Plan Amendment, directed staff to help complete a "Delta watershed-wide agreement, including potential flow measures for the Tuolumne River" by March 1, 2019, and to incorporate such agreements as an "alternative" for a future amendment to the Bay-Delta Plan to be presented to the SWRCB "as early as possible after December 1, 2019." In accordance with the SWRCB's instruction, on March 1, 2019, the SFPUC, in partnership with other key interested parties, submitted a proposed project description for the Tuolumne River that could form the basis for an agreement (Healthy Rivers and Landscapes Agreement) with the SWRCB that would serve as an amendment to the Bay-Delta

[1] SFPUC's "retail service area" refers to water customers inside the City and County of San Francisco (City), as well as select areas outside of the City.

Plan. On March 26, 2019, the SFPUC adopted Resolution No. 19-0057 to support its participation in the Healthy Rivers and Landscapes Agreement negotiation process. In November 2022, the SFPUC and partner water agencies on the Tuolumne River signed onto a non-binding Memorandum of Understanding between the State and other parties to structure their participation in the Healthy Rivers and Landscapes Agreements negotiation process. This framework document is designed to facilitate the parties' development of enforceable agreements and amendments to the Bay-Delta Plan, with actions and funding to integrate additional water flows with the physical landscape to help improve habitat for native fish in the Sacramento-San Joaquin River Delta watershed, including the Tuolumne River. On March 29, 2024, in furtherance of the memorandum of understanding, the SFPUC submitted the key components of its proposed Healthy Rivers and Landscapes Agreement to the SWRCB. The SFPUC continues to actively participate in this process and as of the date of the issuance of this Water Supply Assessment, those negotiations remain ongoing.

Implementation of the Bay-Delta Plan Amendment is uncertain given the ongoing negotiations, litigation, and regulatory proceedings. Given the current uncertainty regarding the extent and timing of the implementation of the Bay-Delta Plan Amendment, this WSA analyzes water supply and demand through 2045 under three scenarios:

1. Scenario 1: No implementation of the Bay-Delta Plan Amendment
2. Scenario 2: Implementation of the Healthy Rivers and Landscapes Agreement
3. Scenario 3: Implementation of the Bay-Delta Plan Amendment

1.2 Basis for Requiring a WSA for the Proposed Project

The proposed project qualifies for preparation of a WSA under Water Code Section 10912(a) because it is a mixed-use development that includes more than 250,000 square feet of office space. The proposed project is characterized further in Section 1.3.

1.3 Proposed Project Description

The proposed project is located on an approximately 0.57-acre site in the Financial District neighborhood of San Francisco. The project sponsor, EQX JACKSON SQ HOLDCO LLC, proposes demolishing all existing structures on 530 Sansome, 425 & 439-445 Washington Street, and 447 Battery and developing a new mixed-use high-rise tower with 3 below-grade levels reaching a height of 544 feet (up to 41 stories, 574 feet inclusive of rooftop mechanical features) and a new 4-story Fire Station 13 with one below-grade level reaching a height of 55 feet (60 feet inclusive of rooftop mechanical features) containing approximately 31,200 square feet. The high-rise tower would include approximately 7,405 square feet of retail/restaurant uses, between approximately 372,035 and 417,230 square feet of office use, between approximately 127,710 and 188,820 square feet of hotel use (between 100 and 200 keys), and approximately 10,135 square feet of ballroom/pre-function/meeting space. The project also includes 12,695 square feet of privately-owned public open space (POPOS) along Merchant Street. The range in hotel and office uses reflects that the proposed project approvals would allow for post-entitlement refinement to the final design to program five of the middle floors of the building as either office or hotel. This water supply assessment assumes a conservative water demand scenario in which the square footage of hotel space is maximized at the expense of office square footage.

Project construction of the mixed-use tower and new fire station would occur in a single phase starting approximately in early 2027 and finishing in 2030.

For additional details on the proposed project, see Attachment B.

2.0 Water Supply

This section reviews San Francisco's existing and planned water supplies.

2.1 Regional Water System

See ***Section 3.1 of the 2020 UWMP*** for descriptions of the San Francisco Regional Water System (RWS), ***Section 6.1 of the 2020 UWMP*** for water rights held by City and County of San Francisco, and ***Section 7.1 of the 2020 UWMP*** for the SFPUC Water System Improvement Program.

2.2 Existing Retail Supplies

Retail water supplies from the RWS are described in ***Section 6.1 of the 2020 UWMP***.

Local groundwater supplies, including the Westside Groundwater Basin, and recycled water supplies, including the Harding Park Recycled Water Project and Pacifica Recycled Water Project, are described in ***Section 6.2 of the 2020 UWMP***.

2.3 Planned Retail Water Supply Sources

The San Francisco Groundwater Supply Project is described in ***Section 6.2.1.1 of the 2020 UWMP***.

The Westside and Treasure Island Recycled Water Projects are described in ***Section 6.2.2 of the 2020 UWMP***.

2.4 Summary of Current and Future Retail Water Supplies

A breakdown of water supply sources for meeting SFPUC retail water demand through 2045 in normal years is provided in ***Section 6.2.5 of the 2020 UWMP***. For planning purposes, the SFPUC defines "normal year" as based on historical hydrology under conditions that allow the reservoirs to be filled over the course of the snowmelt season, allowing full deliveries to customers. Normal year supplies include, but are not limited to, RWS supply, groundwater, and recycled water. For dry-year supplies, see the next section.

2.5 Dry-Year Water Supplies

The SFPUC undertook several water supply projects through the Water System Improvement Program to meet dry-year demands with no greater than 20 percent system-wide rationing in any one year. Descriptions of these dry-year supplies are provided in ***Section 7.2 of the 2020 UWMP***.

2.6 Additional Water Supplies

The SFPUC is increasing and accelerating its efforts to acquire additional water supplies and explore other projects that would increase overall water supply resilience through the Alternative Water Supply Program. A description of this program and the supplies being studied is provided in ***Section 7.4 of the 2020 UWMP***.

3.0 Water Demand

This section reviews the projected retail water demands and the demand associated with the proposed project.

3.1 Projected Retail Water Demand

The projected retail water demand through 2045 is described in ***Section 4.1 of the 2020 UWMP and updated in the 2023 Interim Water Demand Projections (Attachment A)***. This section of the 2020 UWMP also describes the methodology used for demand projections and the factors considered. Updates specific to the change in housing unit projections are described in the 2023 Interim Water Demand Projections.

3.2 Proposed Project Water Demand

The project sponsor provided a memo describing the methods and assumptions used to estimate the water demand of the proposed project, along with the resulting demand (Attachment B).

Because the mixed-use tower component of the proposed project, must comply with San Francisco's Non-potable Water Ordinance (Article 12C of the San Francisco Health Code), estimates for both potable and non-potable demands were submitted as part of the WSA request. The Non-potable Water Ordinance requires new development projects with 100,000 square feet or more of gross floor area, that apply for a site permit after January 1, 2022, to install and operate an onsite non-potable water system. Commercial buildings must meet their toilet and urinal flushing and drain trap priming demands through the collection, treatment, and use of available blackwater and condensate. Residential and mixed-use buildings must meet their toilet and urinal flushing, irrigation, clothes washing, and drain trap priming demands through the collection, treatment, and use of available graywater and condensate. While not required, residential and mixed-use projects may use treated blackwater if desired. As indicated in the water demand memo provided on behalf of the project sponsor in Attachment B, the proposed project would exceed the requirements of the Non-potable Water Ordinance by using alternate supplies, e.g., blackwater, graywater, and condensate to meet toilet and urinal flushing, drain trap priming, irrigation, and HVAC/cooling demands.

Both potable and non-potable demands for the project were estimated using the SFPUC's Non-potable Water Calculator and supplemented with additional calculations for HVAC system/cooling tower, indoor swimming pool, and fire truck washing. The SFPUC reviewed the memo to ensure that the methodology is appropriate for the types of proposed water uses, the assumptions are valid and thoroughly documented along with verifiable data sources, and a professional standard of care was used. The SFPUC concluded that the demand estimates provided on behalf of the project sponsor are reasonable. Water demand associated with the proposed project over the 20-year planning horizon is shown in Table 1.

The non-potable demand estimates in Table 1 are based on building uses anticipated at the time the WSA was requested, i.e., during the planning and environmental review stage of the proposed project. It is understood that these estimates will likely change as the proposed project's design progresses, and information submitted for the WSA request is not part of the proposed project's compliance with the Non-potable Water Ordinance. City review and approval of a proposed onsite water system must be performed separately through the Non-potable Water Program. However, the intent of providing a breakdown of potable and non-potable demand estimates in this WSA is to

demonstrate that the proposed project will incorporate water reuse in compliance with City requirements and the proposed project's sustainability goals, if any. As noted above, the total demand of the proposed project, regardless of non-potable use, is already encompassed in the 2020 UWMP and the 2023 Interim Water Demand Projections. Furthermore, total demand represents the most conservative estimate and includes back-up potable supplies that must be provided by the SFPUC if non-potable supplies serving the proposed project are unavailable.

Table 1: Net Water Demand Based on Project Phasing

	2025	2030	2035	2040	2045
Potable Demand (mgd)	--	0.018	0018	0.018	0.018
Non-potable Demand (mgd)	--	0.010	0.010	0.010	0.010
Total Demand (mgd)	--	0.028	0.028	0.028	0.028
Potential Potable Water Savings as Percentage of Total Demand	--	37%	37%	37%	37%
Existing Site Demand (mgd)	0.00054				
Net New Water Demand (mgd)	--	**0.027**	**0.027**	**0.027**	**0.027**

mgd = million gallons per day

Notes:
1. Total demand conservatively assumes that all demands are met with potable supplies.
2. Existing site demands averaged over the most recent 5-year period. Existing demands are subtracted from total projected water demands to show the incremental increase in demands associated with the project (i.e., the net increase in water demand).

The San Francisco Planning Department has determined that the proposed project is encompassed within the housing projections described in the Housing Element 2022 Update and the employment projections from LUA 2017, as indicated in the letter from the Planning Department to the SFPUC (Attachment B). Therefore, the demand of the proposed project is also encompassed within the San Francisco retail water demands that are presented in the 2023 Interim Water Demand Projections, which considers retail water demand based on the housing and employment projections provided by the Planning Department. The following Table 2 shows the demand of the proposed project relative to total retail demand.

Table 2: Proposed Project Demand Relative to Total Retail Demand

	2025	2030	2035	2040	2045
Total Retail Demand (mgd)[1]	71.3	73.0	75.0	77.9	81.1
Total Demand of Proposed Project (mgd)	--	0.027	0.027	0.027	0.027
Total Demand of Proposed Project as Percentage of Total Retail Demand[2]	--	0.037%	0.036%	0.035%	0.033%

Notes:
1. Retail water demands are provided in ***Table 3 of the 2023 Interim Water Demand Projections***.
2. The proposed project is accounted for in the housing and employment projections provided by the Planning Department; therefore, total demands associated with the proposed project are accounted for in the 2023 Interim Water Demand Projections.

4.0 Conclusion

4.1 Comparison of Projected Supply and Demand

For all scenarios presented here, local supplies (i.e., supplies not from the RWS) correspond to those in ***Table 6-5 of the 2020 UWMP***. Procedures for determining RWS supply availability according to the SFPUC's Water Shortage Allocation Plan are described in ***Section 8.2.4 of the 2020 UWMP***.

As explained previously in Section 3.2, water demands associated with the proposed project are already captured in the retail demand projections presented in the 2020 UWMP and the 2023 Interim Water Demand Projections. The proposed project is expected to represent up to 0.037% of the total retail water demand. Total retail demands correspond to those in ***Table 3 of the 2023 Interim Water Demand Projections*** and reflect both passive and active conservation, onsite water reuse savings, and water loss.

4.1.1 Scenario 1: No Implementation of the Bay-Delta Plan Amendment

Table 3 below is adapted from ***Table 5 of the 2023 Interim Water Demand Projections*** and compares the SFPUC's retail water supplies and demands through 2045 during normal year, single dry year, and multiple dry years under Scenario 1. Under this scenario without implementation of the Bay-Delta Plan Amendment, existing and planned supplies would meet all projected RWS demands in all years. Even though system-wide shortages of RWS supplies would occur in the 4th and 5th years of a multi-year drought in 2045 projected levels of demand, retail customers would reduce their demands by 5% as required by the Water Supply Agreement between SFPUC and its Wholesale Customers. To achieve a small reduction such as this, the SFPUC may prohibit certain discretionary outdoor water uses and/or call for voluntary water use reduction by its retail customers pursuant to its Water Shortage Contingency Plan (***Appendix K of the 2020 UWMP***). The required level of water use reduction is well below the SFPUC's RWS level of service (LOS) goal of limiting water use reduction to no more than 20% on a system-wide basis (i.e., an average throughout the RWS) in drought years. The LOS goal was adopted by the Commission in 2008 through Resolution No. 08-0200.

4.1.2 Scenario 2: Implementation of the Healthy Rivers and Landscapes Agreement

The Healthy Rivers and Landscapes Agreement has yet to be accepted by SWRCB as an alternative to the Bay-Delta Plan Amendment and thus the shortages that would occur with its implementation are not known with certainty. However, given that the objectives of the Healthy Rivers and Landscapes Agreement are to provide fishery improvements while protecting water supply through flow and non-flow measures, the RWS supply shortfalls under the Healthy Rivers and Landscapes Agreement would be less than those under the Bay-Delta Plan Amendment, and therefore would require water use reductions of a lesser degree than that which would occur under Scenario 3. The degree of water use reduction would also more closely align with the SFPUC's RWS LOS goal of limiting water use reduction to no more than 20% on a system-wide basis in drought years.

4.1.3 Scenario 3: Implementation of the Bay-Delta Plan Amendment

Table 4 below provides projected supplies and demands under Scenario 3. The RWS is projected to experience significant shortfalls in single dry and multiple dry years

through 2045, regardless of whether the proposed project is constructed. These significant shortfalls are a result of implementation of the Bay-Delta Plan Amendment and not attributed to the incremental retail demand associated with the proposed project. Shortfalls would range from about 11 to 29 mgd, corresponding to water use reduction in the retail service area ranging from approximately 15-36%, over the next 20 years.

Table 3: Projected Supply and Demand Comparison Under Scenario 1 (No Implementation of the Bay-Delta Plan Amendment) (mgd)

		Normal Year	Single Dry Year[1]	Multiple Dry Years[2]				
				Year 1	Year 2	Year 3	Year 4	Year 5
2025	Total Retail Demand[3]	71.3	71.3	71.3	71.3	71.3	71.3	71.3
	Total Retail Supply[4]	71.3	71.3	71.3	71.3	71.3	71.3	71.3
	Shortfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Shortfall as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2030	Total Retail Demand[3]	73.0	73.0	73.0	73.0	73.0	73.0	73.0
	Total Retail Supply[4]	73.0	73.0	73.0	73.0	73.0	73.0	73.0
	Shortfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Shortfall as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2035	Total Retail Demand[3]	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	Total Retail Supply[4]	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	Shortfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Shortfall as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2040	Total Retail Demand[3]	77.9	77.9	77.9	77.9	77.9	77.9	77.9
	Total Retail Supply[4]	77.9	77.9	77.9	77.9	77.9	77.9	77.9
	Shortfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Shortfall as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2045	Total Retail Demand[3, 5]	81.1	81.1	81.1	81.1	81.1	77.0	77.0
	Total Retail Supply[4]	81.1	81.1	81.1	81.1	81.1	81.1	81.1
	Shortfall	0.0	0.0	0.0	0.0	0.0	4.1	4.1
	Shortfall as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	5.3%	5.3%

Notes:
1. During all single dry years, no RWS system-wide shortages are in effect.
2. During multiple dry years, no RWS system-wide shortages are in effect until years 4 and 5 at 2045 levels of demand. During those years, a 10% system-wide shortage is in effect.
3. Total retail demands correspond to those in ***Table 3 of the 2023 Interim Water Demand Projections***.
4. Total retail supplies correspond to those in ***Table 5 of the 2023 Interim Water Demand Projections***.
5. As amended in 2018, Section 2.1 of the Water Shortage Allocation Plan requires retail customers to conserve a minimum of 5% during droughts. If, during a declared water shortage, retail demands on the RWS are lower than the retail allocation in a dry year, retail demands on the RWS will be reduced by 5%. This provision is in effect in years 4 and 5 of a multi-dry year sequence at 2045 levels of demand.

Table 4: Projected Supply and Demand Comparison Under Scenario 3 (Implementation of the Bay-Delta Plan Amendment) (mgd)

		Normal Year	Single Dry Year[1]	Multiple Dry Years[2]				
				Year 1	Year 2	Year 3	Year 4	Year 5
2025	Total Retail Demand[3]	71.3	71.3	71.3	71.3	71.3	71.3	71.3
	Total Retail Supply[4]	71.3	59.5	59.5	51.5	51.5	51.5	51.5
	Shortfall	0.0	-11.8	-11.8	-19.8	-19.8	-19.8	-19.8
	Shortfall as % of Demand	0.0%	-16.5%	-16.5%	-27.8%	-27.8%	-27.8%	-27.8%
2030	Total Retail Demand[3]	73.0	73.0	73.0	73.0	73.0	73.0	73.0
	Total Retail Supply[4]	73.0	61.4	61.4	53.4	53.4	53.4	53.4
	Shortfall	0.0	-11.6	-11.6	-19.6	-19.6	-19.6	-19.6
	Shortfall as % of Demand	0.0%	-15.9%	-15.9%	-26.8%	-26.8%	-26.8%	-26.8%
2035	Total Retail Demand[3]	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	Total Retail Supply[4]	75.0	63.8	63.8	55.5	55.5	55.5	51.4
	Shortfall	0.0	-11.2	-11.2	-19.5	-19.5	-19.5	-23.6
	Shortfall as % of Demand	0.0%	-14.9%	-14.9%	-26.0%	-26.0%	-26.0%	-31.5%
2040	Total Retail Demand[3]	77.9	77.9	77.9	77.9	77.9	77.9	77.9
	Total Retail Supply[4]	77.9	66.4	66.4	57.9	57.9	52.0	52.0
	Shortfall	0.0	-11.5	-11.5	-20.0	-20.0	-25.9	-25.9
	Shortfall as % of Demand	0.0%	-14.8%	-14.8%	-25.7%	-25.7%	-33.2%	-33.2%
2045	Total Retail Demand[3]	81.1	81.1	81.1	81.1	81.1	81.1	81.1
	Total Retail Supply[4]	81.1	60.1	60.1	60.1	60.1	52.1	52.1
	Shortfall	0.0	-21.0	-21.0	-21.0	-21.0	-29.0	-29.0
	Shortfall as % of Demand	0.0%	-25.9%	-25.9%	-25.9%	-25.9%	-35.8%	-35.8%

Notes:
1. During a single dry year, system-wide shortages of 30-40% are in effect (see ***Table 8-3 of the 2020 UWMP***). For this analysis, shortages greater than 20% are considered to have the same retail/wholesale allocation as the maximum Stage 4, 16-20% system-wide shortage in the Water Shortage Allocation Plan.
2. During multiple dry years, system-wide shortages of 30-55% are in effect (see ***Table 8-3 of the 2020 UWMP***). For this analysis, shortages greater than 20% are considered to have the same retail/wholesale allocation as the maximum Stage 4, 16-20% system-wide shortage in the Water Shortage Allocation Plan.
3. Total retail demands correspond to those in ***Table 3 of the 2023 Interim Water Demand Projections***.
4. Total retail supplies correspond to those in ***Table 4 of the 2023 Interim Water Demand Projections*** with a correction made for volumes shown in the Normal Year column. The 2023 Interim Water Demand Projections has a typo which was revised in this table to show that total retail demand equals total retail supply for the Normal Year; the shortfall between demand and supply is unchanged (i.e., zero).

4.2 Potential for Shortages in SFPUC Service Area

The inflow to SFPUC reservoirs can vary greatly from year to year, based on the hydrology of the region. When inflows are low during dry years, the potential exists for water supply shortages in the SFPUC service area. The occurrence of shortages depends on the magnitude and duration of dry conditions, and on the system demand for water supply.

- In an evaluation of historical hydrology (1920 – 2017) combined with 2020 system demand, the potential for water supply shortages due to dry hydrology is low.

- When projected system demand in 2045 (an increase over 2020 demand) is evaluated along with historical hydrology, the potential for shortage increases but remains relatively low.

- When large increases in instream flow requirements (such as those associated with the Bay-Delta Plan update) are included in either of the above evaluations, the potential for water shortages in the SFPUC system increases markedly. The instream flow requirements are analogous to an increase in demand in this evaluation.

4.3 Water Use Reduction Implications to the Proposed Project

While the levels of water use reduction described above apply to the retail service area (i.e., approximately 15-36% under Scenario 3), the SFPUC may allocate different levels of water use reduction to individual retail customers based on customer type (e.g., dedicated irrigation, single family residential, multi-family residential, commercial) to achieve the required level of retail system-wide demand reduction. Allocation methods and processes that have been considered in the past and may be used in future droughts are described in the SFPUC's Water Shortage Contingency Plan (***Appendix K of the 2020 UWMP***). For both residential and commercial customers, the SFPUC may implement varying levels of water use reductions based on the baseline level of water use, e.g., require less reduction from customers that use less water to begin with. Under the Water Shortage Contingency Plan, the allocation method or combination of methods that would be applied during water shortages caused by drought would be subject to the discretion of the General Manager.

In accordance with the Water Shortage Contingency Plan, the level of water use reduction that would be imposed on the proposed project would be determined at the time of a drought or other water shortage and cannot be established with certainty prior to the shortage event. However, newly constructed buildings, such as the proposed project, have water-efficient fixtures and non-potable water systems that comply with the latest regulations and should be better prepared than older buildings to meet the required reductions.

4.4 Findings

Regarding the availability of water supplies to serve the proposed project beginning in 2027, the SFPUC finds, based on the entire record before it, as follows:

- During normal years, the SFPUC's total projected water supplies will meet the projected demands of its retail customers, including those of the proposed project, existing customers, and foreseeable future development under Scenario 1, Scenario 2, and Scenario 3.

- During single dry years and multiple dry years under Scenario 1—No implementation of the Bay-Delta Plan Amendment or the Healthy Rivers and Landscapes Agreement—the SFPUC can meet the projected demands of its retail customers, including those of the proposed project, existing customers, and foreseeable future development without the need for water use reduction beyond the LOS goal of 20% system-wide water use reduction.

- During single dry years and multiple dry years under Scenario 2—Implementation of the Healthy Rivers and Landscapes Agreement—the SFPUC would still face a shortfall in single dry and multiple dry years, thus requiring water use reduction, but to a lesser degree and in closer alignment to the LOS goal of no more than 20% system-wide water use reduction compared to that which would occur under Scenario 3. Because negotiations in furtherance of the November 2022 Memorandum of Understanding continue in earnest, and litigation challenging the adoption of the Bay-Delta Plan Amendment remains pending, SFPUC further finds that the supply under Scenario 2 is more likely to occur than that projected in Scenario 3.

- During single dry years and multiple dry years under Scenario 3—Implementation of the Bay-Delta Plan Amendment—the SFPUC cannot reliably meet the projected demands of its retail customers, including the proposed project, existing customers, and foreseeable future development, without water use reduction at a level greater than that required to achieve the LOS goal of a maximum of 20% system-wide average water use reduction. The SFPUC estimates it would impose up to 36% water use reductions across the retail service area.

- The SFPUC's Water Shortage Contingency Plan describes allocation methods and processes that may be used in future droughts. For both residential and commercial customers, the SFPUC may implement varying levels of water use reductions based on the baseline level of water use, e.g., require less reduction from customers that use less water to begin with. For the proposed project specifically, these policies may result in lower levels of mandatory water use reduction because of the installation of water-efficient plumbing fixtures and non-potable water systems associated with new construction.

- Under Scenario 3, the relatively small volume of water demand generated by the proposed project, which demand will be further reduced by compliance with SFPUC's Non-potable Water Ordinance, would not exacerbate the projected shortfalls resulting from implementation of the Bay-Delta Plan Amendment. Regardless of whether the proposed project is constructed, with implementation of the Bay-Delta Plan Amendment, the SFPUC's existing and planned water supplies will not meet the water demands of its retail service area in dry years without significant demand reductions.

While this WSA contains information provided by or on behalf of the project sponsor regarding the proposed project's plans for onsite water reuse and demand estimates using the SFPUC's Non-potable Water Calculator, any information submitted to the SFPUC for preparation of this WSA does not fulfill the requirements of the Non-potable Water Ordinance. City review and approval of a proposed onsite water system must be performed separately through the Non-potable Water Program.

Approval of this WSA by the Commission is not equivalent to approval of the development project for which the WSA is prepared. A WSA is an informational document required to be prepared for use in the City's environmental review of a project under CEQA. It assesses the adequacy of water supplies to serve the proposed project and cumulative demand.

Furthermore, this WSA is not a "will serve" letter and does not verify the adequacy of existing distribution system capacity to serve the proposed project. A "will serve" letter and/or hydraulic analysis must be requested separately from the SFPUC City Distribution Division to verify hydraulic capacity.

If there are any questions or concerns, please contact Steve Ritchie at (415) 934-5736 or SRitchie@sfwater.org.

Attachments: Attachment A, 2023 Interim Water Demand Projections
Attachment B, 447 Battery and 530 Sansome Street Project Demand Memo

Attachment A –

2023 Interim Water Demand Projections

2023 Interim Water Demand Projections

for the City and County of San Francisco

Prepared by:

San Francisco Public Utilities Commission

September 2023

San Francisco Water Power Sewer

Services of the San Francisco Public Utilities Commission

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1.0 Introduction

1.1 Purpose of Water Supply Assessments

The California Water Code (Sections 10910 through 10915) requires urban water suppliers to evaluate water supply availability to inform environmental review for qualifying projects ("water demand projects") defined in Water Code Section 10912(a). Water Code Section 10910 requires the preparation of a "water supply assessment" (WSA) for water demand projects that include a determination of whether available water supplies are sufficient to serve the demand generated by the project, as well as reasonably foreseeable cumulative demand over a 20 year period, including years of normal precipitation, single dry, and multiple dry years. If the water supplies needed by a water demand project were accounted for in the water supplier's most recently adopted Urban Water Management Plan (UWMP), under Water Code Section 10910(c)(2), the water supplier may incorporate the requested information from the UWMP in preparing a WSA for a water demand project.

1.2 Purpose of this Document

The SFPUC most recently adopted the 2020 UWMP update for the City and County of San Francisco in June 2021. As described in the 2020 UWMP, Section 4.1.2, Projected Retail Demands, the 2020 UWMP relied on the San Francisco Planning Department's (SF Planning) housing projections based on the Housing Element 2022 Update, which was still under development when the 2020 UWMP was adopted. One of the objectives of the Housing Element 2022 Update was to produce an average of 5,000 housing units per year with adjustments for certain large development plans. Since the SFPUC's adoption of the 2020 UWMP in June 2021, the Planning Commission certified the Housing Element 2022 Update Environmental Impact Report (Housing Element EIR) in November 2022. The Housing Element EIR, which supported the City's adoption of the Housing Element in January 2023, assumed slightly higher housing unit projections than those used in the 2020 UWMP, but was still in line with the objective to produce an average of 5,000 housing units per year. Nonetheless, as a result of the slightly higher housing unit projections associated with the Housing Element EIR, the SFPUC determined that its 2020 UWMP no longer accounted for all projected retail water demands.

The SFPUC will not be updating its UWMP until 2025. Therefore, during this interim period, the SFPUC has prepared the 2023 Interim Water Demand Projections herein to document the SFPUC's projected retail water supplies when compared to projected retail water demands associated with the adopted Housing Element 2022 Update. This document also adjusts the retail water supply projections to meet the updated retail water demands.

The information in this document, in concert with the background information provided in the 2020 UWMP that are not superseded by the 2023 Interim Water Demand Projections herein, can be used in the development of WSAs for pending water demand projects.

1.3 What this Document Does and Does Not Address

This document only updates the following items from the 2020 UWMP as they are directly related to the change in housing unit projections:

- Retail water demand projections, specifically demands of the in-City multi-family residential sector, through 2045
- Retail water supply and demand comparisons (i.e., surpluses and shortfalls) during normal, single dry, and multiply dry years through 2045

This document does not update the following items from the 2020 UWMP as they are not directly related to the change in housing unit projections:

- Population projections associated with the Housing Element 2022 Update
- Employment projections associated with the Housing Element 2022 Update
- Retail water demands for the single family residential and non-residential sectors
- Retail water loss
- Retail water savings associated with Conservation and Onsite Water Reuse programs
- Suburban retail water demands
- Wholesale water demands
- Status of water supply projects

2.0 Housing Unit Projections

SF Planning provided updated housing unit projections in alignment with the Housing Element EIR in a memorandum to the SFPUC dated August 18, 2023 (Appendix A). Per SF Planning's recommendation, it is assumed that the number of single-family detached houses will not increase from existing stock and that all future net housing growth will take the form of multi-family structures.

Table 1 compares the updated housing unit projections to those used in the 2020 UWMP in 5-year increments from 2025 to 2045. SFPUC used the updated housing unit projections as inputs to the same water demand forecasting model (i.e., econometric model) that was developed for the 2020 UWMP, described in the next section.

Table 1: Housing Unit Projections

	2025	2030	2035	2040	2045
Used in 2020 UWMP	425,118	450,923	476,728	502,533	528,338
2023 Update	432,667	458,333	483,600	509,000	534,000
Net Change	**7,549**	**7,410**	**6,872**	**6,467**	**5,662**

3.0 Retail Water Demands

As described in the 2020 UWMP, Section 3.2, Retail Service Area, retail customers include the residents, businesses, and industries located within City limits, referred to as the in-City retail service area. Retail service is also provided to a patchwork of customers located outside the City, such as the Town of Sunol, San Francisco International Airport, Lawrence Livermore National Laboratory, and Castlewood County Service Area. These areas are not contiguous and are collectively referred to as the suburban retail service area.

The SFPUC uses econometric models to project the demands for its in-City single family residential, multi-family residential, and commercial/industrial sectors. Other in-City non-residential demands (i.e., irrigation and municipal) and suburban retail demands are estimated based on historical consumption and supplement the demands projected by the econometric models. Water loss is forecasted separately. For

more information about how retail water demand projections were developed for the 2020 UWMP, refer to Section 4.1.2, Projected Retail Demands, of the 2020 UWMP.

The SFPUC, with the support of its consultant team that developed the econometric models used for the 2020 UWMP, re-ran the model specific to the multi-family residential sector using the updated housing unit projections described in the previous section. No other model inputs were changed from those that were used for the 2020 UWMP. The resulting model outputs are detailed in Appendix B and summarized in Table 2 below. Multi-family residential demands increased by about 0.5 to 0.6 mgd, or 1.5 to 2.5%, compared to those in the 2020 UWMP.

Table 2: Multi-Family Residential Water Demands (million gallons per day [mgd])

	2025	2030	2035	2040	2045
Used in 2020 UWMP	23.7	25.6	27.9	30.3	33.0
2023 Update	24.3	26.2	28.4	30.9	33.5
Difference	**0.6**	**0.6**	**0.6**	**0.5**	**0.5**
% Difference from 2020 UWMP	**2.5%**	**2.3%**	**2.0%**	**1.8%**	**1.5%**

Total retail water demand projections are shown in Table 3, which supersedes Table 4-1 of the 2020 UWMP. These projections comprise the updated multi-family residential demands from Table 2 and the unchanged demands for the remaining sectors. The demands of the remaining sectors are not updated as they are not directly related to the change in housing unit projections. Total retail demands increased by about 0.6 to 0.8% compared to those in the 2020 UWMP.

Table 3: Retail Water Demands (mgd)

Retail Sector or Use Type	Actual[a]	Projected[b]				
	2020	2025	2030	2035	2040	2045
In-City Retail						
Single-Family Residential	14.5	13.7	13.5	13.4	13.5	13.5
Multi-Family Residential	22.9	24.3	26.2	28.4	30.9	33.5
Non-residential	20.9	22.9	22.9	22.8	23.1	23.6
Water Loss[c]	7.2	6.0	6.0	6.0	6.0	6.0
Subtotal In-City Retail Demand	65.3	66.9	68.6	70.6	73.5	76.7
Suburban Retail						
Single-Family Residential[d]	0.1	0.1	0.1	0.1	0.1	0.1
Non-Residential	3.1	4.0	4.0	4.0	4.0	4.0
Groveland CSD[e]	0.3	0.3	0.3	0.3	0.3	0.3
Water Loss[c]	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Suburban Retail Demand	3.5	4.4	4.4	4.4	4.4	4.4
Total Retail Demand	**68.8**	**71.3**	**73.0**	**75.0**	**77.9**	**81.1**
% Difference from 2020 UWMP	**N/A**	**0.8%**	**0.8%**	**0.8%**	**0.7%**	**0.6%**

a Actual consumption data are obtained from customer billing data.

b Single family residential and multi-family residential demand projections are from an econometric model developed for the SFPUC. Non-residential demands include commercial/industrial demands, which are also from an econometric model, as well as municipal and irrigation demands, which are assumed to remain constant at the previous five-year average level.

c Water losses include both apparent and real losses. Suburban retail water losses are considered to be negligible. Actual water loss in 2020 is based on SFPUC's July 2019 – June 2020 water loss audit.

d Suburban retail residential demands are for single family only as no multi-family residential buildings are served.

e Groveland Community Services District (CSD) is accounted for as a retail customer for the purpose of this table and subsequent retail supply and demand comparisons in the 2020 UWMP. Demand projections were provided by Groveland CSD based on its population projections and assumed per capita water use of 107 GPCD (projections are subject to change as part of its UWMP process). In the corresponding standardized tables in UWMP 2020 Appendix B, Groveland CSD is not reported as retail, but rather wholesale.

4.0 Water Supply and Demand Comparisons

This section compares the SFPUC's retail water supplies (unchanged from the 2020 UWMP) and demands (updated in Table 3) through 2045 during normal, single dry, and multiple dry years. The supply and demand comparisons are presented for two Regional Water System (RWS) supply scenarios: (1) with full implementation of the Bay-Delta Plan Amendment and (2) without implementation of the Bay-Delta Plan Amendment. For more information about these scenarios and how their corresponding supplies were estimated, refer to Section 8, Water Supply Reliability Assessment, of the 2020 UWMP[1].

4.1 With Bay-Delta Plan Amendment

The instream flow requirements of the Bay-Delta Plan Amendment would impact the RWS supplies in single dry years and multiple dry years. The comparison of retail demands and supplies under the Bay-Delta Plan Amendment is presented in Table 4, which supersedes Table 8-4 of the 2020 UWMP and demonstrates the following:

- **Normal Years:** During normal hydrologic years, the SFPUC will have adequate supplies to meet its projected retail water demands. This is unchanged from the 2020 UWMP.
- **Single Dry Year:** During single dry years, there would be an anticipated 30 to 40% shortage of RWS supplies. When the supplies available to retail customers (RWS plus local supplies) are compared to the projected retail demands, a retail supply shortfall of 15% to 26% (11 to 21 mgd) is expected in single dry year conditions. These shortfalls are less than 1%, or 1 mgd, higher than estimated in the 2020 UWMP.
- **Multiple Dry Years:** If a multiple dry year event occurs, there would be anticipated shortages in RWS supplies of 30 to 49%, depending on demand levels. When the supplies available to retail customers (RWS plus local supplies) are compared to the projected retail demands, there is an anticipated shortfall of almost 36%, or 29 mgd, by the fifth dry year at 2045 projected levels of demand. This shortfall is less than 1%, or 1 mgd, higher than estimated in the 2020 UWMP.

4.2 Without Bay-Delta Plan Amendment

Without implementation of the Bay-Delta Plan Amendment, existing and planned supplies would meet all projected RWS demands in all years except deep into a multi-year drought at 2045 projected levels of demand. The comparison of retail demands and supplies is presented in Table 5, which supersedes Table 8-6 of the 2020 UWMP and demonstrates the following:

- **Normal Years:** During normal hydrologic years, the SFPUC will have adequate supplies to meet its projected retail water demands. This is unchanged from the 2020 UWMP.
- **Single Dry Year:** During single dry years, there are no anticipated shortages of RWS supplies. This is unchanged from the 2020 UWMP.
- **Multiple Dry Years:** In the multiple dry year scenario, the SFPUC would only experience system-wide shortages in RWS supplies of 10% during years 4 and 5 of an extended drought at 2045

[1] Section 7.3.1, page 7-5, of the 2020 UWMP states, "Although the [State Water Resources Control Board] has stated it intends to implement the Bay-Delta Plan Amendment on the Tuolumne River by the year 2022, given the current level of uncertainty, it is assumed for the purposes of this draft UWMP that the Bay-Delta Plan Amendment will be fully implemented starting in 2023." To date, the Bay-Delta Plan Amendment has not been implemented and the SFPUC currently does not have an anticipated date for implementation.

levels of demand. In a 10% shortage, retail customers would reduce their demands by 5% as required by the Water Supply Agreement between SFPUC and its Wholesale Customers. As a result of this demand reduction, there is a projected surplus of 5.3%, or 4.1 mgd, which is 0.1 mgd greater than that estimated in the 2020 UWMP.

Table 4: Retail Supply and Demand Comparison for Projected Normal & Dry Year Scenarios With Bay-Delta Plan Amendment (mgd)

		Normal Year	Single Dry Year[a]	Multiple Dry Years[b]				
				Year 1	Year 2	Year 3	Year 4	Year 5
2025	Total Retail Demand	71.3	71.3	71.3	71.3	71.3	71.3	71.3
	Baseline Retail Demand[c]	*71.3*	*71.3*	*71.3*	*71.3*	*71.3*	*71.3*	*71.3*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	70.7	59.5	59.5	51.5	51.5	51.5	51.5
	Retail Groundwater[e]	*1.4*	*1.4*	*1.4*	*1.4*	*1.4*	*1.4*	*1.4*
	Retail Recycled Water[f]	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*
	RWS Supply Utilized by Retail[g]	*67.2*	*56.0*	*56.0*	*48.0*	*48.0*	*48.0*	*48.0*
	Difference (Supply Surplus or Shortfall)	0.0	-11.8	-11.8	-19.8	-19.8	-19.8	-19.8
	Difference as Percentage of Demand	0.0%	-16.5%	-16.5%	-27.8%	-27.8%	-27.8%	-27.8%
2030	Total Retail Demand	73.0	73.0	73.0	73.0	73.0	73.0	73.0
	Baseline Retail Demand[c]	*73.0*	*73.0*	*73.0*	*73.0*	*73.0*	*73.0*	*73.0*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	72.4	61.4	61.4	53.4	53.4	53.4	53.4
	Retail Groundwater[e]	*2.4*	*2.4*	*2.4*	*2.4*	*2.4*	*2.4*	*2.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*67.5*	*56.5*	*56.5*	*48.5*	*48.5*	*48.5*	*48.5*
	Difference (Supply Surplus or Shortfall)	0.0	-11.6	-11.6	-19.6	-19.6	-19.6	-19.6
	Difference as Percentage of Demand	0.0%	-15.9%	-15.9%	-26.8%	-26.8%	-26.8%	-26.8%
2035	Total Retail Demand	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	Baseline Retail Demand[c]	*75.0*	*75.0*	*75.0*	*75.0*	*75.0*	*75.0*	*75.0*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	74.5	63.8	63.8	55.5	55.5	55.5	51.4
	Retail Groundwater[e]	*3.4*	*3.4*	*3.4*	*3.4*	*3.4*	*3.4*	*3.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*68.6*	*57.9*	*57.9*	*49.6*	*49.6*	*49.6*	*45.5*
	Difference (Supply Surplus or Shortfall)	0.0	-11.2	-11.2	-19.5	-19.5	-19.5	-23.6
	Difference as Percentage of Demand	0.0%	-14.9%	-14.9%	-26.0%	-26.0%	-26.0%	-31.5%

		Normal Year	Single Dry Year[a]	Multiple Dry Years[b]				
				Year 1	Year 2	Year 3	Year 4	Year 5
2040	Total Retail Demand	77.9	77.9	77.9	77.9	77.9	77.9	77.9
	Baseline Retail Demand[c]	*77.9*	*77.9*	*77.9*	*77.9*	*77.9*	*77.9*	*77.9*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	77.4	66.4	66.4	57.9	57.9	52.0	52.0
	Retail Groundwater[e]	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*70.5*	*59.5*	*59.5*	*51.0*	*51.0*	*45.1*	*45.1*
	Difference (Supply Surplus or Shortfall)	0.0	-11.5	-11.5	-20.0	-20.0	-25.9	-25.9
	Difference as Percentage of Demand	0.0%	-14.8%	-14.8%	-25.7%	-25.7%	-33.2%	-33.2%
2045	Total Retail Demand	81.1	81.1	81.1	81.1	81.1	81.1	81.1
	Baseline Retail Demand[c]	*81.1*	*81.1*	*81.1*	*81.1*	*81.1*	*81.1*	*81.1*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	80.6	60.1	60.1	60.1	60.1	52.1	52.1
	Retail Groundwater[e]	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*73.7*	*53.2*	*53.2*	*53.2*	*53.2*	*45.2*	*45.2*
	Difference (Supply Surplus or Shortfall)	0.0	-21.0	-21.0	-21.0	-21.0	-29.0	-29.0
	Difference as Percentage of Demand	0.0%	-25.9%	-25.9%	-25.9%	-25.9%	-35.8%	-35.8%

Normal, single dry, and multiple dry year conditions are on a water year basis.

a During a single dry year, system-wide shortages of 30 – 40% are in effect (see Table 8-3 of the 2020 UWMP). For this analysis, shortages greater than 20% are considered to have the same retail/wholesale allocation as the maximum Stage 4, 16-20% system-wide shortage in the Water Shortage Allocation Plan (WSAP).

b During multiple dry years, system-wide shortages of 30 – 55% are in effect (see Table 8-3 of the 2020 UWMP). For this analysis, shortages greater than 20% are considered to have the same retail/wholesale allocation as the maximum Stage 4, 16-20% system-wide shortage in the WSAP.

c Total retail demands correspond to those in Table 3 and reflect passive and active conservation, onsite water reuse savings, and water loss. Demands for Groveland Community Services District is included in the table above.

d As amended in 2018, the WSAP Tier One Allocation Plan requires retail customers to conserve a minimum of 5% during droughts. If, during a declared water shortage, retail demands on the Regional Water System (RWS) are lower than the retail allocation in a dry year, retail demands on the RWS will be reduced by 5%. An N/A on this row means that either this 5% rationing requirement doesn't apply (i.e. no declared water shortage), or retail customers are already rationing greater than 5%.

e Groundwater supplies are assumed to be equivalent to projected demands for the San Francisco Groundwater Supply Project (ramping up to 4 mgd by 2040) and Castlewood County Service Area (0.4 mgd). Groundwater availability would not be affected by dry year conditions.

f Recycled water supplies are assumed to be equivalent to projected demands related to the Westside Recycled Water Project (1.6 mgd by 2021 and 1.8 mgd by 2030), Harding Park and Fleming Golf Courses (0.23 mgd), and Sharp Park Golf Course (up to 0.1 mgd) and Treasure Island (0.2 mgd by 2025 and 0.4 mgd by 2030). Recycled water availability would not be affected by dry year conditions.

g Procedures for RWS allocations and the WSAP are described in Section 8.3 of the 2020 UWMP. Groundwater and recycled water are assumed to be used before RWS supplies to meet retail demand. However, in normal years, if groundwater and recycled water supplies are not available, up to 81 mgd of RWS supply could be used.

Table 5: Retail Supply and Demand Comparison for Projected Normal & Dry Year Scenarios Without Bay-Delta Plan Amendment (mgd)

		Normal Year	Single Dry Year[a]	Multiple Dry Years[b]				
				Year 1	Year 2	Year 3	Year 4	Year 5
2025	Total Retail Demand	71.3	71.3	71.3	71.3	71.3	71.3	71.3
	Baseline Retail Demand[c]	*71.3*	*71.3*	*71.3*	*71.3*	*71.3*	*71.3*	*71.3*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	71.3	71.3	71.3	71.3	71.3	71.3	71.3
	Retail Groundwater[e]	*1.4*	*1.4*	*1.4*	*1.4*	*1.4*	*1.4*	*1.4*
	Retail Recycled Water[f]	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*
	RWS Supply Utilized by Retail[g]	*67.8*	*67.8*	*67.8*	*67.8*	*67.8*	*67.8*	*67.8*
	Difference (Supply Surplus or Shortfall)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Difference as Percentage of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2030	Total Retail Demand	73.0	73.0	73.0	73.0	73.0	73.0	73.0
	Baseline Retail Demand[c]	*73.0*	*73.0*	*73.0*	*73.0*	*73.0*	*73.0*	*73.0*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	73.0	73.0	73.0	73.0	73.0	73.0	73.0
	Retail Groundwater[e]	*2.4*	*2.4*	*2.4*	*2.4*	*2.4*	*2.4*	*2.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*68.1*	*68.1*	*68.1*	*68.1*	*68.1*	*68.1*	*68.1*
	Difference (Supply Surplus or Shortfall)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Difference as Percentage of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2035	Total Retail Demand	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	Baseline Retail Demand[c]	*75.0*	*75.0*	*75.0*	*75.0*	*75.0*	*75.0*	*75.0*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	Retail Groundwater[e]	*3.4*	*3.4*	*3.4*	*3.4*	*3.4*	*3.4*	*3.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*69.1*	*69.1*	*69.1*	*69.1*	*69.1*	*69.1*	*69.1*
	Difference (Supply Surplus or Shortfall)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Difference as Percentage of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

		Normal Year	Single Dry Year[a]	Multiple Dry Years[b]				
				Year 1	Year 2	Year 3	Year 4	Year 5
2040	Total Retail Demand	77.9	77.9	77.9	77.9	77.9	77.9	77.9
	Baseline Retail Demand[c]	*77.9*	*77.9*	*77.9*	*77.9*	*77.9*	*77.9*	*77.9*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	77.9	77.9	77.9	77.9	77.9	77.9	77.9
	Retail Groundwater[e]	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*71.0*	*71.0*	*71.0*	*71.0*	*71.0*	*71.0*	*71.0*
	Difference (Supply Surplus or Shortfall)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Difference as Percentage of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2045	Total Retail Demand	81.1	81.1	81.1	81.1	81.1	77.0	77.0
	Baseline Retail Demand[c]	*81.1*	*81.1*	*81.1*	*81.1*	*81.1*	*81.1*	*81.1*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*-4.1*	*-4.1*
	Total Retail Supply	81.1	81.1	81.1	81.1	81.1	81.1	81.1
	Retail Groundwater[e]	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*74.2*	*74.2*	*74.2*	*74.2*	*74.2*	*74.2*	*74.2*
	Difference (Supply Surplus or Shortfall)	0.0	0.0	0.0	0.0	0.0	4.1	4.1
	Difference as Percentage of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	5.3%	5.3%

Normal, single dry, and multiple dry year conditions are on a water year basis.

a During all single dry years, no RWS system-wide shortages are in effect.

b During multiple dry years, no RWS system-wide shortages are in effect until years 4 and 5 at 2045 levels of demand. During those years, a 10% system-wide shortage is in effect.

c Total retail demands correspond to those in Table 3 and reflect passive and active conservation, onsite water reuse savings, and water loss. Demands for Groveland Community Services District is included in the table above.

d As amended in 2018, the Water Shortage Allocation Plan (WSAP) Tier One Allocation Plan requires retail customers to conserve a minimum of 5% during droughts. If, during a declared water shortage, retail demands on the Regional Water System (RWS) are lower than the retail allocation in a dry year, retail demands on the RWS will be reduced by 5%. An N/A on this row means that either this 5% rationing requirement doesn't apply (i.e. no declared water shortage), or retail customers are already rationing greater than 5%.

e Groundwater supplies are assumed to be equivalent to projected demands for the San Francisco Groundwater Supply Project (ramping up to 4 mgd by 2040) and Castlewood County Service Area (0.4 mgd). Groundwater availability would not be affected by dry year conditions.

f Recycled water supplies are assumed to be equivalent to projected demands related to the Westside Recycled Water Project (1.6 mgd by 2021 and 1.8 mgd by 2030), Harding Park and Fleming Golf Courses (0.23 mgd), and Sharp Park Golf Course (up to 0.1 mgd) and Treasure Island (0.2 mgd by 2025 and 0.4 mgd by 2030). Recycled water availability would not be affected by dry year conditions.

g Procedures for RWS allocations and the WSAP are described in Section 8.3 of the 2020 UWMP. Groundwater and recycled water are assumed to be used before RWS supplies to meet retail demand. However, in normal years, if groundwater and recycled water supplies are not available, up to 81 mgd of RWS supply could be used.

Appendix A – San Francisco Planning Memorandum

San Francisco Planning

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August 18, 2023

Paula Kehoe
Director of Water Resources, SFPUC
525 Golden Gate Street, 10th Floor
San Francisco, CA 94102

Re: Projections of growth for San Francisco through 2050

Dear Paula:

On October 27, 2020, the Planning Department provided SFPUC household and job growth projections to inform the citywide water demand projections in the 2020 update of the SFPUC's Urban Water Management Plan (UWMP). The SFPUC adopted the 2020 UWMP in June 2021. Since that time, the Planning Commission certified the Housing Element 2022 Update Environmental Impact Report (Housing Element EIR or EIR) in November 2022. The EIR, which supported the City's adoption of the Housing Element in January 2023, assumed slightly higher household projections than those used in the UWMP. As you requested, this memo provides the EIR's household projections[1] to inform a minor update to SFPUC's water demand projections.

Citywide Growth Projections

Table 1 shows the Planning Department's housing projections for the years 2020-2050. We recognize that the 2020 UWMP water planning horizon extends only to 2045.

Table 1: Development Projections

	2020	2025	2030	2035	2040	2045	2050
Housing Units	407,000	432,667	458,333	483,600	509,000	534,000	559,000

The Housing Element update is required to be adopted every eight years by state law and was approved by the Board of Supervisors in January 2023 and certified by the state Department of Housing and Community Development on February 1, 2023. One of the primary goals of the Housing Element 2022 Update is to improve housing affordability by increasing the rate of housing production compared with the past several decades. The projections are based on the Housing Element objective of producing an average of approximately 5,000

[1] The Housing Element EIR assumed slightly less job growth than that assumed in the Planning Department's October 27, 2020 memo used to inform the 2020 UWMP water demand projections (i.e., EIR assumed 869,000 jobs in 2045 whereas October 2020 memo assumed 894,255 jobs). Given that the 2020 UWMP water demand projections used more conservative (i.e., slightly higher) job growth assumptions, there is no need to update the water demand projections to account for the Housing Element EIR job growth assumptions.

housing units per year, with adjustments for certain large development plans. These projections were analyzed in the Housing Element EIR. (The projections can be found in Appendix C of the EIR.) The Housing Element EIR considered two projection years – 2035 and 2050. For the purposes of generating the 5-year incremental projections required by the SFPUC through 2045, the Planning Department assumes a constant, straight-line average pace of housing production for the periods of 2020-2035 and 2035-2050.

Regarding the typology of projected new housing stock, our memo provided to SFPUC dated October 27, 2020, to inform preparation of the 2020 UWMP, contained analysis supporting a Planning Department recommendation that the SFPUC assume for the purposes of modelling citywide projected housing development in San Francisco that **the number of single-family detached houses will not increase from existing stock and that all future net housing growth will take the form of multi-family structures.** This recommendation is unchanged.

Sincerely,

Joshua Switzky
Acting Director of Citywide Planning

cc:
Fan Lau, SFPUC
Lisa Gibson, Planning
Wade Wietgrefe, Planning
Debra Dwyer, Planning
Julie Moore, Planning
Scott Edmondson, Planning
Peter Miljanich, City Attorney
Andrea Ruiz-Esquide, City Attorney

Appendix B – Woodard & Curran Memorandum

TECHNICAL MEMORANDUM

TO: Paula Kehoe, Director of Water Resources, San Francisco Public Utilities Commission

Fan Lau, Water Resources Division, San Francisco Public Utilities Commission

PREPARED BY: Chris Hewes, Woodard & Curran

REVIEWED BY: Katie Cole, Woodard & Curran

DATE: August 25, 2023

RE: SFPUC Demand Forecast Model Re-Run with Updated Housing Unit Forecast

In 2020, the San Francisco Public Utilities Commission (SFPUC) engaged The Brattle Group to develop an econometric-based water demand forecast model (Model) to generate retail water demands for the SFPUC's 2020 Urban Water Management Plan (UWMP). A key input to the Model was household development forecasts provided by the San Francisco Planning Department (October 27, 2020 memo from Joshua Switzky, Land Use & Community Planning Program Manager). At the time, these forecasts were in draft form, developed during preparation of the city's General Plan Housing Element (Housing Element 2022 Update). Since June 2021 when the 2020 UWMP was published, the Planning Commission certified the Housing Element 2022 Update Environmental Impact Report (EIR) in November 2022. The EIR, which supported the City's adoption of the Housing Element in January 2023, assumed slightly higher household forecasts than those used in the UWMP.

Woodard & Curran worked with the Model developers to re-run it with the updated housing development forecasts provided by the San Francisco Planning Department (see Section 1 – Updated Model Inputs). The resulting Model outputs (water demands) were combined with other values external to the Model that together provide full retail water demand for SFPUC (see Section 2 – Updated Results).

1. UPDATED MODEL INPUTS

See **Table 1** for the updated housing development forecast provided by the San Francisco Planning Department (August 18, 2023 memo from Joshua Switzky, Acting Director of Citywide Planning). Per SFPUC's guidance in the previous Model effort, and re-confirmed by the San Francisco Planning Department for the current Model effort, it was assumed that there will not be an increase in the number of single-family detached houses from the existing stock. Therefore, the water demand forecast for the single-family sector is the same as the prior outputs. All future housing growth is expected to occur in the multi-family residential sector. No other inputs to the Model were changed (e.g., employment forecast, econometric variables, etc.).

Table 1: Housing Development Forecast

Housing Units	2020	2025	2030	2035	2040	2045
For 2020 UWMP	399,313	425,118	450,923	476,728	502,533	528,338
For 2023 Update	407,000	432,667	458,333	483,600	509,000	534,000

2. UPDATED RESULTS

See **Table 2** for the updated outputs directly from the Model. **Table 3** shows the updated multi-family residential sector forecast details. Tables 2 and 3 contain rows that specify the water savings associated with the Onsite Water Reuse Program. These savings were estimated for the 2020 UWMP but are not updated for this memo as (1) they are estimated separately from the Model and (2) the types of new multi-family residential projects and their participation in the Onsite Water Reuse Program are currently unknown.

See **Table 4** for a comparison of the previous and updated multi-family residential sector forecasts.

See **Table 5** for the updated retail demand forecast, which incorporates additional information that is external to the Model, as it was presented in the 2020 UWMP (e.g., municipal and irrigation demands in the "non-residential" sector, as well as Suburban Retail demands).

Table 2: Model Outputs (mgd)

		FY2019-20	FY2024-25	FY2029-30	FY2034-35	FY2039-40	FY2044-45
Single Family Residential							
Unadjusted Baseline Demand		14.32	13.83	13.63	13.60	13.63	13.65
Conservation:	*Active*	0.00	-0.15	-0.18	-0.17	-0.13	-0.11
Total		14.32	13.68	13.45	13.43	13.49	13.54
Multifamily Residential							
Unadjusted Baseline Demand		23.09	24.63	26.74	29.21	31.85	34.46
Conservation:	*Active*	0.00	-0.15	-0.20	-0.18	-0.11	-0.06
	Non-Potable / Onsite Reuse	-0.07	-0.21	-0.35	-0.63	-0.91	-0.91
Other Accounts:	*Fire*	0.01	0.01	0.01	0.01	0.01	0.01
Total		23.03	24.28	26.19	28.41	30.85	33.51
Commercial and Industrial							
Unadjusted Baseline Demand		17.81	17.25	17.33	17.49	17.93	18.38
Conservation:	*Active*	0.00	-0.28	-0.30	-0.30	-0.28	-0.23
	Non-Potable / Onsite Reuse	-0.03	-0.09	-0.15	-0.27	-0.39	-0.39
Other Accounts:	*Docks / Ships*	0.02	0.02	0.02	0.02	0.02	0.02
	Builders / Contractors	0.18	0.18	0.18	0.18	0.18	0.18
	Fire	0.04	0.04	0.04	0.04	0.04	0.04
Total		18.02	17.12	17.11	17.16	17.51	18.00
Grand Total		55.38	55.08	56.76	59.00	61.85	65.05

Notes:

FY2019-20: This column is a forecast that assumes no COVID-19 pandemic and average weather conditions. Actual demand for FY2019-20 is shown in Table 5 of this memo.
Unadjusted Baseline Demand: This is the raw output of the statistical forecast model.
Conservation Adjustments: These estimates are the output of the SFPUC Conservation model and have not been updated in this memo.
Multifamily Residential Fire Accounts: These values were supplied by SFPUC and have not been updated in this memo.
Commercial and Industrial: These forecasts are unchanged from the previous forecasts.
Grand Total: This row does not include water losses, suburban accounts, irrigation accounts, or municipal accounts. The volumes from these additional sector types are included in Table 5 of this memo and are unchanged from the previous forecasts.

Table 3: Multi-Family Demand Forecast Details

	FY2019-20	FY2024-25	FY2029-30	FY2034-35	FY2039-40	FY2044-45
Number of Units	282,814	308,481	334,147	359,414	384,814	409,814
Residents per Unit	2.30	2.30	2.30	2.30	2.30	2.30
Avg. Consumption per Capita (gal / day)						
Unadjusted Baseline Demand	35.50	34.71	34.79	35.34	35.99	36.56
Conservation: *Active*	0.00	-0.21	-0.27	-0.23	-0.12	-0.06
Non-Potable / Onsite Reuse	-0.11	-0.30	-0.47	-0.78	-1.05	-0.98
Demand per Capita	35.39	34.20	34.05	34.33	34.82	35.52
Avg. Consumption per Unit (gal / day)						
Unadjusted Baseline Demand	81.66	79.84	80.01	81.27	82.78	84.09
Conservation: *Active*	0.00	-0.49	-0.63	-0.52	-0.29	-0.14
Non-Potable / Onsite Reuse	-0.25	-0.70	-1.07	-1.79	-2.41	-2.25
Demand per Unit	81.40	78.65	78.31	78.97	80.09	81.70
Total Consumption (MGD)						
Unadjusted Baseline Demand	23.09	24.63	26.74	29.21	31.85	34.46
Conservation: *Active*	0.00	-0.15	-0.20	-0.18	-0.11	-0.06
Non-Potable / Onsite Reuse	-0.07	-0.21	-0.35	-0.63	-0.91	-0.91
Total Demand	23.02	24.27	26.18	28.40	30.84	33.50

Notes:

FY2019-20: This column is a forecast that assumes no COVID-19 pandemic and average weather conditions. Actual demand for FY2019-20 is shown in Table 5 of this memo.
Unadjusted Baseline Demand: This is the raw output of the statistical forecast model.
Conservation Adjustments: These estimates are the output of the SFPUC Conservation model and have not been updated in this memo.

Table 4: Multi-Family Residential Water Demand Forecast (mgd)

Multi-Family Residential	Actual[a]	Projected[b]				
	2020	2025	2030	2035	2040	2045
From 2020 UWMP	22.9	23.7	25.6	27.9	30.3	33.0
From 2023 Update (from Table 3)	22.9	24.3	26.2	28.4	30.9	33.5
Difference	0.0	0.6	0.6	0.6	0.5	0.5

a Actual consumption data are obtained from customer billing data.

b Multi-family residential demand projections are from an econometric model developed for the SFPUC.

Table 5: Retail Water Demand Forecast (mgd)

Retail Sector or Use Type	Actual[a]	Projected[b]				
	2020	2025	2030	2035	2040	2045
In-City Retail						
Single-Family Residential	14.5	13.7	13.5	13.4	13.5	13.5
Multi-Family Residential	22.9	24.3	26.2	28.4	30.9	33.5
Non-residential	20.9	22.9	22.9	22.8	23.1	23.6
Water Loss[c]	7.2	6.0	6.0	6.0	6.0	6.0
Subtotal In-City Retail Demand	65.3	66.9	68.6	70.6	73.5	76.7
Suburban Retail						
Single-Family Residential[d]	0.1	0.1	0.1	0.1	0.1	0.1
Non-Residential	3.1	4.0	4.0	4.0	4.0	4.0
Groveland CSD[e]	0.3	0.3	0.3	0.3	0.3	0.3
Water Loss[c]	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Suburban Retail Demand	3.5	4.4	4.4	4.4	4.4	4.4
Total Retail Demand	**68.8**	**71.3**	**73.0**	**75.0**	**77.9**	**81.1**

a Actual consumption data are obtained from customer billing data.

b Single family residential and multi-family residential demand projections are from an econometric model developed for the SFPUC. Non-residential demands include commercial/industrial demands, which are also from an econometric model, as well as municipal and irrigation demands, which are assumed to remain constant at the previous five-year average level.

c Water losses include both apparent and real losses. Suburban retail water losses are considered to be negligible. Actual water loss in 2020 is based on SFPUC's July 2019 – June 2020 water loss audit.

d Suburban retail residential demands are for single family only as no multi-family residential buildings are served.

e Groveland Community Services District (CSD) is accounted for as a retail customer for the purpose of this table and subsequent retail supply and demand comparisons in the 2020 UWMP. Demand projections were provided by Groveland CSD based on its population projections and assumed per capita water use of 107 GPCD (projections are subject to change as part of its UWMP process). In the corresponding standardized tables in UWMP 2020 Appendix B, Groveland CSD is not reported as retail, but rather wholesale.

Attachment B –

447 Battery and 530 Sansome Street Project Demand Memo

San Francisco Planning

49 South Van Ness Avenue, Suite 1400
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www.sfplanning.org

October 31, 2024

To: Jennifer Lee, Water Resources Division, San Francisco Public Utilities Commission
From: Megan Calpin, Environmental Planning Division, San Francisco Planning

Re: **447 Battery Street / 530 Sansome Street**
Planning Department File No. 2024-007066ENV

The purpose of this memorandum is to request that the San Francisco Public Utilities Commission (SFPUC) prepare a Water Supply Assessment (WSA) for the proposed project at 447 Battery Street / 530 Sansome Street, in compliance with CEQA Guidelines Section 15155 and Sections 10910 through 10915 of the California Water Code.

The project sponsor (EQX JACKSON SQ HOLDCO LLC) proposes to redevelop the approximately 0.57-acre site in the Financial District neighborhood in San Francisco. The project site is comprised of four parcels, currently developed with four buildings: the existing two-story San Francisco Fire Department Station 13, a two-story commercial building, and two three-story commercial buildings. The project proposes demolishing all existing structures on 530 Sansome, 425 & 439-445 Washington Street, and 447 Battery Street and developing a new mixed-use tower with three below-grade levels reaching a height of 544 feet (up to 41 stories, 574 feet inclusive of rooftop mechanical features) and a new four-story Fire Station 13 with one below-grade level reaching a height of 55 feet (60 feet inclusive of rooftop mechanical features) containing approximately 31,200 square feet. The specific land uses are further described in the project sponsor's memo, included in this submittal. Project construction of the mixed-use tower and new fire station would occur in a single phase starting approximately in early 2027 and finishing in 2030.

The project sponsor provided project information intended to meet the requirements outlined in the SFPUC guidance memo dated July 31, 2024. A summary of the project description, average daily water demands, and supporting tables prepared by the project sponsor's consultant (based on the SFPUC Non-Potable Water Calculator(s) Version 9.3), are attached. Should you have questions or need additional information from the Planning Department or the project sponsor, please contact me at 628.652.7508 or megan.calpin@sfgov.org.

Sincerely,
Megan Calpin
Senior Environmental Planner
San Francisco Planning Department

J. ABRAMS LAW, P.C.

538 Hayes Street

San Francisco, CA 94102

Date: October 30, 2024 (December 30, 2024 Update Responding to SFPUC and SF Planning Comment)

To: Megan Calpin, San Francisco Planning Department, Environmental Planning

From: James Abrams, J. Abrams Law, P.C., on behalf of EQX JACKSON SQ HOLDCO LLC

Subject: **447 Battery and 530 Sansome Street Project – Project Demand Memorandum for Preparation of Water Supply Assessment Case No. 2024-007066ENV**

This memorandum presents the project description and project information regarding water demand for the San Francisco Public Utilities Commission (SFPUC) to prepare a Water Supply Assessment (WSA) for the proposed 447 Battery and 530 Sansome Street Project (proposed project). The proposed project qualifies for preparation of a WSA under Water Code Section 10912(a) because it is a mixed-use development with more than 250,000 square feet of office space.

This memorandum is expected to be attached to the WSA as an appendix and referenced in the WSA as needed. **Table 1** provides the basic information of the proposed project.

1. Introduction

The proposed project is located on an approximately 0.57-acre site in the Financial District neighborhood of San Francisco. The project sponsor, EQX JACKSON SQ HOLDCO LLC, proposes demolishing all existing structures on 530 Sansome, 425 & 439-445 Washington Street, and 447 Battery Street and developing a new mixed-use tower with 3 below-grade levels reaching a height of 544 feet (up to 41 stories, 574 feet inclusive of rooftop mechanical features) and a new 4-story Fire Station 13 with one below-grade level reaching a height of 55 feet (60 feet inclusive of rooftop mechanical features) containing approximately 31,200 square feet. The tower would include approximately 7,405 square feet of retail/restaurant uses, between approximately 372,035 and 417,230 square feet of office use, between approximately 127,710 and 188,820 square feet of hotel use (between 100 and 200 keys), and approximately 10,135 square feet of ballroom/pre-function/meeting space. The project also includes 12,695 square feet of POPOS within Merchant Street between Battery and Sansome streets. The range in hotel and office uses reflects that the proposed project approvals would allow for post-entitlement refinement to the final design to program five of the middle floors of the building as either office or hotel. This memorandum assumes a conservative water demand scenario where the square footage of hotel space is

maximized at the expense of office square footage. Refer to **Table 2** for existing, proposed and net new uses.

Table 1: Project Information

Project Name	447 Battery and 530 Sansome Street Project
Project Contact	Sherie George – (628) 652-7558, CPC.447Battery530SansomeEIR@sfgov.org
Project Address(es)	447 Battery Street, 530 Sansome Street, 425 Washington Street, and 439–445 Washington Street
Assessor's Parcel Number(s)	Block 0206/Lots 002, 013, 014, 017
Estimated Project Completion Date (if project construction and/or occupancy would be phased, provide completion or occupancy date of each phase)	2030
Proposed Land Use(s)	Mixed-Use Tower: Office, Hotel, Retail/Restaurant New Fire Station 13: Public Facility (Fire Station)
Total Building Size (gross square feet)	Mixed-Use Building: 649,510 square feet New Fire Station 13: 31,204 square feet Total: 680,714 square feet
Total Lot Size (square feet)	24,830 square feet (0.57 AC)
Days in Operation Per Year	365
Site Permit Application No. (if applicable)	N/A

Table 2: Project Characteristics

Project Component	Existing (sf)	Proposed (sf)	Net New (sf)
FIRE STATION 13			
Height of Building (feet)	Approx. 40’	60’ (to top of rooftop appurtenances)	20’
Number of Stories	3	4 (above grade)	1
Office (sf)	20,155	0	-20,155
Public Facility (Fire Station) (sf)	0	24,440	24,440
Below Grade (sf)	0	6,760	6,760
Parking Spaces	0	18	18
Class 1 Bicycle Parking Spaces	0	4	4
Class 2 Bicycle Parking Spaces	0	2	2
Car Share Parking Spaces	0	0	0
SUBTOTAL (sf)	*20,155*	*31,200*	*11,045*
MIXED USE HOTEL HIGH-RISE BUILDING			
Height of Building (feet)	44’	574’ (to top of rooftop appurtenances)	530’
Number of Stories	2–3	41 (above grade)	38-39
Public Facility (Fire Station) (sf)	18,625	0	-18,625
Hotel (sf)	0	Between 127,710 (approx. 100 hotel rooms, 3,660 SF Hotel Lobby) and 188,820 (approx. 200 hotel rooms, 3,660 SF Hotel Lobby on Level 3)	Between 127,710 and 188,820
Hotel Ballroom/Pre-Function/Meeting (sf)	0	10,135	10,135
Back of House (BOH) for Hotel and Office Uses (sf)	0	16,170	16,170
Office (sf)	20,720	Between 344,840 and 390,035 [a]	Between 324,120 and 369,315
Office Amenities (sf) [b]	0	27,195	27,195
Restaurant (sf)	0	7,405	7,405
Passenger Loading/Parking Area (sf)	0	705	705
Below Grade (sf)	8,850	52,410	43,560
Parking Spaces	21	74	53
Loading Spaces	0	1,840	1,840
Class 1 Bicycle Parking Spaces	0	77	77
Class 2 Bicycle Parking Spaces	0	27	27
Car Share Parking Spaces	0	0	0
SUBTOTAL (sf)	*48,195*	*649,510*	*601,315*

SOURCES: Skidmore, Owings & Merrill LLP, ALTA, San Francisco Fire Department, 2024

ABBREVIATION: sf = square feet

NOTES:

a The square footage calculations for each use vary from those shown in the plan set submitted for the project because they do not include basement square footage.

b Includes indoor swimming pool.

Project construction of the mixed-use tower and new fire station would occur in a single phase starting approximately in early 2027 and finishing in 2030.

The proposed project will meet the requirements of all applicable City and County of San Francisco ordinances related to water conservation and resources, including:

- To reduce potable water demand, high-efficiency fixtures and appliances would be installed in new buildings to comply with the state's Title 24 requirements, the San Francisco Green Building Standards Code, and the San Francisco Plumbing Code.

- The project site is located within a designated recycled water use area, and the proposed project would provide the piping needed to supply and distribute recycled water when it becomes available, as required under San Francisco's Recycled Water Use Ordinance (San Francisco Public Works Code, Article 22).

- The proposed project would comply with San Francisco's Non-potable Water Ordinance (San Francisco Health Code, Article 12C) and would include the diversion and reuse of blackwater to meet the project non-potable demands which include toilet and urinal flushing, trap primers, and irrigation.

- Landscaped areas would be installed, constructed, operated, and maintained in accordance with the Water Efficient Irrigation Ordinance (San Francisco Administrative Code, Ch. 63).

2. Existing Water Demand

Per direction from SFPUC the existing water demand is 196,435 gallons per year for the existing commercial and fire station uses at the project site. For the fire station, this includes water for restrooms, showers, a washing machine, turnout washing machine, kitchen including two dishwashers, and hose bibs for truck washing, janitorial, as well as for hose and canvas carry-all washing after fires. For the existing commercial buildings, this includes water for restrooms, janitorial, and kitchenettes (including for appliances), as well as for food and beverage service at 447 Battery Street.

3. Proposed Project Water Demand

Tables 3, **4**, and **5** show the estimated annual water demand for the proposed project. As shown, the total water use for the proposed project is approximately 10,210,752 gallons per year (gpy). Of the total water demand, 8,904,077 gpy is indoor water use and 1,306,675 gpy is for outdoor water use (cooling tower, irrigation, and washing of fire trucks). In addition, because the proposed project would comply with the City's water saving ordinances and measures involving water efficient fixtures and onsite reuse, up to 3,818,049 gpy or 37.4% of the proposed project's water demand is expected to be met by a non-potable supply. The calculations were developed using the SFPUC Single Site Non-Potable Water Calculator, Version 9.3, for both the mixed-use tower and the new fire station (note that because the proposed project includes flexibility in programming the middle of the tower for office or hotel, the Calculator for the mixed-use tower has been populated with land use figures intended to capture the scenario that generate the highest water demand).

Table 3: Total Project Water Demand

Total Water Demand	Estimated Annual Water Demand (gpy)
Indoor Water Demand	
Fire Station – Indoor Demand	314,993***
Mixed-Use Tower – Indoor Demand	8,504,659
Trap Priming and Other Potable Demand*	84,250**
Total Indoor Demand	8,903,902
Outdoor Water Demand	
Fire Station – Irrigation Demand	0
Mixed-Use Tower – Irrigation Demand	38,043
Fire Station – HVAC/Cooling Demand	0
Mixed-Use Tower – HVAC/Cooling Demand	1,258,937****
Other Outdoor Demands (washing of firetrucks)	13,500*****
Total Outdoor Demand	1,310,480
Total Water Demand (indoor and outdoor)	10,214,382

* The SFPUC NP calculator does not add the trap priming demand and therefore the roundup total for the annual water demand in the Project Summary Tab is 328,500 gpy and 9,885,600 gpy for the fire station and mixed-use tower, respectively.
** Includes trap priming demand for the tower (240 gpy) and fire station (60 gpy), as well as other potable demand for the tower (83,950 gpy).
*** The fire station indoor demand is based on hotel transient numbers, which was the closest in water demand for the firehouse employees.
**** The figure listed is a preliminary estimate based on similar size buildings project sponsor's design team has worked on in the past. The cooling tower demand will continue to be defined as HVAC systems are selected and finalized.
***** Truck washing assumption was approximately one 1.5 gpm hose bibb used for 25 minutes once per day.

Table 4: Non-Potable Demand Estimates

Project Non-potable Uses	**Estimated Annual Water Demand (gpy)**
Fire Station	
Fire Station – Toilets/Urinals	52,696
Fire Station – Drain Trap Priming	60
Fire Station – Total	52,756
Mixed-Use Tower	
Mixed-Use Tower – Toilets/Urinals	2,471,725
Mixed-Use Tower – Drain Trap Priming	240
Mixed-Use Tower – Irrigation	38,043
Mixed-Use Tower – HVAC/Cooling	1,258,937
Mixed-Use Tower - Total	3,768,945
Total Non-potable Demand	3,821,701

* Totals exclude demand for approximately 19 trees proposed at street level (including 10 within the Merchant Street POPOS) for which non-potable water would be required during the tree establishment period. According to SF Public Works Bureau of Urban Forestry, new street trees typically require 15 gallons of water per week for the first three years after planting (or five years

after planting if occurring during a drought). *See* https://sfpublicworks.org/services/caring-your-new-street-tree. This means that, conservatively, the proposed project could require approximately 14,820 additional gallons of non-potable water per year for the first five years.

Table 5: Non-Potable Supply Estimates

Onsite Alternate Water Sources	Estimated Annual Water Supply (gpy)
Fire Station - Blackwater	283,493
Mixed-Use Tower – Blackwater and Condensate	7,710,845
Total Supply	7,994,338

The following summary **Table 6**, with water volumes, shall be reported in units of million gallons per year (mgy) as presented below.

Table 6: Potential Potable Water Savings for the Proposed Project

Demand of Proposed Project	2025	2030	2035	2040	2045
Potable Demand	0	6.39 mgy 0.018 mgd	6.39 mgy 0.018 mgd	6.39 mgy 0.018 mgd	6.39 mgy 0.018 mgd
Non-potable Demand	0	3.82mgy 0.01 mgd	3.82mgy 0.01 mgd	3.82mgy 0.01 mgd	3.82mgy 0.01 mgd
Total Demand	0	10.21 mgy 0.028 mgd	10.21 mgy 0.028 mgd	10.21 mgy 0.028 mgd	10.21 mgy 0.028 mgd
Demand met by Non-potable Supply	0	3.82mgy 0.01 mgd	3.82mgy 0.01 mgd	3.82mgy 0.01 mgd	3.82mgy 0.01 mgd
Potential Potable Water Savings as Percentage of Total Demand	0	37.4%	37.4%	37.4%	37.4%
Existing Site Demand	196,435 gallons per year = 0.2 mgy = 0.00054 mgd				
Net New Water Demand*	0	10.02 mgy 0.027 mgd	10.02 mgy 0.027 mgd	10.02 mgy 0.027 mgd	10.02 mgy 0.027 mgd

*Net New Water Demand is the difference between Total Demand and Existing Site Demand, where results have been rounded from gallons per year to million gallons per year and million gallons per day.

NON-POTABLE WATER CALCULATOR

Project Summary Sheet 530 Sansome - Fire Station 13

Project Contact: Ethan Gould, PE LEED AP
332-240-0499
ethan@meyersplus.com

Total Gross Square Footage: 31,204

Estimated Building Permit Issuance Date: 1/0/1900

1. Demand and Supply Summary

Demand Met by Non-Potable Supply (gallons/year):	**52,756**	*16% of total*
Total Annual Water Demand (gallons/year):	**328,500**	

	6-Month Compliance Periods	
	January - June	**July - December**
Potable Make-Up Allocation (gallons/period):	**2,638**	**2,638**

2. Building Information Summary

Project / Building Name:	**530 Sansome - Fire Station 13**
Project Address:	447 Battery Street
Assessor's Block & Lot No. / APN:	0206-002
Date of Completion:	INFO MISSING

Building Type:	PDR
Total Building Size (GSF):	31,204
Total Lot Size (ft^2):	7,178
Number of Residential Units:	0
Impervious Surface Above Grade (ft^2):	6,858
Impervious Surface Below Grade (ft^2):	320
Irrigated Landscaped Area (ft^2):	0

3. Summary of Non-Potable Demands and Supplies for the Project

Non-Potable Supply Estimates

Onsite Alternate Water Sources	Annual Supply (gpy)	
Graywater:	0	
Blackwater:	283,493	*(includes GW)*
Condensate:	0	
Rainwater/Stormwater:	0	
Other Supplies:	0	
TOTAL:	**283,493**	

Non-Potable Demand Estimates

Project Non-Potable Uses	Annual Demand (gpy)
Toilets/Urinals:	52,696
Drain Trap Priming:	60
Irrigation:	0
Clothes Washing:	0
HVAC/Cooling:	0
Other Demands:	0
TOTAL:	**52,756**

NON-POTABLE WATER CALCULATOR

Project Summary Sheet 530 Sansome - Mixed Use Tower

Project Contact: Ethan Gould, PE LEED AP
332-240-0499
ethan@meyersplus.com

Total Gross Square Footage: 639,523

Estimated Building Permit Issuance Date: 1/0/1900

1. Demand and Supply Summary

Demand Met by Non-Potable Supply (gallons/year):	**3,768,945**	*38% of total*
Total Annual Water Demand (gallons/year):	**9,885,600**	

	6-Month Compliance Periods	
	January - June	**July - December**
Potable Make-Up Allocation (gallons/period):	**123,598**	**123,598**

2. Building Information Summary

Project / Building Name:	**530 Sansome - Mixed Use Tower**
Project Address:	530 Sansome Street
Assessor's Block & Lot No. / APN:	0206-017; 0206-013; 0206-014
Date of Completion:	2030

Building Type:	Mixed
Total Building Size (GSF):	639,523
Total Lot Size (ft^2):	17,653
Number of Residential Units:	0
Impervious Surface Above Grade (ft^2):	16,893
Impervious Surface Below Grade (ft^2):	151
Irrigated Landscaped Area (ft^2):	2,008

3. Summary of Non-Potable Demands and Supplies for the Project

Non-Potable Supply Estimates

Onsite Alternate Water Sources	Annual Supply (gpy)	
Graywater:	0	
Blackwater:	7,654,193	*(includes GW)*
Condensate:	56,652	
Rainwater/Stormwater:	0	
Other Supplies:	0	
TOTAL:	**7,710,845**	

Non-Potable Demand Estimates

Project Non-Potable Uses	Annual Demand (gpy)
Toilets/Urinals:	2,471,725
Drain Trap Priming:	240
Irrigation:	38,043
Clothes Washing:	0
HVAC/Cooling:	1,258,937
Other Demands:	0
TOTAL:	**3,768,945**