OCTOBER 2019
HISTORIC RESOURCES REPORT

ALASKAN COPPER WORKS BUILDING
ANACONDA WIRE & CABLE CO. BUILDING

902 & 904 FIRST AVENUE SOUTH

PREPARED BY:

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1. INTRODUCTION

This report provides information regarding the architectural design and historical significance of two adjacent buildings located at 902 and 904 First Avenue South, in the Pioneer Square neighborhood of Seattle. The buildings were historically known as the Alaskan Copper Works and the Anaconda Wire & Cable Company Building, respectively.

The Alaskan Copper Works Building, 902 First Avenue S, is a vernacular building constructed by the C. H. Frye Co., completed in 1927. The Anaconda Wire & Cable Company Building is a vernacular building also constructed by the C. H. Frye Co. and completed in 1930. Both buildings were documented on the Seattle Historic Resources survey with the status of "Yes - inventory." The Johnson Partnership, now Studio TJP, prepared this report at the request of Alco Investments.

1.1 BACKGROUND

The subject building is located in the City of Seattle's Pioneer Square Historic District. The Pioneer Square-Skid Road National Historic District and the local Pioneer Square Preservation District were established in 1970, instituting an ordinance and design guidelines focused on "preserving [the neighborhood's] unique historic and architectural character assuring the sensitive rehabilitation of buildings, promoting development of residential uses for all income levels, and enhancing the district's economic climate for residents, employers, workers, and visitors.[1]" The National Register District boundaries were expanded in 1978 to include portions around Second Avenue Extension S and the eastern side of Pioneer Square.[2] National Register boundaries were expanded again in 1988 to include a triangular area south of the original district, north of Railroad Way.[3]

In 1987, the boundaries of the Pioneer Square Preservation District were expanded to include the area along First Avenue S, from the southern boundary of the National Register District southward to S Royal

[1] Seattle Department of Neighborhoods, "Pioneer Square," http://www.seattle.gov/neighborhoods/programs-and-services/historic-preservation/historic-districts/pioneer-square (accessed August 31, 2017).
[2] National Parks Service, "Pioneer Square Historic District," National Register of Historic Places Inventory—Nomination Form, 1978, https://npgallery.nps.gov/GetAsset/cd683a60-722e-48b9-8ca4-31be2fc2f386 (accessed March 2021).
[3] National Parks Service, "Pioneer Square-Skid Road Historic District (Boundary Increase)," National Register of Historic Places Nomination, 1988, https://npgallery.nps.gov/GetAsset/c91e3847-2a08-4d2b-aa66-0d21d779318b (accessed March 2021).

Brougham Way.[4] However, this update to the boundary of the local district was not included in any National Register District update after that, including in 2007. This means the buildings within the expanded district were not evaluated as historic or non-historic, contributing or non-contributing within the National Register District. However, all of the properties within the expanded Pioneer Square Preservation District were evaluated on the City of Seattle Historic Sites Survey, and appear as either "Yes – inventory" or "No – altered."

The City of Seattle's Pioneer Square Preservation Board is responsible for review of proposed changes to properties within the district, including the following:

- Alteration, demolition, construction, reconstruction, restoration, and remodeling of any structure
- Any material and visible changes to the exterior appearance of an existing structure or to the public rights of way
- New construction, removal, demolition or alteration of signage or the placement of new signs
- The principal use of any structure, or space and any change of use after initial approval.

Proposed changes to properties within the district must receive a Certificate of Approval (COA) from the board prior to proceeding. "Use, design and demolition approval is required before any building or other City permit or license can be granted. At the applicant's option, use and design approvals can be requested at one time or in two separate steps. Applicants with major projects are encouraged to come before the Board for preliminary review and conceptual approval." (PSB 149/03)

1.2 METHODOLOGY

Ellen F. C. Mirro, AIA, Principal, and Katherine Jaeger, MFA, of Studio TJP, formerly The Johnson Partnership, 1212 NE 65th Street, Seattle, completed research on this report September 2019. Context statements were developed on previous research conducted for other reports, including those written by Larry E. Johnson, Principal Emeritus of the Johnson Partnership. Research was undertaken at the Puget Sound Regional Archives, Seattle Department of Construction and Inspections, Seattle Public Library, the Museum of History and Industry, and the University of Washington Special Collections Library. Research also included review of Internet resources, including HistoryLink.com, and the *Seattle Times* digital archive, available through the Seattle Public Library. Buildings and site were inspected and photographed on October 8 and October 17, 2019 to document the existing conditions. The report was edited and finalized in February and March 2021.

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[4] Seattle Department of Neighborhoods, "Pioneer Square Preservation District," http://www.seattle.gov/neighborhoods/programs-and-services/historic-preservation/historic-districts/pioneer-square-preservation-district#history (accessed March 2021).

2. PROPERTY DATA

2.1. 902 FIRST AVENUE S

Historic Building Names: Alaskan Copper Works

Current Building Name: 902 First Avenue S

Address: 902 First Avenue S

Location: Pioneer Square Historic District / SoDo

Assessor's File Number: 766620-6655

Legal Description:

The south 19.5 feet of west 103 feet of lot 5 & north 38 feet of west 103 feet of Lot 6 of Block 324 of the Seattle Tide Lands
Plat Block: 324
Plat Lot: 5-6

Date of Construction: 1927

Original/Present Use: Retail and warehouse / Gym and chiropractic office

Original/Subsequent/Present Owner: C. H. Frye Co. / Alaskan Copper & Brass Co./ Rosen Investment Co.

Original Designer: unknown

Original Builder: Listed on permit as C.H. Frye Co.

Zoning: PSM-85-120

Property Size: 5,923 sq. ft.

Building Size: 6,818 gross sq. ft; 5,871 net sq. ft.

2.2 ANACONDA WIRE & CABLE COMPANY BUILDING

Historic Building Names: Anaconda Wire & Cable Company Building / Automated Equipment

Current Building Name: 904 First Avenue S

Address: 904 First Avenue S

Location: Pioneer Square Historic District

Assessor's File Number: 766620-6660

Legal Description:
The south 22 feet of lot 6 & all of lot 7 of Block 324 of the Seattle Tide Lands
Plat Block: 324
Plat Lot: 6-7

Date of Construction: 1930

Original/Present Use: Commercial warehouse / Sports bar (addressed at 904 Occidental Ave S), commercial kitchen, machine shop

Original/Subsequent/Present Owner: C. H. Frye Co./Alaskan Copper & Brass Co./Rosen Investment Co.

Original Designer: Unknown

Original Builder: Listed on permit as C.H. Frye Co.

Zoning: PSM-85-120

Property Size: 12,300 sq. ft.

Building Size: 13,380 gross sq. ft.; 12,300 net sq. ft.

3. ARCHITECTURAL DESCRIPTION

3.1 LOCATION & NEIGHBORHOOD CHARACTER

The two subject buildings, 902 & 904 First Avenue S, are located just south of Seattle's Pioneer Square, within the borders of the Pioneer Square Preservation District. They are not located within the original boundaries of the National Register Nomination for the district, and thus their statuses have not been previously determined. However, both buildings have been identified on the City of Seattle Historic Sites Survey with a status of "Yes - Inventory."[5] [6] The building is located on the southern half of a narrow block immediately west of CenturyLink Field. ***See figures 1-2.***

The southern boundary of the National Register District is located to the north of the subject property, along Railroad Way S. The area in the narrow block between First Avenue S and Occidental Avenue S, Railroad Way S and S Royal Brougham Way are part of the Pioneer Square Preservation District but not the National Register District. The buildings appearing on the survey located in this area all contain the status "Yes-Inventory." These buildings are as follows:

- 820 First Avenue S (1920, remodeled 1951 by Daniel Lamont)
- Roebling Building, 900 First Avenue S (1905, R.C. Kerr and R. D. Rogers; base façade 1945, Henry Bittman)
- Alaskan Copper Works building (northernmost subject building of this report), 902 First Avenue S (1927)
- Anaconda Wire & Cable Co. building (southernmost subject building of this report), 904 First Avenue S (1929)
- A.L. Palmer Building, 1000 First Avenue S (1910, George C. Dietrich)
- M. F. Backus Warehouse, 1014 First Avenue S (1907, James Blackwell)
- E. O. Graves Building, 1022 First Avenue S (1908, James Blackwell)
- Geo. T. Maginnis Bottling Works, 1028 First Avenue S (1900).

Only one building, on the southernmost end of the described area, does not appear on the inventory. This is the Silver Cloud Inn, 1046 First Avenue S (2005). ***See figures 3-7.***

CenturyLink Field is located immediately east of the subject building, and T-Mobile Park (formerly Safeco Field) is located approximately one half-mile south-southwest.

Asian supermarket Uwajimaya lies approximately one-third mile to the east, within the boundary of the International Special Review District. The Pioneer Square Preservation District abuts the International Special Review district along Fourth Avenue S and overlaps at Union Station, where both Districts have jurisdiction. Along Fourth Avenue, the boundaries of the local Pioneer Square Preservation District differ slightly from the boundaries of the National Register District.

[5] Seattle Department of Neighborhoods, "Summary for 902 1st AVE," Seattle Historical Sites Database, http://web6.seattle.gov/DPD/HistoricalSite/QueryResult.aspx?ID=66218047 (accessed October 2019).
[6] Seattle Department of Neighborhoods, "Summary for 904 1st AVE," Seattle Historical Sites Database, http://web6.seattle.gov/DPD/HistoricalSite/QueryResult.aspx?ID=1108271377 (accessed October 2019).

3.2 SITE DESCRIPTION

The L-shaped subject site measures 139'-0" north-south and 150'-0" east-west at the longest sides. The site comprises two parcels, both with buildings occupying the entire site. The northern parcel is slightly smaller than the southern parcel. The primary façades front First Avenue S. These façades are bordered by a paved sidewalk and two mature street trees. The southern parcel has a prominent secondary façade along Occidental Avenue S, facing CenturyLink Field.

The northern parcel contains 902 First Avenue S, the former Alaskan Copper Works. It measures 57'-0" north-south along First Avenue S, and 103'-0" east-west. The Roebling Building to the north shares a party wall with the subject building, and also surrounds the subject building on the eastern side, occupying the eastern 47 feet of lots 6 and 7. This means that the former Alaskan Copper Works building at 902 First Avenue S only has one visible exterior wall: the primary façade along First Avenue S.

The southern parcel contains 904 First Avenue S. It measures 82'-0" along First Avenue S and 150'-0" east-west. Secondary façades front a parking lot to the south and Occidental Avenue S to the east.

The two buildings, although constructed as separate buildings, and often leased and tenanted as separate buildings, were at various points in their histories combined and tenanted together. This leads to some confusion in addressing and in documented alterations when determining which permits should be attributed to which building. ***See figure 8.***

3.3 902 FIRST AVENUE S: ALASKAN COPPER WORKS BUILDING

3.3.1 Building Structure & Exterior Features

The building has a rectangular plan with a concrete exterior wall on the western façade and heavy timber mill construction supporting the single-story structure. The partition walls separating the building from its neighbors are party walls, shared with the neighboring structures. Notably, the northern wall is an unreinforced masonry wall shared with the Roebling building. The eastern wall and southern walls are of painted, board-formed concrete. The building consists of two bays, with heavy timber columns at the exterior northern and southern perimeter walls, and a central column line. Beams span north-south, delineating five bays. The building has a flat roof with several filled-in former skylights, and membrane roofing. A parapet outlines the extent of the building at the roof, with a triangular pediment on the western façade.

The western façade is the only exterior façade, and the primary street front facade. This is made of painted board-formed concrete, with a shaped, raised pediment parapet and a minimal rectangular concrete parapet cap. The façade is divided into two sections corresponding to the structural bays at the interior.

The southern bay contains a recessed, double door entry and a plate glass storefront window with steel sash transom windows above. The recessed entry is flanked by curved cheek walls of glass blocks; the non-original glass double doors have a glass block transom over the top. These glass blocks were installed sometime after 1937, replacing a roll-up door for loading.

The paving from the sidewalk slopes up to the finish floor level of the interior and is composed of approximately 4" x 4" cream-colored ceramic tiles laid in a running bond pattern. Above the recessed entry is a steel sash transom window comprised of two eight-light sashes with a steel mullion between them. The storefront window located to the north of the entry sits atop a painted parge-coated bulkhead with a simple concrete sill. This window has two panes of plate glass. The transom above consists of four six-light steel-sash windows with steel mullions between them. At least one of these sashes, the second from the north, is an operable pivot unit.

The northern bay contains a single entry door with a plate-glass transom on the southern end, and five pieces of plate glass in the storefront window. The storefront window is located to the north of the entry and sits atop a painted parge-coated bulkhead with a simple concrete sill. A steel-sash transom stretches across the entire bay, with varying widths of units separated by steel mullions. Above the door is a six-light transom. Proceeding to the north is an eight-light operable pivot unit, a fixed six-light unit, a fixed ten-light unit, a six-light operable pivot unit, and a fixed eight-light unit. ***See figures 9-10.***

3.3.2 Plan & Interior Features

Note: See Drawings in Appendix 2 to this document.

No historic finishes were observed at the interior of the building. Neither was there any evidence that historic building interior layouts had been preserved. At the western end of the building the southern side is separated from the rest of the space by plywood partition walls to create an additional tenant space. This tenant space has a separate mezzanine above, framed with a non-original steel beam and dimensional lumber installed as part of a tenant improvement. Finishes include painted gypsum wallboard partition walls, painted structural members described above, wood paneling installed as part of a tenant improvement, painted concrete floor, and painted wooden ceiling.

On the northern side of the space, an enclosed area with a mezzanine above is used for office and restrooms. The enclosure is made of painted gypsum wallboard, reclaimed wood, and includes steel stair with a cable rail system. Updated finishes for tenant improvement for a gym include rubber gym mats, mirror partitions along the column line, exposed ductwork, fluorescent lighting, water fountains, and fans. ***See figures 11-12.***

3.3.3 Building Alterations

The subject building, 902 First Avenue S, was built in 1927. In subsequent decades, permits for minor changes to the exterior are on record. It is unclear if a permit from 1951 for removing windows and installing a roll steel door and wooden access door refers to the side of the building facing Occidental Avenue S, which may have been unenclosed at the time. The interior has been significantly altered, including the addition of enclosures and mezzanines. Although some elements of the original wooden frames may remain, the storefront windows have been replaced with new glazing, and panes are secured by metal mullions.

Visual evidence from the 1937 tax assessor photograph indicates that the entire southern bay storefront

was added sometime after 1937, when it was originally used as a bay for auto access and contained doors that opened all the way across the bay.

Recorded Permits & certificates of approval:

Date	Description	Owner/tenant	Designer/ Contractor	Permit #
1927	Erect warehouse building per plan filed [plans marked destroyed on permit]	Frye & Co.	[none listed]	266971
1927	Struck 50x100 Frame storage shed	C. H. Frye	Contractor [illegible] & Sims	289700
1944	Alter per plan	Alaskan Copper Works	Marshall [illegible] engineer	362207
1971	[interior partitions & drop ceilings for air conditioning]	Tenant: Greenway Aluminum Co. offices		
1982	Alter portion of existing factory/warehouse/office building and occupy for furniture manufacturing per plans	Tenant: Laminates Unlimited, Mike Fogli		604421
1983	Alter and occupy as office/warehouse subject to field inspection	Tenant: Gary White & Assoc., Jack Thompson Office Manager		602584
2000	Interior alterations to warehouse space, change use of portion to general retail sales and service and occupy per plan.	Tenant: Mark Travers		713654
2016	Change Use from Retail/warehouse to retail/group fitness	Tenant: CueFit, Clint Tannehill		6536334-CN

3.4 904 FIRST AVENUE S: ANACONDA WIRE & CABLE COMPANY BUILDING

Note: See Drawings in Appendix 2 to this document.

3.4.1 Building Structure & Exterior Features

The building has a rectangular plan with concrete exterior walls and heavy timber mill construction supporting the single-story structure. The concrete walls are of painted board-formed concrete. The formwork on the southern façade was left in place. The building has a flat roof with several in-filled former skylights and membrane roofing. It has a parapet outlining the extent of the building at the roof, with a raised portion of the parapet on the western facade.

The building consists of three bays, with heavy timber columns at the exterior northern and southern perimeter walls, and two central column lines creating three east-west bays. Beams span north-south, delineating seven bays. The heavy timber of the structure of the Anaconda Wire & Cable Company building was built adjacent to the board-formed concrete of the Alaskan Copper Works building's

southern wall, and no other enclosing wall was constructed for the Anaconda Wire & Cable Company building.

Western Façade: First Avenue South

The western façade is the primary street-front facade. It is made of painted parge-coated concrete, with a portion of raised parapet at the central bay, and sections of raised concrete banding at the outer bays. The façade is divided into three sections corresponding to the structural bays at the interior. Lighting on this façade is utilitarian tapered flush sconces located in the center of each bay, connected by exposed surface conduit.

The southern bay contains a central entry door and flanking plate glass storefront windows with steel-sash transom windows above. The entry door is protected by a metal security gate. The storefront windows sit atop painted parge-coated bulkheads. Spanning the southern bay is a steel-sash transom window comprising eight-light sashes divided by steel mullions (except above the entry door, where the transom is irregular). Most of the glazing in the transom has been broken or otherwise removed or altered.

The central bay is marked by the raised parapet, and a concrete column divides this bay in half. The southern half of the central bay contains two wood-framed plate glass storefront windows atop painted parge-coated bulkheads. The transom consists of two ten-light steel-sash units with an operable six-light pivot sash at the center of each. A steel mullion separates the two ten-light units. The northern half of the central bay contains a recessed entry flanked by storefront sidelights on parge-coated bulkheads. The transom window above consists of three six-light steel sash windows. Most of the glazing in the transoms has been broken or otherwise removed or altered.

The northern bay is divided in half by a concrete column, with each portion containing two wood-framed plate glass storefront windows atop painted parge-coated bulkheads. The transom consists of three six-light steel sash windows divided by steel mullions. ***See figure 13.***

Southern Façade

The southern façade stretches 150'-0" along the adjacent southern parking lot. This façade contains the remnants of the original wooden formwork used for casting the exterior concrete wall. (At the time the building was constructed, a one-story wood framed building at 924 First Avenue S was in place with a zero lot line development. The remaining formwork on the southern façade of the subject building may be a legacy of being cast up against an existing building which has since been demolished.) The upper portion of the wall, the parapet, has been repaired or replaced and painted with waterproof elastomeric coating, and has a metal flashing capping the parapet. The wooden formwork and exposed concrete at the western end are in poor condition. The wooden formwork has decayed and water has intruded into the concrete, causing rust to form on the steel reinforcing and spalling of the concrete at the exposed areas. ***See figure 14.***

Eastern façade: Occidental Avenue S

The eastern façade is made of painted board-formed concrete. At the southern end, this façade contains an access door and a steel roll-up door. These are contained within an original opening that has since been filled in with concrete masonry units (CMU) above the access door and on either side of the roll-up door. The center of the façade contains an opening with a recessed entry and two different-sized steel sash windows on either side. To the south is a large window containing two twenty-light sashes separated by a steel mullion. The glazing in this window has been damaged. To the north of the central entry is a smaller, 12-light steel sash window. The sash and glazing in this window have been extensively damaged. The non-original recessed entry itself consists of fixed glazed double doors flanked by radiused pink stucco cheeks. A large swinging stucco-panel door is located on the northern side of the recess. There is visual and documented evidence that this opening has been altered; namely, the concrete has been saw-cut to provide a step up to finish floor level. On the northern end of the façade is another steel roll-up door. ***See figures 15-16.***

3.4.2 Plan & Interior Features

The building is currently divided into three separate tenant spaces: two accessed from both First Avenue S and Occidental Avenue S, and one accessed only through the loading dock facing Occidental Avenue S.

The southernmost tenant space occupies the entire southern bay of the building. It contains a non-original mezzanine and enclosed room in the second bay from the west. The westernmost bay containing the storefront windows on First Avenue S also contains partition walls delineating a central hallway from the entry door. A wall with a door separates the storefront area from the warehouse area just west of the first column line. At the eastern end of the warehouse, a loading dock ramp slopes towards Occidental Avenue S. Finishes in this tenant space include concrete floors, exposed studs and steel structure from the non-original mezzanine and seismic upgrades on the southern wall, painted original structural members, painted wood on the northern partition wall and ceiling, and steel structure for a five-ton crane. Original skylights have been filled in. ***See figures 17-18.***

The middle tenant space is irregular in plan, occupying the two storefront spaces along First Avenue S, then stepping to the south to narrow in plan, occupying all of the middle bay of the building and approximately 7'-0" of the southern portion of the northern bay. A mezzanine occupies the second bay from the west, accessed by a stair on the southern side of this bay. A partition wall in the second column line from the west contains a door separating what was once warehouse space from the storefront space. Today the warehouse space has been partitioned into separate rooms off a double-loaded corridor for a karaoke business. The tenant space has two separate entries, each with different characteristics as described in section 3.4.1 above: the storefront entry from the central bay of the western façade, and the entry located at the center of the eastern façade facing Occidental Avenue S. The finishes in this tenant space have been recently updated with new gypsum wallboard, paint, and trim. Flooring is painted concrete. ***See figures 19-20.***

The northernmost tenant space occupies approximately the northern 20'-0" of the building, narrowing to approximately 15'-0" in the second bay to the west, and not occupying any of the westernmost storefront bay. This area is accessed only though the loading dock on the eastern end facing Occidental Avenue S,

and contains a series of two rooms for storage, a kitchen, and a bathroom. Finishes in this space include the painted board-formed concrete northern wall, a steel roll-up door on the eastern façade, plywood partition walls, painted gypsum wallboard partition walls, painted hollow clay tile partition walls, painted exposed heavy timber structural elements, painted wooden ceilings, and concrete flooring. There is evidence that the original skylights were removed and filled in. The exterior of the southern façade of the Alaskan Copper Works building to the north is visible in this tenant space. The southern wall of 902 First Avenue S was used as a party wall when the subject building was constructed. ***See figures 21-22.***

3.4.3 Documented Building Alterations

The subject building, 904 First Avenue S, was built in 1930. The address for the subject building is sometimes listed as 902 First Avenue S, causing some confusion within the permit record. By understanding the tenant spaces and chronology, and looking at the plans on file at SDCI, it is apparent that some alterations listed for 902 First Avenue S were actually for 904 First Avenue S. The Occidental Avenue S entry to the building was constructed as it exists today, with pink stucco cheek walls, when the Artists' Gallery of Seattle occupied the middle tenant space of the building in 2000. The recessed entry at the First Avenue façade was also altered in 2000 under the same permit and Pioneer Square Preservation Board Certificate of Approval (COA). The certificate of approval states: "Change of use of 1,660 square feet on ground floor space from warehouse to retail art gallery. Architectural alterations – Paint the west building façade redish [sic]-brown with gray trim; paint the east façade gray with redish [sic]-brown trim; create new recessed entries with out-swinging doors on both façades, paint 10"-tall white signage lettering above the entries, and install gray gooseneck light fixtures on the east and west façades."

Since that COA in 2000 the paint scheme has changed, as have the lighting fixtures.

Recorded Permits and Certificates of Approval:

Date	Description	Owner/tenant	Designer/ Contractor	Permit or PSPB #
1930	Build one story warehouse bldg. per plan	Frye & Company		291008
1951	Remove windows and put in new roll steel door and one wood access door	Alaskan Copper Works	Marshall & Barr engineers	408054
1981	Use of portions of the street level of the subject building for the manufacture of wood and wood related products, as per plan submitted.	Tenant: Michael J. Fogli		PSB 334/81
1982	Alter portion of existing factory/warehouse/office building and occupy for furniture manufacturing per plans	Tenant: Laminates Unlimited, Mike Fogli		604421

1986	Construct room within tenant space for accessory office to fabricating company at 904 1st Ave S STFI	Tenant: Automated Equipment Co., Loren Tomlinson		627262
2000	Tenant improvement for artist gallery	Tenant: Artists Gallery of Seattle	J.L. Holland Design	713654
2000	Change of use to artist gallery and architectural alterations including recessed entries	Tenant: Artists Gallery of Seattle, Mark Travers		PSB 101/00
2018-2019	Tenant improvements: Change use from warehouse and art gallery to eating and drinking establishment and Construct alterations for restaurant and bar, occupy per plan	Tenant: SOBER 2 K-BAR		6710398-CN & 6647973-CN

4. SIGNIFICANCE

4.1 HISTORIC NEIGHBORHOOD CONTEXT: PIONEER SQUARE & FIRST AVENUE SOUTH

Although the subject building is contained within the boundaries of the Pioneer Square Preservation District, its actual location is slightly south of the commercial and historic core of Pioneer Square itself. As such, its neighborhood context is drawn from the history not only of Pioneer Square but also First Avenue S, the Elliott Bay waterfront, and the neighborhood that is known today as SoDo. ***See figures 23-24.***

The first people to form a settlement on the land that is now Pioneer Square were the Duwamish, the name for various Lushootseed-speaking groups in the area. The land was originally known as "sdZéédZul7aleecH," or the "Little Crossing Over Place."[7] According to historian Coll Thrush, this was the Lushootseed name for the city of Seattle until around the middle of the 19th century. Before 1852, prior to colonization by white settlers, up to eight longhouses were located where King Street Station stands today. Due to the alteration of the waterline, the previously existing beach and portage that gave the settlement its name no longer exist. By the time white settlers had arrived, a Duwamish village called the Ground of the Leader's Camp was located north of Pioneer Square.[8] The land on which the subject buildings sit was tidal flats until sometime between 1885 and 1904.

[7] Coll Thrush, *Native Seattle: Histories from the Crossing-Over Place* (Seattle: University of Washington Press, Seattle, 2007), p. 229
[8] Ibid.

Although the Denny Party initially settled on Alki Point, the majority of the group relocated to the land across Elliott Bay to the east.[9] In 1852 Carson Boren, William Bell, and Arthur Denny filed claims to the land that comprises much of what is now Pioneer Square and Downtown Seattle; and David S. "Doc" Maynard filed a claim to the tideflats to the south and east.[10] That same year, Henry Yesler chose the new settlement for the site of his steam-powered lumber mill, on a pier at the bottom of Mill Street (now Yesler Way), which soon came to be known as "Skid Road."[11]

Subsequent years saw the establishment of essential elements of a growing settlement—Maynard's store the Seattle Exchange, carpentry and blacksmithing shops, a hotel and brothel, and two taverns. The early years of the new town were marked by the Native American uprising of 1855, demand for lumber for San Francisco, and the development of coal mines to the south.[12]

On June 6, 1889, nearly the entire town was destroyed in what came to be known as the Great Fire. The fire began when a pot of glue ignited in a cabinet shop. Within hours the flames engulfed thirty city blocks, devouring nearly every building, all of which were made of wood. In spite of this devastation of property, no one was killed in the fire. The day after the fire, the citizens had pledged to rebuild the city with less flammable materials, and within a year 150 brick and stone buildings had been either started or completed.[13] The fire also resulted in the establishment of a municipal water system, and a jump in population from 25,000 before the fire to 43,000 within a year after it.[14] ***See figure 25.***

Between 1885 and 1904, the tideflats south of Seattle were filled in using soil and matter from the South Canal Project, the Great Northern Tunnel excavation, and the regrading of Jackson and Dearborn streets. By 1917, 92% of the tidal land that Doc Maynard had staked his claim upon had been filled in.[15]

The economic panic of 1893 depressed the entire nation, including Seattle, for approximately four years. However, Seattle at large, and the Pioneer Square area in particular, were granted a boon by the Klondike Gold Rush, as millions surged to the city as the jumping-off point for prospecting in Alaska.[16] It was during this time that the corner of First Avenue and Yesler Way was established as a park dubbed Pioneer Place. The park was marked by a stolen Tlingit totem pole and an ornate Beaux-Arts-style pergola—two landmarks that distinguish the area (in reconstructed forms) to this day.

In 1902 the Seattle-Tacoma Interurban Railway began service between the two cities, with termini in Pioneer Square (at Yesler Way and Occidental Street) and downtown Tacoma.[17] The interurban ran for

[9] Walt Crowley, "Seattle Neighborhoods: Pioneer Square—Thumbnail History," HistoryLink Essay #3392, posted June 20, 2001, http://www.historylink.org/File/3392 (accessed September 20, 2017).
[10] Ibid.
[11] Paul Dorpat, "Seattle Waterfront, Part 3: Yesler's Mill meets Elliott Bay: Foot of Yesler Way," HistoryLink Essay #2473, May 24, 2000, http://www.historylink.org/File/2473 (accessed September 20, 2017).
[12] Crowley, "Pioneer Square."
[13] Paul Dorpat, "Now & Then—Seattle's Great Fire of 1889," HistoryLink Essay 2583, January 1, 1999, http://www.historylink.org/File/2583 (accessed September 15, 2017).
[14] Greg Lange "Seattle's Great Fire," #715, posted 1/16/1999 http://www.historylink.org/File/715 (accessed 9/15/17)
[15] David B. Williams, "Filling the Flats," *Too High and Too Steep: Reshaping Seattle's Topography* (Seattle, WA: University of Washington Press, 2015).
[16] Crowley, "Pioneer Square."
[17] David Wilma, "Interurban rail service between Seattle and Tacoma begins on September 25, 1902," HistoryLink essay 5340, March 2, 2003, http://www.historylink.org/File/5340 (accessed September 28, 2017).

26 years, until 1928, when highway 99 opened.[18] In 1904 construction began on King Street Station, Seattle's first major train station. Seattle had been dealt a blow when, in 1873, the Northern Pacific Railroad selected Tacoma for its western terminus. Railway entrepreneur James Hill provided Seattle with what the government-funded Northern Pacific had failed to do: establish transcontinental service with his Great Northern Railway and, later, fund construction of a grand train station.[19] The Great Northern line first reached Seattle in 1893. Frustrated with Seattle's existing ramshackle, wooden train station located between Railroad and Western avenues and Marion and Columbia streets, Hill lobbied the city council to establish a permanent station on the not-yet-filled-in tidelands. In 1904 work began on the new depot, and by 1906 King Street Station, built in an eclectic style given the tongue-in-cheek name "Railroad Italianate," was opened to the public. King Street Station served the Great Northern and Northern Pacific railways.[20]

In 1911 the Union Pacific Railroad built a new station on a site adjacent to the King Street Station.[21] Originally known as the Oregon & Washington Depot and later renamed Union Station, the station was designed by architect Daniel J. Patterson in a Beaux-Arts style, with a 55-foot-high vaulted ceiling and elegant tiled floors.[22] Not long after the completion of King Street and Union stations the automobile rose to prominence in Seattle and at large, and rail travel gradually declined.[23]

By the 1910s Seattle had incorporated much of the surrounding land and towns, and the area of the original settlement had fallen into disrepute, with social reformers denouncing the area as a den of iniquity, and attaching the pejorative notions of vice and poverty to the term Skid Road.[24] ***See figure 26.***

In 1916, entrepreneurs David Skinner and Jon Eddy founded Skinner & Eddy Shipbuilders on Pier 36, where Atlantic Street meets Elliott Bay. When the United States entered World War I the following year, the firm purchased an additional 15 acres of waterfront land and quickly became the largest shipbuilder in Seattle.[25] Under the management of shipfitter David Rodgers, and with a workforce of 13,000, Skinner & Eddy produced 75 ships, producing in a matter of weeks ships that previously would have taken over a year to complete.[26] After the war, demand dropped so thoroughly that Skinner & Eddy ceased shipbuilding operations by 1920.[27]

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[18] Walt Crowley, "Interurban Rail Transit in King County and the Puget Sound Region," HistoryLink Essay 2667, September 19, 2000, http://www.historylink.org/File/2667 (accessed September 28, 2017).
[19] John Caldbick, "King Street Station (Seattle)," HistoryLink Essay 11124, October 17, 2015, http://www.historylink.org/File/11124 (accessed September 28, 2017).
[20] Heather M. MacIntosh, "Railroad Stations: Their Evolution in Seattle," HistoryLink Essay 1697, October 1, 1999, http://www.historylink.org/File/1697 (accessed September 28, 2017).
[21] Ibid.
[22] Adam Burns, "A History of Seattle Union Station," American-Rails.com, http://www.american-rails.com/union-station.html (accessed September 28, 2017).
[23] Heather M. MacIntosh, "Railroad Stations: Their Evolution in Seattle," HistoryLink Essay 1697, October 1, 1999, http://www.historylink.org/File/1697 (accessed September 28, 2017).
[24] Crowley, thumbnail.
[25] Greg Lange, "Skinner & Eddy Shipyard begins ship construction in Seattle on February 3, 1916," HistoryLink Essay 749, January 24, 1999, http://www.historylink.org/File/749 (accessed September 15, 2017).
[26] Mark Hanson, "David Rodgers: Crafting of Boats and Building of Seattle's Legacy," HistoryLink Essay 11093, July 29, 2010, http://www.historylink.org/File/11093 (accessed September 21, 2017).
[27] Daryl McClary, "Pier 36—Seattle Waterfront," HistoryLink Essay 4149, March 13, 2013, http://www.historylink.org/File/4149 (accessed September 21, 2017).

In 1931, two years into the Great Depression, a shantytown developed in the land south of Pioneer Square, on much of the land that formerly housed Skinner & Eddy, between First Avenue South and the Elliott Bay waterfront. The city twice burned down the "Hooverville"—as such settlements were cheekily called, after then-president Herbert Hoover—but after the residents rebuilt the second time, the City agreed to allow them to stay. By 1934 the shantytown housed more than 630 unemployed men, and remained in existence until the end of the Great Depression.[28] ***See figure 27.***

The problem of transportation and congestion in Seattle, particularly along the waterfront, has been a problem and a matter of debate since the early 20th Century. Engineer Virgil Bogue proposed a 2,380-foot tunnel extending from Blanchard Street to Westlake, although in 1912 Seattle voters rejected the entirely of the so-called Bogue Plan.[29] Commercial traffic moving through downtown went over a trestle at Railroad Avenue; by the 1930s the number of motor vehicles in the city had surged and the trestle was in dire condition. In 1934 the city received emergency funds to build a sea wall along the waterfront and a four-lane road atop it. This road, Alaskan Way, immediately became a bottleneck for traffic both driving through and in and out of downtown Seattle.[30] While it was clear that another solution was needed, the Depression and then World War II stymied development of the project.[31] By 1949 both funding and design for an elevated highway had been secured. Construction began in December 1949 and the highway, extending from Battery Street to S Dearborn Street (immediately north of the subject site), opened to traffic on April 4, 1953.[32] ***See figure 28.***

In the 1960s the neighborhood was subjected to "urban renewal," a term that tended to be code for tearing down and rebuilding, and often conflated old neighborhoods or buildings and urban blight. Pioneer Square was specifically targeted to house a clutch of parking garages to serve the northward downtown core. A broad coalition of architectural professionals, businesses, civic clubs, and more rallied to protect the area by naming it a preservation district. The Pioneer Square Historic District, the first of its kind in the city, was approved in 1970 by the city council.[33]

In 1972, the city broke ground on the Kingdome, an event that came after twelve years of controversy, public outcry, financial wrangling, and political debate about the feasibility of the city having a massive professional sports stadium.[34] In spite of vocal opposition from the Asian American communities in the International District to the east, the site was eventually selected for its proximity to downtown and relatively low price. The grand opening celebration took place on March 27, 1976. The newly formed NFL team the Seahawks played their first game in the Kingdome on August 1, 1976, and the following

[28] Greg Lange, "Hooverville: Shantytown of Seattle's Great Depression," HistoryLink Essay 741, January 18, 1999, http://www.historylink.org/File/741 (accessed September 20, 2017).
[29] Jennifer Ott, "Alaskan Way Viaduct, Part 1: Early Transportation Planning," HistoryLink Essay 9925, September 13, 2011, http://historylink.org/File/9925. (accessed)
[30] Ott.
[31] Viaduct History, "Viaduct Beginnings: Planning," http://viaducthistory.com/history.htm
[32] Viaduct History, "Viaduct Beginnings: Construction," http://viaducthistory.com/history.htm
[33] Sharon Boswell and Loraine McConaghy, "Saving a Time, and a Place," *Seattle Times*, October 27, 1996, n.p. http://old.seattletimes.com/special/centennial/october/saving.html
[34] Heather MacIntosh, "Kingdome: The Controversial Birth of a Seattle Icon (1959-1976)," HistoryLink essay 2164, March 1, 2000, http://www.historylink.org/File/2164 (accessed September 20, 2017).

year the newly-formed Seattle Mariners played their first game in the Kingdome against the California Angels, on April 6, 1977.[35] ***See figure 29.***

By 1994 the city was considering a new baseball-specific stadium; King County Executive Gary Locke established the 28-member Stadium Alternatives Task Force to explore funding, feasibility, and locations.[36] By September 1996 the county had selected the site south of the Kingdome as location for the new stadium, and less than three years later, on July 15, 1999, the Mariners and the San Diego Padres played the first game in the new stadium, known as Safeco Field.[37]

The Seahawks had originally been owned by the Nordstrom family, who sold the team to California-based real estate developer Ken Behring. Behring was dissatisfied that the Mariners were granted their own stadium while his team was expected to continue playing in the Kingdome, and announced that he was moving the Seahawks to California. Microsoft co-founder Paul Allen secured the option to buy the team. Allen would keep the team in Seattle on the condition that the county would help finance and build a new stadium.[38] Allen also funded a statewide referendum to allocate $300 million to a new stadium, an issue that narrowly passed in June 1997.

The Kingdome was imploded on the morning of March 26, 2000, an event that nearly all of Seattle watched in person or on television.[39] The new stadium, which would accommodate the Seahawks and a professional soccer team, was built on the same site as the Kingdome, opened to the public July 20, 2002. Originally named Seahawks Stadium, the site was renamed Qwest Field in 2004 and then again renamed CenturyLink Field in 2011.[40] ***See figure 30.***

Over the past several decades the neighborhood south of Pioneer Square has come to be known as "SoDo"—short for South of the Dome. On February 3, 2019 the SR99 tunnel, replacement project for the aged and potentially unsound Alaskan Way Viaduct, opened to traffic.[41] That same month, crews began demolition of the Viaduct. Demolition was completed in September 2019, with the final portion along S Dearborn Street between Alaskan Way and First Avenue S. The on-ramps at S Dearborn Street, located immediately across First Avenue S from the subject buildings, are "first in the world built with flexible metals and bendable concrete."[42]

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[35] Glenn Drosendahl, "Seattle Mariners," HistoryLink essay 9560, September 12, 2010, http://www.historylink.org/File/9560 (accessed September 20, 2017).
[36] Seattle Mariners, "Safeco Field History," http://seattle.mariners.mlb.com/sea/ballpark/information/index.jsp?content=history (accessed September 27, 2017).
[37] Ibid.
[38] Glenn Drosendahl, "Seattle Seahawks," HistoryLink essay 10217, November 3, 2011, http://www.historylink.org/File/10217 (accessed September 27, 2017).
[39] MacIntosh.
[40] Drosendahl. "Seahawks."
[41] Washington State Department of Transportation (WSDOT), "SR 99 tunnel now open to traffic," February 4, 2019, https://www.wsdot.wa.gov/Projects/Viaduct/library/advisories-and-updates/sr-99-tunnel-now-open-to-traffic (accessed October 2019).
[42] Natalie Guevara, "New NB South Dearborn off-ramp in Seattle first in the world to use earthquake-resistant concrete," *Seattle Times*, February 19, 2019, n.p., https://www.seattlepi.com/viaducttotunnel/article/South-Dearborn-SR-99-off-ramp-open-earthquake-13628673.php#photo-16952274 (accessed October 2019).

4.2 BUILDING HISTORY: 902 & 904 FIRST AVENUE S

Construction permits for 902 and 904 First Avenue S were issued in 1927 and 1930, respectively. Both were constructed and initially owned by the C. H. Frye Investment Co. By at least 1937 both buildings were owned by the Alaskan Copper & Brass Corporation. As of 2019 they were owned by the Rosen Investment Co.; the Rosen family has owned Alaskan Copper & Brass since its founding in 1913. Given their proximity, ownership, and overlapping addressing, the histories of the individual buildings tend to converge and diverge over the years. From at least 1951 until at least 1983, the two buildings seem to have been considered and/or operated as a single building, addressed at 902 First Avenue S.

For more on C. H. Frye Investment Co., see section 4.5. For more on Alaskan Copper Works and the Rosen family, see section 4.6.

902 First Avenue S

Originally addressed at 902-908 First Avenue S, the building was constructed as a warehouse in 1927 by the C. H. Frye Investment Co. At that time, the building had a single storefront, and the southernmost bay included a door for auto access. ***See figures 31, 33-34.***

By 1932 the building housed the Seattle headquarters of the Frigidaire company, consisting of display room, warehouse, and service station for private and commercial refrigerators.[43]

By 1934 the building housed Alaska Copper Works.[44] By at least 1937, the building was owned by Alaskan Copper Works' sister company, Alaskan Copper & Brass Company. By 1953, Alaskan Copper Works had moved into a new building at 3223 Sixth Avenue. Alaskan Copper and the Rosen family remained the owners of the building, leasing it to tenants.[45]

By at least 1955, 902 First Ave S was a salesroom for the John E. Amberg Company, a distributor of Admiral-brand television sets. Amberg vacated the subject building in the second half of 1958.[46]

By 1960, the tenant was the "thermoid division" of rubber goods manufacturer H. K. Porter, Inc.[47]

From at least 1965 until at least 1970, the building a plant for the Greenway Aluminum Co. In 1975 the tenant was Herzog Aluminum Co.

By 1983 the tenant was Seattle Office Systems. From at least 1986 until at least 1994 the tenant was Automated Equipment. It was during this period that the two buildings functioned as a single building. The building at 902 was used for manufacturing, and the building at 904 was used as "additional space."

In 2000 Universal Marble & Granite Fabricators was the tenant of 902 First Avenue S.

Today, a CrossFit gym occupies the northern portion of the building. The southern portion of the building is occupied by a chiropractic office.

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[43] *Seattle Times*, advertisement, August 15, 1932, n.p.
[44] *Seattle Times*, advertisement, December 30, 1934, p. 21.
[45] Seattle Department of Neighborhoods, "Summary for 3223 6TH AVE," Seattle Historical Sites Database, https://web6.seattle.gov/DPD/HistoricalSite/QueryResult.aspx?ID=2147012018 (accessed October 2019).
[46] *Seattle Times*, advertisement, September 4, 1956, p. 14.
[47] R. L. Polk & Co., Seattle City Directory, 1927-1994.

904 First Avenue South

From at least 1906 until 1929, the site at 904 First Avenue S was the site of the Puget Hotel, a single-room occupancy or workers' hotel. At the time, the address was 912½ First Avenue S. Street addresses associated with the building now known as 904 First Avenue S have ranged from 902 to 922 First Avenue S.

In 1929 an article in the *Seattle Times* announced that the C. H. Frye Company would be constructing a new building on the site of the soon-to-be-razed Puget Hotel:

> The Anaconda Wire & Cable Company, a subsidiary of the Anaconda Copper Company, will occupy a one-story concrete warehouse and office building at 910-14 First Ave. S., the structure to be erected by the Frye Investment Company at a cost of $30,000. The building will occupy the site of the old Puget Hotel, now being razed, and is expected to be ready for occupancy about March 1. L. M. Wolfe will be in charge of the company, which will handle insulated wire and cable.[48]

See figures 32, 35-36.

Anaconda Wire & Cable Co. was a subsidiary company of the Anaconda Copper Mining Company, which was one of the largest mining companies in the world throughout the 20th Century. Anaconda was founded in Butte, MT in 1880.[49] Anaconda Wire & Cable took up occupancy of the building in April 1930. According to the Seattle Times, "[t]he building [was] a one-story concrete structure, 54 by 150 feet, with a mezzanine floor 24 by 70 feet…"[50]

Originally the building at 904 First Avenue S contained two storefronts: one with a double door occupying the two northern bays, and one with a single door in the southernmost bay.

By 1937 the building was owned by Alaska Copper & Brass Co. The tenant at the northernmost storefront was Anaconda Wire & Cable Company. The tenant in the southernmost First Avenue storefront was Worthington Pump & Machinery Corporation, which remained a tenant until at least 1944. An additional tenant in 1937 was the Battle Creek Food Company (previously and subsequently known as Kellogg's).

In 1938 the Hart Manufacturing Co. was listed as a tenant in the Polk's City Directory.

In 1940, the Polk's City Directory lists 914 and 920 First Avenue S as "vacant," and lists Worthington Pump as the tenant in the southernmost space, 922 First Avenue S.

In the 1943-1944 Polk's City Directory, there are no entries for any address between 914 and 920 First Avenue S. Worthington Pump is still listed at 922 First Avenue S that year.

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[48] Thomas G. Fay, "Cutting Becomes Realty Luminary with Four Deals," *Seattle Times*, November 17, 1929, p. 26.
[49] Encyclopaedia Brittanica, "Anaconda Company," July 20, 1998, updated October 12, 2012, https://www.britannica.com/topic/Anaconda-Company (accessed October 2019).
[50] *Seattle Times*, "Lease Reflects Faith in Seattle," April 29, 1930, p. 11.

From at least 1951 until at least 1983, the Seattle City Directory includes no listings for 904-922 First Avenue S.

By 1982 Laminates Unlimited was a tenant in the southernmost unit. Although the business occupied the southernmost unit in the building now addressed at 904 First Avenue S, Laminates Unlimited was addressed as 902 First Avenue S in the City of Seattle building permit records.

As described above, from at least 1986 until at least 1994, 904 First Avenue S was additional space for Automated Equipment, which also occupied 902 First Avenue S.

The Artists' Gallery of Seattle was established in the subject building in 2000 as an alternative gallery and exhibition space, at which artists were able to rent wall space to exhibit their work by the month.[51] In 2000, the gallery applied for and received a Certificate of Approval from the Pioneer Square Preservation Board to alter the building, as described in section 3.3.3. The Artists' Gallery remained the tenant until at least 2006.

As of March 2021, the building contains three units: a sports bar, commercial kitchen, and machine shop.

4.3 HISTORIC ARCHITECTURAL CONTEXT: ECLECTIC COMMERCIAL & INDUSTRIAL WAREHOUSE TYPOLOGY[52]

The subject buildings are typologically considered commercial/warehouse buildings. Both buildings have minimal architectural styling, but could be considered to have elements of the Art Deco or Streamline Moderne styles.

At the turn of the 20th Century the vast majority of small commercial buildings and warehouses in the western portion of the United States were designed within a range of vaguely eclectic architectural styles derived from European models. Buildings were adorned with relatively minor exterior details attempting to enhance otherwise straightforward designs. These included architraves, corbels, belt courses, arches, projecting bays, and turrets.

Early warehouse buildings built in Seattle were constructed with the intention of securely enclosing as much space as economically as possible. Building exteriors were often wood-sheathed or of brick masonry, with heavy-timber interior framing in regular, repeatable bays. Exterior embellishments were relatively minimal. Examples of warehouses constructed in Seattle during this period include the Ainsworth & Dunn Warehouse (1902, S. A. Jennings, City of Seattle Landmark), the Frederick & Nelson Warehouse (1907, W. D. Van Siclen), and the Van Vorst Building (1915, City of Seattle Landmark).

In the mid-1930s reinforced concrete with modular steel structural systems became more commonly used. Floors were either concrete or heavy timber planks. Ceilings were relatively high, allowing for high exterior windows that allowed natural light to penetrate into the interior. Roof monitor skylights were common. An early example of a concrete warehouse structure is the Polson Building, designed in 1910 by

[51] Steve Callihan, "Seattle Arts & Culture," A Seattle Directory, https://callihan.com/seattle-directory/culture.html (accessed October 2019).
[52] Adapted from "Frederick Boyd Company/American Meter & Appliance Building, Landmark Nomination Report," Larry E. Johnson, The Johnson Partnership, 2016.

Saunders & Lawton. A later example of a concrete warehouse is the National Grocery Company Warehouse (1930, the Austin Company).

After a major fire in 1889 destroyed Seattle's nascent central business district, fireproof construction was mandated for new buildings in downtown Seattle. At the same time and as a direct consequence of several other disastrous downtown fires throughout the United States, national building codes were developed, initially to protect property and eventually to save lives. Buildings were often constructed of reinforced concrete to allow fireproof construction. Freed from the limitation of load-bearing masonry construction, architects employed Classical Revival styles, particularly Renaissance Revival, which provided architects with the opportunity to dress their buildings with florid ornamentation. Exteriors were faced with brick masonry, cast stone, and terra cotta, the latter two often highly ornamented with eclectic compositions of classical detailing. Beaux-Arts-style ornamentation can be seen on the A. L. Palmer Building warehouse (1910, George C. Dietrich). Minimal neoclassical detailing can be seen on buildings such as the Boren Investment Company Warehouse (1925, Stuart & Wheatley, City of Seattle Landmark).

Warehouses were grouped in industrial areas of the city, initially alongside railroad spurs or freight depots, but later, as industries switched to trucking companies to move their products, near major highways. Flexible freight delivery to building interiors was essential for warehouses with on-grade access doors, and loading docks were essential for the efficient receipt and distribution of freight.

Starting in the 1930s Art Moderne and Art Deco styles were widely adopted for warehouse and utilitarian structures, and can be seen in warehouse buildings constructed of all types of materials. These buildings include the Limback Lumber Company building at 2600 NW Market Street (1939) constructed of wood frame,[53] the Builders' Supply Hardware building constructed of brick and cast stone at 227 Ninth Avenue (1931, George Wellington Stoddard),[54] and the Eyers Storage No. 2 Warehouse constructed of reinforced concrete at 2245 First Avenue S (1930, David Dow).[55]

There are many examples of concrete warehouse type buildings, especially in the Art Deco or Art Moderne styles in Seattle. Those buildings specifically in the Art Deco style that also have exposed board-formed concrete appear to be clustered in the SoDo neighborhood, south of the subject site. However, there are also several examples of parge-coated or stucco Moderne- or Deco-style warehouse buildings in Belltown and South Lake Union. These include the following:

- National Grocery Company/Salvation Army Building (1930), 1000 Fourth Avenue, SoDo, has exposed board-formed concrete.
- Mill & Mine Supply Company/Esquin Wine Merchants (1930), 2700 Fourth Avenue, SoDo, has exposed board-formed concrete.

[53] Seattle Department of Neighborhoods, "Summary for 902 1st AVE," Seattle Historical Sites Database, http://web6.seattle.gov/DPD/HistoricalSite/QueryResult.aspx?ID=2077445355 (accessed October 2019).
[54] Seattle Department of Neighborhoods, "Summary for 902 1st AVE," Seattle Historical Sites Database, http://web6.seattle.gov/DPD/HistoricalSite/QueryResult.aspx?ID=1122324095 (accessed October 2019).
[55] Seattle Department of Neighborhoods, "Summary for 902 1st AVE," Seattle Historical Sites Database, http://web6.seattle.gov/DPD/HistoricalSite/QueryResult.aspx?ID=2147011945 (accessed October 2019).

- Metropolitan Grocery Co./Angela Merlino Building (1931), 814 Sixth Avenue, SoDo, has exposed board-formed concrete.
- Van Waters & Rogers, Inc. (1937), 4000 First Avenue, SoDo, has exposed board-formed concrete.
- American Smelting & Refinery Company/Crosscut Hardwoods (1941), 4100 First Avenue, SoDo, has exposed board formed concrete.
- Peck & Hills Furniture Company and Baxley Dress Manufacturing Company (1929, Albert C. Martin), 1000 Denny Way, South Lake Union
- Seattle Tent & Awning Company/Seattle Tent & Housing Company, A. J. Eberharter building (1928, William R. Grant), 430 Dexter Avenue, South Lake Union
- Milwaukee Sausage Company (1937, W. C. Jackson), 2900 Fourth Avenue, SoDo
- Moline Elevator Co. (1938, Henry Bittman), 2325 Fourth Ave, South Lake Union
- Western Auto Supply Co. (1936), 2331 Seventh Avenue, South Lake Union

4.4 HISTORICAL ARCHITECTURAL CONTEXT: POSTWAR STREAMLINE MODERNE STYLE[56]

The subject buildings contain certain elements of the Streamline Moderne style, mostly due to the minimal exterior detailing such as horizontal banding (904 First Avenue S), and non-original curved entry cheeks of glass block (902 First Avenue S).

The Streamline Moderne or Art Moderne style is an outgrowth of Modernism, and a later derivation of the Art Deco style generally used between 1930 and 1945. The style is often identified by smooth, rounded wall surfaces and rounded edges, one-story buildings with flat roofs with a small ledge or string course at parapet or wall coping; composition with a horizontal, ground-oriented emphasis;[57] asymmetrical façades; smooth wall finishes, often stucco with a predominantly white color palette; horizontal grooves or lines in walls (sometimes fluted or pressed metal); casement, corner, or ribbon windows arranged horizontally with metal frames; utilitarian, functional metals (such as aluminum, chrome, and stainless steel) used for metal balustrades and trim; glass-block windows and walls, often curved and built into a curved wall; mirrored panels; curved canopies; occasional circular porthole/oculus/round windows on main or secondary elevations; and references to the ocean, such as curves, horizontal vectors and lines, and light blue finishes like aquamarine, azure, baby blue, cyan, teal, and turquoise.[58,59]

[56] Text adapted from "Appendix A Report: Mariner Apartments, 203 W Republican Street," Larry E. Johnson, March 2015, and further developed in "Showbox Theater, (additional) Landmark Nomination Report", Ellen F. C. Mirro, 2018.
[57] unlike the vertical trend of Art Deco
[58] Thomas Paradis, "Art Deco and Moderne," Architectural Styles of America and Europe," https://architecturestyles.org/art-deco.c
[59] Hänsel Hernández-Navarro, "ART DECO + ART MODERNE (STREAMLINE MODERNE): 1920-1945," Circa Old Houses, https://circaoldhouses.com/art-deco-art-moderne/ (accessed August 2018).

The Art Deco style was born out of the 1925 *Exposition Internationale des Arts Decoratifs et Industriels Modernes* held in Paris in 1925.[60] The new style strove to meld artistic expression and the machine age in a complementary, forward-looking manner. The decoration often emphasized craft and decorative materials were often more expensive stone or metal, and new manufactured materials such as enameled steel products, glass products and aluminum. Innovations in glass technologies produced materials such as pigmented structural glass products with proprietary brand names of Vitrolux, Thermolux, and Vitrolite. New tempered and laminated glass products along with glass tiles and structural glass block became popular. After 1920, Aluminum production became cheaper, making it more popular for architectural applications, and in 1931 the construction of the Empire State Building (Shreve, Lamb & Harmon) using aluminum for both structural members and interior finishes demonstrated the potential of the metal for Art Deco and Art Moderne style buildings. [61,62]

Some of the most famous examples of Art Deco buildings in the United States are Rockefeller Center (1940, Raymond Hood) and the Chrysler Building (1930, William Van Alen) in New York City. There are significant Art Deco historic districts in Miami Beach, Tulsa, and a significant collection of Art Deco buildings in Los Angeles, including the Streamline Moderne Coulter's Department Store (1938-39, Stiles O. Clements, demolished).[63]

The Streamline Moderne style was a more popular form of Modernism and was often applied to buildings such as gas stations, diners, movie theaters, factories, and all kinds of transportation buildings. William Arrasmith designed more than 60 Greyhound Bus stations between 1937 and 1948, including the Cleveland station (1948, National Register). Other buildings exhibiting the popular style include the Blue Plate Building in New Orleans (1942-43, August Perez Jr., National Register), the Coca-Cola Bottling plant in Los Angeles (1939, Robert V. Derrah, National Register), the Normal Theater in Normal, IL (1937, Arthur F. Moratz, National Register) and the Pan-Pacific Auditorium in Los Angeles (1935, Welton & Becket, demolished).

In Seattle, the Streamline Moderne style was not as prevalent as in some other cities, although it was applied to many small buildings such as Richfield gas stations, restaurants like Ivar's and SPUD Fish & Chips, and the Paramount Pictures Building of (1937, demolished). Some Seattle architects—including Floyd Naramore, J. Lester Holmes, and R. C. Reamer—transitioned from revival and eclectic styles to designing Art Deco and Moderne buildings.[64]

At least five Art Deco-style warehouse-type buildings that include elements of the Streamline Moderne have been designated City of Seattle Landmarks or listed on the National Register:

- 777 Thomas Street Garage (George Wellington Stoddard, 1931, altered), City of Seattle Landmark

[60] The term "Art Deco" did not come into widespread use in the architectural community until the 1960s.
[61] Hernández-Navarro.
[62] All About Aluminum, "Aluminum History," https://www.aluminiumleader.com/history/industry_history.
[63] Los Angeles Conservancy, "Coulter's Department Store (Demolished)," https://www.laconservancy.org/locations/coulters-department-store-demolished.
[64] Susan Boyle, "Seattle Fire Station 6 Landmark Nomination Report," BOLA Architecture + Planning, 2005.

- Ford Motor Company Assembly Plant/Federal Center South (Albert Kahn, 1930-32), 4735 E Marginal Way, National Register
- Seattle Times Office & Printing Plant (Robert Reamer, 1930, altered), City of Seattle Landmark
- Firestone Building (1929), 400 Westlake Avenue, City of Seattle Landmark
- Coca-Cola Bottling Plant (1932), 711 14th Ave/1313 E Columbia Street, City of Seattle Landmark

In the Pioneer Square Historic District, the Hartford Building, also known as Store & Lofts for the First Realty Company (1929, John Graham Sr.)[65] stands out as a concrete Art Deco building that has been determined to be a historic contributing building to the District.

Elements of the style seen on the subject buildings are minimal and consist mostly of non-original later elements including the curved glass-block cheeks of the Alaskan Copper Works Building, installed sometime after 1937, and the curved stucco Occidental Avenue entrance of the Anaconda Wire & Cable Co. building, installed in 2000. Only the smooth, slightly raised parapet of Anaconda Wire & Cable building and the partial string courses may indicate that the original building design may have taken some style indicators from Streamline Moderne.

4.5 ORIGINAL OWNER & BUILDER: CHARLES FRYE & THE C. H. FRYE INVESTMENT CO.

C. H. Frye Investment Co. was the original owner of the subject buildings.

Charles H. Frye (1858-1940) was born in Davenport, Iowa, and moved westward in the 1880s, settling in Seattle with his wife, Emma Lamp[66] Frye (1860-1934) in the 1888s. Charles Frye became a meatpacker, and opened several meat markets in Seattle.[67]

In 1891 Charles and his brother Frank Frye, along with business partner Charles Bruhn, formed the Frye-Bruhn Meat Packing Company and established business on 15 acres south of Pioneer Square, in the tideflats area. Business boomed during the Klondike Gold Rush of 1896-1899. In 1897 Frye-Bruhn opened a retail operation in Skagway, Alaska, and went on to establish stores in cities throughout the state as well as cattle ranches.[68] Frye-Bruhn's Alaska operations continued into the early 1930s.[69] ***See figure 37.***

[65] Seattle Department of Neighborhoods, "Summary for 902 1st AVE," Seattle Historical Sites Database, http://web6.seattle.gov/DPD/HistoricalSite/QueryResult.aspx?ID=-949344751 (accessed October 2019).
[66] Numerous historic sources list Emma Frye's maiden name as "Lamb." However, her grave, located in Evergreen-Washelli Memorial Park in North Seattle, reads "Emma Lamp Frye." Find A Grave, "Emma Lamp Frye," https://www.findagrave.com/memorial/41202215 (accessed October 2019).
[67] In spite of the identical surnames and mutual associations to the meat industry and real estate in Seattle, Charles Frye bears no relation to George and Emma Frye, who in the second half of the nineteenth century established numerous businesses, hotels, civic institutions (including the Frye Opera House), and acquired significant real estate holdings throughout the city.
[68] Frye Art Museum, "Frye-Bruhn and Alaska," https://fryemuseum.org/exhibition/3668/ (accessed October 2019).
[69] Ibid.

In 1900, Seattle's meatpacking industry created $4.5 million dollars' worth of products. Additional ventures included ranching and retail outlets ranging from Alaska to California. Frye had a nearby local retail distribution building at 2203 Airport Way South.[70]

By 1926, the Frye Investment Co. had been established, with $1,500,00 in capital stock.[71] The firm invested in real estate, gold mines, and oil. While some of Frye's ventures were commercial failures, his meatpacking and real estate concerns were successful and lucrative. Charles and Emma Frye collected art, with a particular focus on German Romantic paintings from the nineteenth century, which they displayed in a private gallery space attached to their home. Emma Frye died in 1934, and Charles died in 1940. The Fryes left their art collection to the people of Seattle, with the stipulation that their bequest be housed in a new, public museum committed to realist, representational art. The museum, designed by Paul Thiry, opened in 1952 and remains a pillar of Seattle's fine art scene today, with more than 100,000 visitors per year.[72] ***See figures 38-39.***

4.6 SUBSEQUENT OWNER: THE ROSEN FAMILY AND ALASKAN COPPER & WIRE

Morris Rosen (1882-1956) established the Alaskan Copper Works in Seattle in 1913 as a marine coppersmithing company. The firm grew to become a corporation called the Alaskan Copper Company, which included under its umbrella the Alaskan Copper Works (manufacturer), Alaska Copper & Brass Company (distributor), real estate holdings (Rosen Investment Co.), significant real estate holdings in industrial Seattle, and more.[73]

Morris Rosen was born in Lithuania around 1880, and was trained in coppersmithing from an early age. In 1898 he immigrated to the United States by way of Germany and England. He married Rebecca Miller in 1906. By 1908 he was working on construction of the Panama Canal for the US Civil Service, and he and his family lived in Panama until 1913, after which they moved to Seattle. Rosen established a coppersmithing shop near the Elliott Bay waterfront on Connecticut Street (now Royal Brougham Way). During World War I copper piping was in high demand by the shipbuilding industry, and Rosen had a larger shop built, on Spokane Street and E Marginal Way. A post-war slump in business turned around in 1924 and 1925 thanks to the rapid growth of the paper pulp industry, which also required metal alloys for its plants.[74] ***See figures 40-41.***

In 1932 the Alaskan Copper & Brass Company was established to serve as a distributor of the firm's corrosion-resistant alloys.[75]

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[70] *Seattle Times*, "Charles H. Frye Passes Away," May 1, 1940, p. 15.
[71] *Seattle Times*, "New Incorporations," July 27, 1926, p. 23.
[72] Priscilla Long, "Frye Art Museum on Seattle's First Hill opens on February 8, 1952," HistoryLink.org essay 3126, March 22, 2001, https://www.historylink.org/File/3126 (accessed October 2019).
[73] Alaskan Copper, "History," http://www.alascop.com/About (accessed October 2019).
[74] William Rosen, interview by Meta Kaplan and Jeanette Schreiber, Jewish Archives Project, Washington State Jewish Historical Society and University of Washington, June 24, 1974, https://digitalcollections.lib.washington.edu/digital/collection/ohc/id/510/rec/4 (accessed October 2019).
[75] Alaskan Copper, "History," http://www.alascop.com/About (accessed October 2019).

Morris Rosen remained active in the business until his death in 1956, whereupon his sons William (1908-90) and Kermit (1910-1985) took over the running of the business.[76] William's four sons—William, Donald, Alan, and Douglas—became engineers with the company.

Albert and Bessie Rosen incorporated as the Rosen Investment Co. in September 1954 with $100,000 in capital.[77]

By 1990, Alaskan Copper & Brass Co. was making sales of $90 to $100 million per year, and employed 450 individuals.

In 1996, five grandsons of Morris Rosen (William, Kermit Jr., Donald, Alan, and Douglas) incorporated as Alaskan Copper Manufacturing Company, changing the name later that same year to Alaskan Copper Companies, Inc.[78]

As of 2003, Alaskan Copper Works and Alaska Copper & Brass Company owned 19 acres of land within the industrial district of Seattle, including the two subject buildings.[79]

As of 2019, Alaskan Copper Works maintains its manufacturing location at 3200 Sixth Avenue S in SoDo. The Alaskan Copper & Brass Company's main office is in Kent, WA, and has branch offices in San Diego, CA, Portland, OR, Vancouver, BC, and Norfolk, VA.[80]

4.7 BUILDING ARCHITECT: UNKNOWN

The architects were not listed on the original construction permits for either 902 or 904 First Avenue S. The construction drawing for 904 First Avenue S lacks an architect's name or signature.

4.8 BUILDING ENGINEER: UNKNOWN

The engineer(s) for the buildings at 902 and 904 First Avenue S are unknown at this time.

4.9 BUILDING CONTRACTOR:

Both original construction permits for 902 and 904 First Avenue S list the contractor as C. H. Frye Co.

[76] Amy Kuebelbeck, "William Rosen, A 'True Capitalist,' But Warm, Unassuming Patriarch," *Seattle Times*, August 17, 1990, n.p., http://community.seattletimes.nwsource.com/archive/?date=19900817&slug=1088297 (accessed October 2019).
[77] *Seattle Times*, "Incorporations," September 12, 1954, p. 49.
[78] Washington Secretary of State, corporations search.
[79] Seattle Department of Neighborhoods, "Summary for 3405 6TH AVE," Seattle Historical Sites Survey Database, https://web6.seattle.gov/DPD/HistoricalSite/QueryResult.aspx?ID=2147012019 (accessed October 2019).
[80] Alaskan Copper, "Contact/Locations," http://www.alascop.com/Contact (accessed October 2019).

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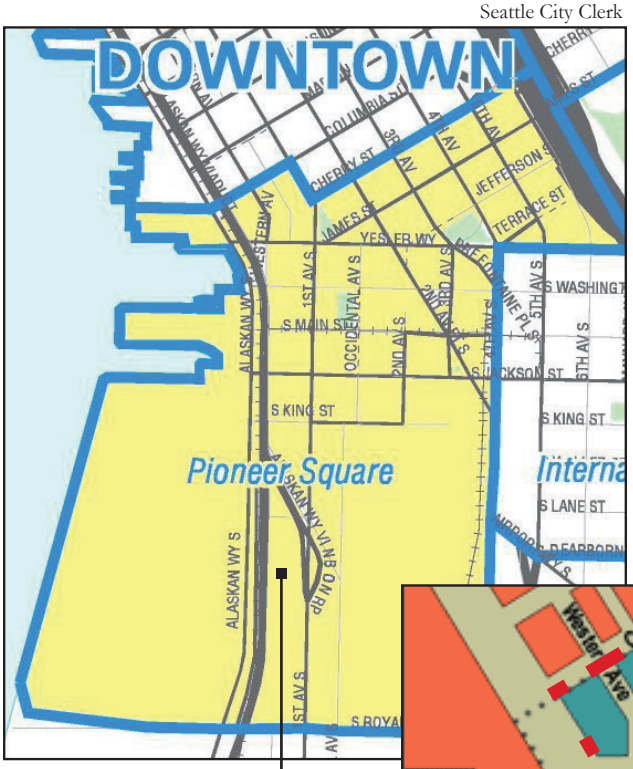
6. FIGURES

6.1 LIST OF FIGURES

6.2 FIGURES

Seattle City Clerk



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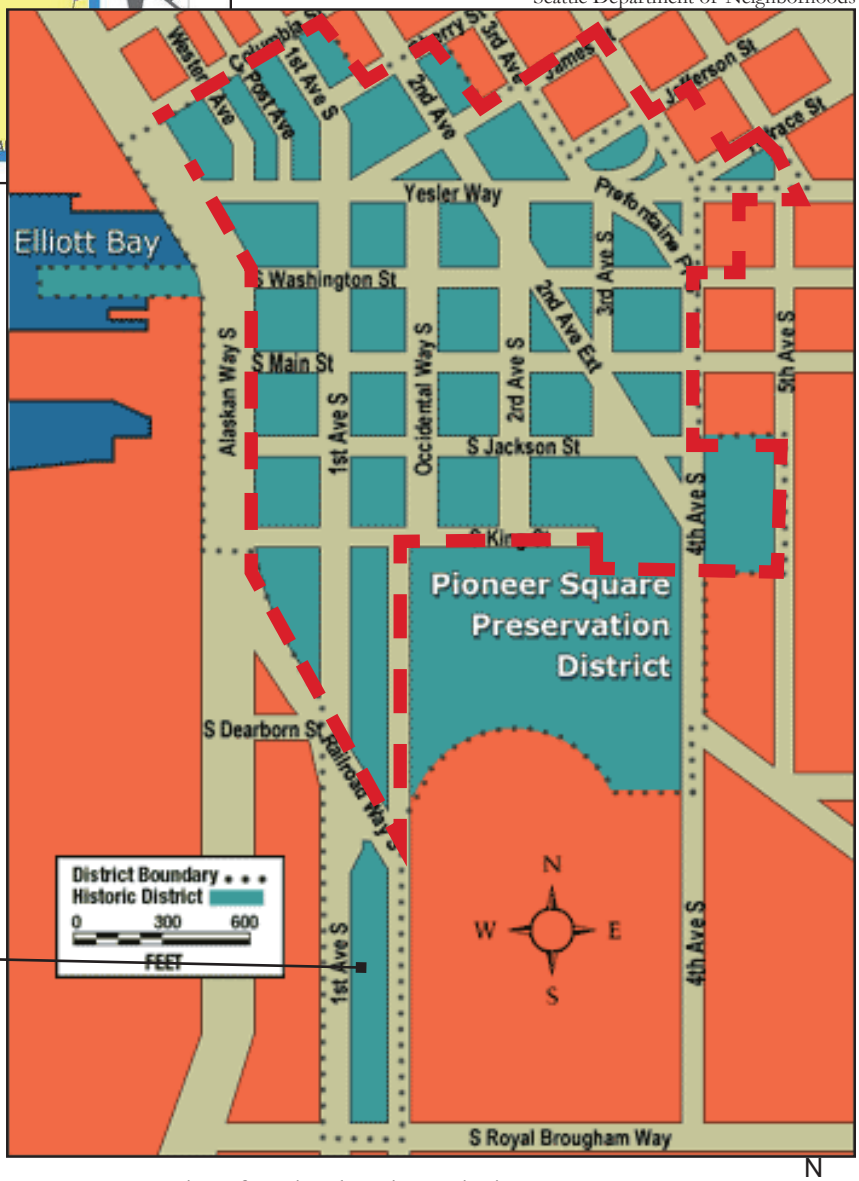


SUBJECT SITE

Figure 1 • Location Maps

Line of National Register District 2007

N

Apple Maps

Figure 2 • Aerial View

The Johnson Partnership, 10/8/2019

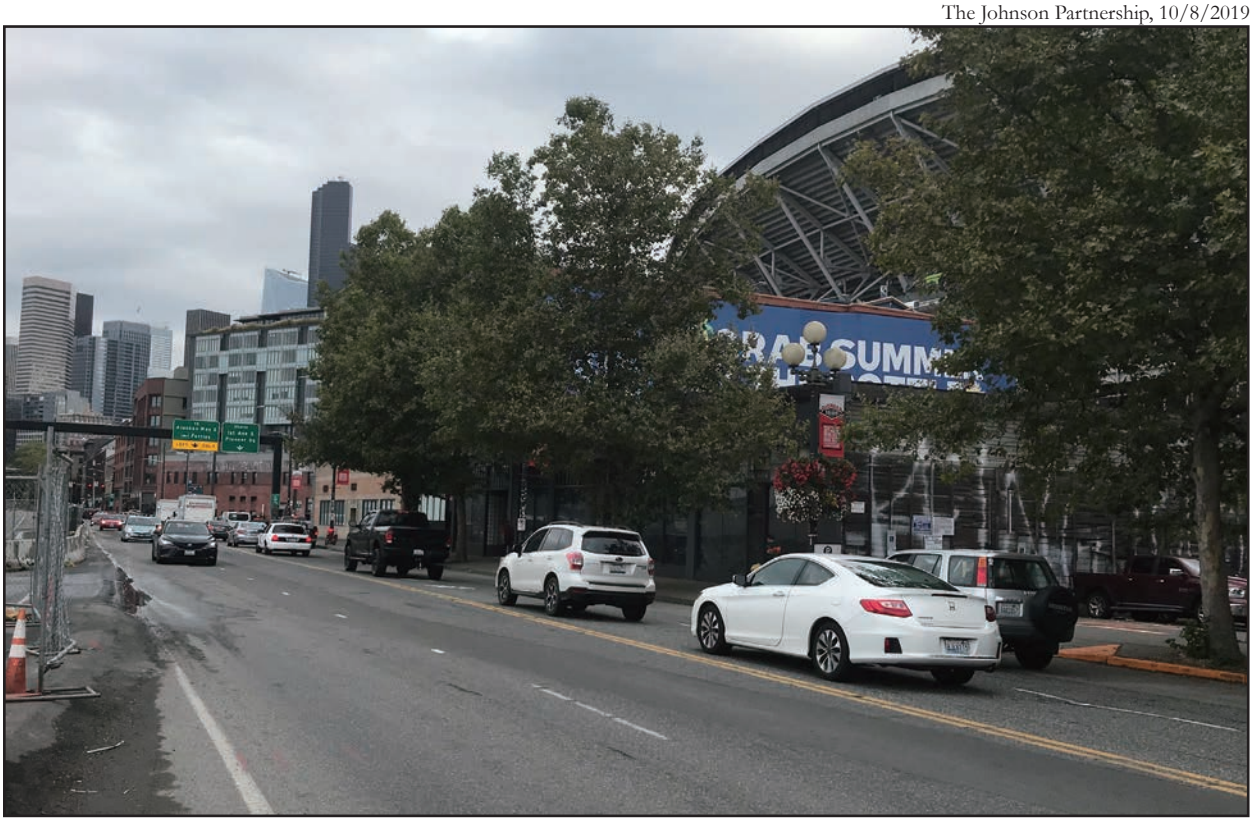


Figure 3 • View A - viewing north on First Avenue S

The Johnson Partnership, 10/8/2019

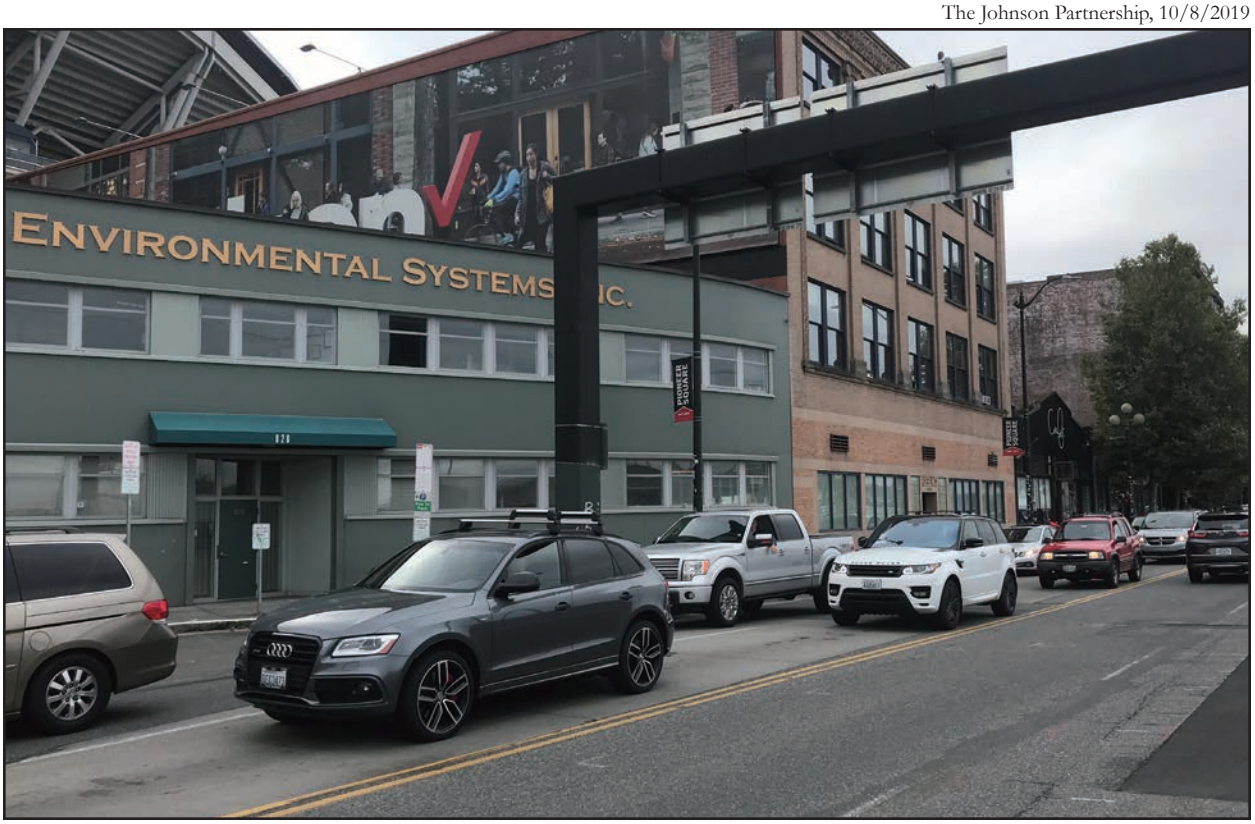


Figure 4 • View B - viewing south on First Avenue S

The Johnson Partnership, 10/8/2019

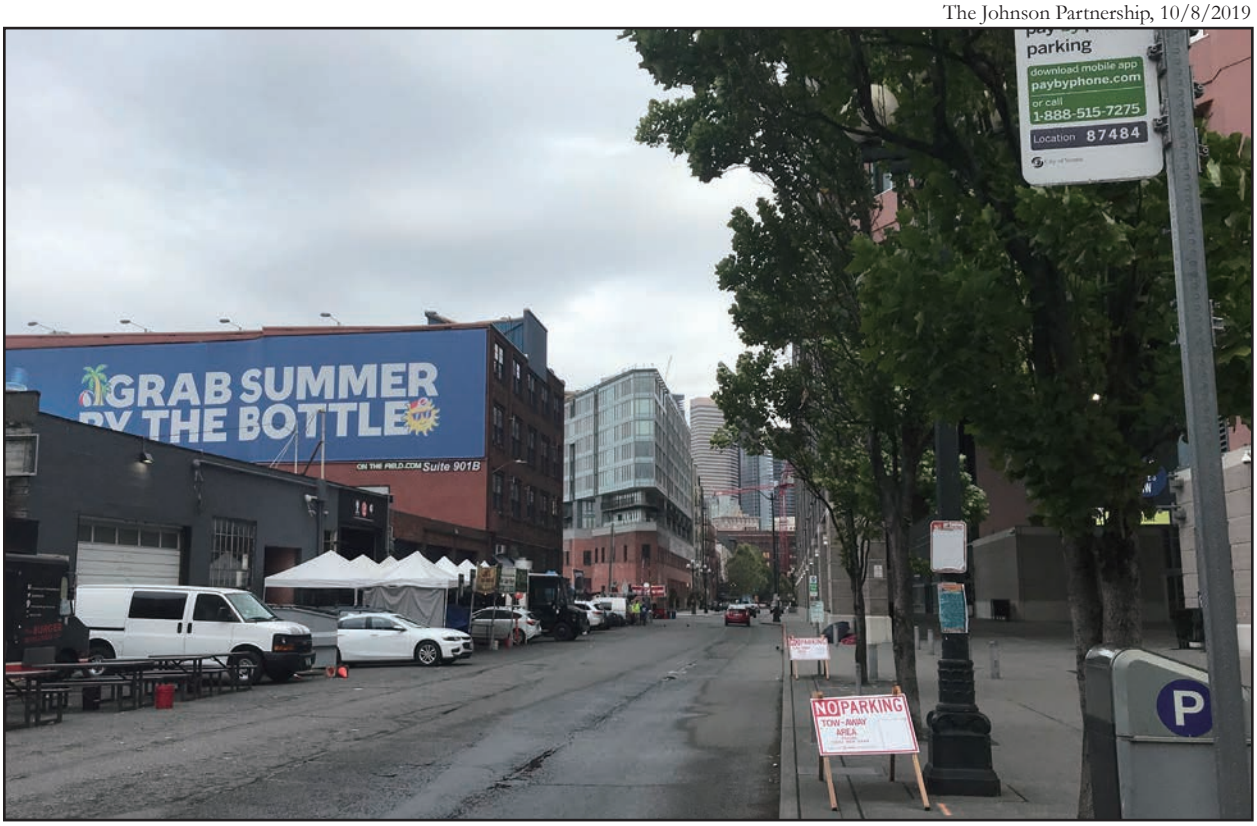


Figure 5 • View C - viewing north on Occidental Avenue S

The Johnson Partnership, 10/8/2019

Figure 6 • View D - Viewing south on Occidental Avenue S

The Johnson Partnership, October 2019

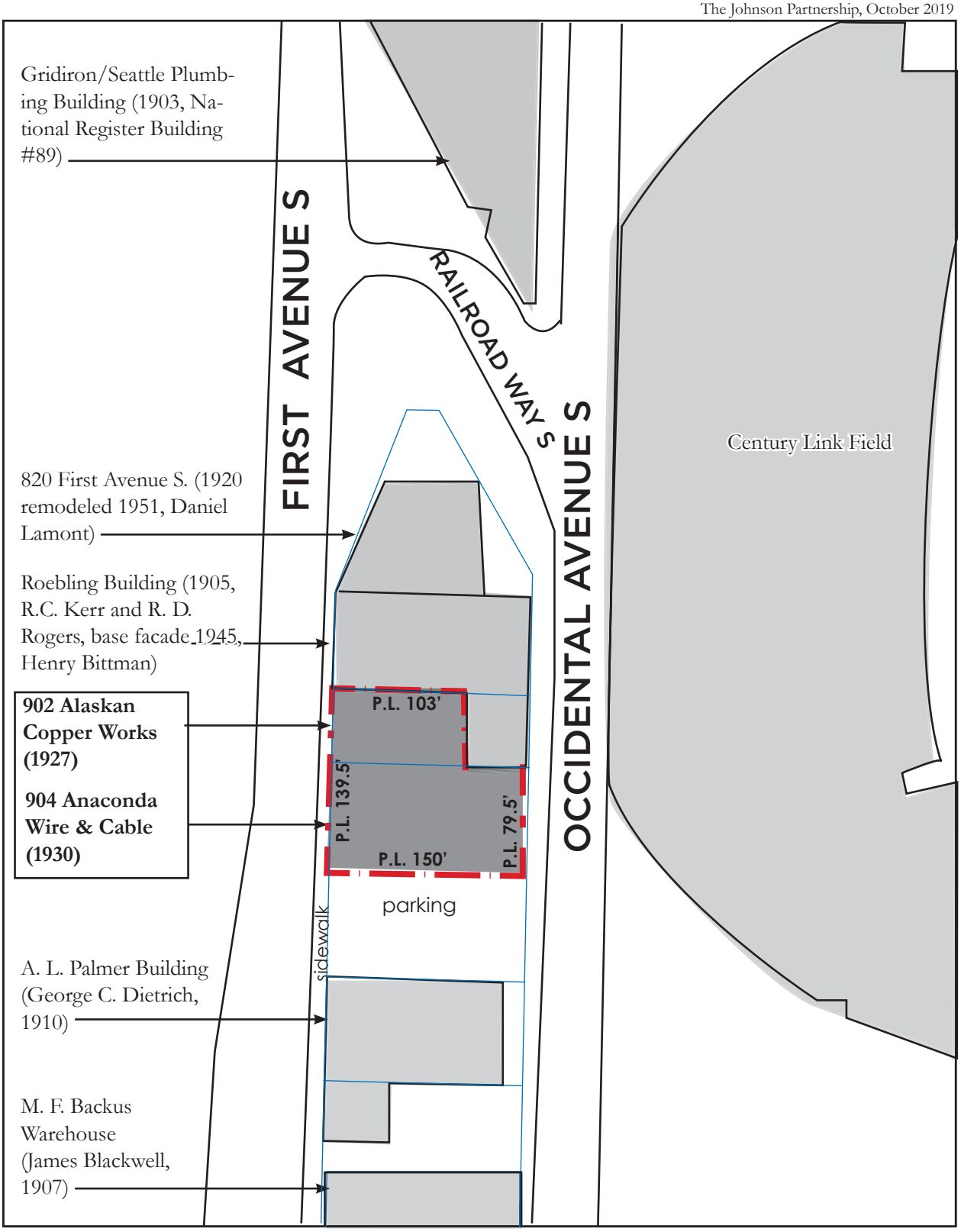


Figure 7 • Area buildings (identified by original architect, year of original construction, resource number on Pioneer Square National Register Nomination)

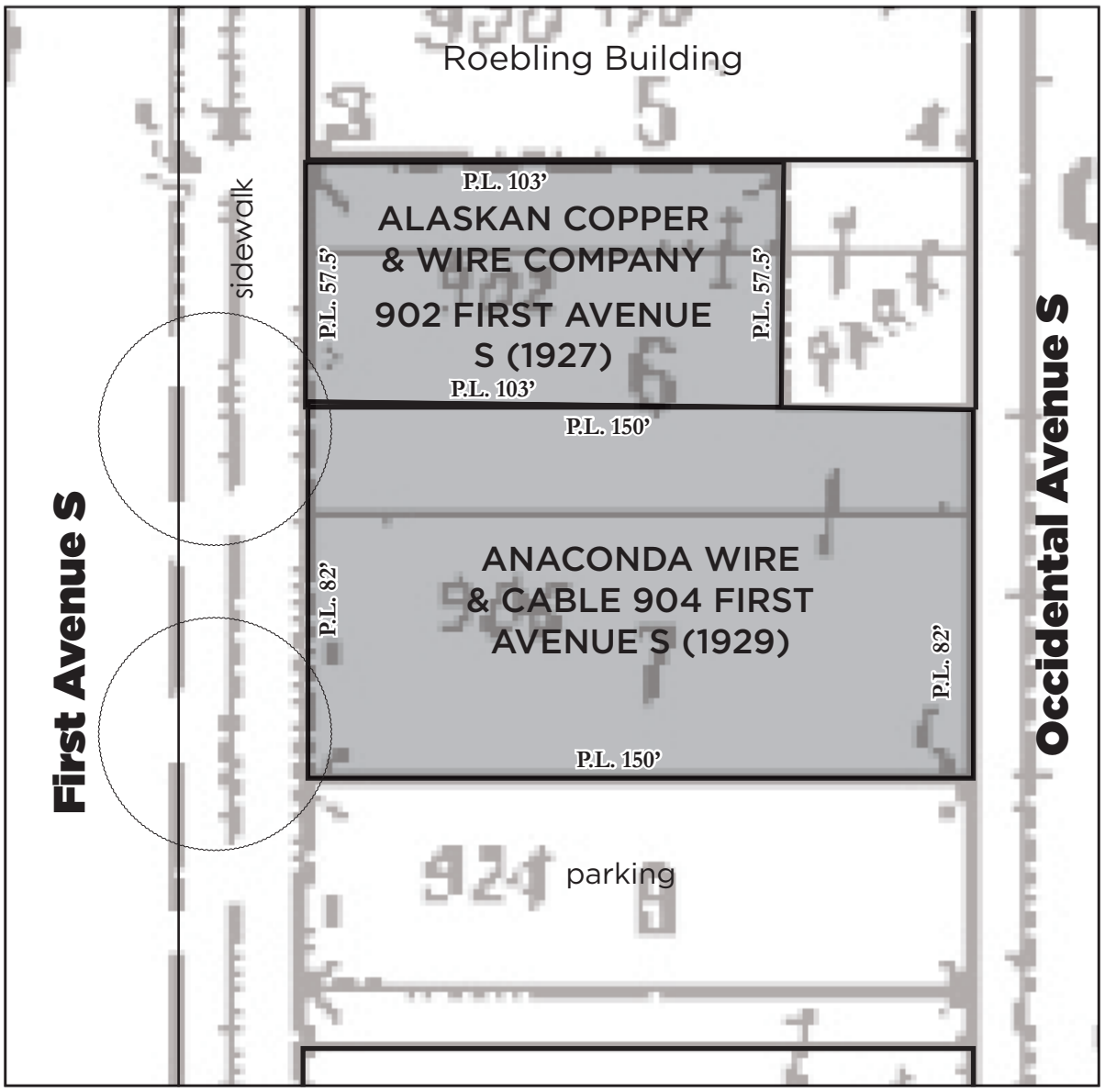


Figure 8 • Site Plan on Kroll Map base

The Johnson Partnership, 10/8/2019

Figure 9 • 902 First Avenue S, western façade

The Johnson Partnership, 10/8/2019

Figure 10 • 902 First Avenue S, western façade

The Johnson Partnership, 10/8/2019

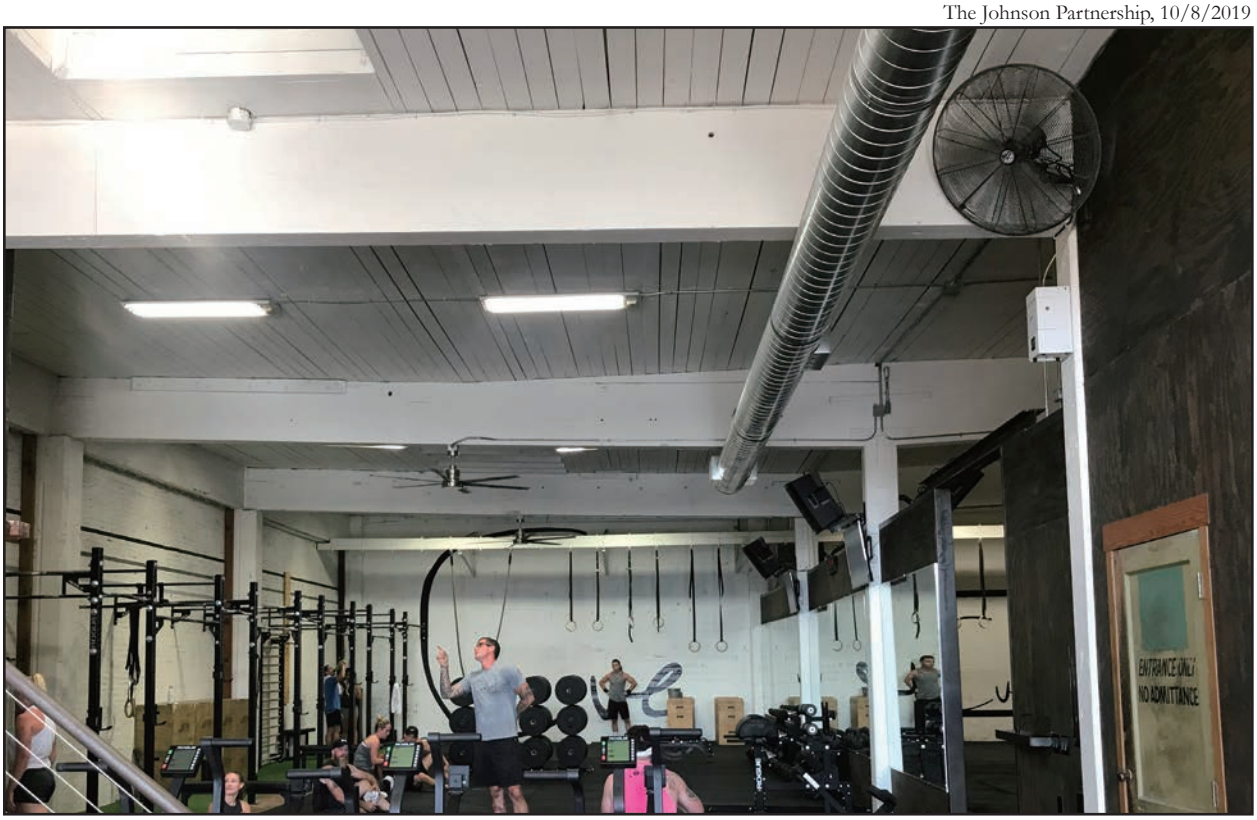


Figure 11 • 902 First Avenue S, interior viewing east

The Johnson Partnership, 10/8/2019

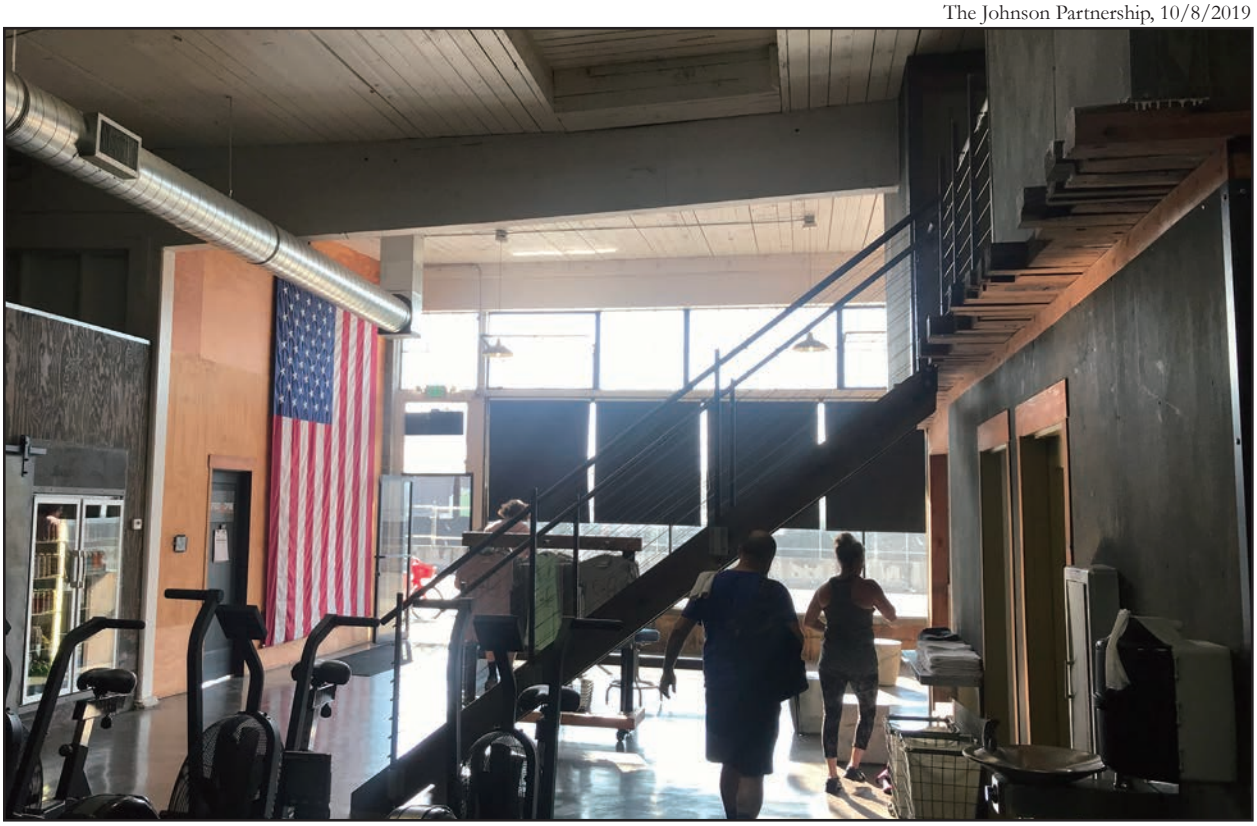


Figure 12 • 902 First Avenue S, interior viewing west

The Johnson Partnership, 10/8/2019

Figure 13 • 904 First Avenue S, western façade

The Johnson Partnership, 10/17/2019

Figure 14 • 904 First Avenue S, southern façade

The Johnson Partnership, 10/17/2019

Figure 15 • 904 First Avenue S, eastern façade

The Johnson Partnership, 10/17/2019

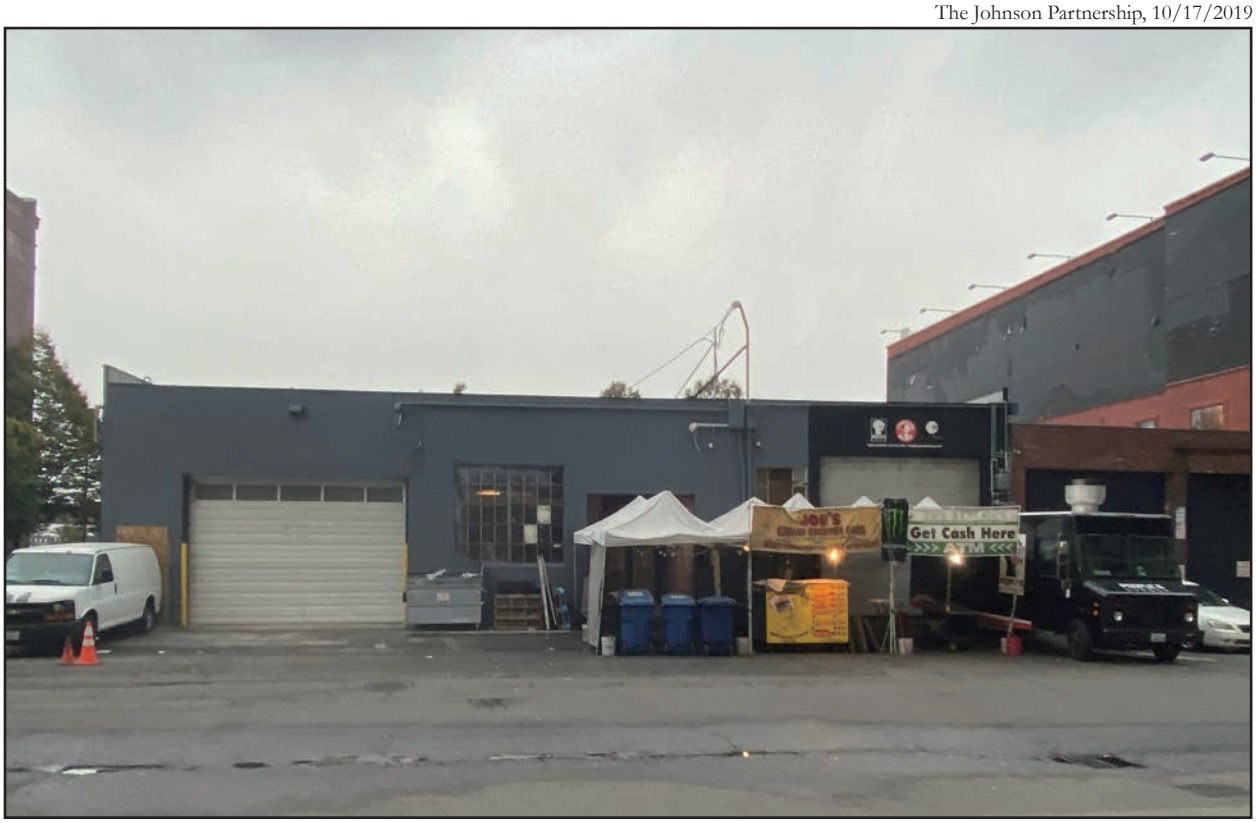


Figure 16 • 904 First Avenue S, eastern façade

The Johnson Partnership, 10/8/2019

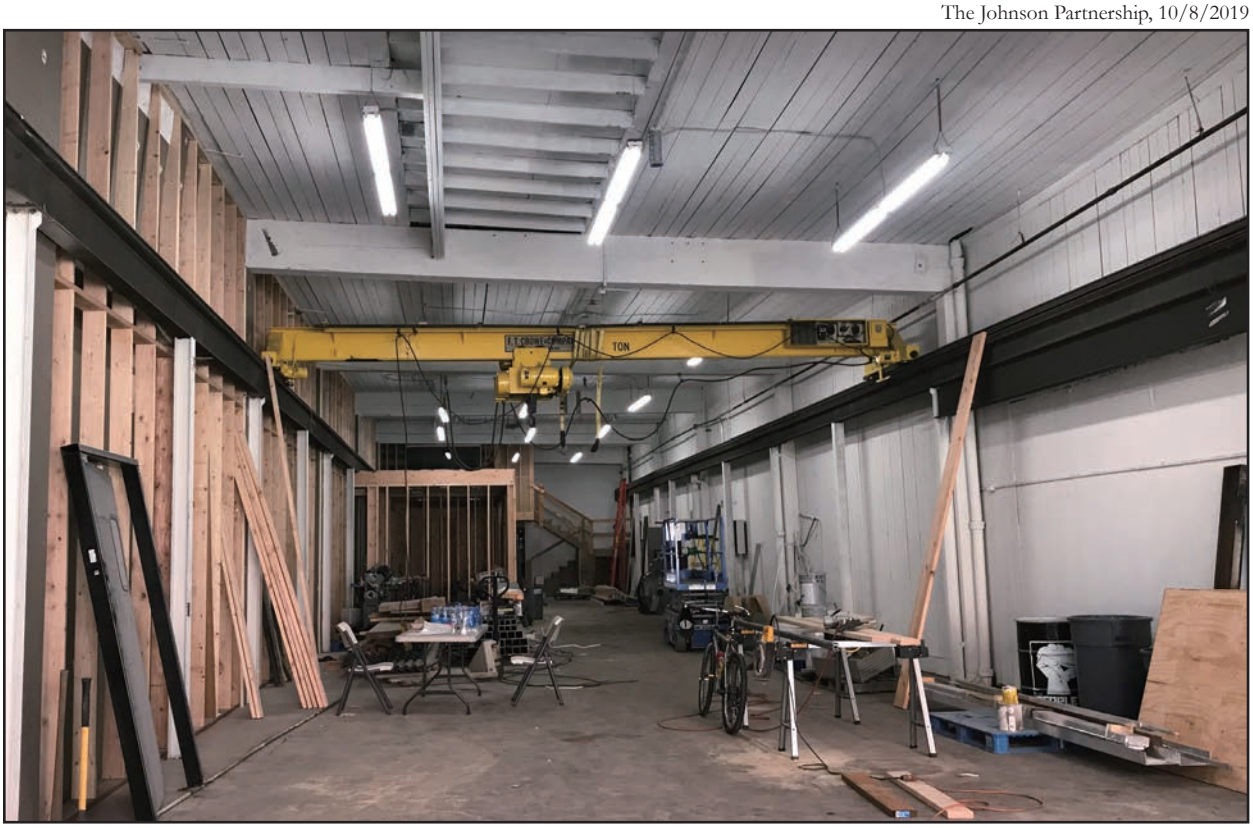


Figure 17 • 904 First Avenue S, southernmost tenant space interior

The Johnson Partnership, 10/8/2019

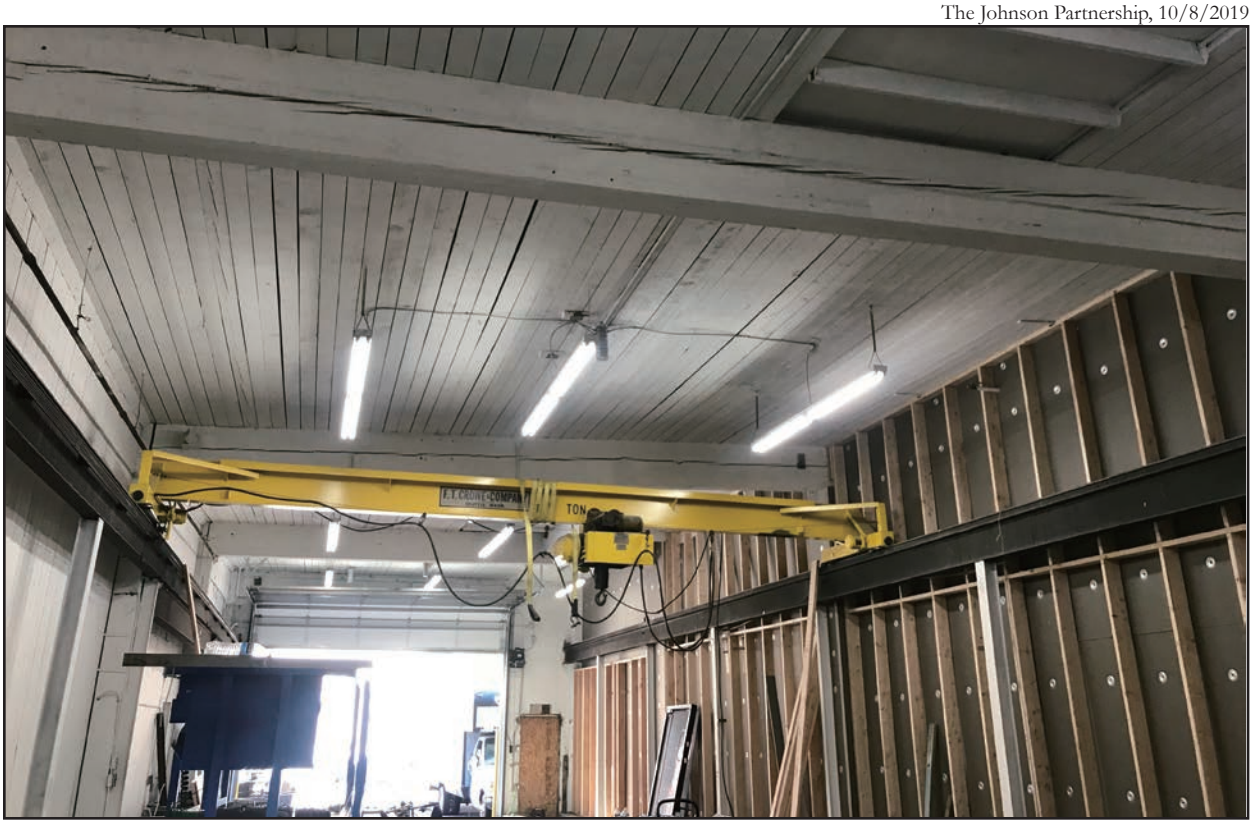


Figure 18 • 904 First Avenue S, southernmost tenant space interior

The Johnson Partnership, 10/8/2019

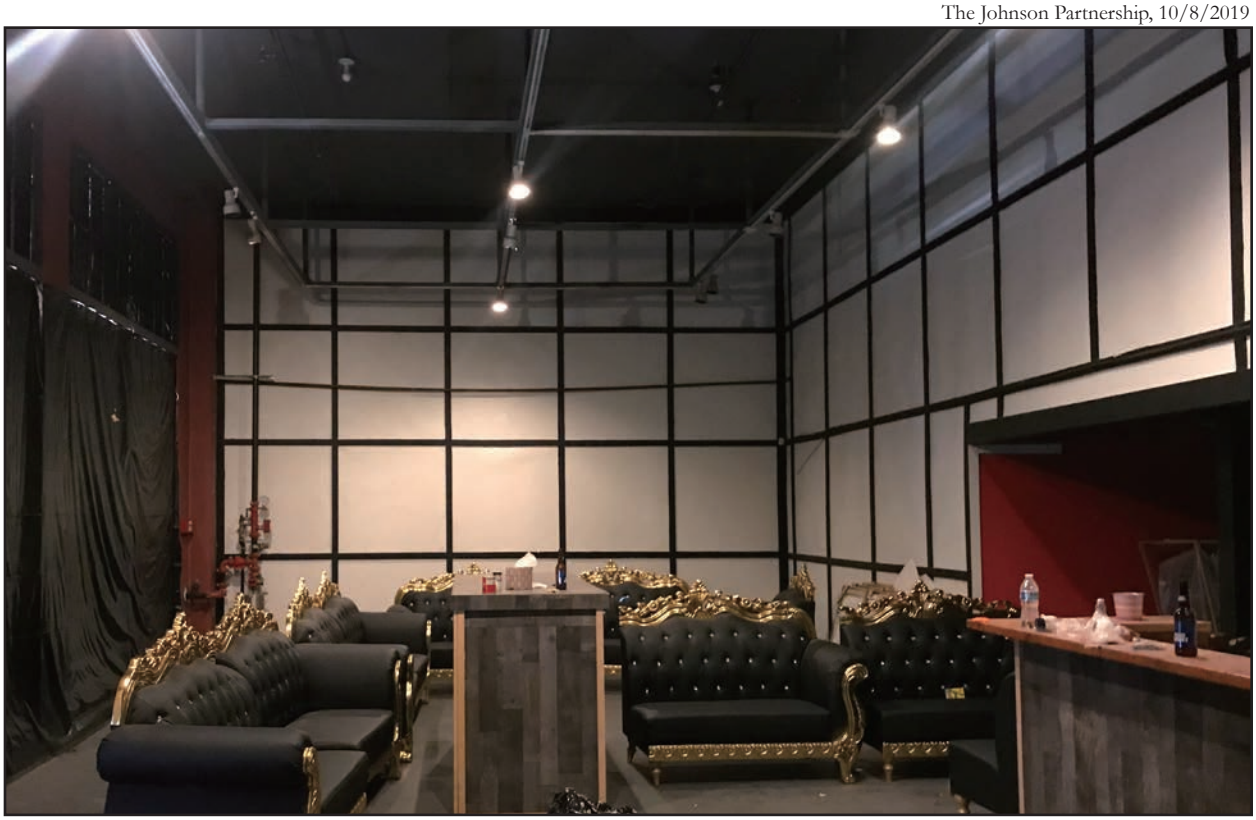


Figure 19 • 904 First Avenue S, middle tenant space, storefront area viewing north

The Johnson Partnership, 10/8/2019

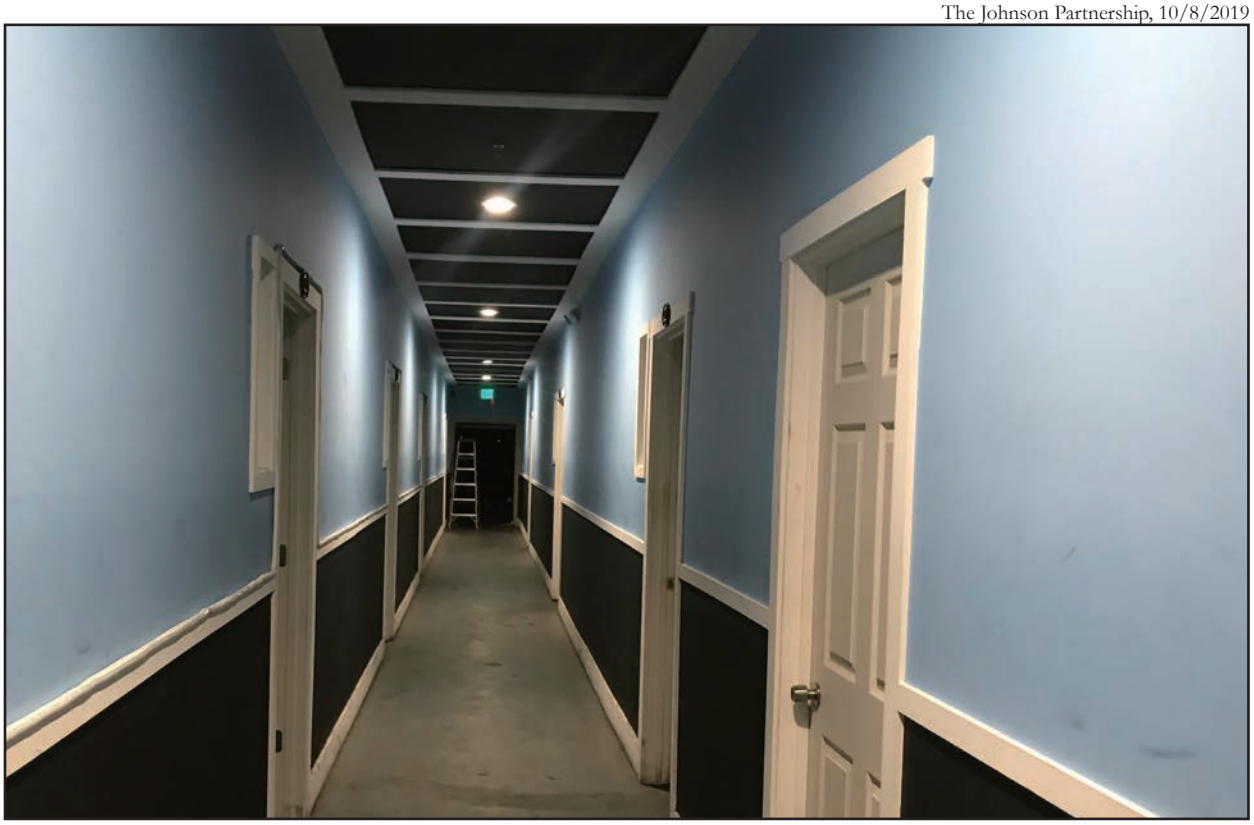


Figure 20 • 904 First Avenue S, middle tenant space, recent partitions, viewing west

The Johnson Partnership, 10/8/2019

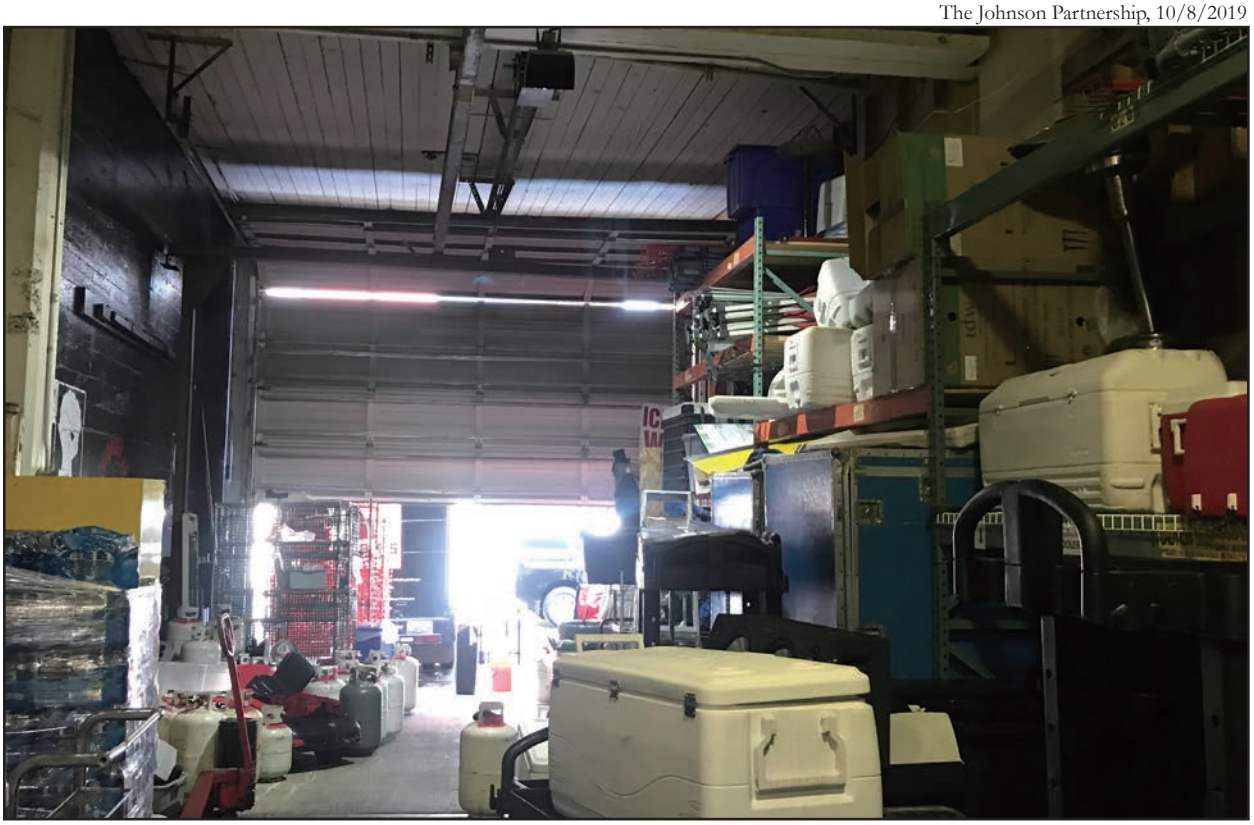


Figure 21 • 904 First Avenue S, northern tenant space, viewing east

The Johnson Partnership, 10/8/2019

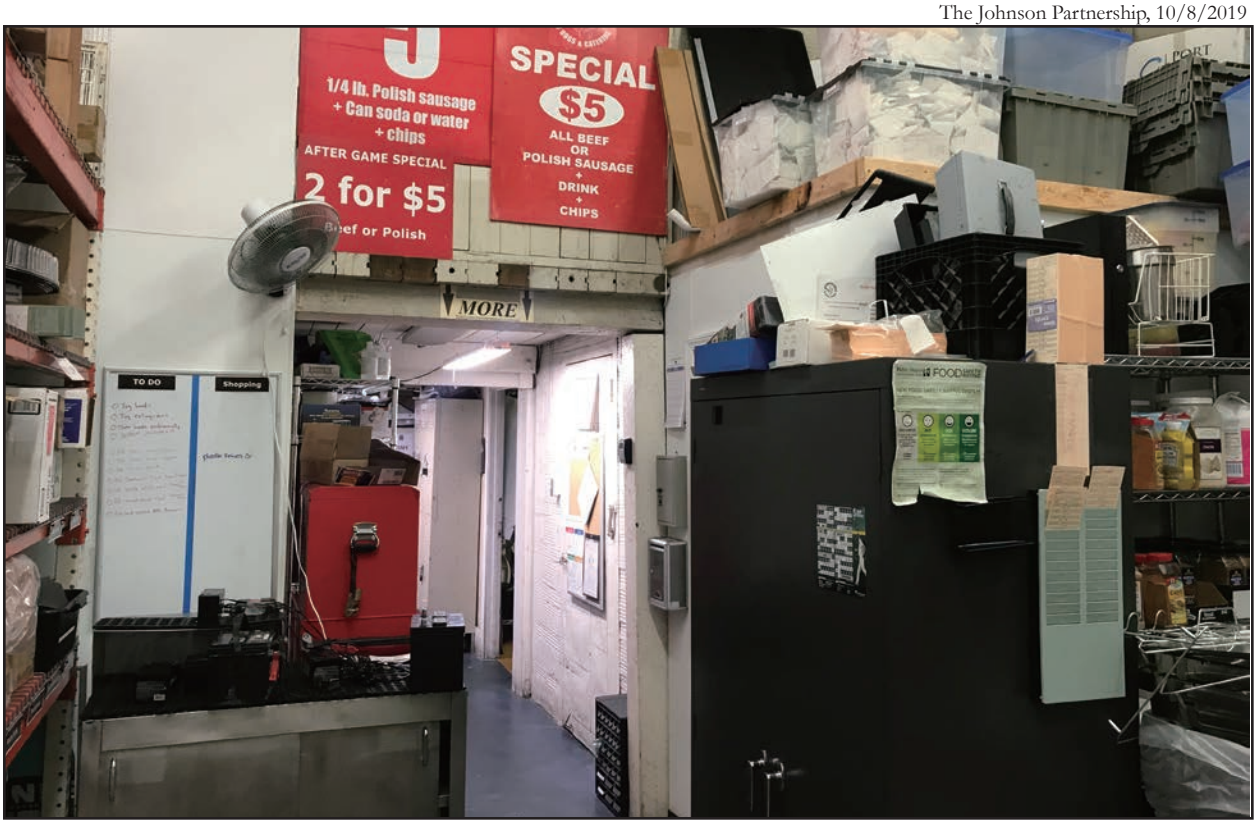


Figure 22 • 904 First Avenue S, northern tenant space viewing west

Paul Dorpat

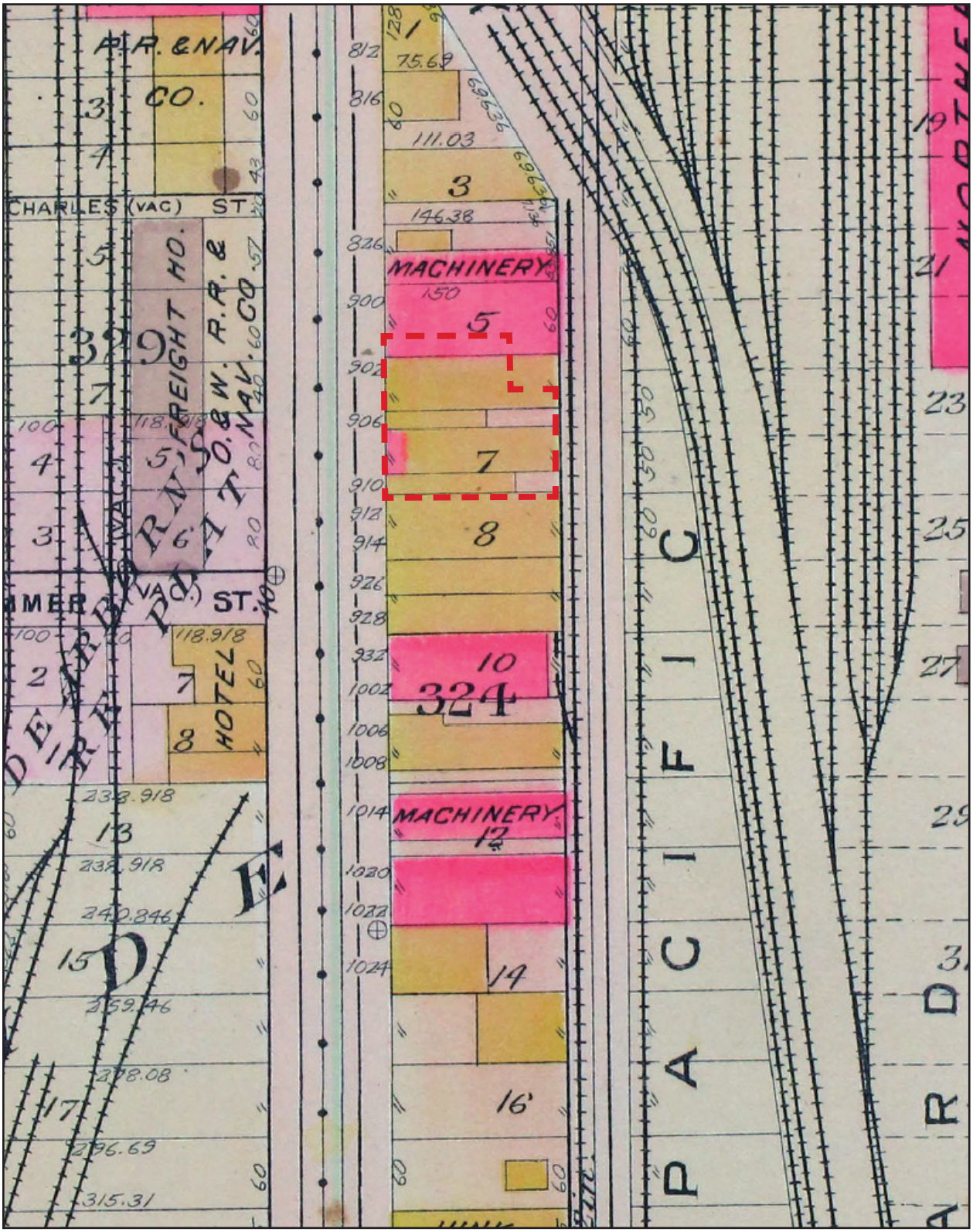


Figure 23 • Sanborn Map, 1913

Kroll Map Co.y

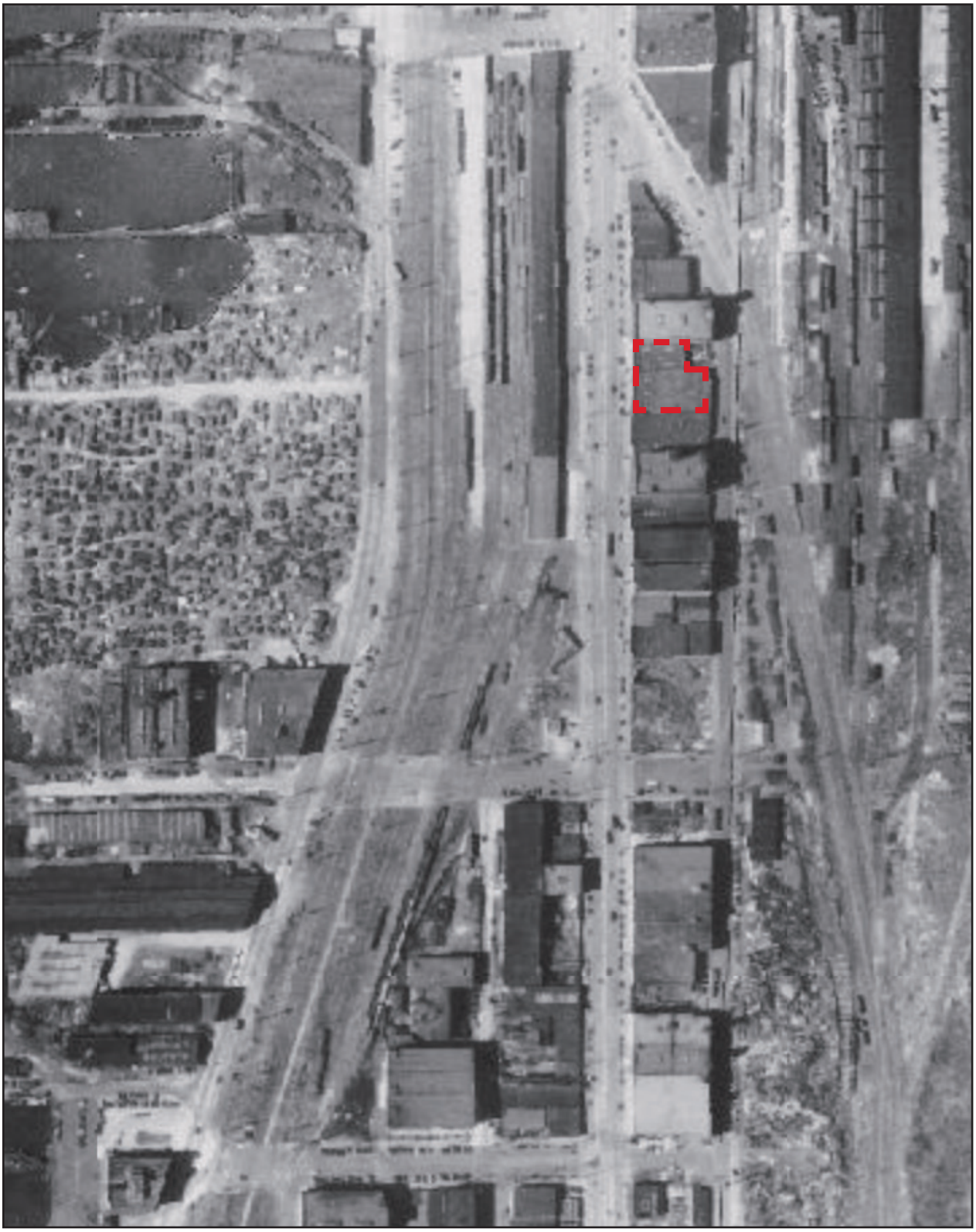


Figure 24 • 1936 Aerial view

University of Washington Asahel Curtis Collection CUR 1781

Figure 25 • Pioneer Square, First Avenue S at start of the Great Fire, June 6, 1889

courtesy Paul Dorpat

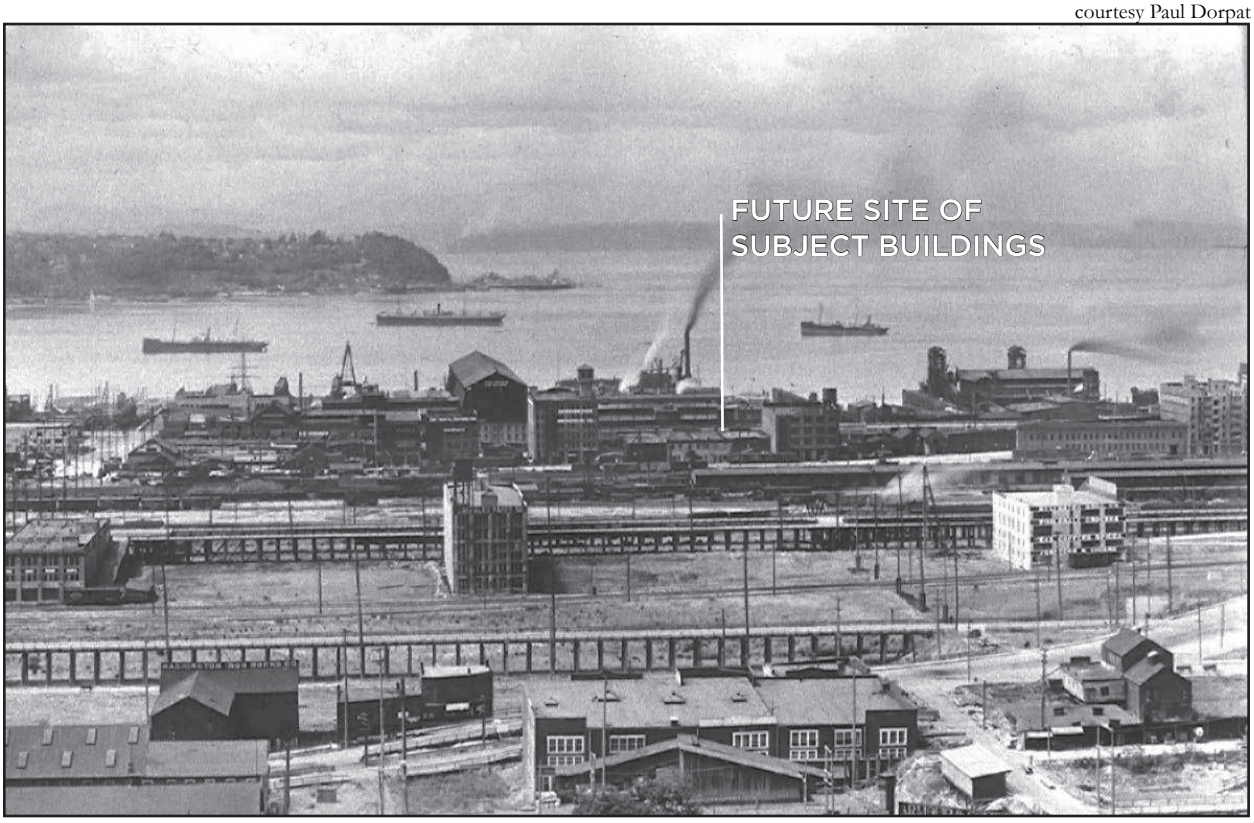


Figure 26 • Former tideflats south of Pioneer Square, 1914.

King County Archives 90.2.1798

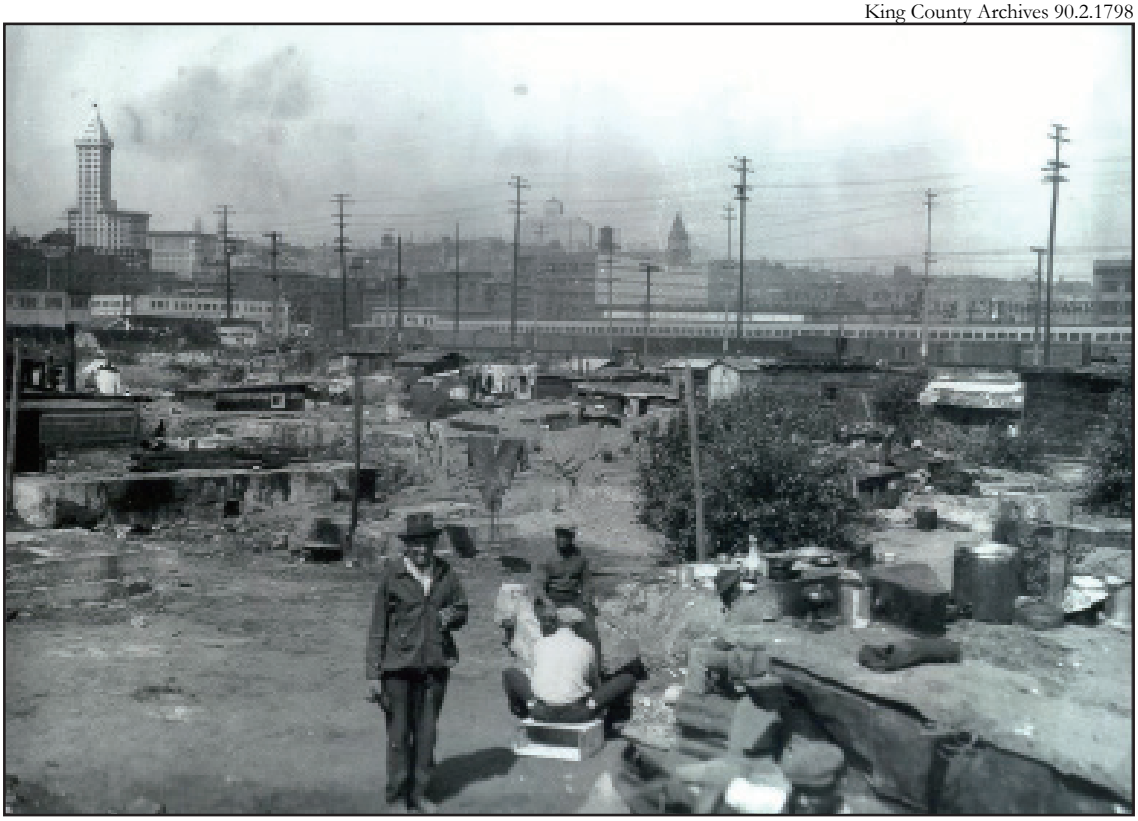


Figure 27 • Hooverville, 1933

Seattle Municipal Archives 66893

Figure 28 • Alaskan Way Viaduct, 1953

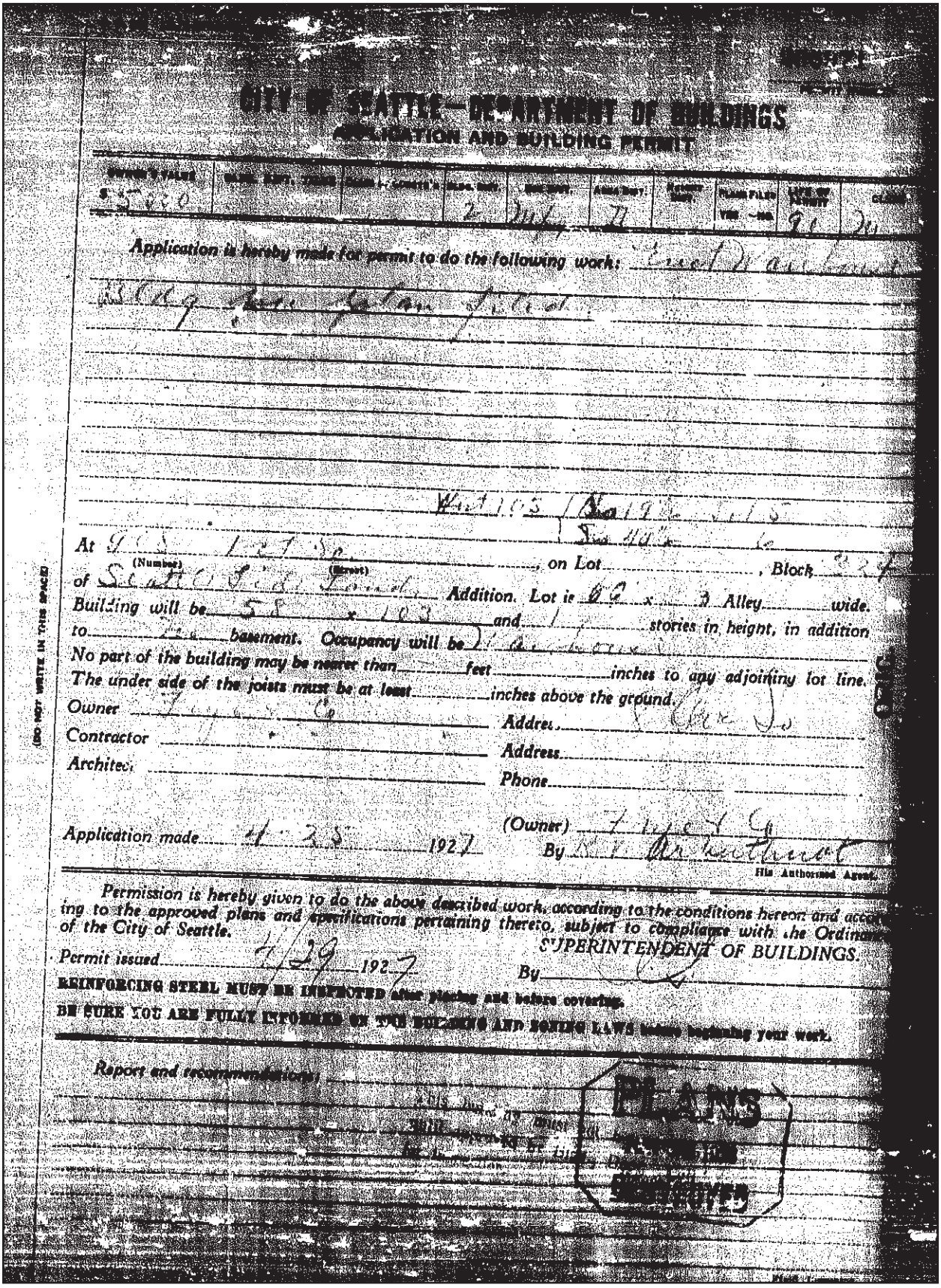
City of Seattle Municipal Archives

Figure 29 • Kingdome

Courtesy Tom McQuaid

Figure 30 • Kingdome implosion, 2000

SDCI



CITY OF SEATTLE—DEPARTMENT OF BUILDINGS
APPLICATION AND BUILDING PERMIT

Application is hereby made for permit to do the following work: Erect Warehouse Bldg per plan

At 902 1st So. (Number) (Street) on Lot , Block 324
of Seattle Tide Land Addition. Lot is 82 x 83 Alley wide.
Building will be 58 x 103 and 1 stories in height, in addition
to basement. Occupancy will be Warehouse
No part of the building may be nearer than feet inches to any adjoining lot line.
The under side of the joists must be at least inches above the ground.
Owner Address
Contractor Address
Architect Phone
(Owner) By His Authorized Agent.

Application made 4-23-1927

Permission is hereby given to do the above described work, according to the conditions hereon and according to the approved plans and specifications pertaining thereto, subject to compliance with the Ordinances of the City of Seattle.

SUPERINTENDENT OF BUILDINGS.

Permit issued 4-29-1927 By

REINFORCING STEEL MUST BE INSPECTED after planking and before covering.

BE SURE YOU ARE FULLY INFORMED ON THE BUILDING AND ZONING LAWS before beginning your work.

Report and recommendations:

PLANS

(DO NOT WRITE IN THIS SPACE)

Figure 31 • Permit # 266971, "Erect Warehouse Bldg. per plan," 1927

SDCI

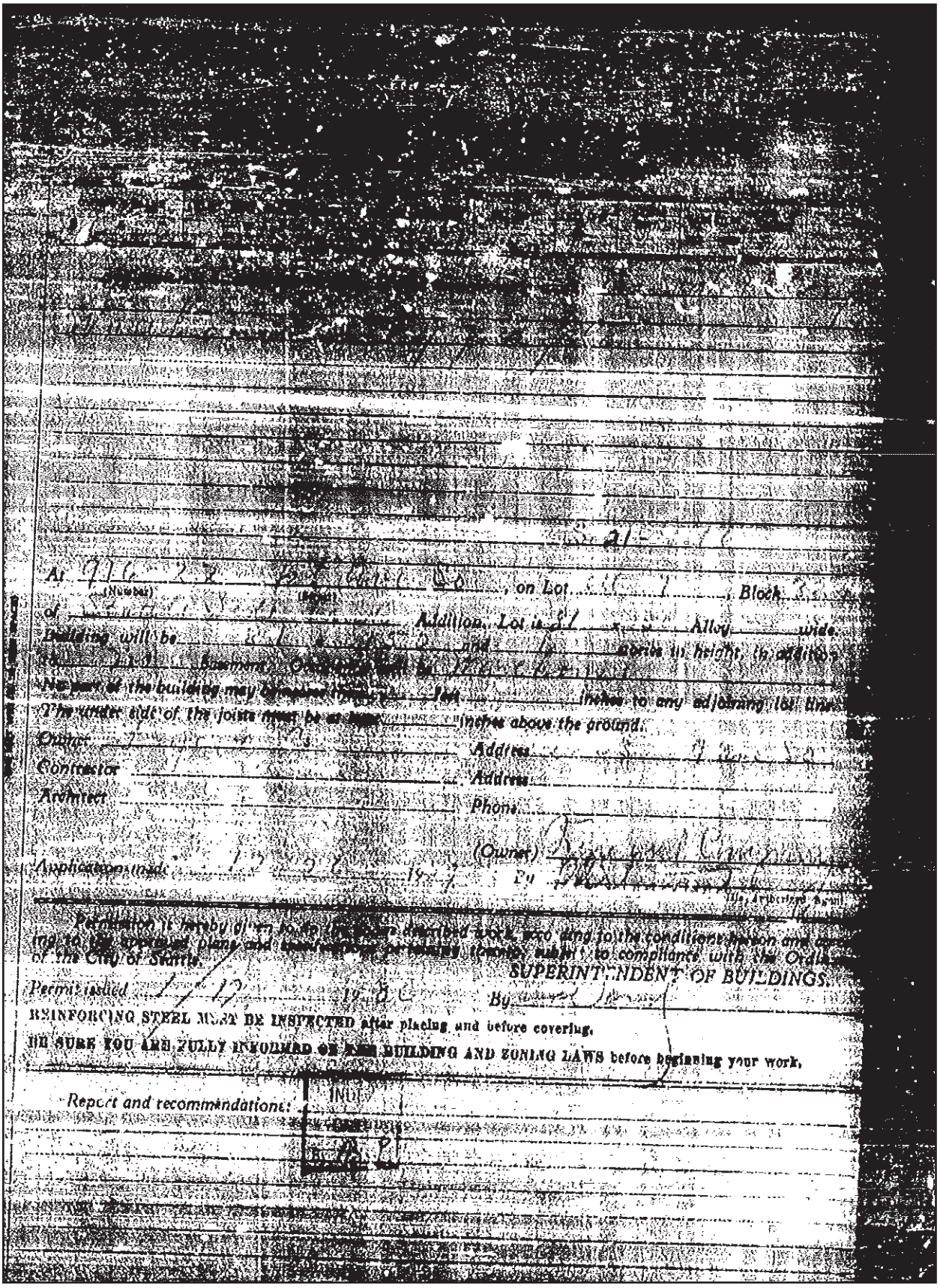


Figure 32 • Permit #291008, "Build one story warehouse bldg. per plan," 1930

Puget Sound Regional Archives

Figure 33 • 902 First Avenue S, Tax Assessor photo, 1937

Puget Sound Regional Archives

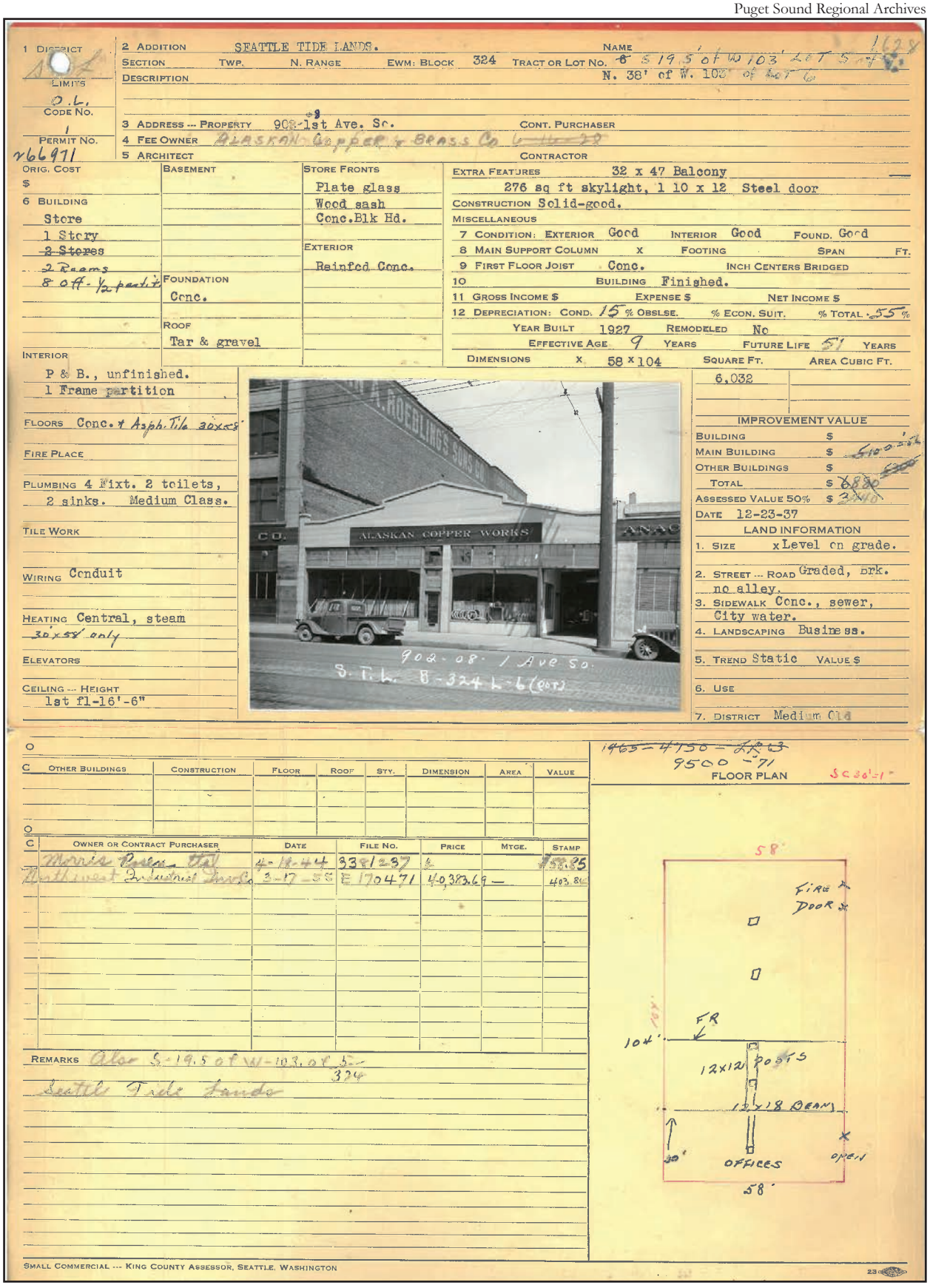


Figure 34 • 902 First Avenue S Tax Assessor records, 1937

Puget Sound Regional Archives

Figure 35 • 904 First Avenue S (formerly 914 First Avenue S), Tax Assessor photo, 1937

Puget Sound Regional Archives

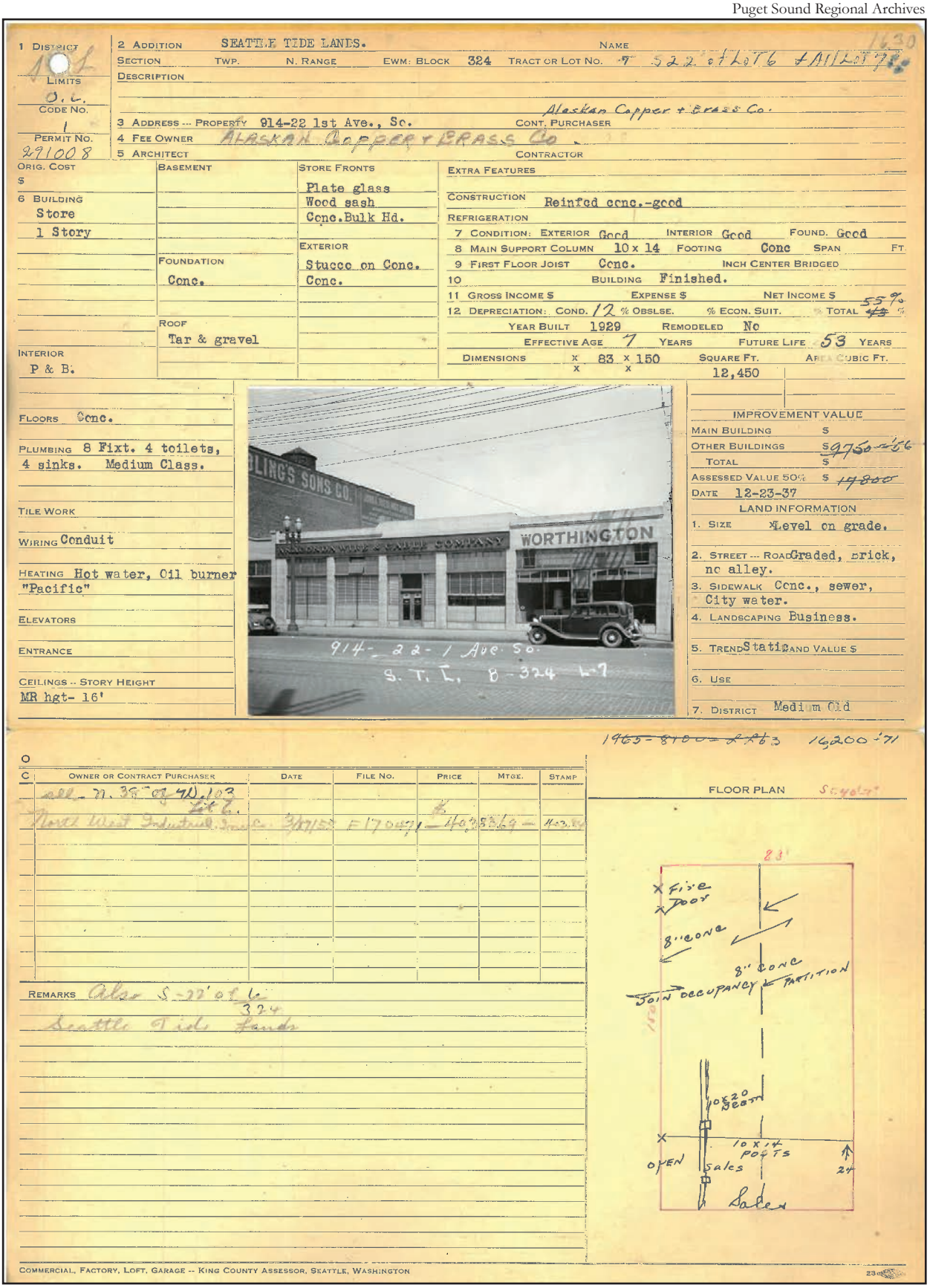


Figure 36 • 904 First Avenue S (formerly 914 First Avenue S), Tax Assessor records, 1937

Seattle and the Orient, pamphlet by Alfred D. Bowen

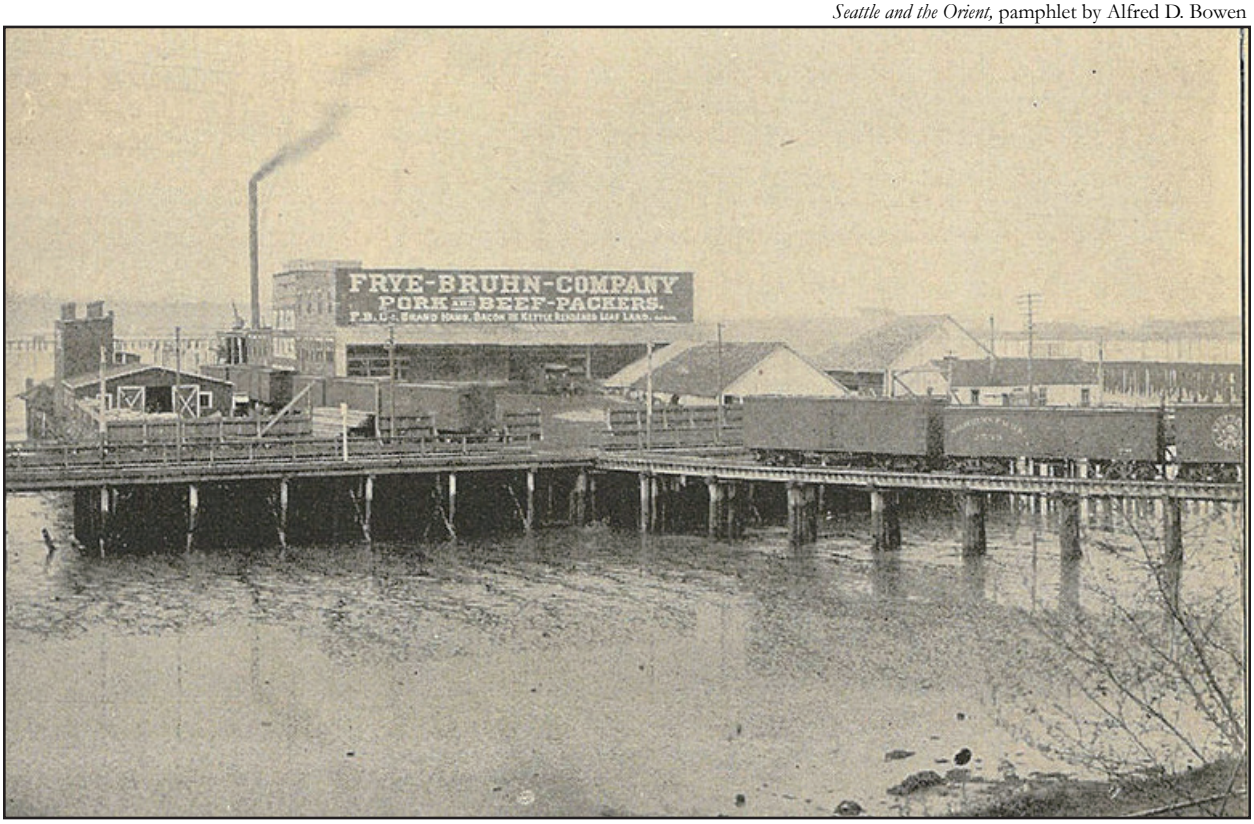


Figure 37 • Frye-Bruhn Company, Seattle tideflats, 1900

Frye Art Museum, Charles & Emma Frye Collection

Figure 38 • Charles and Emma Frye, painted by Henry Raschen, 1913

University of Washington Libraries, Photo Coll. 650.RosenWilliam2

Figure 39 • Morris Rosen (left) at Alaskan Copper Works, Seattle, 1914

University of Washington Libraries, Photo Coll. 650.RosenWilliam2

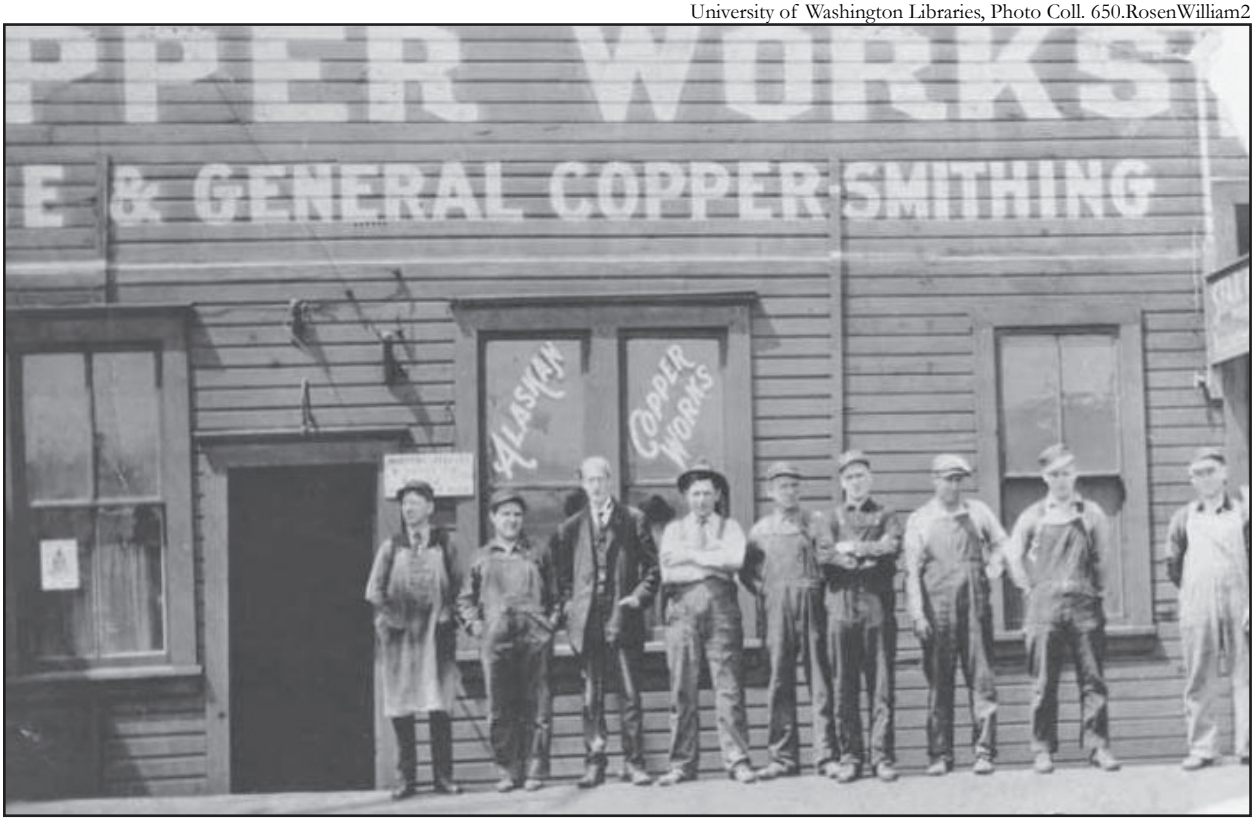
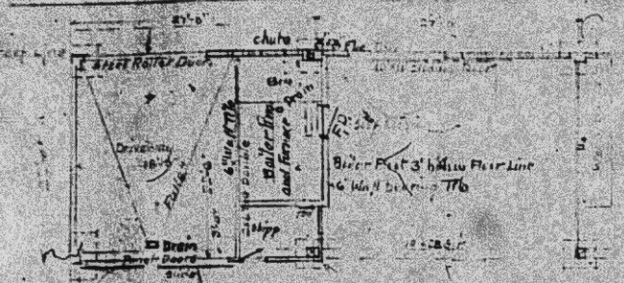
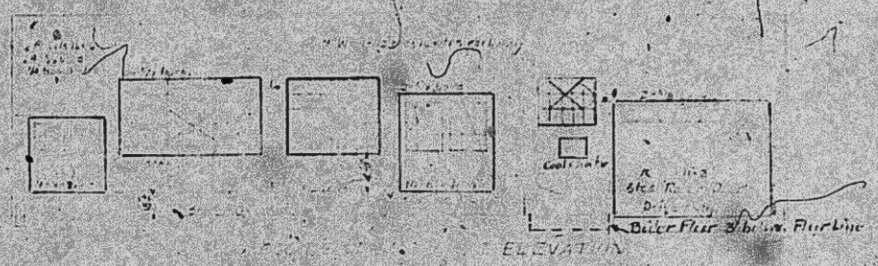


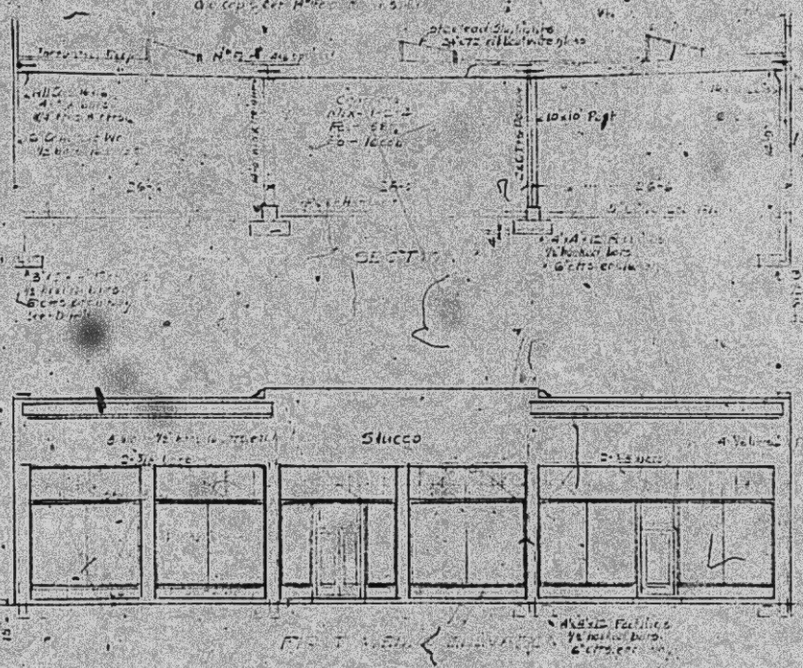
Figure 40 • Workers at Alaskan Copper Works, ca. 1918

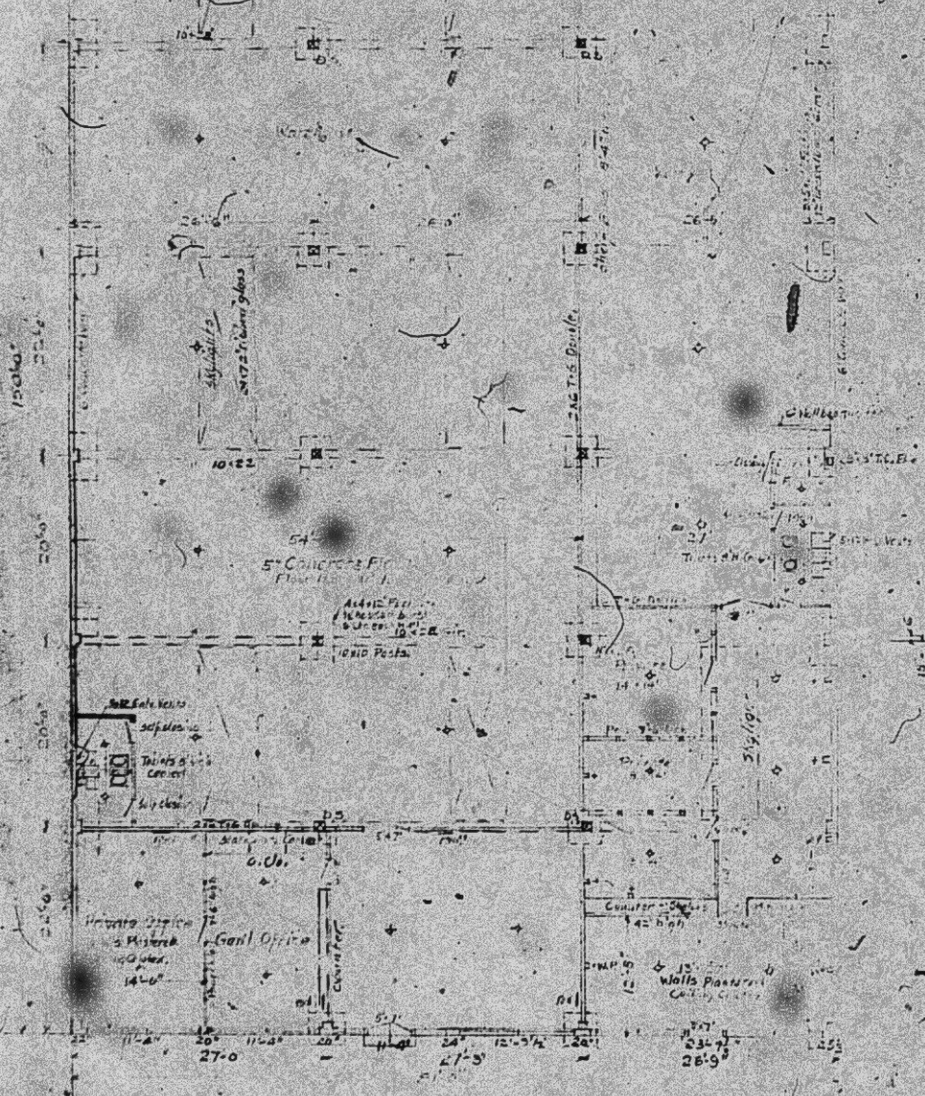
APPENDIX: ARCHITECTURAL DRAWINGS





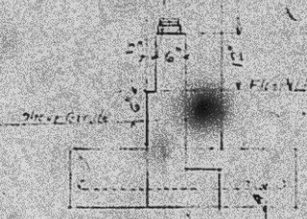
ELEVATION



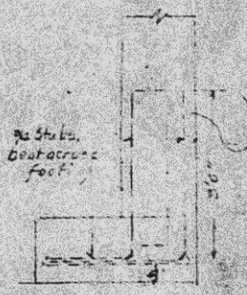


FIRST FLOOR PLAN

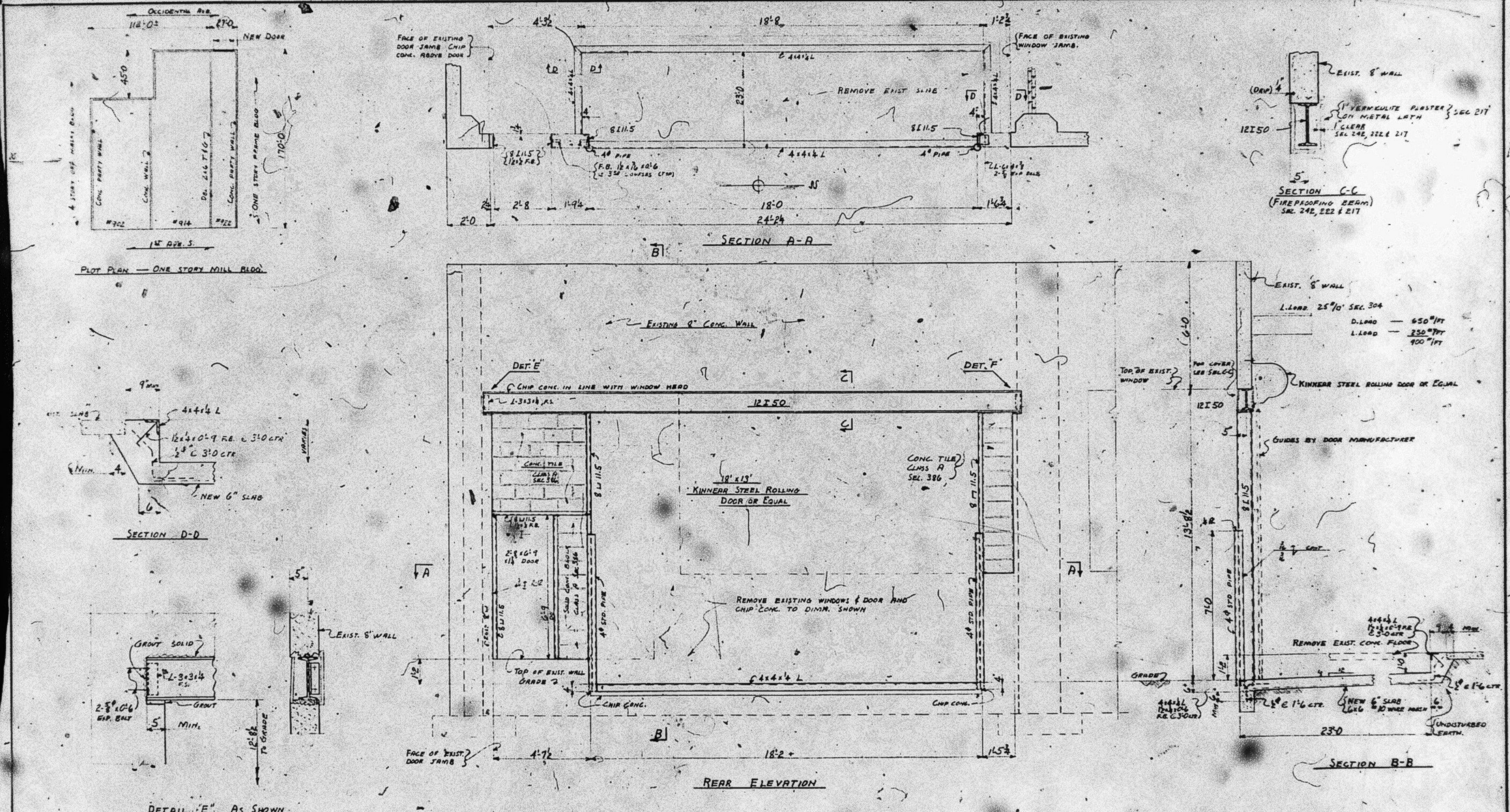
FRYE-[illegible] COMPANY
[illegible] SOUTH
BLOCK [illegible] S. 11½ of 6 All of 7.
Scale of Feet
G-12



STREET WALL SEC.



SIDE WALL FOOTINGS



GENERAL NOTES & SPECIFICATIONS

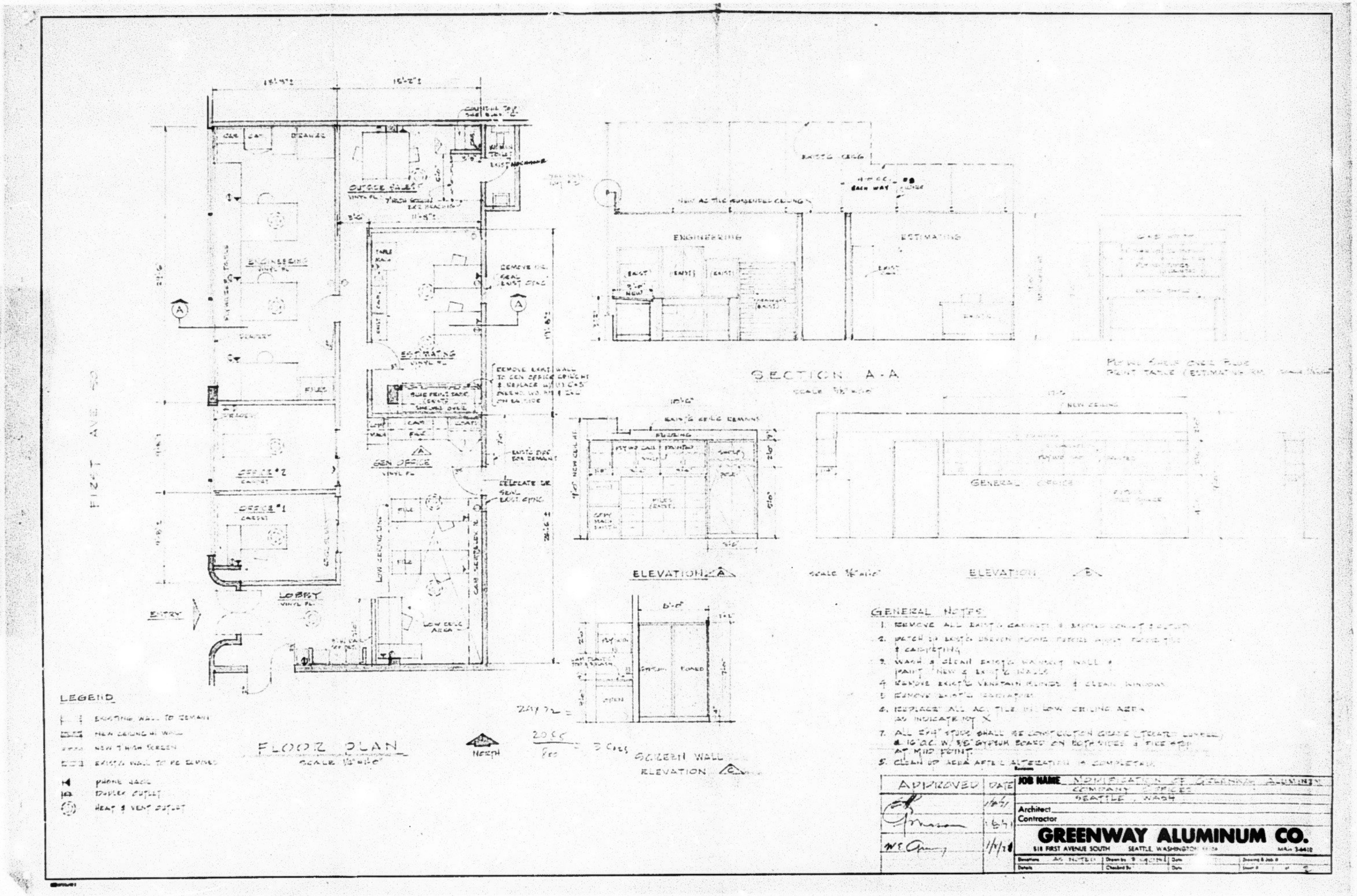
1. ALL CONSTRUCTION TO CONFORM TO SEATTLE BLDG. CODE. CONSTRUCTION TO BE UNSUPERVISED.
2. ALL SLAB CONCRETE SHALL BE MIXED IN THE PROPORTIONS OF 1-3½-4½, WITH NOT LESS THAN 4 BAGS OF CEMENT PER YD. AGGREGATES SHALL NOT EXCEED 1½". FLOORS SHALL HAVE A MONOLITHIC FINISH, TROWELED TO A SMOOTH EVEN SURFACE.
3. STRUCTURAL STEEL TO BE MED. OPEN HEARTH A.S.T.M. - A7-39, fs=16,000. FABRICATION SHALL CONFORM TO A.I.S.C. CODE OF STDS. (REV. FEB '46). ONE COAT OF SHOP PAINT. FIELD CONN. - ¾" M. BOLT.
4. KINNEAR STEEL ROLLING DOOR OR EQUAL TO HAVE CHAIN HOIST OPERATION. DOOR MANUFACTURER TO PROVIDE & INSTALL DOOR AND ALL RELATED MATERIAL. (FIELD DRILL & TAP AS REQUIRED)
5. FITTINGS, HARDWARE, FLASHING & MISC. MATERIAL TO OWNERS SPECIFICATIONS.

REV.	DATE	BY	REVISIONS
C			
B			
A	16 May	[illegible]	RE-CONN

MARSHALL & BARR
CONSULTING INDUSTRIAL ENGINEERS
SEATTLE, WASHINGTON

TITLE: DETAILS OF NEW DOOR
JOB: ALTERATIONS OF WAREHOUSE DOORS
OWNER: ALASKAN COPPER WORKS
LOCATION: 902 - 1ST AVE. S. SCALE

MADE BY	CHKD. BY	APPROVED BY	JOB NO.	DRAWING NO.	REV.
[illegible]			566	C 1	A


FIRST AVE
ENGINEERING
OUTSIDE SALES
ESTIMATING
GEN OFFICE
OFFICE #2
OFFICE #1
LOBBY
ENTRY
LOW CEILING AREA
SECTION A-A
ELEVATION A
ELEVATION B
SCREEN WALL ELEVATION C
FLOOR PLAN
NORTH
LEGEND
EXISTING WALL TO REMAIN
PHONE JACK
DUPLEX OUTLET
HEAT & VENT OUTLET
GENERAL NOTES
GENERAL OFFICE
APPROVED
DATE
JOB NAME
COMPANY OFFICES
SEATTLE, WASH
Architect
Contractor
GREENWAY ALUMINUM CO.
518 FIRST AVENUE SOUTH
SEATTLE, WASHINGTON

ALASKAN COPPER & BRASS CO.

AS-BUILT DOCUMENTATION

JUNE 13, 2017

NWBC NORTHWEST
BUILDING
COLLABORATIVE

PLAN GENERAL NOTES

1. ALL INTERIOR WALLS ARE 2x4 UNO. PROVIDE SOUND INSULATION IN BATHROOM WALLS
2. ALL DIMENSIONS FROM EXISTING WALLS ARE FROM EXISTING FACE OF FINISH. ALL DIMENSIONS AT NEW WALLS ARE FROM FACE OF STUD
3. NON-DIMENSIONED WINDOWS DENOTE WINDOW TO BE REPLACED IN PLACE AT EXISTING SIZE & LOCATION
4. DOOR ROUGH OPENINGS ARE 3" OFF STUD FACE OF ADJACENT WALL (TO HINGED SIDE OF THE DOOR) UNO
5. ALL FINISH FLOOR MATERIALS TO ALIGN WITH ADJACENT FLOOR FINISH
6. DIMENSIONS AT POSTS ARE TO CENTERLINES UNO - VERIFY ALL STRUCTURAL LOCATIONS WITH FRAMING PLANS
7. SEE SHEET A0.1 FOR FURTHER DIMENSIONING AND GENERAL NOTES
8. SEE SHEET A7.1 FOR NEW WINDOW SCHEDULE

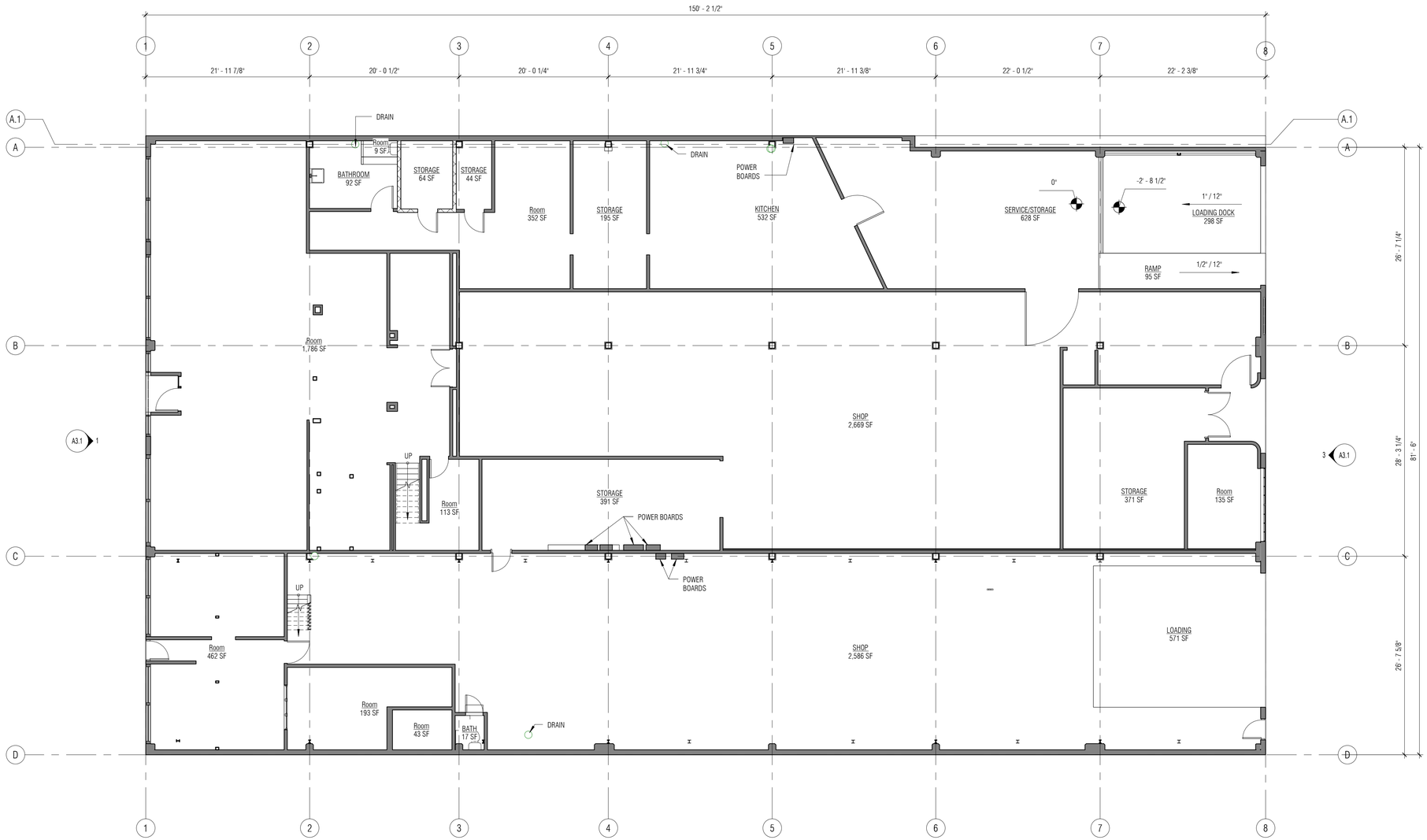
REVIEW PER PROJECT PHASE

WALL KEY

- EXISTING WALL
- DEMO WALL
- NEW WALL
- NEW CONC. WALL
- ROOF CUT

NOTES:

1. ALL INTERIOR WALLS ARE 2x4 UNO. PROVIDE SOUND INSULATION IN BATHROOM WALLS PER SPECIFICATIONS



1 - (E) FIRST FLOOR

1/8" = 1'-0"

NORTH

0' 2' 4' 8' 16'

NORTHWEST BUILDING COLLABORATIVE

NWBC

DPD STAMP AREA

904 1ST AVE S

PROJECT ADDRESS:
904 1ST AVE. S
SEATTLE, WA 98134

OWNER:
ALASKAN COPPER & BRASS

REVISIONS	DATE	DESCRIPTION

ISSUANCES

DATE	DESCRIPTION
06.12.2017	AS-BUILT PLANS

NWBC PROJECT #: 2017.04
SDCI PROJECT #:

PLOT DATE: 06.13.2017

EXISTING FLOOR PLAN

SHEET NO.:

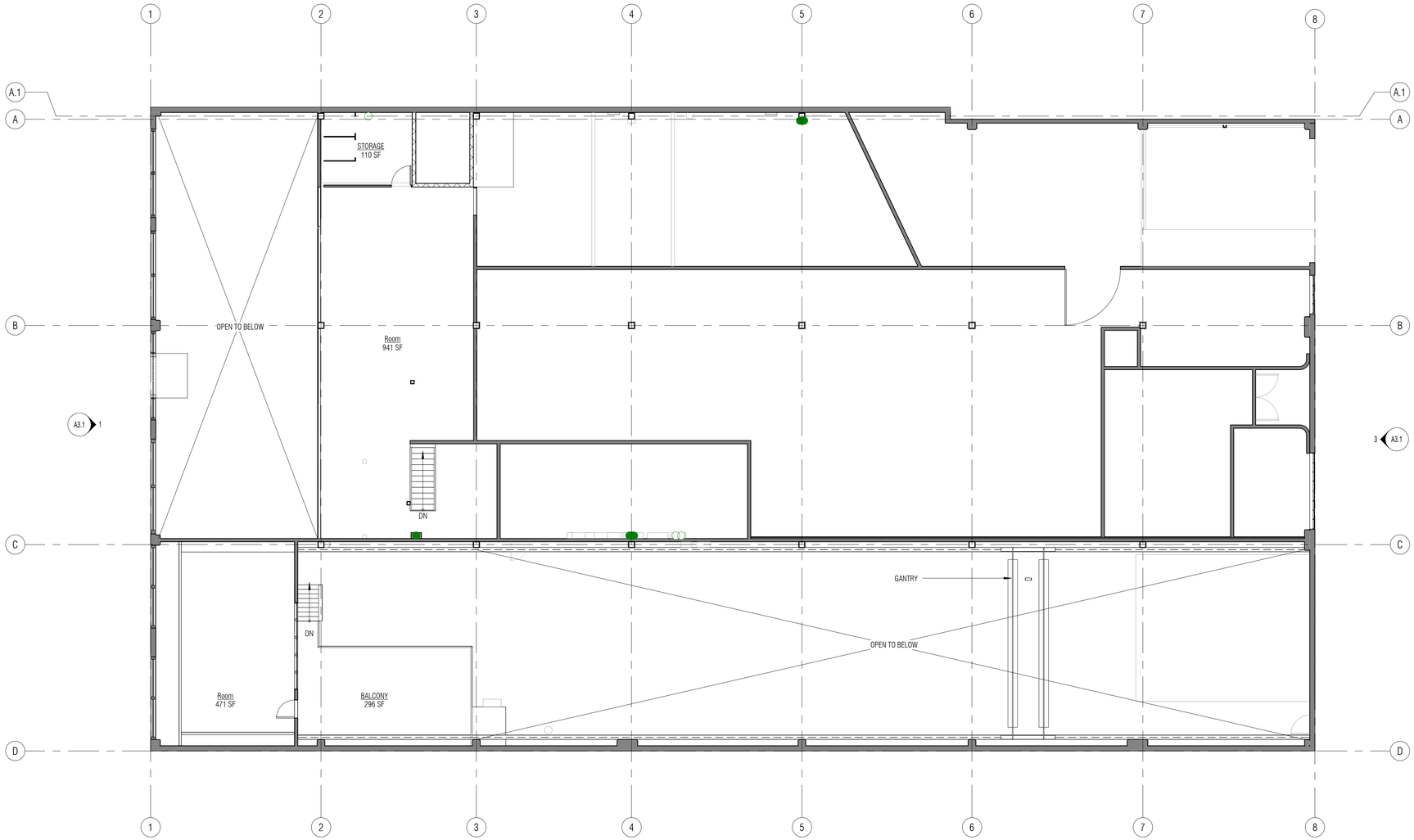
A2.1

WALL KEY

- EXISTING WALL
- DEMO WALL
- NEW WALL
- NEW CONC. WALL
- ROOF CUT

NOTES:

1. ALL INTERIOR WALLS ARE 2x4 UNO. PROVIDE SOUND INSULATION IN BATHROOM WALLS PER SPECIFICATIONS



1 **1.1 - (E) MEZZANINE**
1/8" = 1'-0"

NORTH

0' 2' 4' 8' 16'

NORTHWEST BUILDING COLLABORATIVE

NWBC

DPD STAMP AREA

904 1ST AVE S

PROJECT ADDRESS:
904 1ST AVE S
SEATTLE, WA 98134

OWNER:
ALASKAN COPPER & BRASS

REVISIONS	DATE	DESCRIPTION

ISSUANCES

DATE	DESCRIPTION
06.12.2017	AS-BUILT PLANS

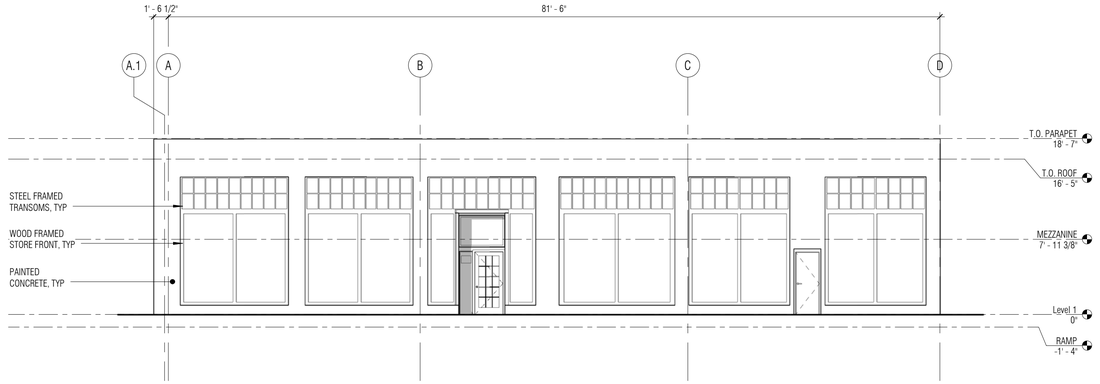
NWBC PROJECT #: 2017.04
SDCI PROJECT #:

PLOT DATE: 06.13.2017

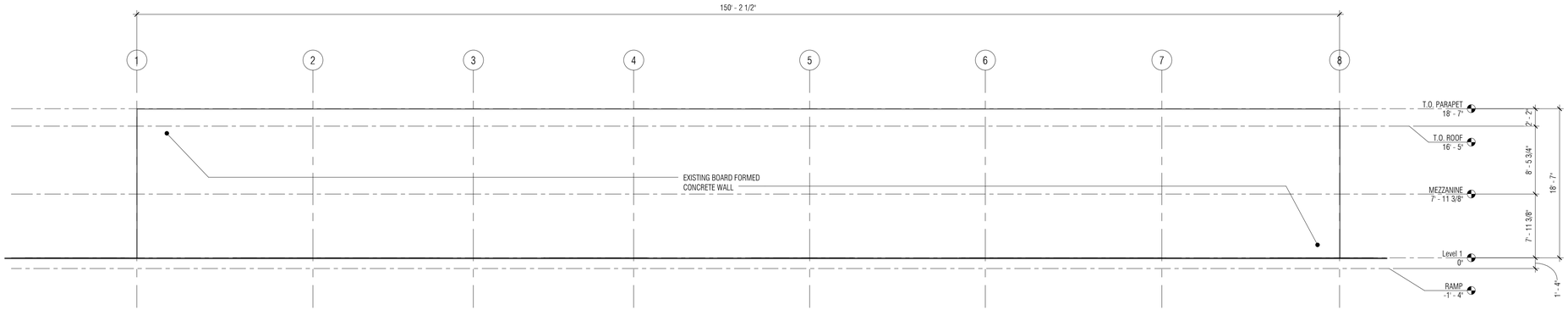
EXISTING MEZZANINE FLOOR PLAN

SHEET NO.:

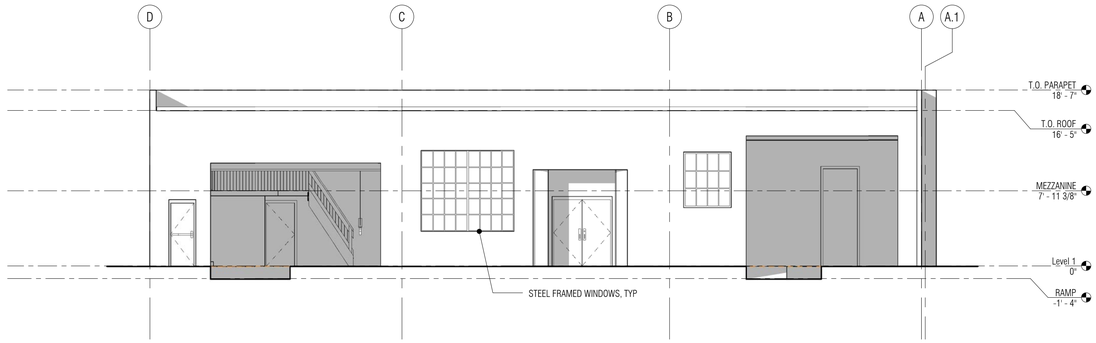
A2.2



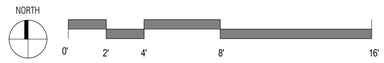
1 WEST ELEVATION
1/8" = 1'-0"



2 SOUTH ELEVATION
1/8" = 1'-0"



3 EAST ELEVATION
1/8" = 1'-0"



NORTHWEST BUILDING COLLABORATIVE

NWBC

DPD STAMP AREA

904 1ST AVE S

PROJECT ADDRESS:
904 1ST AVE. S
SEATTLE, WA 98134

OWNER:
ALASKAN COPPER & BRASS

REVISIONS	DATE	DESCRIPTION

ISSUANCES

DATE	DESCRIPTION
06.12.2017	AS-BUILT PLANS

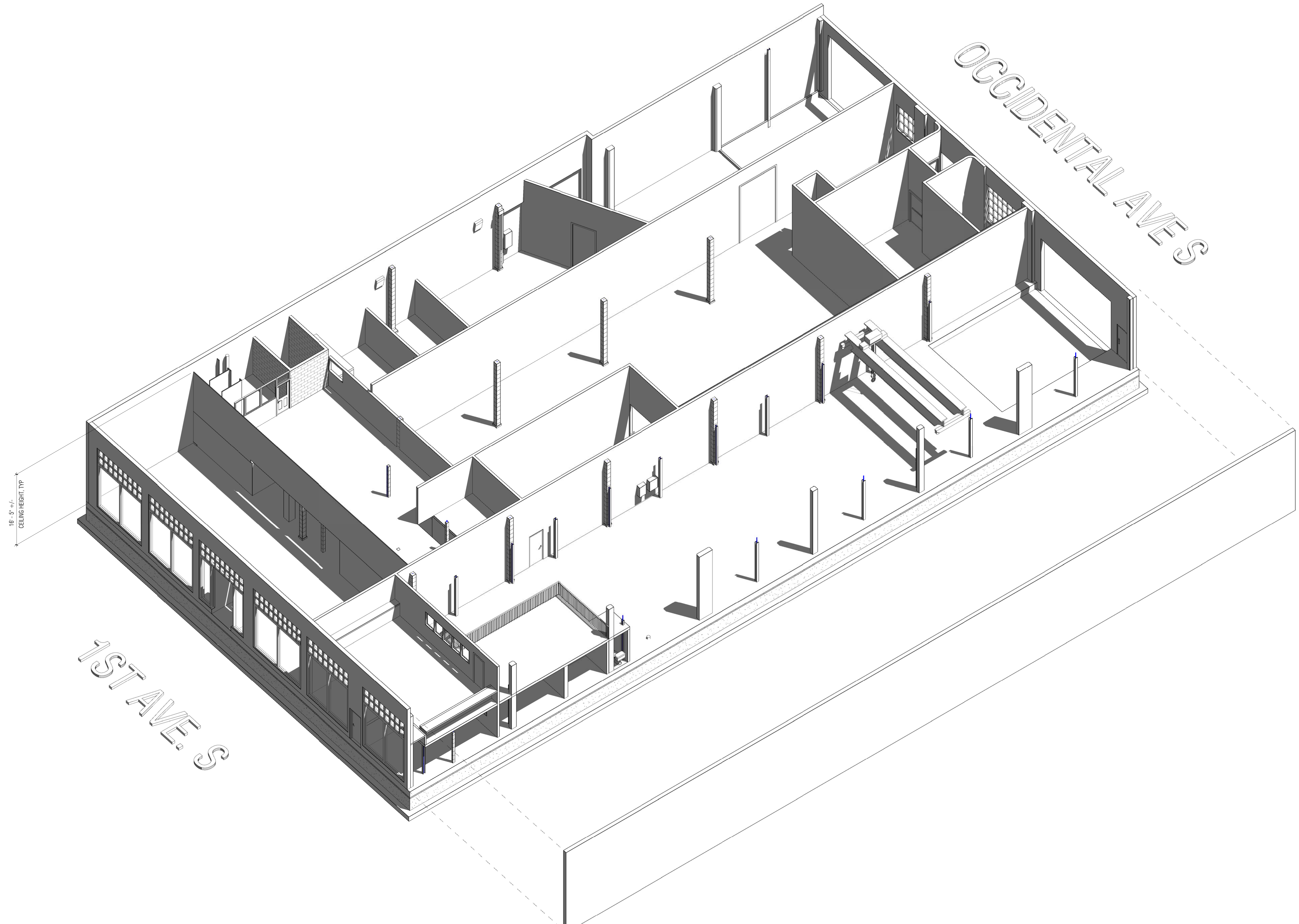
NWBC PROJECT #: 2017.04
SDCI PROJECT #:

PLOT DATE: 06.13.2017

EXTERIOR ELEVATIONS

SHEET NO.:

A3.1



NWBC NORTHWEST BUILDING COLLABORATIVE

904 1ST AVE S

PROJECT ADDRESS:
904 1ST AVE. S
SEATTLE, WA 98134

OWNER:
ALASKAN COPPER & BRASS

REVISIONS	DATE	DESCRIPTION

ISSUANCES

DATE	DESCRIPTION
06.12.2017	AS-BUILT PLANS

NWBC PROJECT #: 2017.04
SDCI PROJECT #:
PLOT DATE: 06.13.2017

AXON

SHEET NO.:

A3.2

APPENDIX: ASCE 41-13 SEISMIC STUDY FOR 904 1ST AVE S BY SSF ENGINEERS 2017

Swenson Say Fagét
STRUCTURAL ENGINEERING

2124 Third Ave, Suite 100
Seattle, WA 98121
O 206.443.6212

934 Broadway, Suite 100
Tacoma, WA 98402
O 253.284.9470

ssfengineers.com

904 1st Ave S

Seattle, WA 98134

ASCE 41-13 Seismic Study

October 12, 2017

Table of Contents

Purpose and Scope

This report summarizes our assessment and recommendations regarding the probable seismic performance of the Alaskan Copper & Brass Co. Building located at 904 1st Ave S in Seattle, WA. Our scope of work was as follows:

1. Perform a walk-through of the building to observe the general condition of the building.
2. Perform a Tier 1 and limited Tier 2 evaluation per ASCE 41-13.
3. Perform a limited Tier 1 nonstructural system evaluation per ASCE 41-13 including parapets, ceilings, veneer and partitions.
4. Preparation of a report that outlines the results of our assessment along with recommendations for possible seismic improvements or mitigation measures.

Our evaluation is based on visual observations of the building and review of the architectural as-built drawings prepared by Northwest Building Collaborative on June 13, 2017. Existing drawings were not available for this building. Our seismic evaluation of the building is based on ASCE Standard 41-13 "*Seismic Evaluation and Retrofit of Existing Buildings*" which is a nationally recognized standard for seismic rehabilitation of existing buildings.

General Description and Condition

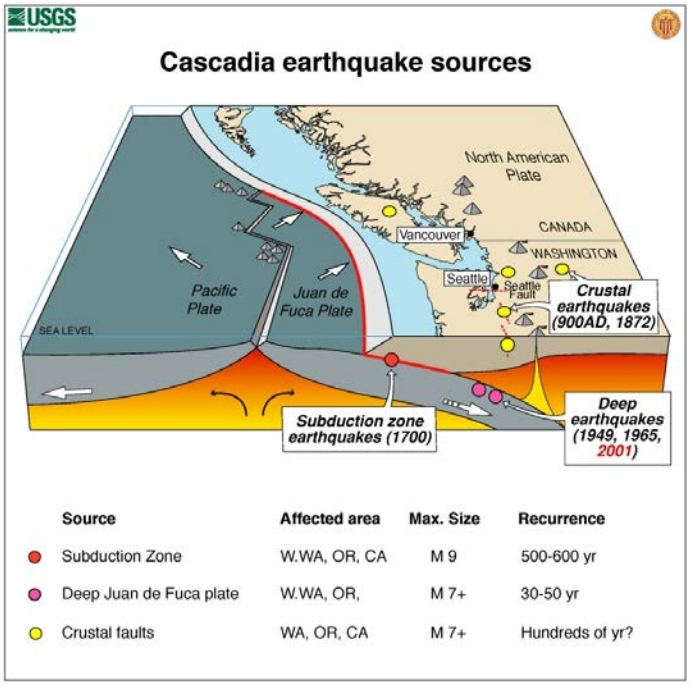
The Alaskan Copper & Brass Co. Building, located at 904 1st Ave S, is a one-story building built in 1929 with exterior reinforced concrete walls and a light-framed wood roof and mezzanine. The roof framing consists of tongue and groove decking spanning between timber beams supported by timber columns at the interior and reinforced concrete pilasters and walls at the exterior. Thickness and number of layers of roof sheathing is unknown. Based on the existing span length, we have assumed a minimum of (2) or (3) layers of 2x straight sheathing at the roof to be field verified. The mezzanine level consists of plywood sheathing over 2x floor joists spanning to wood beams, posts and wood framed walls. Only a portion of the mezzanine structure was exposed with the remaining covered with architectural finishes. The main floor consists of slab on grade. No major settlement or extensive cracking was observed at the slab on grade. Foundations for this building are unknown.

The main lateral force resisting system for the building consists of exterior reinforced concrete shear walls. The lateral system for the mezzanine consists of interior wood shear walls and exterior reinforced concrete shear walls where the mezzanine is adjacent to the exterior wall.

The physical condition of the main building appears to be average for a building of this age. We were unable to observe the condition of the roof but did not observe any current signs of leaking or water intrusion. From the exterior and interior, the concrete appeared of average quality and condition with some spalling at the corner concrete pilasters at the exterior of the building.

Seismic Hazard and Past Performance

The Puget Sound region is seismically active with the most recent major events being the 2001 Nisqually (Mag 6.8), 1965 SeaTac (Mag 6.5) and the 1949 Olympia (Mag 7.1) earthquakes. Recent research indicates that there are three sources of strong ground motion. The first is an event off the coast of Washington occurring where the Juan de Fuca plate is being subducted under the North American plate. Earthquakes of up to magnitude 9.0 are predicted from this source once every 500 years. An event of this type was the 1964 Alaska earthquake. As well as being of large magnitude, the duration of these events is thought to be on the order of minutes. The second source is an event deep in the Juan de Fuca plate directly beneath the Puget Sound area. This source is thought to be capable of producing magnitude 7.5 events every 500 years. The February 2001 Nisqually earthquake as well as the 1965 and 1949 events are examples of this type of earthquake. Strong ground motion duration is predicted to be on the order of 20 seconds for these events. The third source is shallow crustal events which may occur along known and unknown faults. Recent events of this type include the 1996 Duvall earthquake (Mag 5.3). Recent research has uncovered faults such as the Seattle and South Whidbey Island faults which may be capable of producing events with magnitudes up to 7 and greater and with strong ground motion durations of 20 seconds.



The building at 904 1st Ave S has experienced these major seismic events. It is important to note that ground motions the building experienced during the 2001 Nisqually earthquake is not on the order predicted by current building codes or national retrofit standards. Therefore, past performance is not an accurate predictor of future performance under design level events.

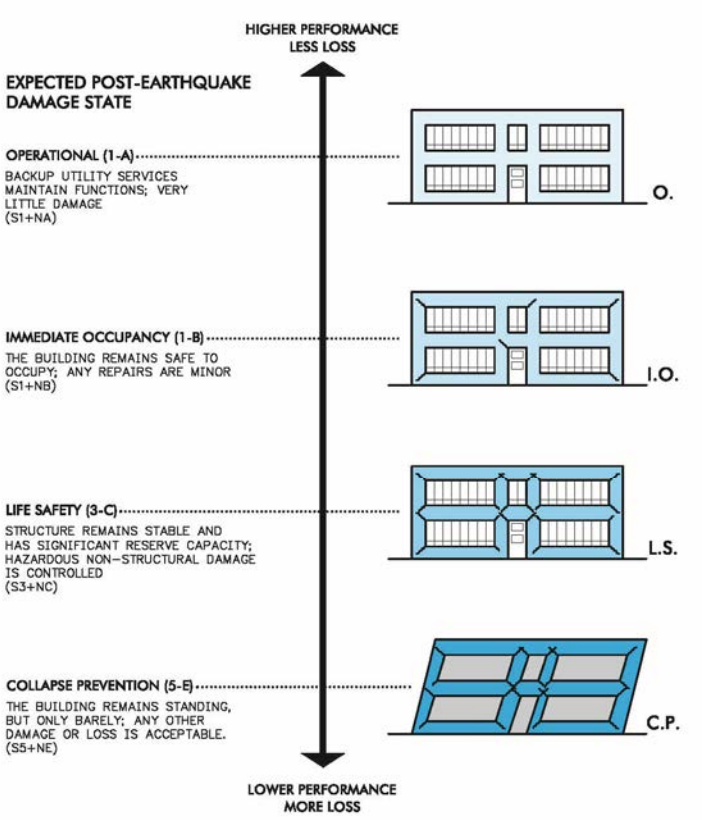
Seismic Evaluation Methodology

ASCE 41-13 "*Seismic Evaluation and Retrofit of Existing Buildings*" was used for this evaluation. ASCE 41-13 provides an option for a deficiency based retrofit evaluation. Under ASCE 41-13, buildings are evaluated to either the Life-Safety or Immediate Occupancy Performance Level using a 3 tier evaluation process. A Tier-1 and Tier-2, or screening phase, evaluation consists of the use of checklists to quickly identify potential building structural deficiencies. Based on the results of the Tier-1 and Tier-2 evaluation, Tier-3 (Evaluation Phase) evaluations may be required. Building type, C2, was used as part of the Tier-1 evaluation that included a checklist for Life Safety Basic Configuration. This checklist provides a means to identify potential deficiencies in a structure and potential behavior during an earthquake.

Based on the high level of seismicity for the site, ASCE 41-13 requires the life safety basic configuration checklist, the supplemental life safety structural checklist, as well as checks for nonstructural components.

Performance Objective

The initial step in the seismic evaluation of the building was to define the seismic performance objective. The performance objective is described in terms of a post- earthquake damage control state for a particular earthquake paired with an earthquake ground motion. The damage control states range from collapse prevention to fully operational. Collapse prevention is typically reserved for historical and limited use structures that have mitigating circumstances which prevent more comprehensive damage control measures. The post-earthquake damage state is such that the building is on the verge of partial or total collapse with extensive damage to non-structural components. Fully operational is typically reserved for critical facilities that must remain functional after an earthquake including emergency response centers, hospital emergency rooms and fire and police stations. A fully operational damage control state requires that structural components remain undamaged and that non-structural components remain fully functional with negligible damage. Typically it is not economically feasible to design or upgrade facilities for this level of performance.



TARGET BUILDING PERFORMANCE LEVELS AND RANGES

(ADAPTED FROM FIG. C1-2 IN FEMA 356, 2000)

The standard for most seismic retrofits is termed BSE-1E, which is the Life Safety Performance Level with a seismic event with a 20% probability of exceedance in 50 years, corresponding to a 225-year return period for the event. This standard is part of the ASCE Standard 41-13 "*Seismic Evaluation and Retrofit of Existing Buildings*". The post-earthquake damage state for a building designed to this performance level is described as follows:

"Post-earthquake damage state in which significant damage to the structure has occurred, but some margin against either partial or total structural collapse remains. Some structural elements and components are severely damaged, but this has not resulted in large falling debris hazards, either inside or outside the building. Injuries might occur during the earthquake; however, the overall risk of life-threatening injury as a result of structural damage is expected to be low. It should be possible to repair the structure; however, for economic reasons this repair might not be practical. Although the damaged structure is not an imminent collapse risk, it would be prudent to implement structural repairs or install temporary bracing before reoccupancy."

Demands:
Demands are based on peak earthquake ground motions as determined from the United States Geologic Service (USGS) National Earthquake Hazard Reduction Program maps. The USGS hazard maps account for the local earthquake sources and their probability of occurring and take into account the Performance Objective and return period for the design seismic event. Ground motions are based on a 20% in 50 year probability of exceedance. This earthquake design methodology was developed by USGS and others to provide uniform design hazard across the county and is standard in all current building codes and retrofit guidelines. The forces described by the hazard map are distributed vertically and horizontally to walls, frames, and wood diaphragms. The resulting seismic force in an element is referred to as the elements seismic demand. The evaluation generally consists of comparing this demand force to an elements calculated capacity as described in the ASCE documents.

Capacities:
Capacities were determined using the approaches outlined in ASCE 41-13, the as-built plans, and our experience with buildings of similar construction in this area. The north and south concrete wall lines were evaluated per ASCE 41-13 Tier 1 shear stress test (Section 4.5.3.3), which limits the shear stress to 100psi. Further analysis was performed for the east wall line with the following material assumptions: f'c = 3000psi, fy = 33ksi, and minimum steel reinforcement ratio = 0.0011. The existing west wall line has an incomplete lateral system and is non-conforming.

Demand Capacity Ratio (DCR):
The demands are compared to capacities to develop acceptance criteria. The acceptance criteria are the tools used to determine if the performance objective is met. For this study a Demand Capacity Ratio (DCR) approach was used where the DCR = Demand / Capacity. Elements with DCR's less than 1.0 are considered to meet the specified performance objective while those with DCR's greater than 1.0 are generally considered not to meet the performance objective.

Findings and Recommendations for 904 1st Ave S

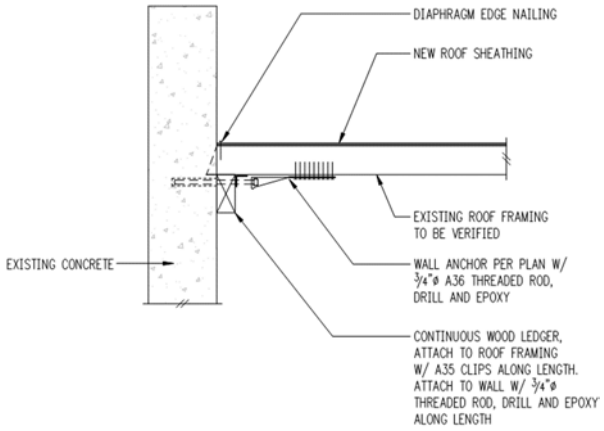
Based on the ASCE 41-13 Tier 1 evaluation we have determined the building at 904 1st Ave S has a number of non-conforming issues that prevent the building from meeting the minimum performance objective level as defined in ASCE 41-13. A copy of the checklists used to determine the non-conforming items have been included in Appendix A. The nonconforming (NC) items resulting deficiencies, if they occur, are outlined below.

STRUCTURAL COMPONENTS – Findings:

- Wall anchorage for out of plane loads was not present.
- In-plane wall anchor lateral force transfer to shearwalls was not present.
- Existing roof diaphragm had insufficient capacity to transfer lateral loads to the exterior concrete walls and was not continuous due to the infilled skylight openings at (9) locations.
- Continuous cross ties are not present in the east-west direction. In the north-south direction, existing beams are present for continuous ties; however, beam splices and connections to exterior walls are not adequate for the tie forces.
- Concrete shearwall line DCR's: North = 0.06 (Conforms), South = 0.19 (Conforms), West = 13.7 (Non-conforming), East = Incomplete lateral system (Non-conforming)
- Concrete wall reinforcement ratio is unknown.
- Foundations are unknown.
- Per Seattle Liquefaction maps, site is located at "High" liquefiable area.
- Proximity to adjacent buildings within 4% of height of shorter building
- At the wood-framed mezzanine, portion of the structure and its connections are unknown at locations that were not visible (could not be observed).

STRUCTURAL COMPONENTS – Recommendations:

- Add continuous wood ledgers and anchorage along the roof perimeter. This consists of mechanical anchors installed to connect the roof framing to the concrete walls with all-threads and rosettes or epoxy. This provides lateral force transfer between the wood roof diaphragm and the exterior concrete walls and out-of-plane anchorage for the exterior walls. See image below for an example of this connection detail.



Typical Wall Anchorage

- At the roof diaphragm, add plywood sheathing over the entire roof (including the infilled skylights). Further investigation and modification of the framing at the skylight infills may be required for the new plywood sheathing to be installed flush over the entire extents. Preliminary size and nailing requirements for the new roof diaphragm to be added is ½" thick plywood with 10d nails at 4" on center spacing. Final plywood thickness and nailing requirements to be verified with further analysis.
- Connect spliced roof beams together with mechanical fasteners for cross ties in the north-south direction, and add anchorage to the exterior walls. In the east-west direction, verify existing roof structure for adequate cross tie capacity or add beams. Connect added beams with mechanical fasteners and add anchorage to the exterior walls.
- Add a new lateral force resisting system at the east and west wall lines and a new interior lateral system near the center of the building parallel to the east and west wall lines. For the west wall line and new interior lateral element, a steel braced frame is an economical choice. The frame will continue full height to a new foundation and will require either new concrete footings or a deep foundation system such as micropiles. At the east elevation, either a new full-height braced frame can be added or existing walls openings can be infilled. Further design checks will be required to confirm the number of openings required to be infilled at this elevation.
- Geotechnical engineer to be consulted regarding the liquefaction-susceptible soils and impact on existing and proposed new foundations.
- Scan existing concrete walls to verify wall and foundation dowel reinforcement size and spacing. Verify existing concrete wall reinforcement extends to top of parapet. Unreinforced concrete parapets may require additional bracing.
- Verify plywood floor sheathing for entire mezzanine floor plan. Add plywood sheathing to existing wood frame walls per Appendix B. Top and base wall connections to be verified and modified as required with further analysis.
- Bracing of interior masonry partitions located in the northwest section of the building (per architectural as-built drawings) is unknown. Added connections to brace the top of wall may be required.
- A professional experienced in the design of life safety systems, hazardous materials, light fixtures, and mechanical and electrical equipment shall evaluate noted nonstructural items listed in Appendix A "Nonstructural Checklist".

Limitations

This study and report represent our opinions based solely on our site observations as well as review of as-built drawings provided by the architect. No exploratory demolition or in-situ testing of the existing building materials has been performed. Our opinions and recommendations are based upon our walk through of the building as well as our review of all visible portions of the building elevations.

The scope of work was limited to a seismic evaluation of the primary lateral force resisting systems of the building. No assessment of the vertical (gravity) load carrying capability of the structure was made.

It is important to note that the building was evaluated based on the Tier 1 Evaluation method of ASCE 41-13. While the Life Safety Performance level is the standard for both new construction and the retrofit of existing buildings, this level of performance implies the possibility of a building damage state after a design level seismic event that may be uneconomical to repair.

This report is intended for the sole use of the building owners and its consultants. The scope of work performed for this evaluation may not be appropriate to satisfy the needs of other users, and any use or re-use of this document and the findings and recommendations presented herein is at the sole risk of the said user. Furthermore, this evaluation does not represent a warranty or guarantee on our part that other problems do not exist. Swenson Say Fagét's professional services are performed using the degree of care and skill ordinarily exercised under similar circumstances by reputable structural engineers practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional opinions included in this.

Lori DeBoer, PE

Greg Coons, PE
Principal

Appendix A

ASCE 41-13

Tier-1 Checklist

Appendix A: Summary Data Sheet

BUILDING DATA

Building Name: Alaskan Copper & Brass Co. Date: 10/12/2017

Building Address: 904 1st Ave S, Seattle, WA 98134

Latitude: 47.594 Longitude: -122.334 By:

Year Built: 1929 Year(s) Remodeled: - Original Design Code: -

Area (sf): 14400 Length (ft): 150 Width (ft): 83

No. of Stories: 1+ (Mezzanine) Story Height: 16.5' Total Height: 18.6'

USE ☐ Industrial ☐ Office ☑ Warehouse ☐ Hospital ☐ Residential ☐ Educational ☑ Other: Gym

CONSTRUCTION DATA

Gravity Load Structural System: Reinforced concrete exterior walls, interior wood posts and beams, and interior wood-framed walls at mezzanine

Exterior Transverse Walls: Reinforced concrete Openings? Yes

Exterior Longitudinal Walls: Reinforced concrete Openings? No

Roof Materials/Framing: Straight sheathing spanning between timber beams at ~21'-0" spacing

Intermediate Floors/Framing: Mezzanine floor: plywood sheathing over 2x floor framing

Ground Floor: Slab on grade

Columns: Wood Posts Foundation: Unknown

General Condition of Structure: Average

Levels Below Grade? No

Special Features and Comments:

LATERAL-FORCE-RESISTING SYSTEM

	Longitudinal	Transverse
System:	Reinforced Concrete Shearwalls	Reinforced Concrete Shearwalls
Vertical Elements:	Walls / Beam/ Post	Wall / Beam/ Post
Diaphragms:	Flexible	Flexible
Connections:	Unknown	Unknown

EVALUATION DATA

BSE-1N Spectral Response Accelerations: S_{DS}= - S_{D1}= -

Soil Factors: Class= D F_a= 1.41 F_v= 2.07

BSE-1E Spectral Response Accelerations: S_{XS}= 0.69 S_{X1}= 0.38

Level of Seismicity: High Performance Level: LIFE SAFETY

Building Period: T= 0.16

Spectral Acceleration: S_a= 0.69

Modification Factor: $C_mC_1C_2$= 1.306 Building Weight: W= 749 k

Pseudo Lateral Force: $V = C_mC_1C_2S_aW$= 675 k

BUILDING CLASSIFICATION:

REQUIRED TIER 1 CHECKLISTS

	Yes	No
Basic Configuration Checklist	☑	☐
Building Type C2 Structural Checklist	☑	☐
Nonstructural Component Checklist	☑	☐

FURTHER EVALUATION REQUIREMENT: Tier 3 analysis required for non-conforming elements

ASCE 41-13 Tier 1 Checklists

FIRM:	Swenson Say Faget
PROJECT NAME:	904 1st Ave S
SEISMICITY LEVEL:	High
PROJECT NUMBER:	11579-2017-01
COMPLETED BY:	LSD
DATE COMPLETED:	10/12/2017
REVIEWED BY:	RGC
REVIEW DATE:	10/12/2017

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

16.1 Basic Checklist

Very Low Seismicity

Structural Components

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☒	☐	☐	☐	LOAD PATH: The structure shall contain a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1)	
C	NC	N/A	U		
☐	☒	☐	☐	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1)	No visible anchorage observed for connection of exterior concrete walls to diaphragm.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

16.1.2LS Life Safety Basic Configuration Checklist

Low Seismicity

Building System

General

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☒	☐	☐	☐	LOAD PATH: The structure shall contain a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1)	
C	NC	N/A	U		
☐	☒	☐	☐	ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 4% of the height of the shorter building. This statement need not apply for the following building types: W1, W1A, and W2. (Commentary: Sec. A.2.1.2. Tier 2: Sec. 5.4.1.2)	No gap or space exists between building being evaluated and the adjacent building.
C	NC	N/A	U		
☐	☒	☐	☐	MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure. (Commentary: Sec. A.2.1.3. Tier 2: Sec. 5.4.1.3)	The majority of the mezzanine is braced independently from the main structure although insufficient. Mezzanine appears to be connected to the exterior south concrete wall, but connection is unknown.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Building Configuration

RATING				DESCRIPTION	COMMENTS
C ☐	NC ☐	N/A ☒	U ☐	WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction is not less than 80% of the strength in the adjacent story above. (Commentary: Sec. A2.2.2. Tier 2: Sec. 5.4.2.1)	
C ☐	NC ☐	N/A ☒	U ☐	SOFT STORY: The stiffness of the seismic-force-resisting system in any story is not less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffness of the three stories above. (Commentary: Sec. A.2.2.3. Tier 2: Sec. 5.4.2.2)	
C ☒	NC ☐	N/A ☐	U ☐	VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation. (Commentary: Sec. A.2.2.4. Tier 2: Sec. 5.4.2.3)	
C ☐	NC ☐	N/A ☒	U ☐	GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines. (Commentary: Sec. A.2.2.5. Tier 2: Sec. 5.4.2.4)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	MASS: There is no change in effective mass more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered. (Commentary: Sec. A.2.2.6. Tier 2: Sec. 5.4.2.5)	
☐	☐	☒	☐	TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension. (Commentary: Sec. A.2.2.7. Tier 2: Sec. 5.4.2.6)	

Moderate Seismicity

Geologic Site Hazards

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☒	☐	☐	LIQUEFACTION: Liquefaction-susceptible, saturated, loose granular soils that could jeopardize the building's seismic performance shall not exist in the foundation soils at depths within 50 ft under the building. (Commentary: Sec. A.6.1.1. Tier 2: 5.4.3.1)	Per Seattle Liquefaction maps. Geotechnical engineer to be consulted.
☐	☐	☐	☒	SLOPE FAILURE: The building site is sufficiently remote from potential earthquake-induced slope failures or rockfalls to be unaffected by such failures or is capable of accommodating any predicted movements without failure. (Commentary: Sec. A.6.1.2. Tier 2: 5.4.3.1)	See liquefaction

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☐	☒	SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated. (Commentary: Sec. A.6.1.3. Tier 2: 5.4.3.1)	

High Seismicity

Foundation Configuration

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☒	☐	☐	☐	OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/ height) is greater than $0.6S_a$. (Commentary: Sec. A.6.2.1. Tier 2: Sec. 5.4.3.3)	83.04/ 18.58 = 4.47 > 0.6Sa = 0.414
C	NC	N/A	U		
☐	☐	☐	☒	TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C. (Commentary: Sec. A.6.2.2. Tier 2: Sec. 5.4.3.4)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

16.10LS Life Safety Structural Checklist for Building Types C2: Concrete Shear Walls with Stiff Diaphragms and C2A: Concrete Shear Walls with Flexible Diaphragms

Low and Moderate Seismicity

Seismic-Force-Resisting System

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	COMPLETE FRAMES: Steel or concrete frames classified as secondary components form a complete vertical-load-carrying system. (Commentary: Sec. A.3.1.6.1. Tier 2: Sec. 5.5.2.5.1)	
C	NC	N/A	U		
☐	☒	☐	☐	REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)	
C	NC	N/A	U		
☐	☒	☐	☐	SHEAR STRESS CHECK: The shear stress in the concrete shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than the greater of 100 lb/in.^{2} or $2\sqrt{f'_c}$. (Commentary: Sec. A.3.2.2.1. Tier 2: Sec. 5.5.3.1.1)	North DCR = 0.19 South DCR = 0.06 Further analysis was performed for the slender west wall piers. West DCR = 13.7. East wall line has an incomplete lateral system.
C	NC	N/A	U		
☐	☐	☐	☒	REINFORCING STEEL: The ratio of reinforcing steel area to gross concrete area is not less than 0.0012 in the vertical direction and 0.0020 in the horizontal direction. (Commentary: Sec. A.3.2.2.2. Tier 2: Sec. 5.5.3.1.3)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Connections

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☒	☐	☐	WALL ANCHORAGE AT FLEXIBLE DIAPHRAGMS: Exterior concrete or masonry walls that are dependent on flexible diaphragms for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1)	No visible anchorage observed for connection of exterior concrete walls to diaphragm.
C	NC	N/A	U		
☐	☒	☐	☐	TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls. (Commentary: Sec. A.5.2.1. Tier 2: Sec. 5.7.2)	No diaphragm connections to shear walls for the transfer of seismic forces were observed.
C	NC	N/A	U		
☐	☐	☐	☒	FOUNDATION DOWELS: Wall reinforcement is doweled into the foundation with vertical bars equal in size and spacing to the vertical wall reinforcing immediately above the foundation. (Commentary: Sec. A.5.3.5. Tier 2: Sec. 5.7.3.4)	

High Seismicity

Seismic-Force-Resisting System

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	DEFLECTION COMPATIBILITY: Secondary components have the shear capacity to develop the flexural strength of the components. (Commentary: Sec. A.3.1.6.2. Tier 2: Sec. 5.5.2.5.2)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	FLAT SLABS: Flat slabs or plates not part of the seismic-force-resisting system have continuous bottom steel through the column joints. (Commentary: Sec. A.3.1.6.3. Tier 2: Sec. 5.5.2.5.3)	
☐	☒	☐	☐	COUPLING BEAMS: The stirrups in coupling beams over means of egress are spaced at or less than *d*/2 and are anchored into the confined core of the beam with hooks of 135 degrees or more. The ends of both walls to which the coupling beam is attached are supported at each end to resist vertical loads caused by overturning. (Commentary: Sec. A.3.2.2.3. Tier 2: Sec. 5.5.3.2.1)	West wall line has coupling beams. Minimum reinforcement ratio = 0.0011 is assumed, which is non-conforming.

Connections

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☐	☒	UPLIFT AT PILE CAPS: Pile caps have top reinforcement, and piles are anchored to the pile caps. (Commentary: Sec. A.5.3.8. Tier 2: Sec. 5.7.3.5)	

Diaphragms (Flexible or Stiff)

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☒	☐	☐	☐	DIAPHRAGM CONTINUITY: The diaphragms are not composed of split-level floors and do not have expansion joints. (Commentary: Sec. A.4.1.1. Tier 2: Sec. 5.6.1.1)	The roof diaphragm is not composed of split-level floors or expansion joints; however, the existing roof has (9) large existing skylight openings that had been infilled after the building's original construction. No diaphragm continuity is apparent at these locations. See Appendix B for approximate location of existing skylight openings.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☒	☐	☐	☐	OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 25% of the wall length. (Commentary: Sec. A.4.1.4. Tier 2: Sec. 5.6.1.3)	

Flexible Diaphragms

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☒	☐	☐	CROSS TIES: There are continuous cross ties between diaphragm chords. (Commentary: Sec. A.4.1.2. Tier 2: Sec. 5.6.1.2)	No cross ties are present in the east-west direction. Beams for cross ties are present in the north-south direction; however beam splices and connection to exterior wall are not adequate for cross tie forces.
C	NC	N/A	U		
☒	☐	☐	☐	STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)	(150.21'/ 83.04') = 1.81 < 2
C	NC	N/A	U		
☐	☒	☐	☐	SPANS: All wood diaphragms with spans greater than 24 ft consist of wood structural panels or diagonal sheathing. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft and aspect ratios less than or equal to 4-to-1. (Commentary: Sec. A.4.2.3. Tier 2: Sec. 5.6.2)	
C	NC	N/A	U		
☐	☐	☒	☐	OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

16.17 Nonstructural Checklist

The Performance Level is designated LS for Life Safety or PR for Position Retention. The level of seismicity is designated as "not required" or by L, M, or H, for Low, Moderate, and High.

All Seismicity Levels

Life Safety Systems A PROFESSIONAL EXPERIENCED IN THE DESIGN OF THE SYSTEMS BELOW SHALL EVALUATE

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☐	☒	LS-LMH; PR-LMH. FIRE SUPPRESSION PIPING: Fire suppression piping is anchored and braced in accordance with NFPA-13. (Commentary: Sec. A.7.13.1. Tier 2: Sec. 13.7.4)	
C	NC	N/A	U		
☐	☐	☐	☒	LS-LMH; PR-LMH. FLEXIBLE COUPLINGS: Fire suppression piping has flexible couplings in accordance with NFPA-13. (Commentary: Sec. A.7.13.2. Tier 2: Sec. 13.7.4)	
C	NC	N/A	U		
☐	☐	☐	☒	LS-LMH; PR-LMH. EMERGENCY POWER: Equipment used to power or control life safety systems is anchored or braced. (Commentary: Sec. A.7.12.1. Tier 2: Sec. 13.7.7)	
C	NC	N/A	U		
☐	☐	☐	☒	LS-LMH; PR-LMH. STAIR AND SMOKE DUCTS: Stair pressurization and smoke control ducts are braced and have flexible connections at seismic joints. (Commentary: Sec. A.7.14.1. Tier 2: Sec. 13.7.6)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☐	☒	LS-MH; PR-MH. SPRINKLER CEILING CLEARANCE: Penetrations through panelized ceilings for fire suppression devices provide clearances in accordance with NFPA-13. (Commentary: Sec. A.7.13.3. Tier 2: Sec. 13.7.4)	
☐	☐	☐	☒	LS-not required; PR-LMH. EMERGENCY LIGHTING: Emergency and egress lighting equipment is anchored or braced. (Commentary: Sec. A.7.3.1. Tier 2: Sec. 13.7.9)	

Hazardous Materials A PROFESSIONAL EXPERIENCED IN THE DESIGN OF THE SYSTEMS BELOW SHALL EVALUATE

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☐	☒	LS-LMH; PR-LMH. HAZARDOUS MATERIAL EQUIPMENT: Equipment mounted on vibration isolators and containing hazardous material is equipped with restraints or snubbers. (Commentary: Sec. A.7.12.2. Tier 2: 13.7.1)	
☐	☐	☐	☒	LS-LMH; PR-LMH. HAZARDOUS MATERIAL STORAGE: Breakable containers that hold hazardous material, including gas cylinders, are restrained by latched doors, shelf lips, wires, or other methods. (Commentary: Sec. A.7.15.1. Tier 2: Sec. 13.8.4)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☐	☒	LS-MH; PR-MH. HAZARDOUS MATERIAL DISTRIBUTION: Piping or ductwork conveying hazardous materials is braced or otherwise protected from damage that would allow hazardous material release. (Commentary: Sec. A.7.13.4. Tier 2: Sec. 13.7.3 and 13.7.5)	
C	NC	N/A	U		
☐	☐	☐	☒	LS-MH; PR-MH. SHUT-OFF VALVES: Piping containing hazardous material, including natural gas, has shut-off valves or other devices to limit spills or leaks. (Commentary: Sec. A.7.13.3. Tier 2: Sec. 13.7.3 and 13.7.5)	
C	NC	N/A	U		
☐	☐	☐	☒	LS-LMH; PR-LMH. FLEXIBLE COUPLINGS: Hazardous material ductwork and piping, including natural gas piping, has flexible couplings. (Commentary: Sec. A.7.15.4, Tier 2: Sec.13.7.3 and 13.7.5)	
C	NC	N/A	U		
☐	☐	☐	☒	LS-MH; PR-MH. PIPING OR DUCTS CROSSING SEISMIC JOINTS: Piping or ductwork carrying hazardous material that either crosses seismic joints or isolation planes or is connected to independent structures has couplings or other details to accommodate the relative seismic displacements. (Commentary: Sec. A.7.13.6. Tier 2: Sec.13.7.3, 13.7.5, and 13.7.6)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Partitions REVIEWED BY SSF

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U	LS-LMH; PR-LMH. UNREINFORCED MASONRY: Unreinforced masonry or hollow-clay tile partitions are braced at a spacing of at most 10 ft in Low or Moderate Seismicity, or at most 6 ft in High Seismicity. (Commentary: Sec. A.7.1.1. Tier 2: Sec. 13.6.2)	Architectural as-built drawings identify (3) masonry partitions in the northwest section of the building. Bracing of walls is unknown.
C	NC	N/A	U	LS-LMH; PR-LMH. HEAVY PARTITIONS SUPPORTED BY CEILINGS: The tops of masonry or hollow-clay tile partitions are not laterally supported by an integrated ceiling system. (Commentary: Sec. A.7.2.1. Tier 2: Sec. 13.6.2)	
C	NC	N/A	U	LS-MH; PR-MH. DRIFT: Rigid cementitious partitions are detailed to accommodate the following drift ratios: in steel moment frame, concrete moment frame, and wood frame buildings, 0.02; in other buildings, 0.005. (Commentary A.7.1.2 Tier 2: Sec. 13.6.2)	See unreinforced masonry partitions notes above.
C	NC	N/A	U	LS-not required; PR-MH. LIGHT PARTITIONS SUPPORTED BY CEILINGS: The tops of gypsum board partitions are not laterally supported by an integrated ceiling system. (Commentary: Sec. A.7.2.1. Tier 2: Sec. 13.6.2)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-MH. STRUCTURAL SEPARATIONS: Partitions that cross structural separations have seismic or control joints. (Commentary: Sec. A.7.1.3. Tier 2. Sec. 13.6.2)	
☐	☐	☐	☒	LS-not required; PR-MH. TOPS: The tops of ceiling-high framed or panelized partitions have lateral bracing to the structure at a spacing equal to or less than 6 ft. (Commentary: Sec. A.7.1.4. Tier 2. Sec. 13.6.2)	

Ceilings REVIEWED BY SSF

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	LS-MH; PR-LMH. SUSPENDED LATH AND PLASTER: Suspended lath and plaster ceilings have attachments that resist seismic forces for every 12 ft^2 of area. (Commentary: Sec. A.7.2.3. Tier 2: Sec. 13.6.4)	
☐	☐	☒	☐	LS-MH; PR-LMH. SUSPENDED GYPSUM BOARD: Suspended gypsum board ceilings have attachments that resist seismic forces for every 12 ft^2 of area. (Commentary: Sec. A.7.2.3. Tier 2: Sec. 13.6.4)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-MH. INTEGRATED CEILINGS: Integrated suspended ceilings with continuous areas greater than 144 ft^2, and ceilings of smaller areas that are not surrounded by restraining partitions, are laterally restrained at a spacing no greater than 12 ft with members attached to the structure above. Each restraint location has a minimum of four diagonal wires and compression struts, or diagonal members capable of resisting compression. (Commentary: Sec. A.7.2.2. Tier 2: Sec. 13.6.4)	
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-MH. EDGE CLEARANCE: The free edges of integrated suspended ceilings with continuous areas greater than 144 ft^2 have clearances from the enclosing wall or partition of at least the following: in Moderate Seismicity, 1/2 in.; in High Seismicity, 3/4 in. (Commentary: Sec. A.7.2.4. Tier 2: Sec. 13.6.4)	
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-MH. CONTINUITY ACROSS STRUCTURE JOINTS: The ceiling system does not cross any seismic joint and is not attached to multiple independent structures. (Commentary: Sec. A.7.2.5. Tier 2: Sec. 13.6.4)	
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. EDGE SUPPORT: The free edges of integrated suspended ceilings with continuous areas greater than 144 ft^2 are supported by closure angles or channels not less than 2 in. wide. (Commentary: Sec. A.7.2.6. Tier 2: Sec. 13.6.4)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. SEISMIC JOINTS: Acoustical tile or lay-in panel ceilings have seismic separation joints such that each continuous portion of the ceiling is no more than 2500 ft^2 and has a ratio of long-to-short dimension no more than 4-to-1. (Commentary: Sec. A.7.2.7. Tier 2: 13.6.4)	

Light Fixtures A PROFESSIONAL EXPERIENCED IN THE DESIGN OF THE SYSTEMS BELOW SHALL EVALUATE

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☐	☒	LS-MH; PR-MH. INDEPENDENT SUPPORT: Light fixtures that weigh more per square foot than the ceiling they penetrate are supported independent of the grid ceiling suspension system by a minimum of two wires at diagonally opposite corners of each fixture. (Commentary: Sec. A.7.3.2. Tier 2: Sec. 13.6.4 and 13.7.9)	
C	NC	N/A	U		
☐	☐	☐	☒	LS-not required; PR-H. PENDANT SUPPORTS: Light fixtures on pendant supports are attached at a spacing equal to or less than 6 ft and, if rigidly supported, are free to move with the structure to which they are attached without damaging adjoining components. (Commentary: A.7.3.3. Tier 2: Sec. 13.7.9)	
C	NC	N/A	U		
☐	☐	☐	☒	LS-not required; PR-H. LENS COVERS: Lens covers on light fixtures are attached with safety devices. (Commentary: Sec. A.7.3.4. Tier 2: Sec. 13.7.9)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Cladding and Glazing REVIEWED BY SSF

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	LS-MH; PR-MH. CLADDING ANCHORS: Cladding components weighing more than 10 lb/ft^2 are mechanically anchored to the structure at a spacing equal to or less than the following: for Life Safety in Moderate Seismicity, 6 ft; for Life Safety in High Seismicity and for Position Retention in any seismicity, 4 ft. (Commentary: Sec. A.7.4.1. Tier 2: Sec. 13.6.1)	
C	NC	N/A	U		
☐	☐	☒	☐	LS-MH; PR-MH. CLADDING ISOLATION: For steel or concrete moment frame buildings, panel connections are detailed to accommodate a story drift ratio of at least the following: for Life Safety in Moderate Seismicity, 0.01; for Life Safety in High Seismicity and for Position Retention in any seismicity, 0.02. (Commentary: Sec. A.7.4.3. Tier 2: Section 13.6.1)	
C	NC	N/A	U		
☐	☐	☒	☐	LS-MH; PR-MH. MULTI-STORY PANELS: For multi-story panels attached at more than one floor level, panel connections are detailed to accommodate a story drift ratio of at least the following: for Life Safety in Moderate Seismicity, 0.01; for Life Safety in High Seismicity and for Position Retention in any seismicty, 0.02. (Commentary: Sec. A.7.4.4. Tier 2: Sec. 13.6.1)	
C	NC	N/A	U		
☐	☐	☒	☐	LS-MH; PR-MH. PANEL CONNECTIONS: Cladding panels are anchored out-of-plane with a minimum number of connections for each wall panel, as follows: for Life Safety in Moderate Seismicity, 2 connections; for Life Safety in High Seismicity and for Position Retention in any seismicity, 4 connections. (Commentary: Sec. A.7.4.5. Tier 2: Sec. 13.6.1.4)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-MH; PR-MH. BEARING CONNECTIONS: Where bearing connections are used, there is a minimum of two bearing connections for each cladding panel. (Commentary: Sec. A.7.4.6. Tier 2: Sec. 13.6.1.4)	
☐	☐	☒	☐	LS-MH; PR-MH. INSERTS: Where concrete cladding components use inserts, the inserts have positive anchorage or are anchored to reinforcing steel. (Commentary: Sec. A.7.4.7. Tier 2: Sec. 13.6.1.4)	
☐	☐	☒	☐	LS-MH; PR-MH. OVERHEAD GLAZING: Glazing panes of any size in curtain walls and individual interior or exterior panes over 16 ft^2 in area are laminated annealed or laminated heat-strengthened glass and are detailed to remain in the frame when cracked. (Commentary: Sec. A.7.4.8: Tier 2: Sec. 13.6.1.5)	

Masonry Veneer REVIEWED BY SSF

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. TIES: Masonry veneer is connected to the backup with corrosion-resistant ties. There is a minimum of one tie for every 2-2/3 ft^2, and the ties have spacing no greater than the following: for Life Safety in Low or Moderate Seismicity, 36 in.; for Life Safety in High Seismicity and for Position Retention in any seismicity, 24 in. (Commentary: Sec. A.7.5.1. Tier 2: Sec. 13.6.1.2)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. SHELF ANGLES: Masonry veneer is supported by shelf angles or other elements at each floor above the ground floor. (Commentary: Sec. A.7.5.2. Tier 2: Sec. 13.6.1.2)	
C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. WEAKENED PLANES: Masonry veneer is anchored to the backup adjacent to weakened planes, such as at the locations of flashing. (Commentary: Sec. A.7.5.3. Tier 2: Sec. 13.6.1.2)	
C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. UNREINFORCED MASONRY BACKUP: There is no unreinforced masonry backup. (Commentary: Sec. A.7.7.2. Tier 2: Section 13.6.1.1 and 13.6.1.2)	
C	NC	N/A	U		
☐	☐	☒	☐	LS-MH; PR-MH. STUD TRACKS: For veneer with metal stud backup, stud tracks are fastened to the structure at a spacing equal to or less than 24 in. on center. (Commentary: Sec. A.7.6.1. Tier 2: Section 13.6.1.1 and 13.6.1.2)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-MH; PR-MH. ANCHORAGE: For veneer with concrete block or masonry backup, the backup is positively anchored to the structure at a horizontal spacing equal to or less than 4 ft along the floors and roof. (Commentary: Sec. A.7.7.1. Tier 2: Section 13.6.1.1 and 13.6.1.2)	
☐	☐	☒	☐	LS-not required; PR-MH. WEEP HOLES: In veneer anchored to stud walls, the veneer has functioning weep holes and base flashing. (Commentary: Sec. A.7.5.6. Tier 2: Section 13.6.1.2)	
☐	☐	☒	☐	LS-not required; PR-MH. OPENINGS: For veneer with metal stud backup, steel studs frame window and door openings. (Commentary: Sec. A.7.6.2. Tier 2: Sec. 13.6.1.1 and 13.6.1.2)	

Parapets, Cornices, Ornamentation, and Appendages REVIEWED BY SSF

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. URM PARAPETS OR CORNICES: Laterally unsupported unreinforced masonry parapets or cornices have height-to-thickness ratios no greater than the following: for Life Safety in Low or Moderate Seismicity, 2.5; for Life Safety in High Seismicity and for Position Retention in any seismicity, 1.5. (Commentary: Sec. A.7.8.1. Tier 2: Sec. 13.6.5)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. CANOPIES: Canopies at building exits are anchored to the structure at a spacing no greater than the following: for Life Safety in Low or Moderate Seismicity, 10 ft; for Life Safety in High Seismicity and for Position Retention in any seismicity, 6 ft. (Commentary: Sec. A.7.8.2. Tier 2: Sec. 13.6.6)	
☐	☐	☐	☒	LS-MH; PR-LMH. CONCRETE PARAPETS: Concrete parapets with height-to-thickness ratios greater than 2.5 have vertical reinforcement. (Commentary: Sec. A.7.8.3. Tier 2: Sec. 13.6.5)	(2'2")/8" = 3.25 > 2.5. Ratio exceeds 2.5 and concrete reinforcement at parapet is unknown and would need to be field verified.
☐	☐	☒	☐	LS-MH; PR-LMH. APPENDAGES: Cornices, parapets, signs, and other ornamentation or appendages that extend above the highest point of anchorage to the structure or cantilever from components are reinforced and anchored to the structural system at a spacing equal to or less than 6 ft. This checklist item does not apply to parapets or cornices covered by other checklist items. (Commentary: Sec. A.7.8.4. Tier 2: Sec. 13.6.6)	

Masonry Chimneys REVIEWED BY SSF

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. URM CHIMNEYS: Unreinforced masonry chimneys extend above the roof surface no more than the following: for Life Safety in Low or Moderate Seismicity, 3 times the least dimension of the chimney; for Life Safety in High Seismicity and for Position Retention in any seismicity, 2 times the least dimension of the chimney. (Commentary: Sec. A.7.9.1. Tier 2: 13.6.7)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. ANCHORAGE: Masonry chimneys are anchored at each floor level, at the topmost ceiling level, and at the roof. (Commentary: Sec. A.7.9.2. Tier 2: 13.6.7)	

Stairs REVIEWED BY SSF

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. STAIR ENCLOSURES: Hollow-clay tile or unreinforced masonry walls around stair enclosures are restrained out-of-plane and have height-to-thickness ratios not greater than the following: for Life Safety in Low or Moderate Seismicity, 15-to-1; for Life Safety in High Seismicity and for Position Retention in any seismicity, 12-to-1. (Commentary: Sec. A.7.10.1. Tier 2: Sec. 13.6.2 and 13.6.8)	
C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. STAIR DETAILS: In moment frame structures, the connection between the stairs and the structure does not rely on shallow anchors in concrete. Alternatively, the stair details are capable of accommodating the drift calculated using the Quick Check procedure of Section 4.5.3.1 without including any lateral stiffness contribution from the stairs. (Commentary: Sec. A.7.10.2. Tier 2: 13.6.8)	

Contents and Furnishings A PROFESSIONAL EXPERIENCED IN THE DESIGN OF THE SYSTEMS BELOW SHALL EVALUATE

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	LS-MH; PR-MH. INDUSTRIAL STORAGE RACKS: Industrial storage racks or pallet racks more than 12 ft high meet the requirements of ANSI/MH 16.1 as modified by ASCE 7 Chapter 15. (Commentary: Sec. A.7.11.1. Tier 2: Sec. 13.8.1)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-H; PR-MH. TALL NARROW CONTENTS: Contents more than 6 ft high with a height-to-depth or height-to-width ratio greater than 3-to-1 are anchored to the structure or to each other. (Commentary: Sec. A.7.11.2. Tier 2: Sec. 13.8.2)	
C	NC	N/A	U		
☐	☐	☐	☒	LS-H; PR-H. FALL-PRONE CONTENTS: Equipment, stored items, or other contents weighing more than 20 lb whose center of mass is more than 4 ft above the adjacent floor level are braced or otherwise restrained. (Commentary: Sec. A.7.11.3. Tier 2: Sec. 13.8.2)	
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-MH. ACCESS FLOORS: Access floors more than 9 in. high are braced. (Commentary: Sec. A.7.11.4. Tier 2: Sec. 13.8.3)	
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-MH. EQUIPMENT ON ACCESS FLOORS: Equipment and other contents supported by access floor systems are anchored or braced to the structure independent of the access floor. (Commentary: Sec. A.7.11.5. Tier 2: Sec. 13.7.7 and 13.8.3)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☐	☒	LS-not required; PR-H. SUSPENDED CONTENTS: Items suspended without lateral bracing are free to swing from or move with the structure from which they are suspended without damaging themselves or adjoining components. (Commentary. A.7.11.6. Tier 2: Sec. 13.8.2)	

Mechanical and Electrical Equipment A PROFESSIONAL EXPERIENCED IN THE DESIGN OF THE SYSTEMS BELOW SHALL EVALUATE

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☐	☒	LS-H; PR-H. FALL-PRONE EQUIPMENT: Equipment weighing more than 20 lb whose center of mass is more than 4 ft above the adjacent floor level, and which is not in-line equipment, is braced. (Commentary: A.7.12.4. Tier 2: 13.7.1 and 13.7.7)	
C	NC	N/A	U		
☐	☐	☐	☒	LS-H; PR-H. IN-LINE EQUIPMENT: Equipment installed in-line with a duct or piping system, with an operating weight more than 75 lb, is supported and laterally braced independent of the duct or piping system. (Commentary: Sec. A.7.12.5. Tier 2: Sec. 13.7.1)	
C	NC	N/A	U		
☐	☐	☐	☒	LS-H; PR-MH. TALL NARROW EQUIPMENT: Equipment more than 6 ft high with a height-to-depth or height-to-width ratio greater than 3-to-1 is anchored to the floor slab or adjacent structural walls. (Commentary: Sec. A.7.12.6. Tier 2: Sec. 13.7.1 and 13.7.7)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☐	☒	LS-not required; PR-MH. MECHANICAL DOORS: Mechanically operated doors are detailed to operate at a story drift ratio of 0.01. (Commentary: Sec. A.7.12.7. Tier 2: Sec. 13.6.9)	
☐	☐	☐	☒	LS-not required; PR-H. SUSPENDED EQUIPMENT: Equipment suspended without lateral bracing is free to swing from or move with the structure from which it is suspended without damaging itself or adjoining components. (Commentary: Sec. A.7.12.8. Tier 2: Sec. 13.7.1 and 13.7.7)	
☐	☐	☐	☒	LS-not required; PR-H. VIBRATION ISOLATORS: Equipment mounted on vibration isolators is equipped with horizontal restraints or snubbers and with vertical restraints to resist overturning. (Commentary: Sec. A.7.12.9. Tier 2: Sec. 13.7.1)	
☐	☐	☐	☒	LS-not required; PR-H. HEAVY EQUIPMENT: Floor-supported or platform-supported equipment weighing more than 400 lb is anchored to the structure. (Commentary: Sec. A.7.12.10. Tier 2: 13.7.1 and 13.7.7)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☐	☒	LS-not required; PR-H. ELECTRICAL EQUIPMENT: Electrical equipment is laterally braced to the structure. (Commentary: Sec. A.7.12.11. Tier 2: 13.7.7)	
☐	☐	☐	☒	LS-not required; PR-H. CONDUIT COUPLINGS: Conduit greater than 2.5 in. trade size that is attached to panels, cabinets, or other equipment and is subject to relative seismic displacement has flexible couplings or connections. (Commentary: Sec. A.7.12.12. Tier 2: 13.7.8)	

Piping A PROFESSIONAL EXPERIENCED IN THE DESIGN OF THE SYSTEMS BELOW SHALL EVALUATE

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☐	☒	LS-not required; PR-H. FLEXIBLE COUPLINGS: Fluid and gas piping has flexible couplings. (Commentary: Sec. A.7.13.2. Tier 2: Sec. 13.7.3 and 13.7.5)	
☐	☐	☐	☒	LS-not required; PR-H. FLUID AND GAS PIPING: Fluid and gas piping is anchored and braced to the structure to limit spills or leaks. (Commentary: Sec. A.7.13.4. Tier 2: Sec. 13.7.3 and 13.7.5)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☐	☒	LS-not required; PR-H. C-CLAMPS: One-sided C-clamps that support piping larger than 2.5 in. in diameter are restrained. (Commentary: Sec. A.7.13.5. Tier 2: Sec. 13.7.3 and 13.7.5)	
☐	☐	☒	☐	LS-not required; PR-H. PIPING CROSSING SEISMIC JOINTS: Piping that crosses seismic joints or isolation planes or is connected to independent structures has couplings or other details to accommodate the relative seismic displacements. (Commentary: Sec. A7.13.6. Tier 2: Sec.13.7.3 and Sec. 13.7.5)	

Ducts A PROFESSIONAL EXPERIENCED IN THE DESIGN OF THE SYSTEMS BELOW SHALL EVALUATE

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☐	☒	LS-not required; PR-H. DUCT BRACING: Rectangular ductwork larger than 6 ft^2 in cross-sectional area and round ducts larger than 28 in. in diameter are braced. The maximum spacing of transverse bracing does not exceed 30 ft. The maximum spacing of longitudinal bracing does not exceed 60 ft. (Commentary: Sec. A.7.14.2. Tier 2: Sec. 13.7.6)	
☐	☐	☐	☒	LS-not required; PR-H. DUCT SUPPORT: Ducts are not supported by piping or electrical conduit. (Commentary: Sec. A.7.14.3. Tier 2: Sec. 13.7.6)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. DUCTS CROSSING SEISMIC JOINTS: Ducts that cross seismic joints or isolation planes or are connected to independent structures have couplings or other details to accommodate the relative seismic displacements. (Commentary: Sec. A.7.14.5. Tier 2: Sec. 13.7.6)	

Elevators A PROFESSIONAL EXPERIENCED IN THE DESIGN OF THE SYSTEMS BELOW SHALL EVALUATE

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	LS-H; PR-H. RETAINER GUARDS: Sheaves and drums have cable retainer guards. (Commentary: Sec. A.7.16.1. Tier 2: 13.8.6)	
C	NC	N/A	U		
☐	☐	☒	☐	LS-H; PR-H. RETAINER PLATE: A retainer plate is present at the top and bottom of both car and counterweight. (Commentary: Sec. A.7.16.2. Tier 2: 13.8.6)	
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. ELEVATOR EQUIPMENT: Equipment, piping, and other components that are part of the elevator system are anchored. (Commentary: Sec. A.7.16.3. Tier 2: 13.8.6)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. SEISMIC SWITCH: Elevators capable of operating at speeds of 150 ft/min or faster are equipped with seismic switches that meet the requirements of ASME A17.1 or have trigger levels set to 20% of the acceleration of gravity at the base of the structure and 50% of the acceleration of gravity in other locations. (Commentary: Sec. A.7.16.4. Tier 2: 13.8.6)	
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. SHAFT WALLS: Elevator shaft walls are anchored and reinforced to prevent toppling into the shaft during strong shaking. (Commentary: Sec. A.7.16.5. Tier 2: 13.8.6)	
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. COUNTERWEIGHT RAILS: All counterweight rails and divider beams are sized in accordance with ASME A17.1. (Commentary: Sec. A.7.16.6. Tier 2: 13.8.6)	
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. BRACKETS: The brackets that tie the car rails and the counterweight rail to the structure are sized in accordance with ASME A17.1. (Commentary: Sec. A.7.16.7. Tier 2: 13.8.6)	

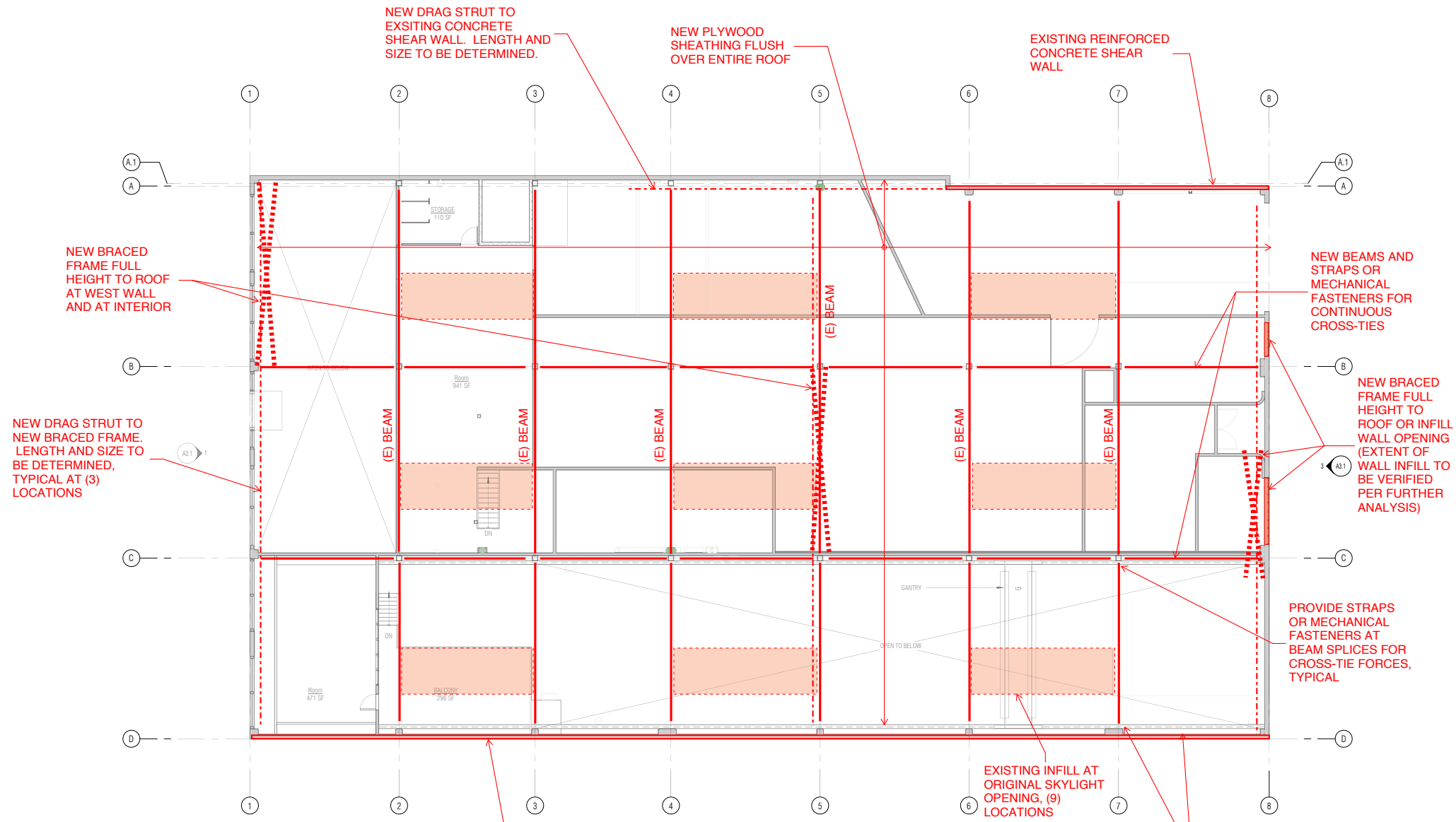
Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. SPREADER BRACKET: Spreader brackets are not used to resist seismic forces. (Commentary: Sec. A.7.16.8. Tier 2: 13.8.6)	
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. GO-SLOW ELEVATORS: The building has a go-slow elevator system. (Commentary: Sec. A.7.16.9. Tier 2: 13.8.6)	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Appendix B

Key Plans


NEW DRAG STRUT TO EXSITING CONCRETE SHEAR WALL. LENGTH AND SIZE TO BE DETERMINED.
NEW PLYWOOD SHEATHING FLUSH OVER ENTIRE ROOF
EXISTING REINFORCED CONCRETE SHEAR WALL
NEW BRACED FRAME FULL HEIGHT TO ROOF AT WEST WALL AND AT INTERIOR
NEW BEAMS AND STRAPS OR MECHANICAL FASTENERS FOR CONTINUOUS CROSS-TIES
NEW BRACED FRAME FULL HEIGHT TO ROOF OR INFILL WALL OPENING (EXTENT OF WALL INFILL TO BE VERIFIED PER FURTHER ANALYSIS)
NEW DRAG STRUT TO NEW BRACED FRAME. LENGTH AND SIZE TO BE DETERMINED, TYPICAL AT (3) LOCATIONS
(E) BEAM
(E) BEAM
(E) BEAM
(E) BEAM
(E) BEAM
PROVIDE STRAPS OR MECHANICAL FASTENERS AT BEAM SPLICES FOR CROSS-TIE FORCES, TYPICAL
EXISTING INFILL AT ORIGINAL SKYLIGHT OPENING, (9) LOCATIONS
EXISTING REINFORCED CONCRETE SHEAR WALL
ADD ANCHORAGE AT CROSS-TIES AND ALONG DIAPHRAGM FOR IN-PLANE AND OUT-OF-PLANE FORCES
STORAGE 110 SF
Room 941 SF
OPEN TO BELOW
GANTRY
Room 471 SF
BALCONY 296 SF
DN

1 ROOF
N.T.S.

1 MEZZANINE
N.T.S.