PAGE&TURNBULL

VAILLANCOURT FOUNTAIN
CONDITIONS ASSESSMENT

SAN FRANCISCO, CALIFORNIA
[24146A]

PREPARED FOR
San Francisco Recreation and Park Department

June 2, 2025

FINAL

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INTRODUCTION

STUDY SUMMARY

Purpose

Page & Turnbull has been retained by the San Francisco Recreation and Park Department (RPD) to prepare a conditions assessment of Vaillancourt Fountain, located in Embarcadero Plaza in San Francisco, California. Vaillancourt Fountain (1971, Armand Vaillancourt) is a monumental reinforced concrete sculpture designed to be an interactive and engaging feature of the public space. This conditions assessment shall serve to inform plans for how to treat the fountain as part of proposed renovation to the public space which includes Embarcadero Plaza. This conditions assessment is further supported by as-built documentation in the form of a laser scan and 3D digital model; a hazardous materials investigation and report; and a non-destructive testing program to identify existing reinforcing within the concrete. Evaluation of the condition of the pumps, which we understand to be non-functional, is outside the scope of this investigation and report.

Summary of Findings

This assessment of the Vaillancourt Fountain included visual assessment of the surface materials; ground-penetrating radar (GPR) scanning to corroborate the reinforcing shown in the historic structural drawings; structural analysis and assessment of the fountain under a variety of load conditions, including seismic; and hazardous materials sampling and analysis. This section summarizes the key findings of each report. The complete findings are included in the full reports in the appendix.

The surface materials exhibit small cracks and spalls found in the pre-cast concrete wall panels and larger cracks and spalls in the hollow concrete “arms.” Ground-penetrating radar (GPR) testing confirmed the presence of reinforcing steel in the precast concrete arms, at 12” on center with 3-1/2” to 4” of cover typically. The GPR testing also confirmed the presence of additional steel at the “elbows” of the arms, although destructive testing would be needed to verify whether the as-built condition of these connections is consistent with the original structural details from ca. 1969 drawings (Appendix C). Most of the deterioration observed appears to be the result of that reinforcing and embedded steel corroding within the concrete, which appears to be exacerbated locally by galvanic corrosion occurring between steel rods and the bronze end caps; in one location observed, the bronze cap and steel rod appear to be missing. That corroding reinforcing is concerning because it reduces the capacity of the fountain to self-support and resist the forces of potential earthquakes. Based on the historic drawings and the results of the GPR survey, the structural engineers modeled and evaluated the expected behavior of the sculpture in a seismic event, and found that even under ideal material conditions, the force demands on the fountain under the Maximum Considered Earthquake (MCE) and the Design Basis Earthquake (DBE) under current codes will likely exceed the capacity of the existing structural system. The modeling suggests that under the conditions of a Maximum Considered Earthquake (MCE) or Design Basis Earthquake (DBE), the structure is likely to yield and deform, beyond that deformation which is already apparent in some of the stress cracking in the concrete. The report further notes that the seismic risks are likely amplified by shallow concrete mat foundation over the soils below the fountain, which are most likely unconsolidated fill and Bay Mud based on geotechnical investigations of neighboring sites. Ideally the mat foundation would “float” on these soils, however these conditions are highly susceptible to a combination of long-term settlement concerns and liquefaction during seismic events.

The hazardous materials testing found lead-based and lead-containing paint in the beige paint present in the pump room, on the pump room enclosure and access hatch, as well as the fountain bridge railings. Asbestos containing materials (ACM) were confirmed in mechanical components, including in the pump room pipe insulation, the boiler rope gasket, and other sampled gaskets. Historic drawings further indicate that asbestos was used to protect the structural steel at the joints of the sculpture, however samples were not taken at these locations due to their sensitivity. The presence of ACM at these joints presents a complication for future treatment and will need to be taken into account. Additionally, several other suspected ACM materials were not accessible during the sampling effort, including the waterproof membrane, the fire doors to the pump room, and the sealants, ribbing material, gaskets, and insulation at the boiler interior, and should be treated as asbestos-containing material (ACM) unless future testing confirms otherwise. Samples of caulking and sealant were also tested for polychlorinated biphenyl (PCB) content, but no PCBs were found.

While assessment of the mechanical and electrical systems was outside the scope of this team’s investigation, a prior report by RPD maintenance staff as provided and consulted to provide additional information about the conditions of those systems. This report, which is included as Appendix H, indicates that both the mechanical and electrical systems have exceeded their serviceable life and require replacement. Additionally, the vault where much of the infrastructure is located is noted to be an unsafe confined space according to current Occupational Safety and Health Administration (OSHA) standards and is thus no longer accessible to maintenance staff. The below-grade waterproofing for the fountain basin and the vault have failed, leading to water infiltration and flooding which further undermine the structure, systems, and safety of the fountain and its supporting infrastructure.

Overall, Vaillancourt Fountain exhibits a range of deterioration that must be addressed for it to continue to be enjoyed safely. That said, the fountain does not appear to have yet deteriorated beyond repair, though certain systems and components have, and there may be a variety of approaches to treatment to be explored in future phases that could stabilize and restore it.

Document Organization

Following in this Introduction, this report begins with a discussion of the historic context and significance of the fountain, as well as identification if its character-defining features and historic photographs. The report continues with an assessment of the existing conditions of the fountain, followed by a summary of the conclusions of that assessment. Specific treatment recommendations for the fountain are outside the scope of this report, as future treatment approaches will be dependent on decisions regarding the future of the fountain more generally.

PROJECT INFORMATION

Location

Embarcadero Plaza (Block/Lot 0233/035)
Market & Steuart Streets
San Francisco, CA 94105

Project Methodology

Page & Turnbull's staff and consultants conducted two site visits for the purposes of documentation and testing: the first on Friday, February 14, 2025, and the second on Tuesday, February 24, 2025. During the site visit on February 14, consultants conducted a laser scan of the fountain for the purposes of as-built documentation; took small, 1"-diameter samples for the purposes of hazardous materials analysis; and conducted a ground-penetrating radar (GPR) survey of the structure to identify embedded reinforcing within the concrete. On February 24, staff from Page & Turnbull's Preservation Architecture Studio conducted a visual and limited hands-on, non-destructive conditions assessment of the fountain, identifying areas of deterioration and recording them through annotated drawings and digital photographs. DCI conducted a site visit on April 8 to observe the existing conditions and visually evaluate the structure, a document review process of the historic drawings and as-built 3-D model of the fountain, and performed computer modeling to analyze the performance of the system under different load conditions.

Project Team

Owner/Client

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HISTORICAL CONTEXT

HISTORICAL CONTEXT SUMMARY

Vaillancourt Fountain was designed by Canadian sculptor Armand Vaillancourt and completed in 1971. The fountain is located at the northeast corner of the Embarcadero Plaza, which was designed by landscape architect Lawrence Halprin in a joint venture with architects Mario Ciampi and John Savage Bolles and fully completed in 1972.[1] The fountain and Embarcadero Plaza were funded and constructed as part of the Golden Gateway redevelopment project (officially, Embarcadero-Lower Market Project Area E-1), under the auspices of the San Francisco Redevelopment Agency (SFRA). Vaillancourt Fountain is in the City and County of San Francisco Civic Art Collection (Accession No. 1971.46), which is managed by the San Francisco Arts Commission.[2]

Vaillancourt Fountain was conceived as one element of a large urban open space within the Golden Gateway redevelopment project area. At the same time Halprin, Ciampi, and Bolles were designing Embarcadero Plaza, Halprin was also working on a major comprehensive redesign of Market Street. Halprin's early concept designs for the plaza include a large site for a monumental fountain, in keeping with his experimentations with urban open space and fountains as locations of interactive "participation" and movement.[3] The fountain itself was selected through an invited design competition with entries from five internationally renowned sculptors.

All five submissions to the design competition were monumental Abstract Expressionist fountains. The jury, which included Halprin, Ciampi, and Bolles, selected Vaillancourt's design stating that they felt the design would "bring into complete play all the elements of plasticity and movement and delight that the great fountains achieved. It will combine an endless variety of effects of water, motion, light, sound, and sculpture into complete unity […] it will involve spectators and encourage their participation in the Plaza."[4] In particular, the fountain was expected to have a dynamic, kinetic interplay with the Embarcadero Fountain behind as cars could be seen to move through the fountain.

Vaillancourt's fountain design can be described as part of the broad Abstract Expressionist movement in post-World War II art, which is decidedly non-figurative. Jackson Pollock and Mark Rothko, among many others, were important early figures particularly in the New York School and

[1] Most commonly known as Vaillancourt Fountain, the fountain was sometimes called the "Grand Fountain," "Embarcadero Fountain," or "*Québec Libre!*"
[2] "The Embarcadero Fountain," San Francisco Arts Commission, accessed February 19, 2025, https://kiosk.sfartscommission.org/objects-1/info/1460.
[3] Lawrence Halprin Collection, Architectural Archives, University of Pennsylvania, Notebooks (1966), 014.III.B.17.16-20.
[4] Alfred Frankenstein, "A Concrete, Environmental Event" *San Francisco Examiner*, April 16, 1967, 25.

are associated with painting, but the movement also extended to sculpture, including notable figures such as David Smith, Isamu Noguchi, and Louis Nevelson (*Sky Tree* by Nevelson is located in the Embarcadero Center). The term Brutalism—used to describe a late twentieth century architectural style characterized by the use of exposed concrete and plastic forms—has not typically been used within the art world. However, Vaillancourt Fountain makes expressive use of exposed concrete in a manner that is aligned with Brutalist architecture. The fountain is also an early example of monumental, participatory urban fountains constructed across the country in the 1960s through 1980s.

EXISTING HISTORIC STATUS & PRIOR EVALUATIONS

The property is not currently listed in the National Register of Historic Places or as a local Article 10 Landmark. According to the San Francisco Property Information Map, Embarcadero Plaza (0233/035) is currently assigned a Planning Department Historic Resource Status of "B - Unknown/Age Eligible."[5] However, Embarcadero Plaza is listed in the California Register of Historical Resources (California Register) as a contributor to the Market Street Cultural Landscape Historic District, and Vaillancourt Fountain is a contributing feature.[6]

Page & Turnbull has evaluated Vaillancourt Fountain for historic eligibility as an individual object in a Historic Resources Report (HRR), which was submitted to RPD on May 15, 2025. The HRR has not yet been reviewed by the San Francisco Planning Department. The findings of the HRR conclude that Vaillancourt Fountain is eligible for listing in the National Register and California Register as an individual object under Criterion A/1 (Events) and Criterion C/3 (Design) with a period of significance of 1971. Under Criterion A/1, Vaillancourt Fountain is significant as one of the early examples of public art sponsored by the San Francisco Redevelopment Agency (SFRA), as the result of one of only three public art design competitions run by SFRA, and as the most publicly prominent public artwork conceived and funded through SFRA as part of their broader public art program—which significantly contributed to the range of public art in San Francisco and influenced the 1985 Downtown Plan and its on-going 1%-for-art program. Under Criterion C/3, Vaillancourt Fountain is significant as a distinctive example of a late twentieth century monumental and participatory urban fountain that expresses the characteristics of the Abstract Expressionist movement in sculpture and Brutalist

[5] San Francisco Planning Department, Property Information Map, https://sfplanninggis.org/pim/.
[6] January Tavel, ICF, Department of Parks and Recreation (DPR) 523 forms, Justin Herman Plaza (March 30, 2016), 12, included in in "Appendix 6: Cultural Resources Supporting Information" of the Better Market Street Project Draft Environmental Impact Report (February 27, 2019), Planning Department Case No. 2014.0012E, State Clearinghouse No. 2015012027, which was accessed online February 2025, https://sfplanning.org/project/better-market-street-environmental-review-process#info; and "Appendix E: Correspondence" in *Better Market Street Project: Final Environmental Assessment with Finding of No Significant Impact and Final Section 4(f) Evaluation*, prepared by the State of California Department of Transportation (September 2020), PDF pages 251 and 256 of 532.

movement in architecture. Despite alterations to the setting of the fountain, including the demolition of Embarcadero Freeway and alterations to Embarcadero Plaza, the fountain retains sufficient historic integrity to convey its significance.

CHARACTER-DEFINING FEATURES

For a property to be eligible for national or state historic designation, the essential physical features (or character-defining features) that enable the property to convey its historic identity and reason for significance must be evident. These distinctive character-defining features are the physical traits that commonly recur in property types and/or architectural styles, or that convey an association with significant persons or patterns of events. Characteristics can be expressed in terms such as form, proportion, structure, plan, style, materials, and spatial relationships. To be eligible, a property must clearly contain enough of those characteristics, and these features must also retain a sufficient degree of integrity.

The character-defining features of the Vaillancourt Fountain include:

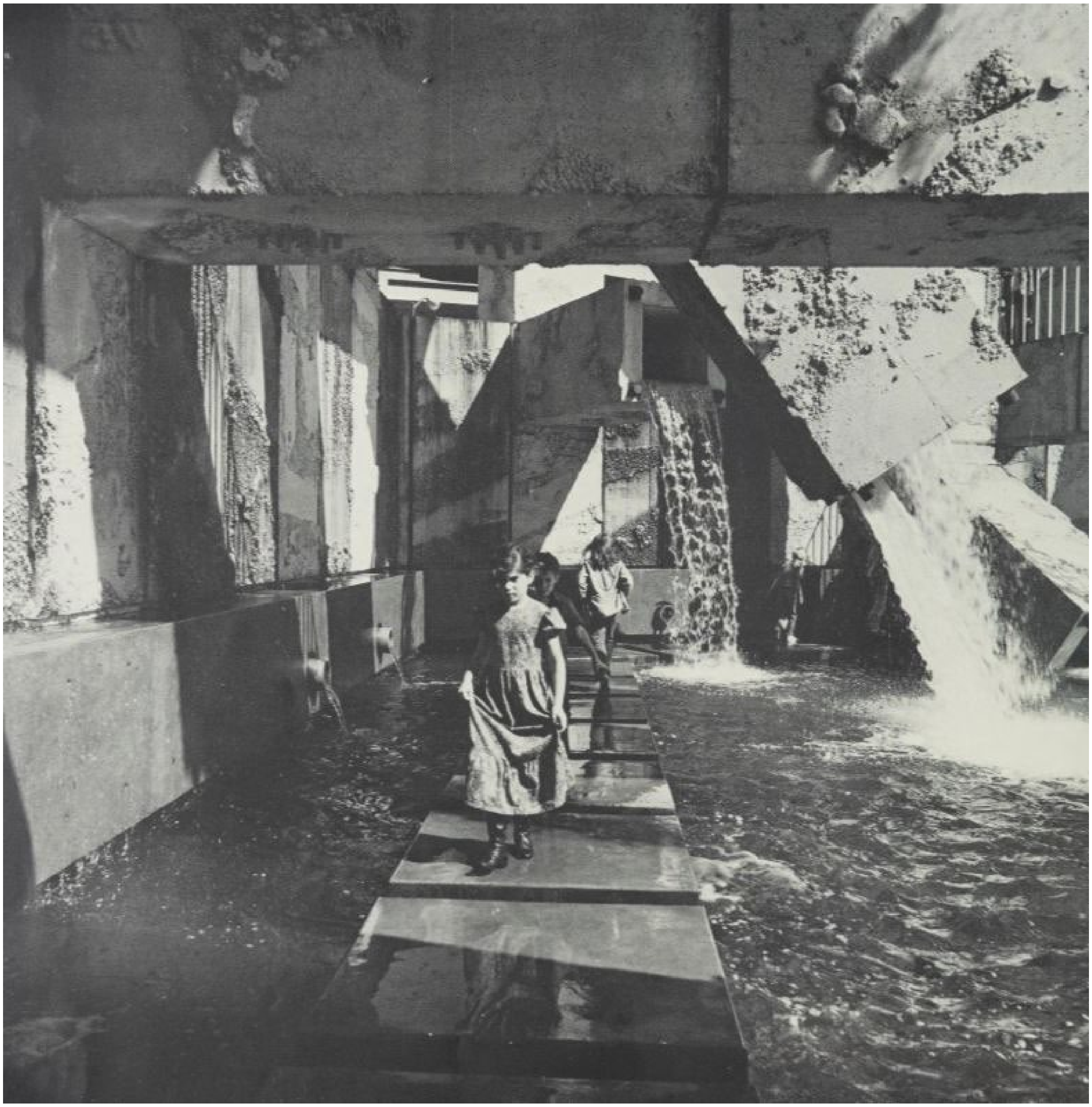
- Siting within Embarcadero Plaza
- Angular, irregular shaped concrete pool with stepped outer ledge
- Square, concrete “lily pad” path through the fountain
- Configuration and assemblage of multiple square, pre-cast concrete hollow core “arms” at various projecting angles with fourteen channels for water
- Precast-concrete panel hollow wall along the north and east sides, with narrow water collection pool
- Exposed, rough texture of the pre-cast concrete elements
- Visible metal bolts
- Two metal stairs accessing pedestrian viewing platforms with metal railings.

HISTORIC PHOTOGRAPHS

Vaillancourt Fountain, ca.1970, looking east toward the Ferry Building. Source: San Francisco Public Library.

Vaillancourt Fountain ca.1971-1973. Source: San Francisco Redevelopment Agency.

East wall of Vaillancourt Fountain, ca.1970. Source: San Francisco Public Library.



Vaillancourt Fountain ca.1971-1973. Source: San Francisco Redevelopment Agency.

SURFACE MATERIALS CONDITIONS ASSESSMENT

The following section contains Page & Turnbull's evaluation of the visible surface materials of the Vaillancourt Fountain's character-defining features, particularly the concrete components and features and the steel stairs and railings. For evaluation of the structural components and systems, please refer to Appendix G.

CONDITIONS ASSESSMENT RUBRIC

The fountain element conditions within this section are assessed according to a "good," "fair," and "poor" rating system as defined below, and further described according to the glossary of deterioration which follows the rating system.

Good (G)

The element/feature is intact, structurally sound, and performing its intended purpose. The component needs no repair or rehabilitation, but only routine or preventative maintenance, including cyclical cleaning, painting, and maintenance of sealants and/or caulking.

Fair (F)

The element/feature is in fair condition if either of the following conditions are present:

- There are early signs of wear, failure, or deterioration, though the component and its features are generally structurally sound and performing their intended purpose; or
- There is limited failure of a component of an element or feature.

Poor (P)

The element/feature is in poor condition if any of the following conditions are present:

- The features are no longer performing their intended purpose; or
- Features are missing; or
- Deterioration or damage affects more than 25% of the component; or
- The element or feature shows signs of imminent failure or breakdown.

Unknown (U)

The assembly or feature was not accessible for assessment or not enough information is available to make an evaluation.

GLOSSARY OF DETERIORATION

BIOLOGICAL GROWTH	E.g. algae, moss, lichen, mildew, mold, or mushrooms.
CORROSION	**Minor:** Surface corrosion, no pitting or section loss; **Moderate:** Some pitting and scaling, but no significant section loss; **Severe:** Deep pitting and/or greater than 10% section loss.
CRACK	An individual fissure, clearly visible to the naked eye, resulting from separation of one part from another. **Hairline:** width less than .004 inches (.1mm); **Small/Fine:** width greater than .004 inches but less than .04 inches (.1 mm to 1 mm); **Medium:** width greater than .04 inches but less than .08 inches (1 mm to 2 mm); **Large:** wider than .08 inches (2 mm).
DISCOLORATION	Change of the material color in hue, value, and/or chroma. Includes moist areas characterized by darkening due to dampness; bleaching resulting from chemical or environmental weathering of the material surface; and staining, such as from deposits of oxides from metallic elements.
EFFLORESCENCE	Powdery salt on surface caused by migration of water through material; especially on masonry.
FAILING PAINT	Missing paint, peeling, crazing, and bubbling.
GRAFFITI	Intentional and illicit engraving, scratching, cutting, or application of paint, ink, or similar matter on the material surface.
HOLES	**Small:** Less than 1” diameter; **Medium:** 1”–3” diameter; **Large:** 3”–6” diameter; **Extra Large:** Greater than 6” diameter.
INCIPIENT SPALL	Material that is at risk of breaking, fragmenting, loosening, or falling off; especially on masonry.
MAP CRACKING	Multiple fine, connected cracks; especially on plaster
MECHANICAL DAMAGE	Damage from external sources, e.g. gouges.
SOILING	Deposit of a very thin layer of exogenous particles, e.g. soot, soil, etc., giving a dirty appearance to the material surface.
SPALL	Loss of material; especially on masonry.

CONDITIONS ASSESSMENT

The surface materials of Vaillancourt Fountain are generally in fair condition overall. The primary material for the elements of the fountain is reinforced concrete used in a variety of shapes and applications. Secondary materials observed include bronze end caps, steel stairs and railings for accessing the pedestrian viewing platforms, and the glass tubes of the integrated light fixtures. The following conditions assessment is generally organized by character-defining feature, with the addition of the integral lighting. The observed conditions are further illustrated on the Conditions Diagrams included as Appendix D.

Concrete Pool

According to the original design drawings (Appendix A) and pool and plaza structural drawings (Appendix B), the structure of the concrete pool includes a concrete pad over drainage rock, topped with a concrete slab that is sloped toward a series of drains within the plan of the pool. This pool structure appears to be in generally fair condition, with some settlement cracking of typically medium width. At the cracks, and also at joints in the concrete, there is biological growth, including but not limited to moss and grass. There is also soiling of the surface of the pool, particularly with the fountain turned off as it was at the time of survey. The metal grate over the sump pit on the north side of the pool is exhibiting surface corrosion that appears to be occurring underneath either a galvanized material or coating, resulting in a bubbling effect with relatively circular patterns of corrosion. Additionally, a maintenance summary provided by RPD notes that the existing waterproofing membrane in the basin has failed, resulting in water intrusion to the structure and the potential for associated structural damage.

Typical overall condition of concrete pool, looking north.

Typical condition of concrete pool and connections between concrete pool and hollow pre-cast concrete “arms,” showing cracking, biological growth, soiling, and corrosion at connections.

Typical corrosion at metal grate over sump pit.

Concrete “Lily Pad” Pedestals

The concrete pedestals are generally in good condition, exhibiting some chipping at the edges and soiling, but otherwise appear sound without significant cracking, incipient spalls, or other spalling.

Typical overall condition of concrete “lily pad” pedestals, north side of fountain, looking west.

Typical overall condition of concrete “lily pad” pedestals, east side of fountain, looking southeast.

Typical overall condition of concrete “lily pad” pedestals, north side of fountain, looking east.

Hollow, Pre-Cast Concrete Arms

The concrete of the pre-cast concrete arms of the fountain is generally in fair to poor condition. Most exhibit some combination medium to large cracks, as well as spalls and incipient spalls. The majority of this deterioration appears to be a result of moderate to severe corrosion of the steel reinforcing within the pre-cast sections. A pattern of more significant cracking was also observed at high stress locations such as at structural transitions and connections. Exposed edges and both interior and exterior corners appear the most vulnerable to this type of deterioration. In particular, there is advanced corrosion in most of the locations where the bronze caps sit at the ends of the steel reinforcing, suggesting that galvanic corrosion may be an exacerbating factor, especially in the marine environment. In on location the cap is missing, and the steel rod within could not be verified. There is ferrous staining in numerous locations where iron oxides have been carried down the face of the elements with the flow of water. There is biological colonization in the form of algae or lichen colonies on the surface of the concrete, as well as limited observed plant colonization in the form of ferns at the joints between the pre-cast sections, which is indicative of retained or infiltrating moisture. There is dark soiling running down from many of the horizontal or nearly horizontal surfaces of the arms. There is also localized evidence of graffiti, primarily in the form of overpaint, in certain areas that are accessible to pedestrians either from the ground, or from the stairs and viewing platforms.

Overall view of fountain, particularly the hollow, pre-cast concrete “arms,” looking north.

Overall view of fountain, particularly the hollow, pre-cast concrete “arms,” looking northeast.

Overall view and condition of hollow, pre-cast concrete arms of fountain, looking east.

Overall view and condition of hollow, pre-cast concrete arms of fountain, looking north.

Central crack at lower side of projecting column, typical condition. Northeast elevation pictured.

Incipient spalling and cracking at joint of vertical column, typical condition. Northeast elevation pictured.

Spalling at the outer corners of the projecting column, typical condition. Image taken facing south.

Incipient spall and cracking at joint of projecting column, typical condition.

Cracking at the joint along the underside and side of projecting column, typical condition.

Corrosion of metal fixtures, typical condition. Photo facing west from viewing platform.

Incipient spalling and cracking at joint of projecting column, typical condition. Biological growth within several cracks.

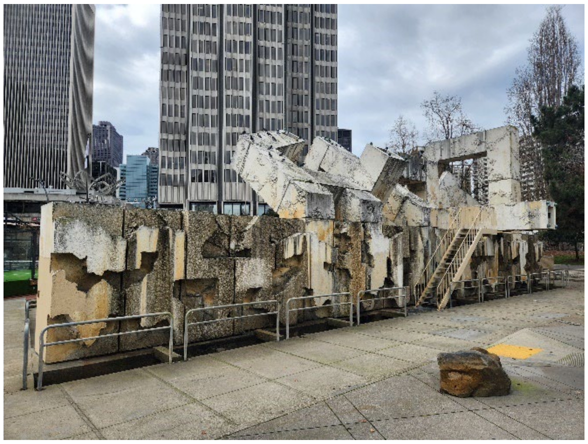
Cracking at joint along the underside of projecting column, typical condition.

Spalling, incipient spalling, cracking, and corrosion of copper fixtures. Typical condition.

Incipient spalling at upper joint of projecting column. Typical condition.

Hollow, Pre-Cast Concrete Panel Wall

Observation of the pre-cast panel wall of the fountain was limited to the visible faces of each section, but from these surfaces it appears to be in generally fair condition, exhibiting early signs of deterioration. There are areas of crazing with hairline to small cracks, particularly in the irregular projections on the rear face of the panels; these cracks are most likely the result of surface shrinkage during the drying and curing process. Some small cracks run from edge to edge along a non-linear, irregular path, which could be from a variety of causes, including thermal stress or settlement. There are some instances of spalls and incipient spalls, most often at the upper corners where reinforcing, anchors, or other ferrous embedments have corroded. There is widespread discoloration from a variety of sources: efflorescence, soiling, ferrous staining, localized graffiti (and overpaint), and suspected mineral encrustation. There is also biological colonization of the surface primarily from algae and/or lichen, indicative of retained moisture which can contribute to the corrosion of reinforcing in the concrete.



Overall view of the hollow, pre-cast concrete panel wall, east side of fountain looking northwest.

Overall view of the hollow, pre-cast concrete panel wall, east side of fountain looking northeast.

Hairline crack, typical condition. Southern edge of the northeast elevation pictured.

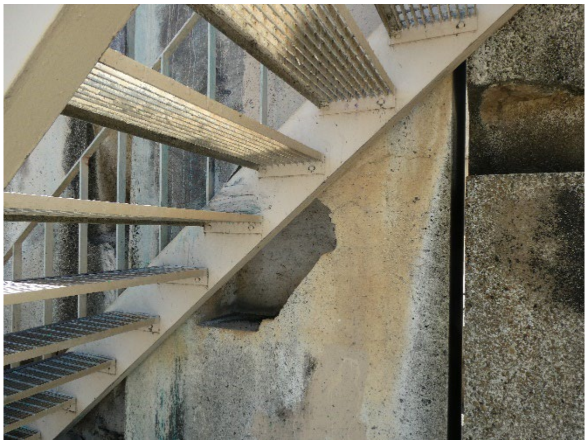
Cracks at base, typical condition. Northeast elevation pictured.

Incipient spalling adjacent to metal fixture, typical condition. Northeast elevation pictured.

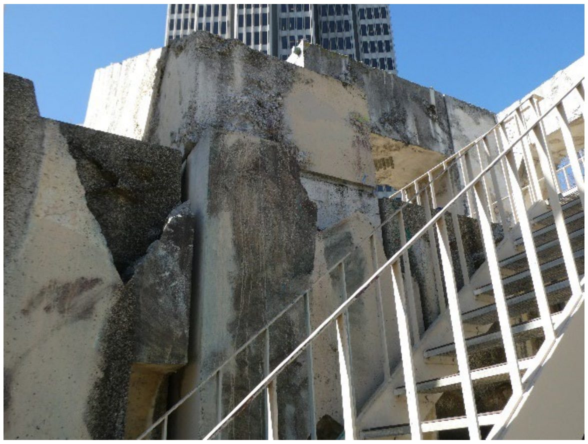
Incipient spalling at the joint beneath metal stair platform, typical condition. Northeast elevation pictured.

Steel Stairs, Viewing Platforms, & Railings

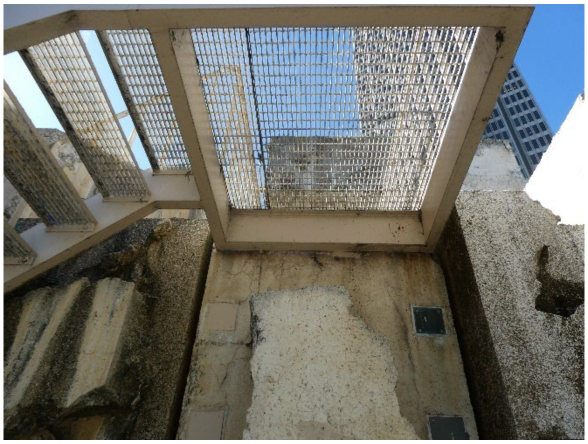
The original steel stairs, viewing platforms, and railings are painted a light buff color similar to the color of the finished concrete, and are in generally good condition. There is some soiling on the underside of the stairs and landings, as well as some localized surface corrosion and minor paint loss. Where the steel viewing platforms connect to the concrete structure, there are incipient spalls and evidence of corrosion, however it is not clear from only visual assessment whether the corroding member is the connection between the platform and the concrete or just other reinforcing within the concrete. This condition may compromise the long-term stability and safety of the platforms and should be evaluated further, particularly if the platforms are to remain accessible.



Typical condition of the underside of the painted steel stairs on the east side of the fountain, exhibiting soiling but minimal if any corrosion.



Typical overall condition of painted steel stairs on the east side of the fountain.

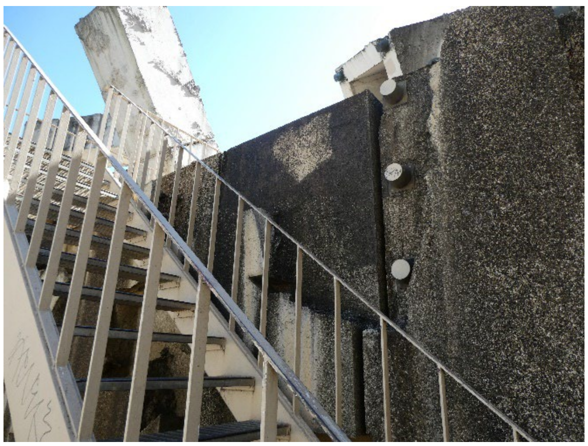


Typical condition of underside of east viewing platform landing and stairs.

Typical condition of platform and landing railings.

Detail of spalled concrete at the edge of the railing attachment.

Typical condition of the painted steel stairs with soiling, and some minor surface corrosion at edges of the landing frame.



Typical condition of the painted steel stairs to the viewing platforms.

Detail of typical cracking and spalling around the bottom of the viewing platforms due to corrosion of the supporting and reinforcing steel.

Glass Cylinders of Light Fixtures

The light fixtures do not appear to still be functional, and a few of the glass cylinders have chipped or broken off (approximately 6 of the latter), however most of the glass cylinders are intact and appear to be in otherwise good to fair condition. Some have been partially painted where graffiti has been covered. The electrical lamping components of the light fixtures were not evaluated as part of this assessment, however the maintenance report from RPD indicates that the lighting system has deteriorated beyond repair and requires replacement to restore functionality.

Typical glass cylinders on the underside of the hollow, pre-cast concrete arms.

Detail of glass cylinders in the hollow pre-cast concrete arms, associated cracking, and efflorescence.

Detail of glass cylinders in the hollow pre-cast concrete arms, associated cracking, and efflorescence.

Detail of broken and painted glass cylinders in the hollow pre-cast concrete arms.

CONCLUSIONS

Vaillancourt Fountain exhibits a range of deterioration that must be addressed for it to continue to be enjoyed safely. There is widespread corrosion of the structural steel, which in turn is causing cracking and spalling of the surface concrete – as that concrete coverage fails, it allows yet more water to reach the reinforcing and accelerates the corrosion, particularly in the marine environment of the San Francisco Bay. As reported by RPD maintenance staff, the mechanical and electrical systems of the fountain, including the lighting and pumps for the fountain, are beyond their serviceable life and the pump room is no longer compliant with OSHA standards as a confined space, and will require replacement to restore those elements of the fountain.

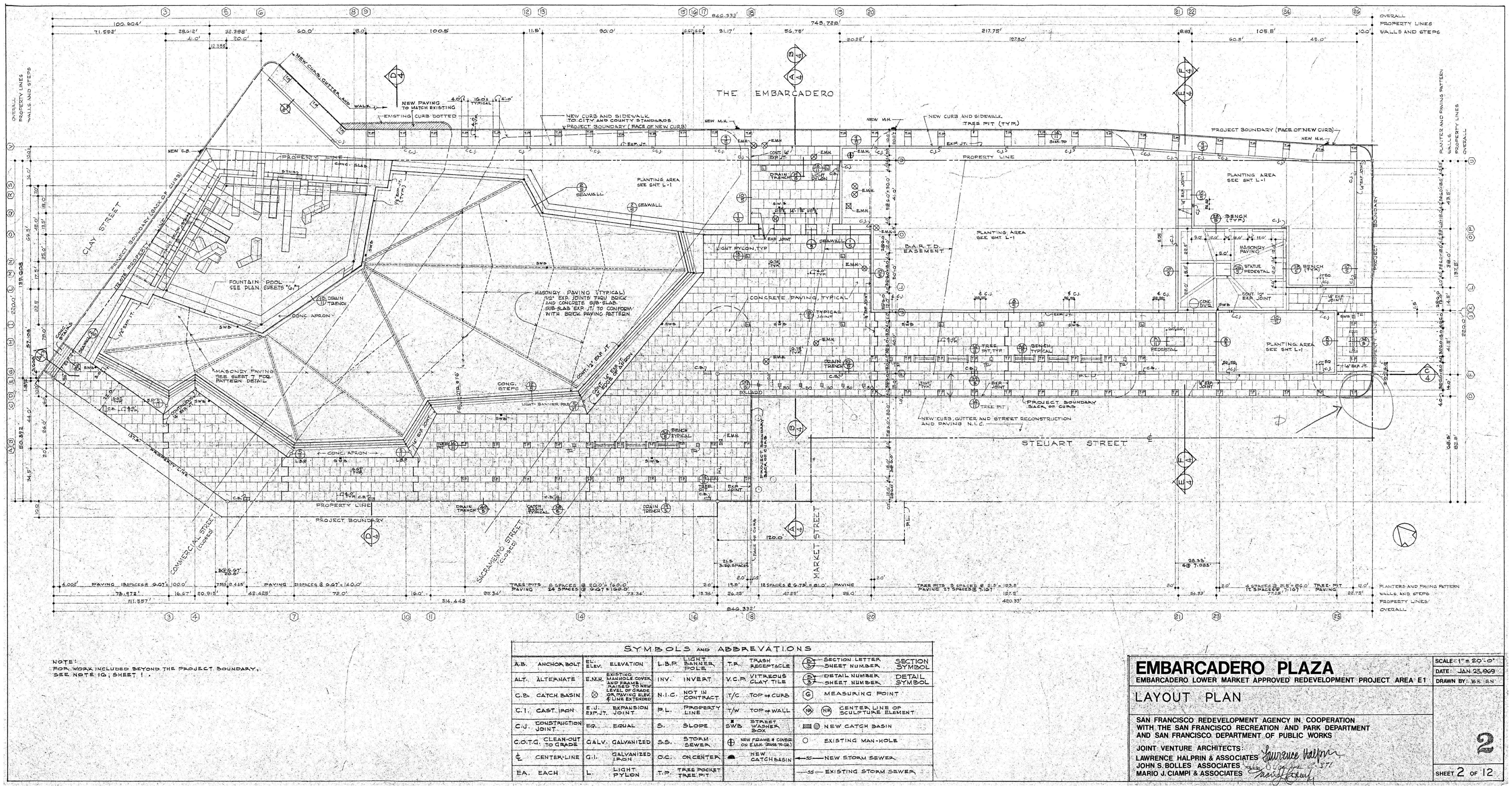
Of greatest concern is the deteriorated condition of the structural system, which even under ideal material conditions is insufficient to resist the force demands on the fountain under the Maximum Considered Earthquake (MCE) and the Design Basis Earthquake (DBE) under current codes. The modeling, which used idealized material properties and cross-sections, suggests that under the conditions of a Maximum Considered Earthquake (MCE) or Design Basis Earthquake (DBE), the structure is likely to experience yielding, deformation, and localized failure. The observed corrosion of the reinforcing structural steel further reduces the capacity of the structural system beyond its original design capacity, and increases the risk of damage or failure during an earthquake. The risks to the structural system would likely be further amplified by the soil conditions at the site since the foundation is a mat slab over unconsolidated fill and Bay Mud.

The presence of hazardous materials, including lead and asbestos in the coatings, fireproofing, gaskets, and waterproofing, will complicate efforts at repair and restoration and require remediation and specialized environmental practices during the work to protect the workers and the public (Appendix F).

However, the fountain overall does not appear to have yet deteriorated beyond repair even as individual systems and components have. A variety of treatment approaches may be explored in future scopes of work to reinforce and upgrade the structural system, remediate the hazardous materials, replace the supporting infrastructure (e.g. pumps and pump room), treat the existing corrosion (both visible and concealed), repair the cracked and spalled concrete, and potentially inhibit future corrosion through separation of dissimilar metals and the use of certain coatings and/or passive cathodic protection.

APPENDIX

A. 1969 ORIGINAL DESIGN DRAWINGS
B. 1969 POOL AND PLAZA STRUCTURAL DRAWINGS
C. 1969 SCULPTURE STRUCTURAL DRAWINGS
D. CONDITION DIAGRAMS
E. REINFORCING INVESTIGATION REPORT
F. HAZARDOUS MATERIALS TESTING REPORT
G. STRUCTURAL ASSESSMENT REPORT
H. RPD MAINTENANCE REPORT



MARKET ST

Original Design Drawings

EMBARCADERO PLAZA

Notes:

1. This drawing is a reproduction of an original January 25, 1969 construction drawing by Joint Venture Architects (Lawrence Halprin & Associates, John S. Bolles Associates, Mario J. Ciampi & Associates). The original is copyrighted and held by The Lawrence Halprin Collection, the Architectural Archives, University of Pennsylvania. The drawing has not been field verified and is reproduced at 1"=32'-0".

5.2

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MARKET STREET

EMBARCADERO PLAZA TO OCTAVIA STREET

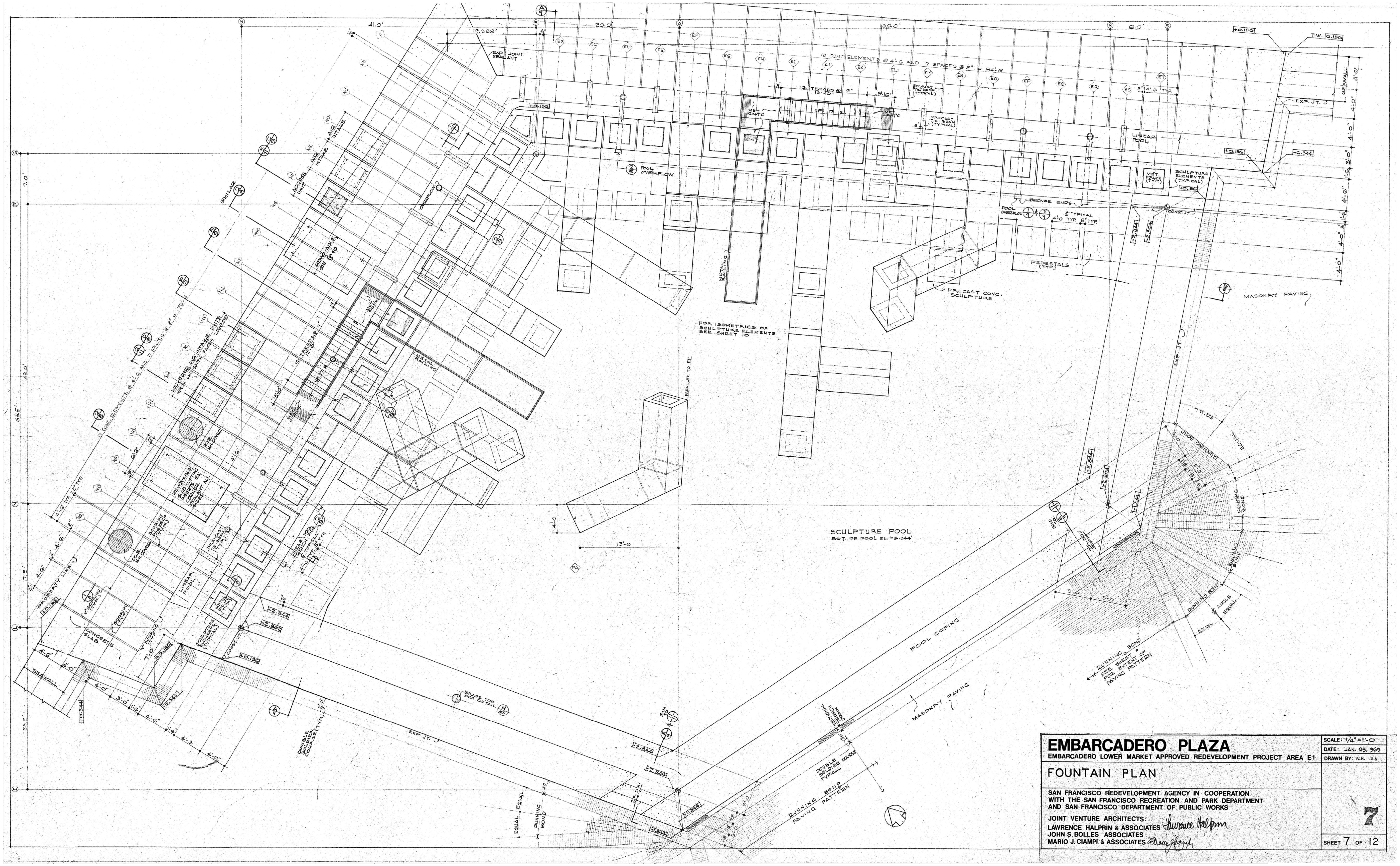
SAN FRANCISCO COUNTY

SAN FRANCISCO

MARKET STREET RECORDING PROJECT, 2022

NATIONAL PARK SERVICE

UNITED STATES DEPARTMENT OF THE INTERIOR



MARKET ST

Original Design Drawings

EMBARCADERO PLAZA

Notes:
1. This drawing is a reproduction of an original January 25, 1969 construction drawing by Joint Venture Architects (Lawrence Halprin & Associates, John S. Bolles Associates, Mario J. Ciampi & Associates).
The original is copyrighted and held by The Lawrence Halprin Collection, the Architectural Archives, University of Pennsylvania. The drawing has not been field verified and is reproduced at 5/32"=1'-0".

5.3

LIBRARY OF CONGRESS INDEX NUMBER

HISTORIC AMERICAN LANDSCAPES SURVEY
CA-164

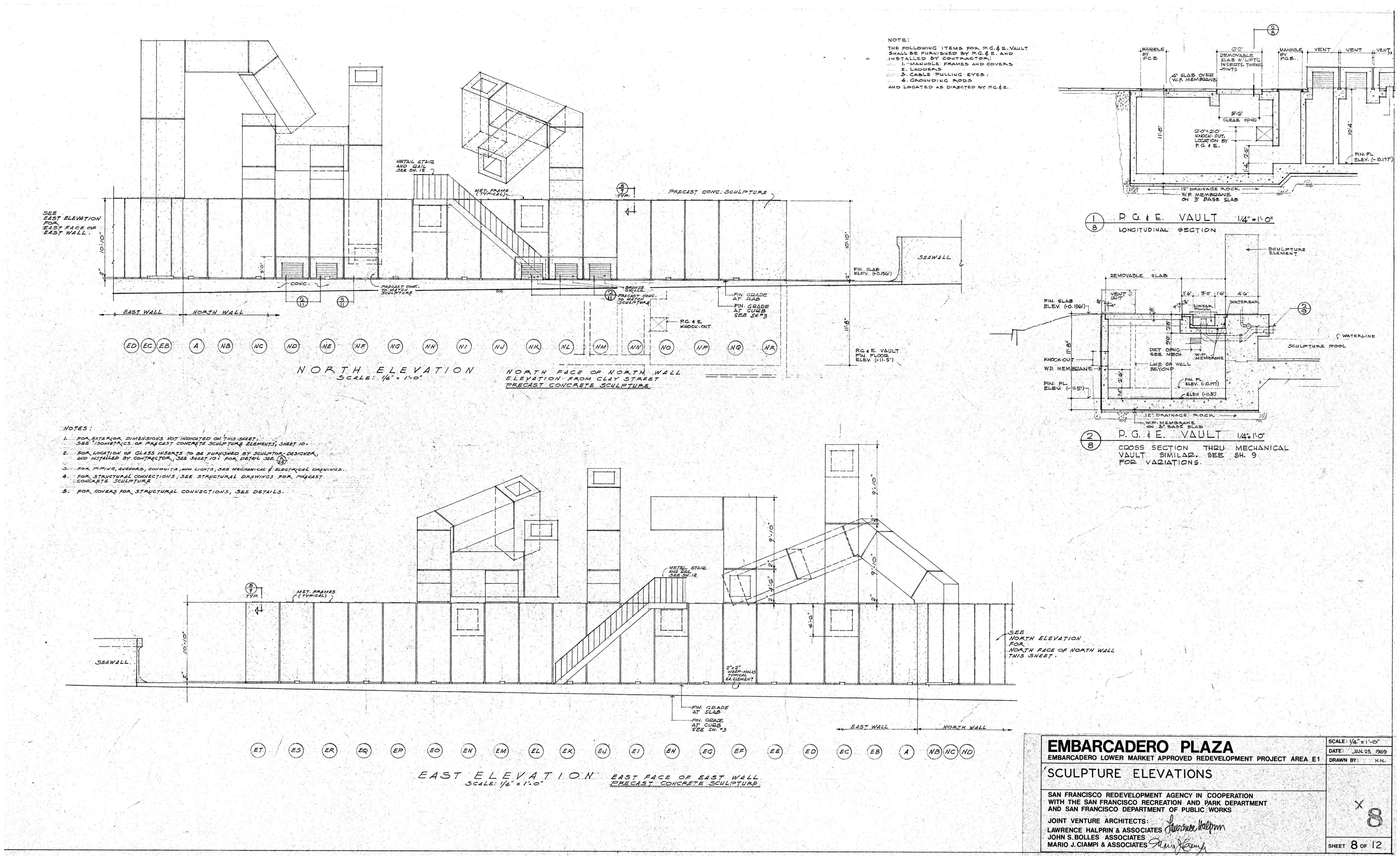
SHEET
21 OF 34

MARKET STREET
EMBARCADERO PLAZA TO OCTAVIA STREET
SAN FRANCISCO COUNTY

CALIFORNIA

SAN FRANCISCO

MARKET STREET
RECORDING PROJECT, 2022
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR



MARKET ST Original Design Drawings
EMBARCADERO PLAZA

Notes:
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5.4

MARKET STREET
RECORDING PROJECT, 2022
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

MARKET STREET
EMBARCADERO PLAZA TO OCTAVIA STREET
SAN FRANCISCO COUNTY

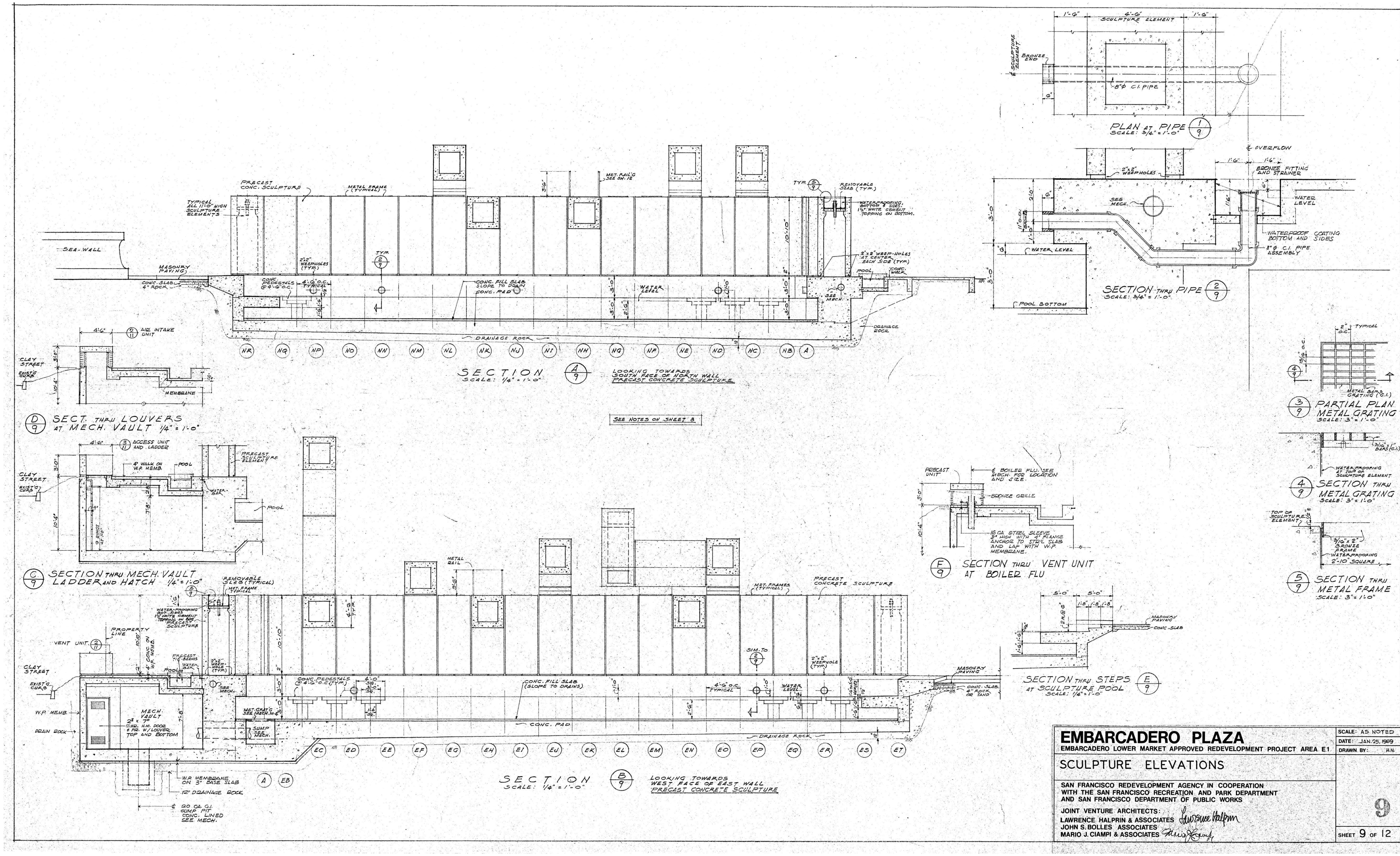
SAN FRANCISCO

CALIFORNIA

SHEET 22 OF 34

HISTORIC AMERICAN LANDSCAPES SURVEY CA-164

LIBRARY OF CONGRESS INDEX NUMBER



MARKET ST

Original Design Drawings
EMBARCADERO PLAZA

Notes:
1. This drawing is a reproduction of an original January 25, 1969 construction drawing by Joint Venture Architects (Lawrence Halprin & Associates, John S. Bolles Associates, Mario J. Ciampi & Associates). The original is copyrighted and held by The Lawrence Halprin Collection, the Architectural Archives, University of Pennsylvania. The drawing has not been field verified and is reproduced at 5/32"=1'-0".

5.5

LIBRARY OF CONGRESS INDEX NUMBER

HISTORIC AMERICAN LANDSCAPES SURVEY
CA-164

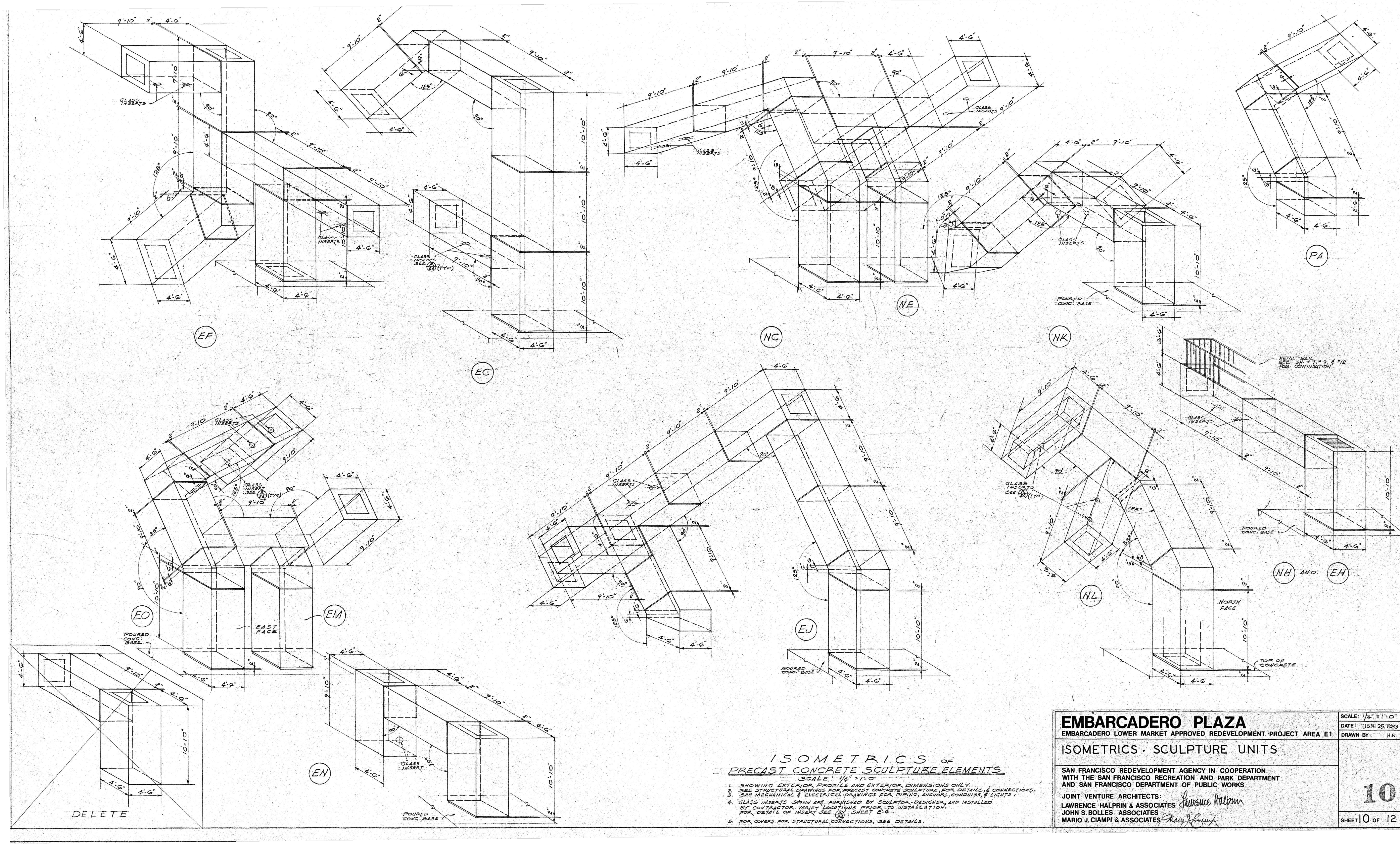
SHEET
23 OF 34

CALIFORNIA

MARKET STREET
EMBARCADERO PLAZA TO OCTAVIA STREET
SAN FRANCISCO COUNTY

SAN FRANCISCO

MARKET STREET RECORDING PROJECT, 2022
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR



MARKET ST

Original Design Drawings

EMBARCADERO PLAZA

Notes:

1. This drawing is a reproduction of an original January 25, 1969 construction drawing by Joint Venture Architects (Lawrence Halprin & Associates, John S. Bolles Associates, Mario J. Ciampi & Associates). The original is copyrighted and held by The Lawrence Halprin Collection, the Architectural Archives, University of Pennsylvania. The drawing has not been field verified and is reproduced at 5/32"=1'-0".

5.6

LIBRARY OF CONGRESS INDEX NUMBER

HISTORIC AMERICAN LANDSCAPES SURVEY CA-164

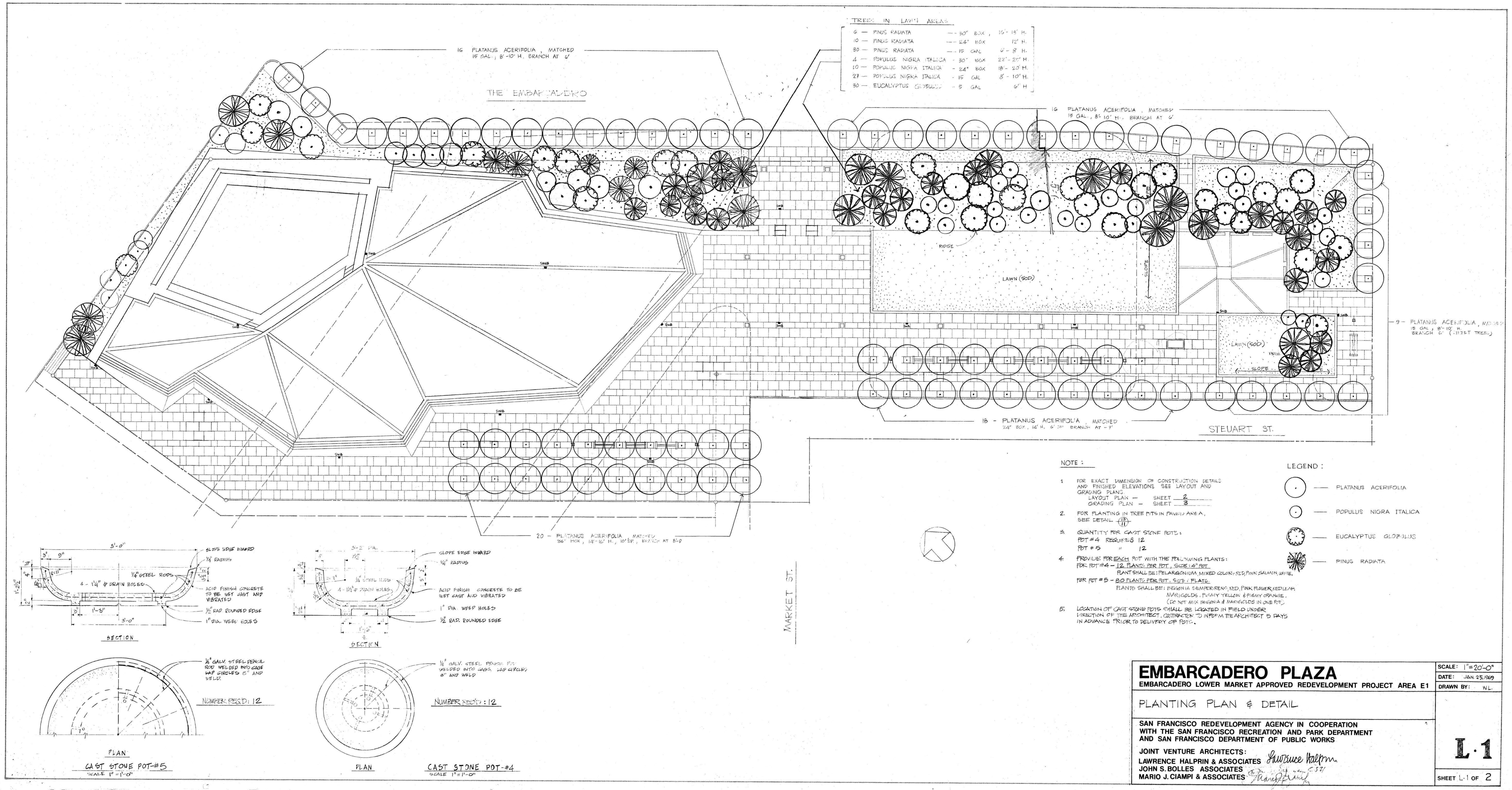
SHEET 24 OF 34

CALIFORNIA

MARKET STREET
EMBARCADERO PLAZA TO OCTAVIA STREET
SAN FRANCISCO COUNTY

SAN FRANCISCO

MARKET STREET RECORDING PROJECT, 2022
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR



MARKET ST — Original Design Drawings

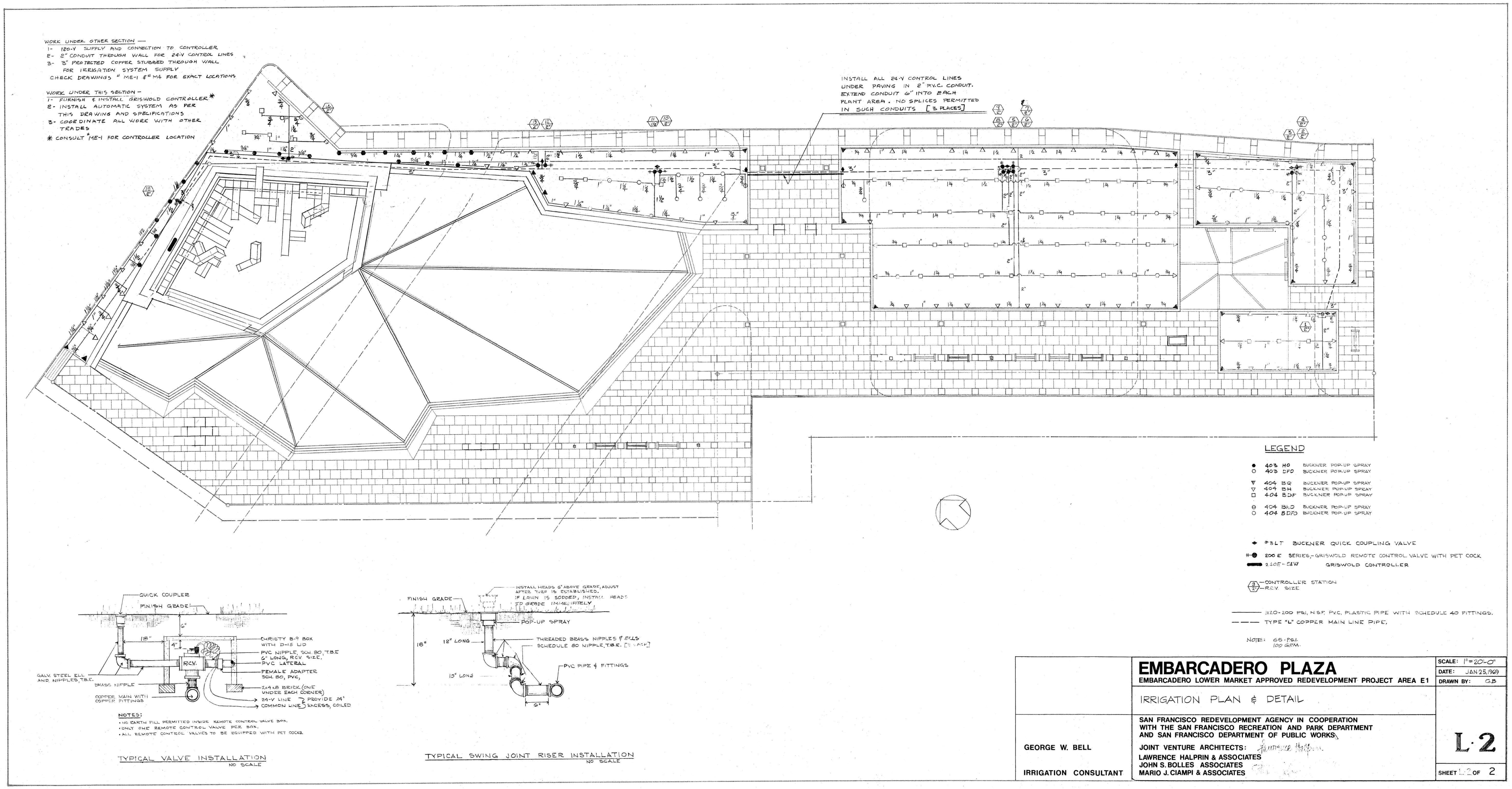
EMBARCADERO PLAZA

Notes:
1. This drawing is a reproduction of an original January 25, 1969 construction drawing by Joint Venture Architects (Lawrence Halprin & Associates, John S. Bolles Associates, Mario J. Ciampi & Associates). The original is copyrighted and held by The Lawrence Halprin Collection, the Architectural Archives, University of Pennsylvania. The drawing has not been field verified and is reproduced at 1"=32'.

MARKET STREET
EMBARCADERO PLAZA TO OCTAVIA STREET
SAN FRANCISCO COUNTY
CALIFORNIA
SAN FRANCISCO

MARKET STREET RECORDING PROJECT, 2022
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

HISTORIC AMERICAN LANDSCAPES SURVEY CA-164
SHEET 25 OF 34
LIBRARY OF CONGRESS INDEX NUMBER



MARKET ST

Original Design Drawings
EMBARCADERO PLAZA

Notes:
1. This drawing is a reproduction of an original January 25, 1969 construction drawing by George W. Bell, Irrigation Consultant and Joint Venture Architects (Lawrence Halprin & Associates, John S. Bolles Associates, Mario J. Ciampi & Associates). The original is copyrighted and held by The Lawrence Halprin Collection, the Architectural Archives, University of Pennsylvania. The drawing has not been field verified and is reproduced at 1"=32'.

LIBRARY OF CONGRESS INDEX NUMBER

HISTORIC AMERICAN LANDSCAPES SURVEY
CA-164

SHEET 26 OF 34

CALIFORNIA

MARKET STREET
EMBARCADERO PLAZA TO OCTAVIA STREET
SAN FRANCISCO COUNTY

SAN FRANCISCO

MARKET STREET
RECORDING PROJECT, 2022
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

FOUNTAIN POOL PLAN AT MAT FOUNDATION 1/8" = 1'-0"

EMBARCADERO PLAZA

EMBARCADERO LOWER MARKET APPROVED REDEVELOPMENT PROJECT AREA E1

POOL FOUNDATION PLAN

SAN FRANCISCO REDEVELOPMENT AGENCY IN COOPERATION WITH THE SAN FRANCISCO RECREATION AND PARK DEPARTMENT AND SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS

JOINT VENTURE ARCHITECTS:
LAWRENCE HALPRIN & ASSOCIATES
JOHN S. BOLLES ASSOCIATES
MARIO J. CIAMPI & ASSOCIATES

SCALE: AS NOTED
DATE: JAN. 25, 1969
DRAWN BY: R.S.
S 1276

S1

SHEET S1 OF 4

EMBARCADERO PLAZA

EMBARCADERO LOWER MARKET APPROVED REDEVELOPMENT PROJECT AREA E1

POOL COPING PLAN

SAN FRANCISCO REDEVELOPMENT AGENCY IN COOPERATION WITH THE SAN FRANCISCO RECREATION AND PARK DEPARTMENT AND SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS

JOINT VENTURE ARCHITECTS:
LAWRENCE HALPRIN & ASSOCIATES
JOHN S. BOLLES ASSOCIATES
MARIO J. CIAMPI & ASSOCIATES

SCALE: 1/4" = 1'-0"
DATE: JAN. 23, 1969
DRAWN BY: R.S.

S-1276

S2

SHEET S2 OF 4

EMBARCADERO PLAZA

EMBARCADERO LOWER MARKET APPROVED REDEVELOPMENT PROJECT AREA E1

POOL SECTIONS & DETAILS

SAN FRANCISCO REDEVELOPMENT AGENCY IN COOPERATION WITH THE SAN FRANCISCO RECREATION AND PARK DEPARTMENT AND SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS

JOINT VENTURE ARCHITECTS:
LAWRENCE HALPRIN & ASSOCIATES
JOHN S. BOLLES ASSOCIATES
MARIO J. CIAMPI & ASSOCIATES

SCALE: ½" = 1'-0"
DATE: JAN. 25, 1968
DRAWN BY: R.S.

S 1272

S3

SHEET S3 OF 4

GENERAL NOTES & TYPICAL DETAILS

"General Notes & Typical Details" apply to all details, sections and drawings unless otherwise shown or noted.
Features of construction not fully shown shall be of the same character as shown for similar conditions.
Elevations: S.A.D. for datum.
Dimensions: Contractor shall verify all dimensions before starting work and the Architect shall be notified immediately of any discrepancies found.
Codes: All materials, workmanship and construction shall be in accordance with the requirements of applicable local codes and ordinances.
Existing Conditions: Contractor shall verify dimensions and elevation of existing construction and other existing conditions at the site.

SYMBOLS AND ABBREVIATIONS

A.B.	- Anchor bolts	o.o	- Out to out
B.D.	- Bar diameters	P.E.M.	- Premoulded e.j. filler
Bm.	- Beam	S.A.D.	- See Architectural Drawings
c.c.	- Center to Center	S.E.D.	- See Electrical Drawings
c.j.	- Cold joint or construction joint	S.M.D.	- See Mechanical Drawings
		S.P.D.	- See Plumbing Drawings
℄	- Centerline	T. & B.	- Top and Bottom
Cont.	- Continuous	T. W.	- Top of Wall
D.L.	- Dead Load	Typ.	- Typical
e.j.	- Expansion Joint	U.O.N.	- Unless otherwise noted
El.	- Elevation	(V)	- Vertical
E.W.	- Each Way	w/	- with
F.O.C.	- Face of Concrete	W.M.	- Waterproof Membrane
F.S.	- Far side	W.W.M.	- Welded Wire Mesh
Gd. Bm.	- Grade Beam	CS4	- Section "C" on Sheet S4
(H)	- Horizontal	CS4	- Detail "C" on Sheet S4
L.L.	- Live Load		- Precast concrete in Sect.
N.S.	- Near Side		- Poured in place concrete in section
N.W.C.	- Normal Wt. Concrete	+0'-0	- Elev. bottom of footing
o.c.	- on center		- Brick shown in section

FOUNDATION NOTES

See Soils Report entitled "Report, Soil Investigation, Ferry Building Park, San Francisco, Calif. for San Francisco Redevelopment Agency" dated May 5, 1966 as prepared by Harding, Miller, Lawson & Assoc., 64 Woodland Ave., San Raphael for information pertaining to subsurface conditions and recommendations regarding foundation material.

Design soil pressures are 2000 psf, D.L., & 3000 psf, D.L. + L.L.

CONCRETE NOTES

Concrete shall have minimum 28 day compressive strength f'c as follows:

	f'c	Type	Max Size Agg.	Max Slump
U.O.N.	3000psi	HRC	1½	4
Walls	3000p.s.i.	HRC	¾	4

NOTE: Water cement ratio shall be less than 6 gal. per sack.

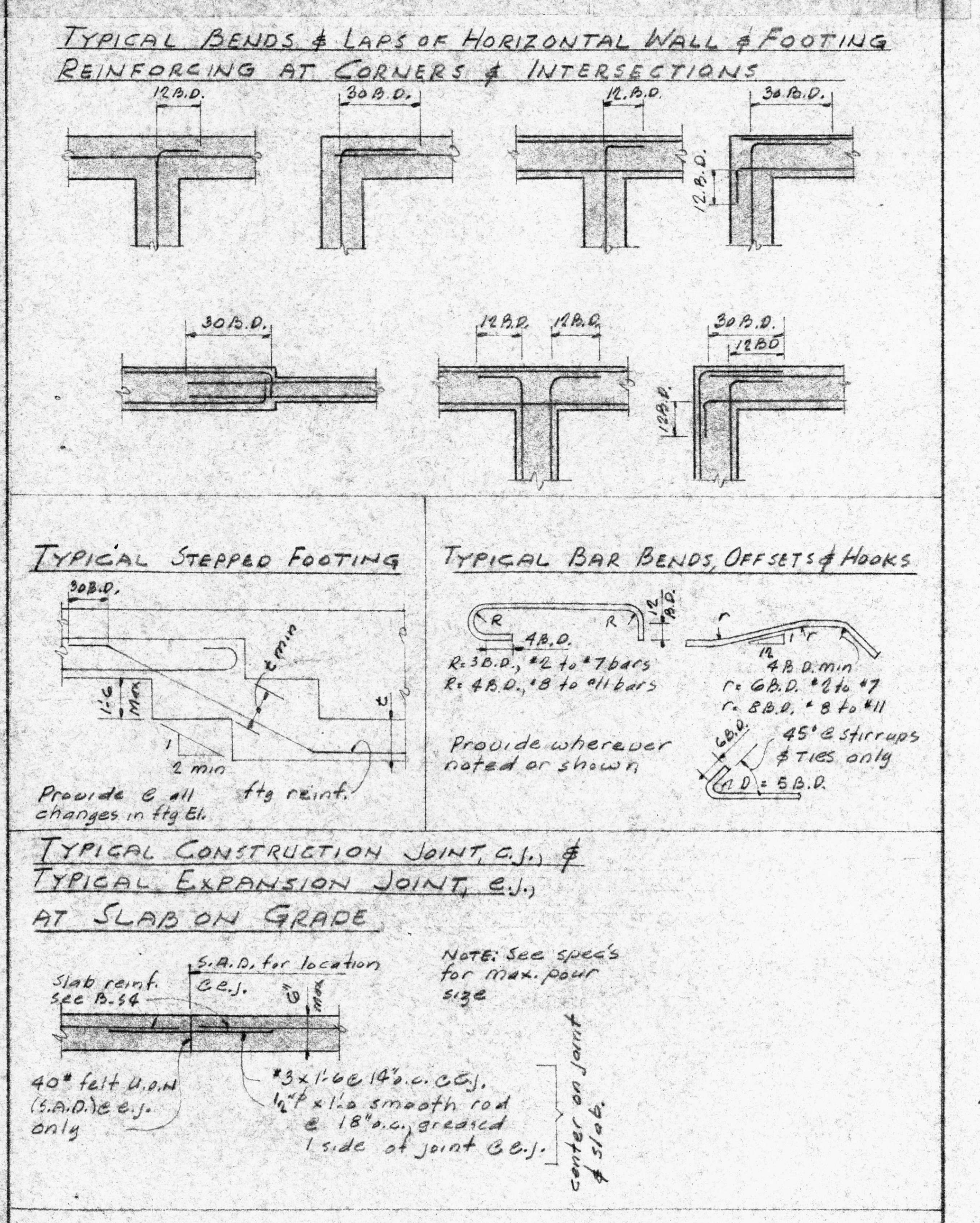
Reinforcing steel shall be ASTM-A15 Intermediate Grade steel bars with ASTM A-305 deformations.

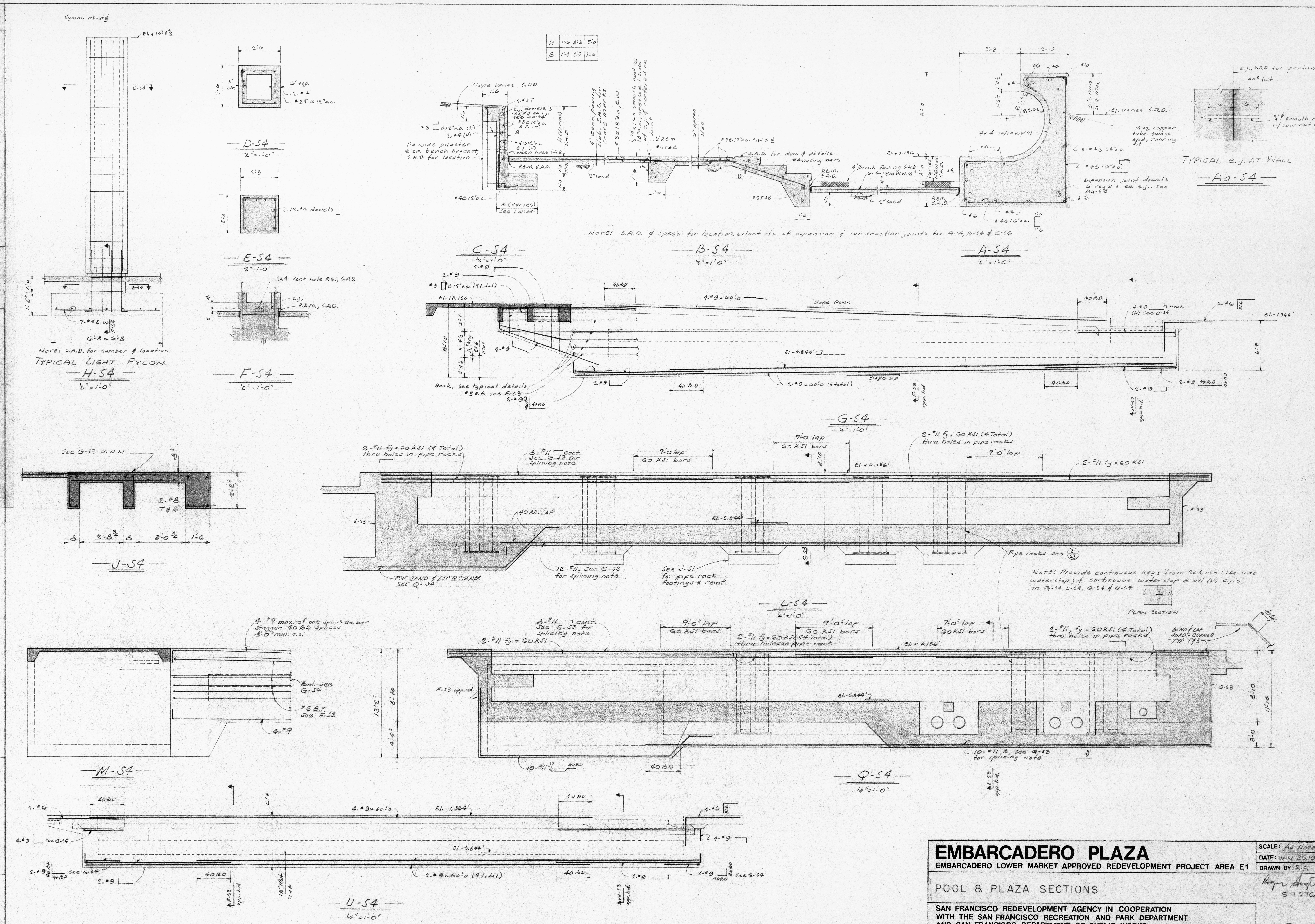
Unless otherwise noted, all dimensions shown for location of reinforcing steel are to the face of the main bars and denote clear coverage. Concrete coverage shall be as follows:

3" where concrete is deposited directly against ground.
2" where concrete is exposed to ground but placed in forms.
1-½" for bars or mesh in slab on ground, beam and column bars.
1" for T & B slab bars and bars at exterior face of wall.
3/4" for bars at interior face of walls.

Laps and splices shall be 32 bar diameter with 1'-3 minimum. Stagger splices in adjacent bars.

Dowel all (V) and (H) reinforcement in walls, columns, etc. to supporting footings, beams and walls with bars of same size and spacing as bar doweled. Dowels to extend 32 diameters into supporting members and lap 32 diameters with bar doweled.





EMBARCADERO PLAZA
EMBARCADERO LOWER MARKET APPROVED REDEVELOPMENT PROJECT AREA E1

POOL & PLAZA SECTIONS

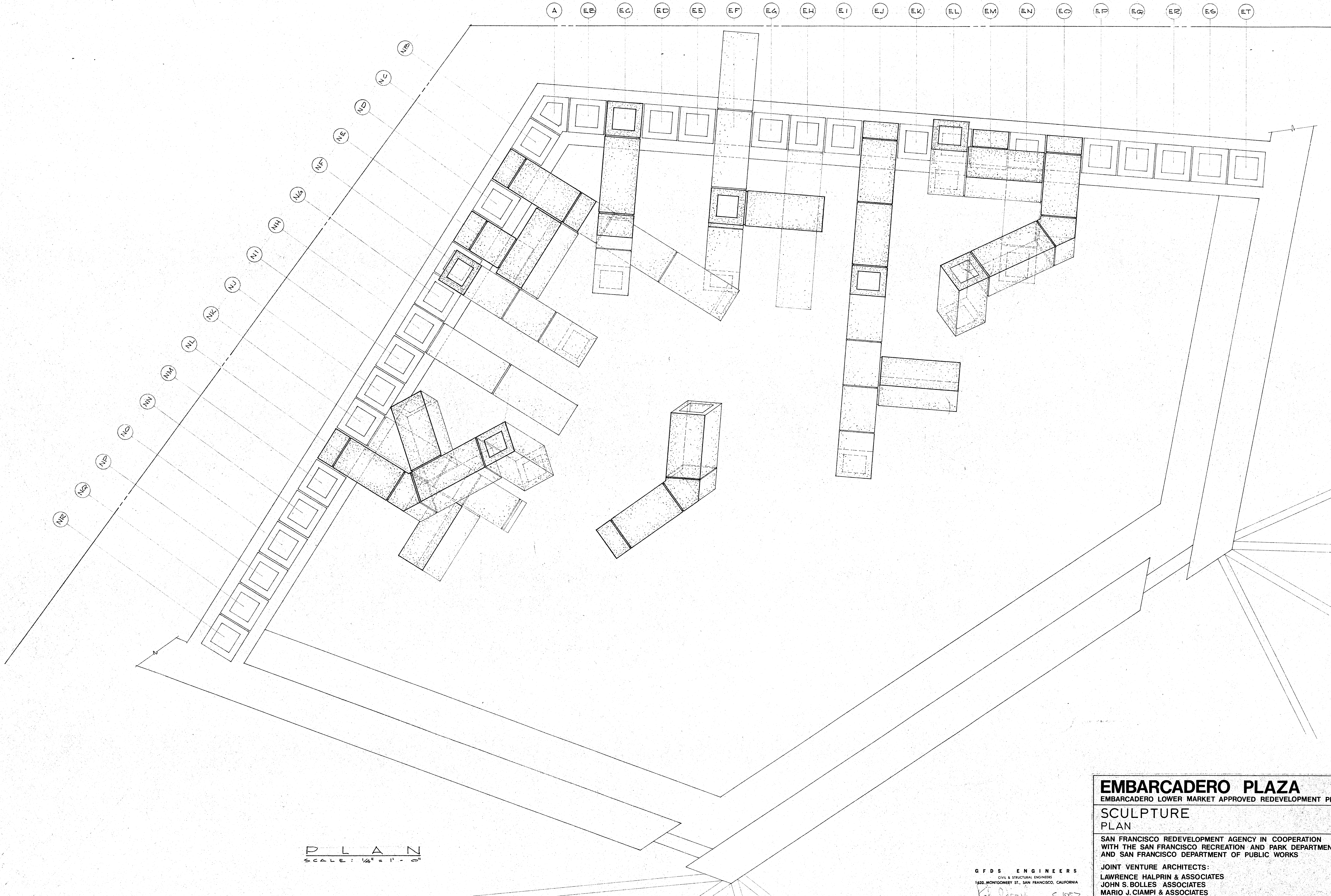
SAN FRANCISCO REDEVELOPMENT AGENCY IN COOPERATION WITH THE SAN FRANCISCO RECREATION AND PARK DEPARTMENT AND SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS

JOINT VENTURE ARCHITECTS:
LAWRENCE HALPRIN & ASSOCIATES
JOHN S. BOLLES ASSOCIATES
MARIO J. CIAMPI & ASSOCIATES

SCALE: As Noted
DATE: JAN. 25, 1969
DRAWN BY: R.S.
S 1276

S4

SHEET S4 OF 4



PLAN
SCALE: 1/4" = 1'-0"

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CIVIL & STRUCTURAL ENGINEERS
1620 MONTGOMERY ST., SAN FRANCISCO, CALIFORNIA

EMBARCADERO PLAZA

EMBARCADERO LOWER MARKET APPROVED REDEVELOPMENT PROJECT AREA E1

SCULPTURE
PLAN

SAN FRANCISCO REDEVELOPMENT AGENCY IN COOPERATION WITH THE SAN FRANCISCO RECREATION AND PARK DEPARTMENT AND SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS

JOINT VENTURE ARCHITECTS:
LAWRENCE HALPRIN & ASSOCIATES
JOHN S. BOLLES ASSOCIATES
MARIO J. CIAMPI & ASSOCIATES

SCALE: as noted
DATE: JAN. 28, 1969
DRAWN BY: jmo

S1

SHEET S1 OF 8

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CIVIL & STRUCTURAL ENGINEERS
1620 MONTGOMERY ST., SAN FRANCISCO, CALIFORNIA
S1057

EMBARCADERO PLAZA

EMBARCADERO LOWER MARKET APPROVED REDEVELOPMENT PROJECT AREA E1

SCULPTURE
ELEVATIONS

SAN FRANCISCO REDEVELOPMENT AGENCY IN COOPERATION WITH THE SAN FRANCISCO RECREATION AND PARK DEPARTMENT AND SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS

JOINT VENTURE ARCHITECTS:
LAWRENCE HALPRIN & ASSOCIATES
JOHN S. BOLLES ASSOCIATES
MARIO J. CIAMPI & ASSOCIATES

SCALE: as noted
DATE: JAN. 25, 1969
DRAWN BY: jmo

S2

SHEET S2 OF 8

1 S-3 STRUCTURE NL - ELEVATION 1/4" = 1'-0"

2 S-3 STRUCTURE NK - ELEVATION 1/4" = 1'-0"

3 S-3 STRUCTURE NH & EH - ELEV. 1/4" = 1'-0"

4 S-3 STRUCTURE NC - ELEV. 1/4" = 1'-0"

5 S-3 STRUCTURE NC - SEC.-ELEV. 1/4" = 1'-0"

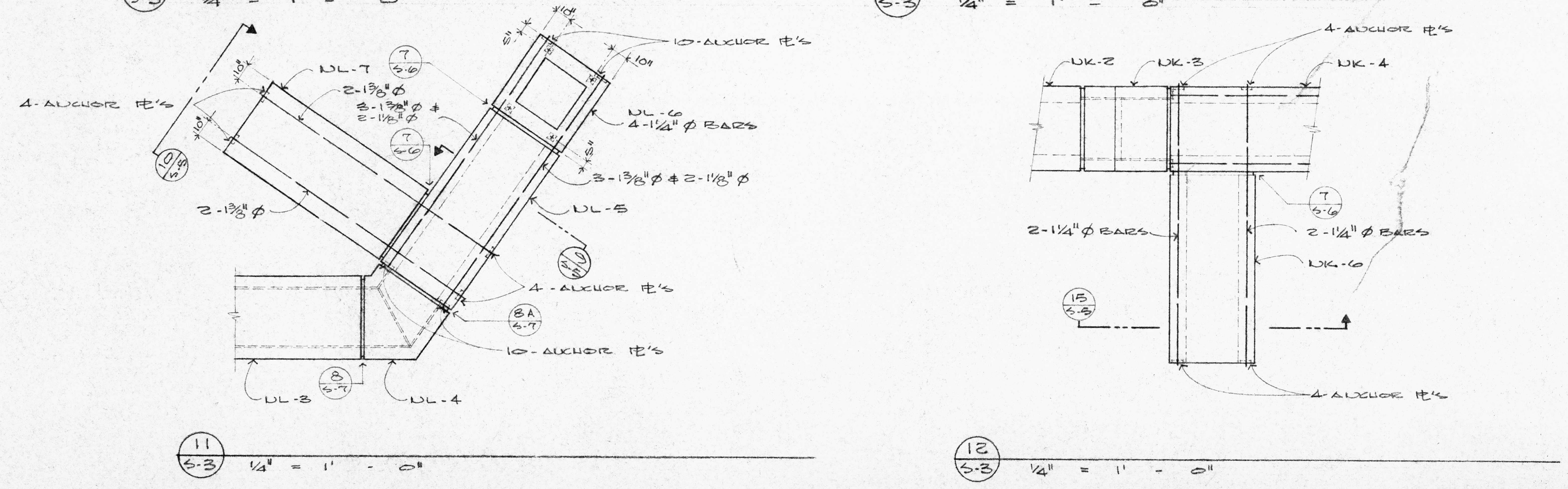
6 S-3 STRUCTURE NL - PLAN 1/4" = 1'-0"

7 S-3 STRUCTURE NK - PLAN 1/4" = 1'-0"

8 S-3 STRUCTURE NH & EH - PLAN 1/4" = 1'-0"

9 S-3 STRUCTURE NC - PLAN 1/4" = 1'-0"

10 S-3 1/4" = 1'-0"



11 S-3 1/4" = 1'-0"

12 S-3 1/4" = 1'-0"

NOTES:

1. ALL BARS SHOWN ARE SPECIAL STRESSTEEL BARS (ULT. STRENGTH 160 KSI MIN.)
2. SEE SCHEDULE ON SHEET S-6 FOR ANCHOR PL SIZES, ETC.
3. GENERAL CONTRACTOR SHALL COORDINATE NUMBER AND LOCATIONS OF ALL ACCESS OPENINGS, ETC. REQUIRED FOR ERECTION AND INSTALLATION OF WATER LINES AND ELECTRICAL CONDUITS. IT WILL BE PERMISSABLE TO LEAVE OUT STIFFENER PLATE PANELS DURING ERECTION SUBJECT TO PRIOR APPROVAL OF ARCHITECT.

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EMBARCADERO PLAZA

EMBARCADERO LOWER MARKET APPROVED REDEVELOPMENT PROJECT AREA E1

SCULPTURE
PLANS & ELEVATIONS

SAN FRANCISCO REDEVELOPMENT AGENCY IN COOPERATION WITH THE SAN FRANCISCO RECREATION AND PARK DEPARTMENT AND SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS

JOINT VENTURE ARCHITECTS:
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JOHN S. BOLLES ASSOCIATES
MARIO J. CIAMPI & ASSOCIATES

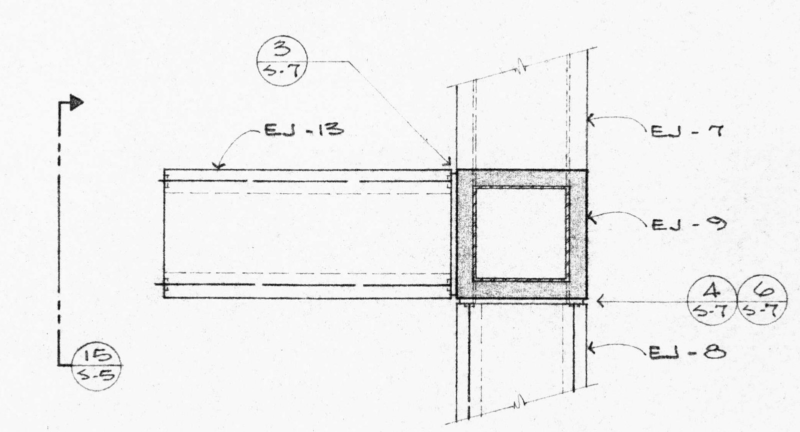
SCALE: as noted
DATE: JAN. 23, 1969
DRAWN BY: jmo

S3

SHEET S3 OF 8

NOTES:

1. ALL BARS SHOWN ARE SPECIAL STRESSTEEL BARS (ULT. STRENGTH 160 KSI MIN.)
2. SEE SCHEDULE ON SHEET S-6 FOR ANCHOR PL SIZES, ETC.



1/4" = 1'-0"

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EMBARCADERO PLAZA

EMBARCADERO LOWER MARKET APPROVED REDEVELOPMENT PROJECT AREA E1

SCULPTURE
PLANS & ELEVATIONS

SAN FRANCISCO REDEVELOPMENT AGENCY IN COOPERATION WITH THE SAN FRANCISCO RECREATION AND PARK DEPARTMENT AND SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS

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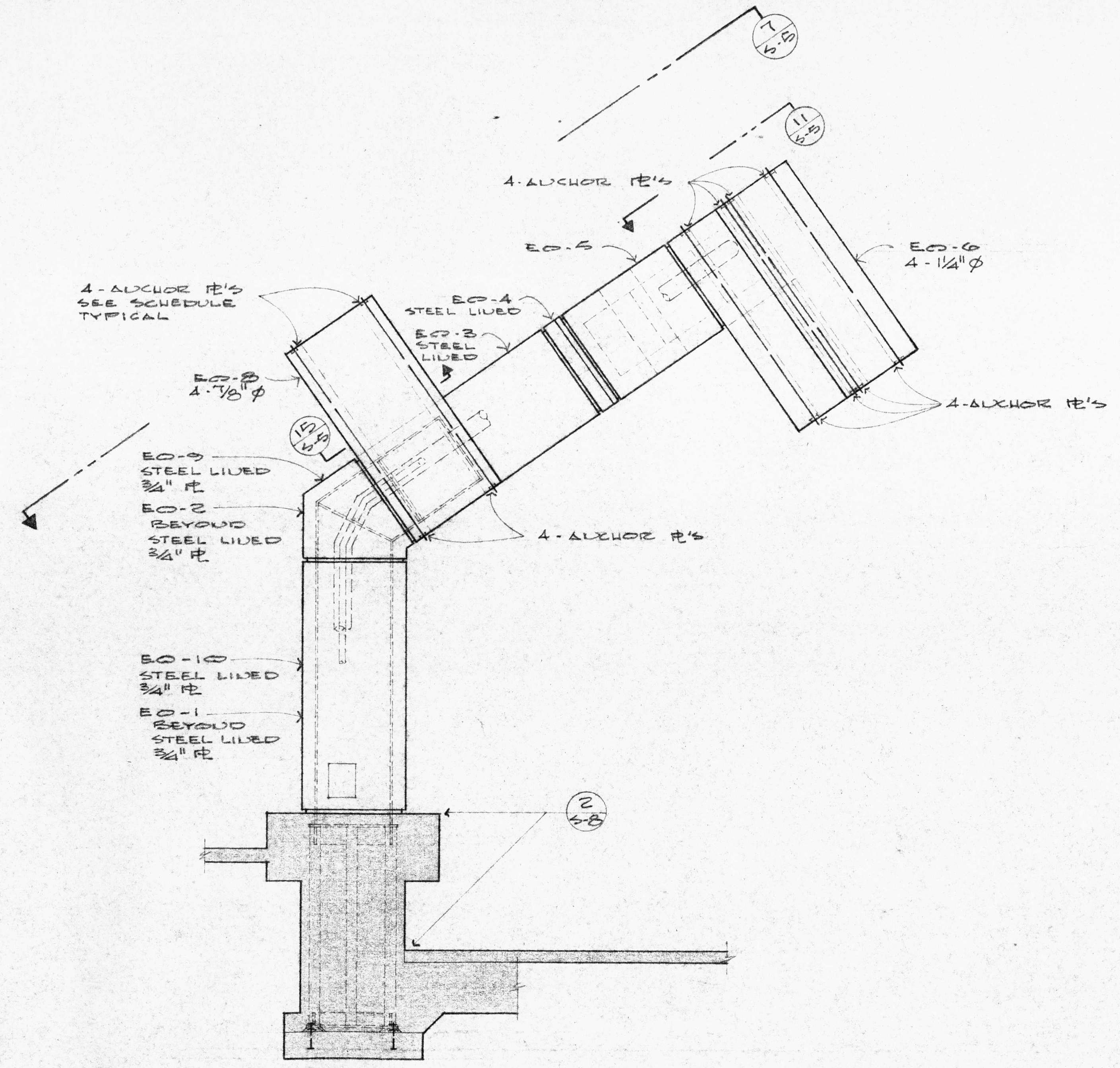
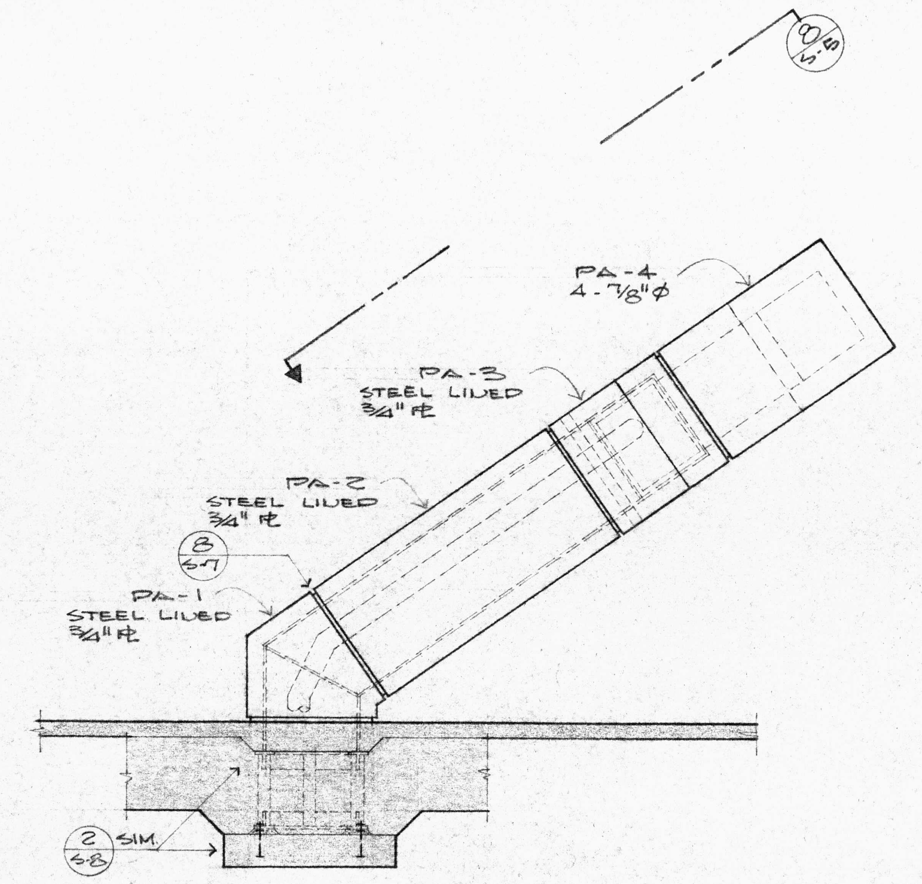
JOHN S. BOLLES ASSOCIATES
MARIO J. CIAMPI & ASSOCIATES

SCALE: as noted
DATE: JAN. 25, 1969
DRAWN BY: jmo

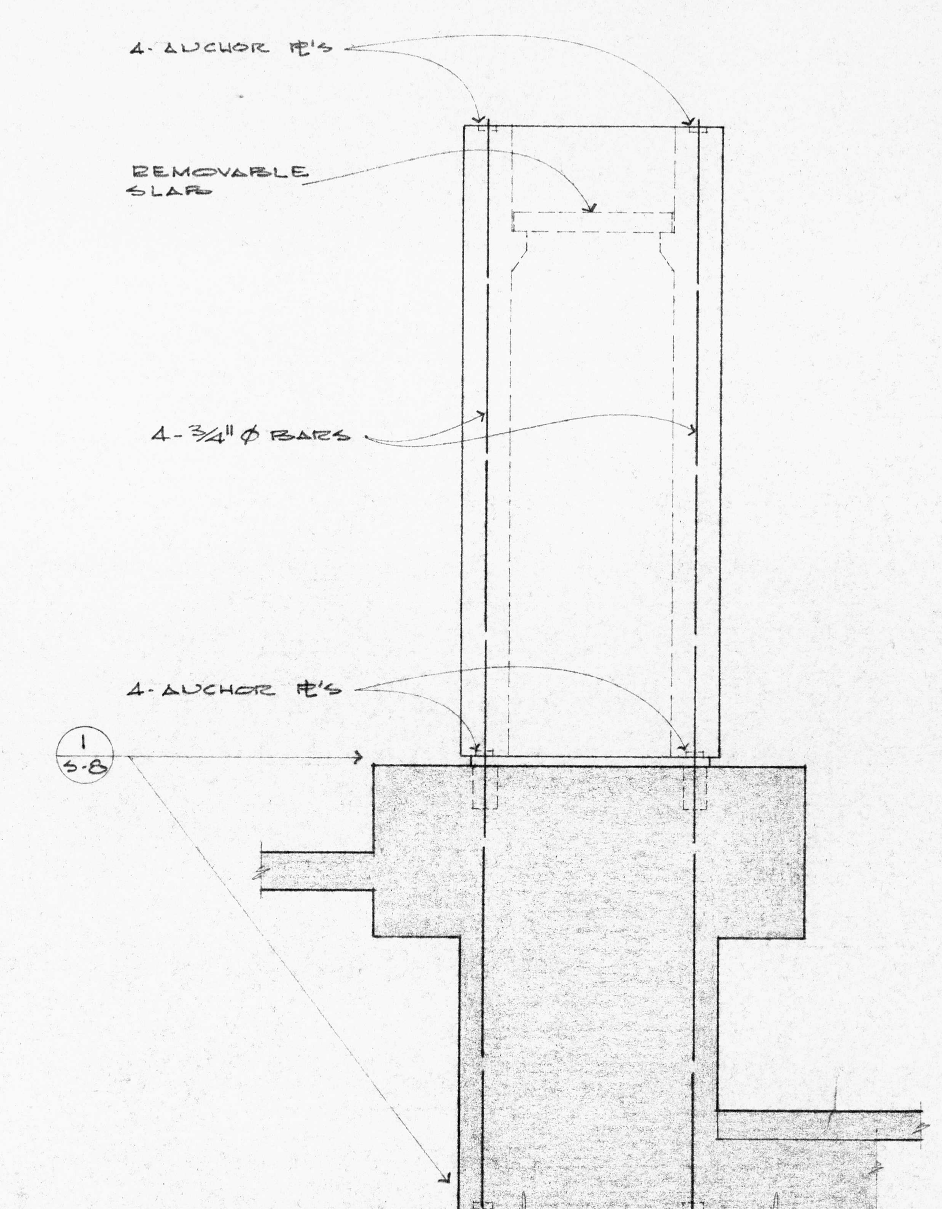
S4

SHEET S4 OF 8

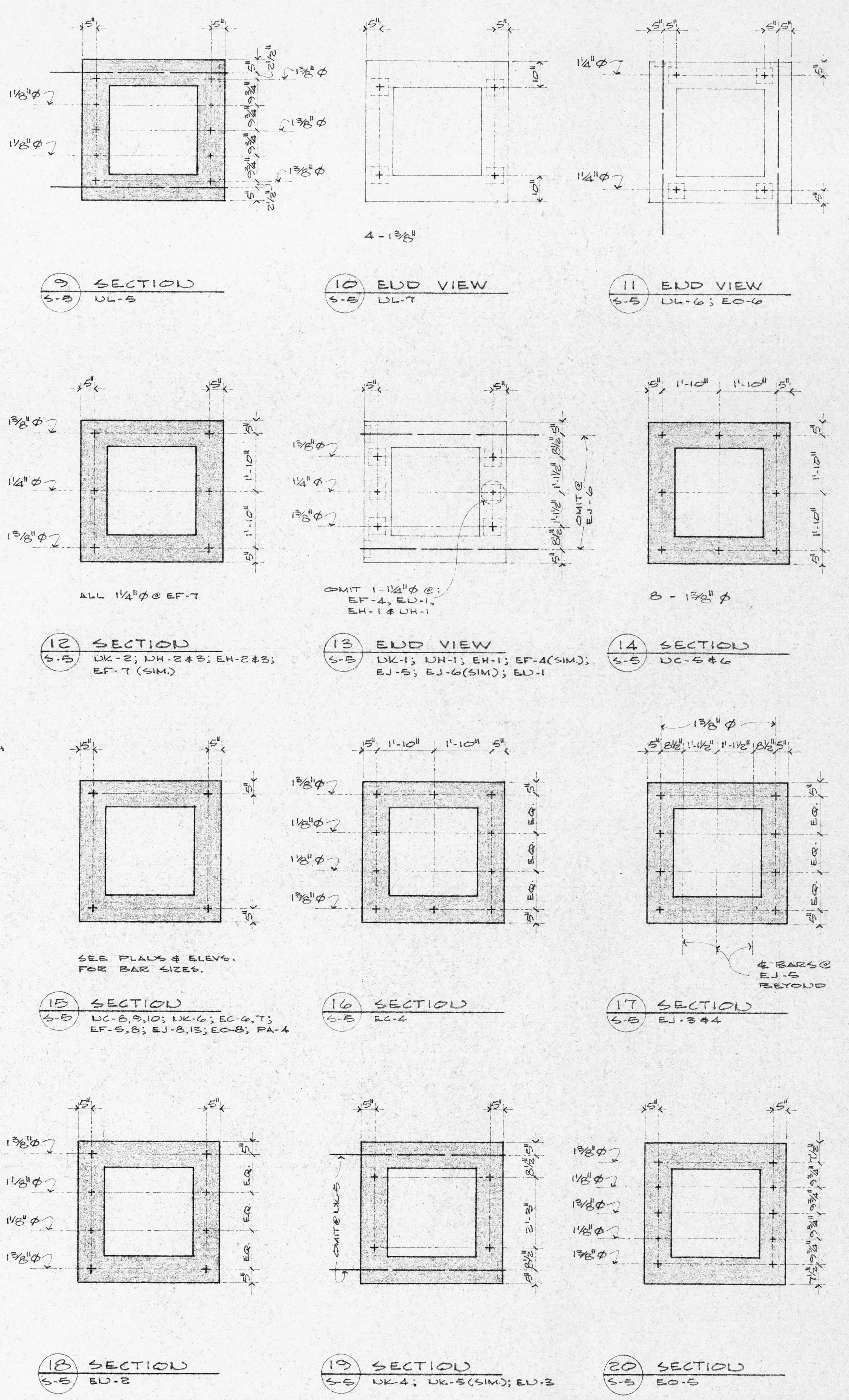




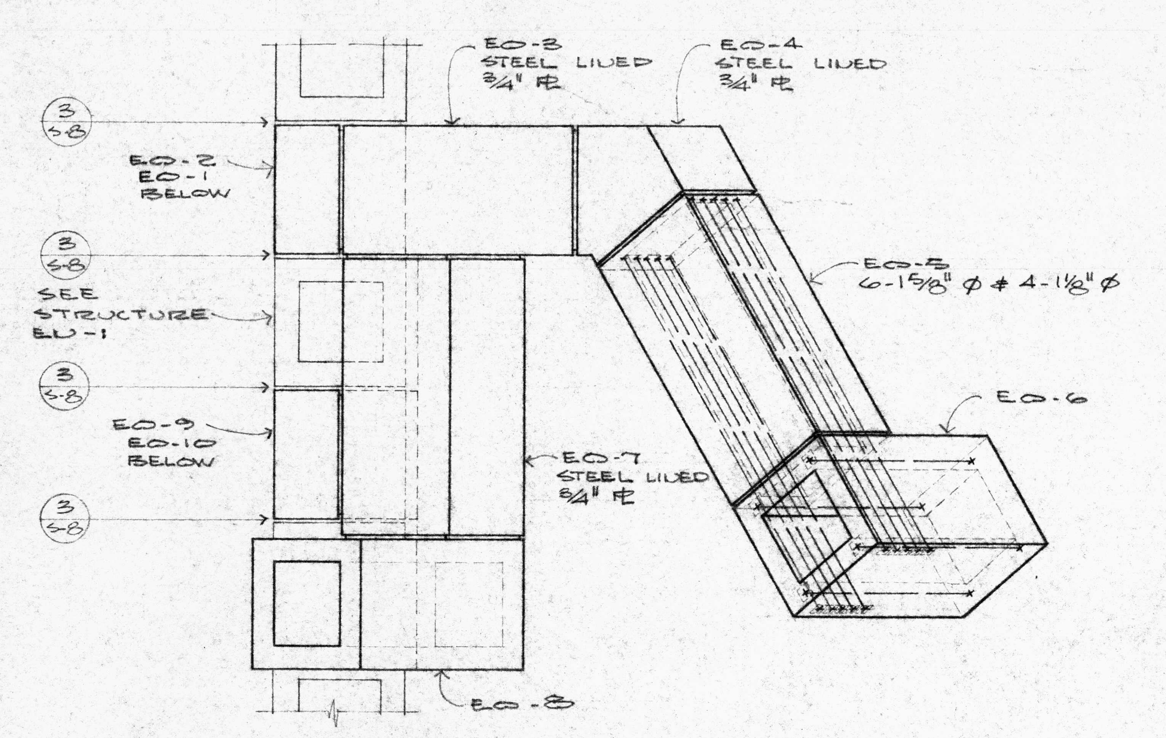
2 S-5 STRUCTURE PA - ELEVATION
1/4" = 1' - 0"



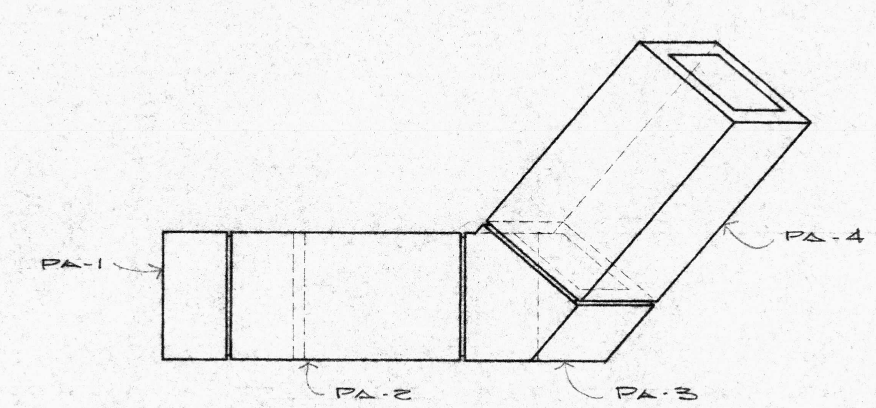
3 S-5 CORNER & TYP. FREESTANDING UNIT - ELEV.
1/2" = 1' - 0"



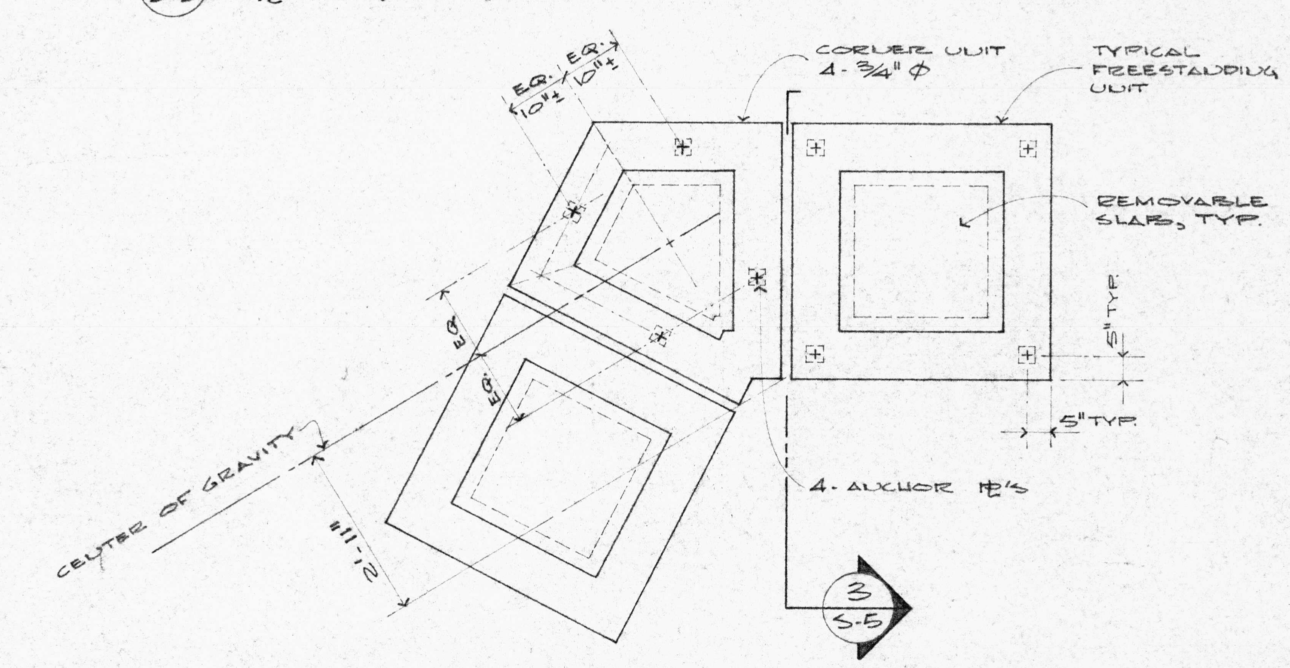
BAR LOCATIONS AT POST TENSIONED ELEMENTS
1/2" = 1' - 0"



4 S-5 STRUCTURE EO - PLAN
1/4" = 1' - 0"

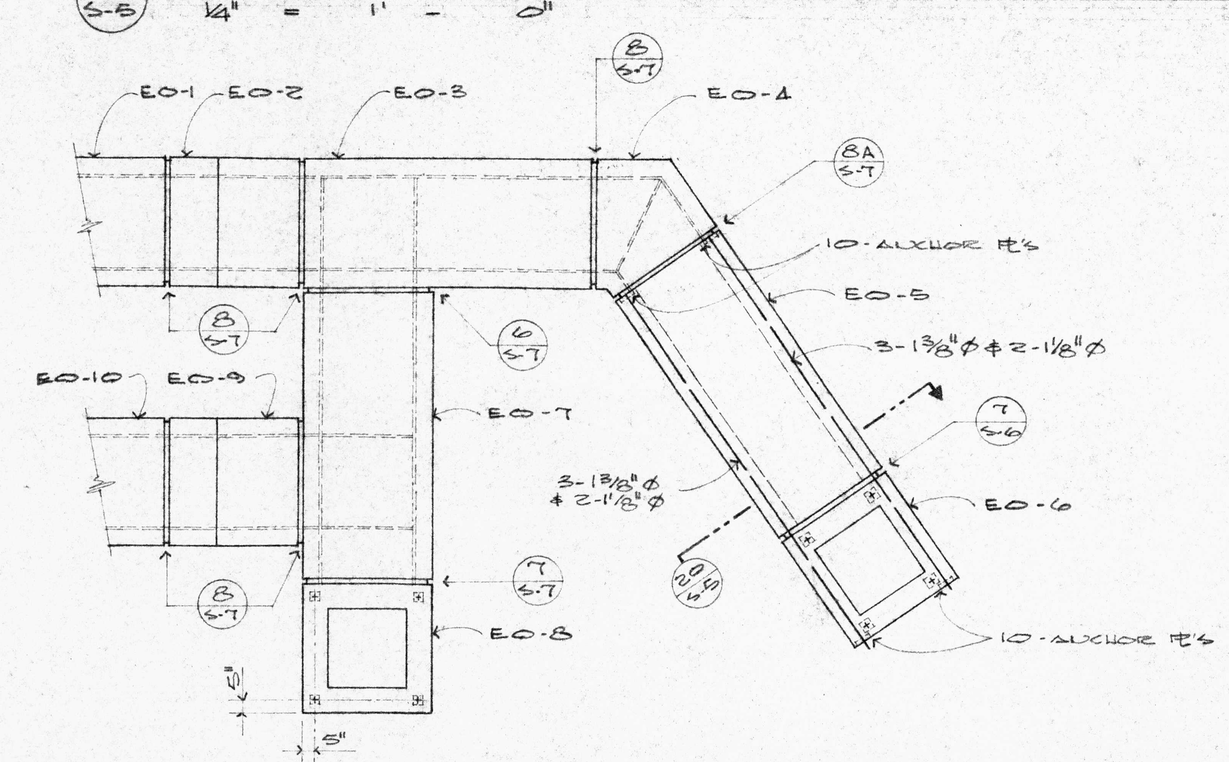


5 S-5 STRUCTURE PA - PLAN
1/4" = 1' - 0"

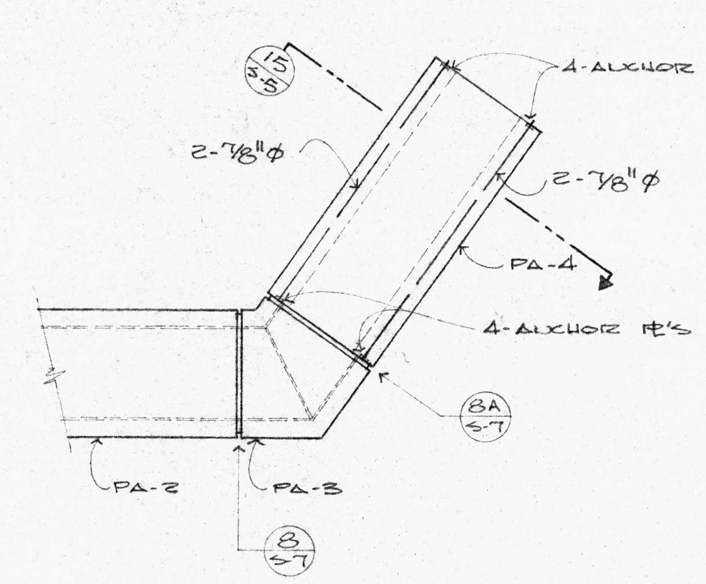


6 S-5 CORNER & TYP. FREESTANDING UNIT - PLAN
1/2" = 1' - 0"

GENERAL NOTE:
SEE SCHEDULE ON SHEET S-6 FOR ANCHORPLATE SIZES, ETC.



7 S-5 1/4" = 1' - 0"



8 S-5 1/4" = 1' - 0"

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1620 MONTGOMERY ST., SAN FRANCISCO, CALIFORNIA
S 1057

EMBARCADERO PLAZA

EMBARCADERO LOWER MARKET APPROVED REDEVELOPMENT PROJECT AREA E1

SCULPTURE

PLANS, ELEVATIONS & DETAILS

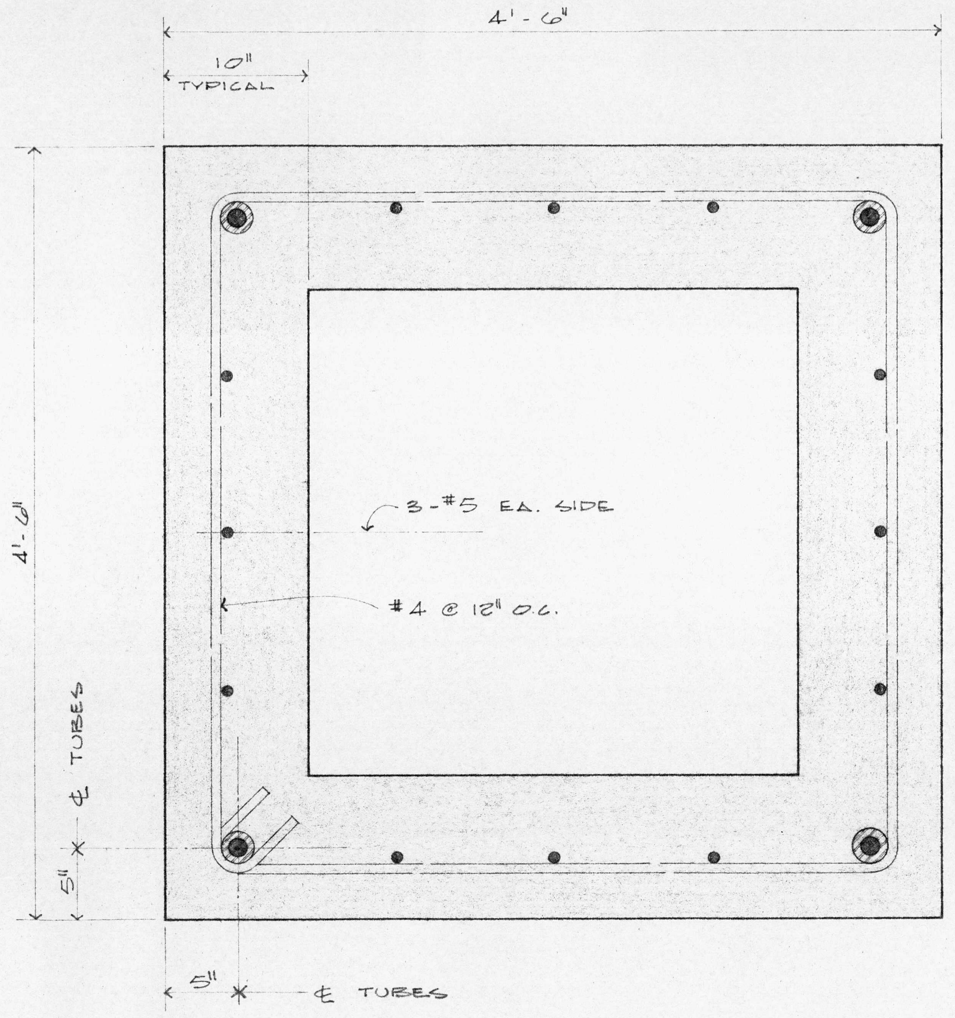
SAN FRANCISCO REDEVELOPMENT AGENCY IN COOPERATION WITH THE SAN FRANCISCO RECREATION AND PARK DEPARTMENT AND SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS

JOINT VENTURE ARCHITECTS:
LAWRENCE HALPRIN & ASSOCIATES
JOHN S. BOLLES ASSOCIATES
MARIO J. CIAMPI & ASSOCIATES

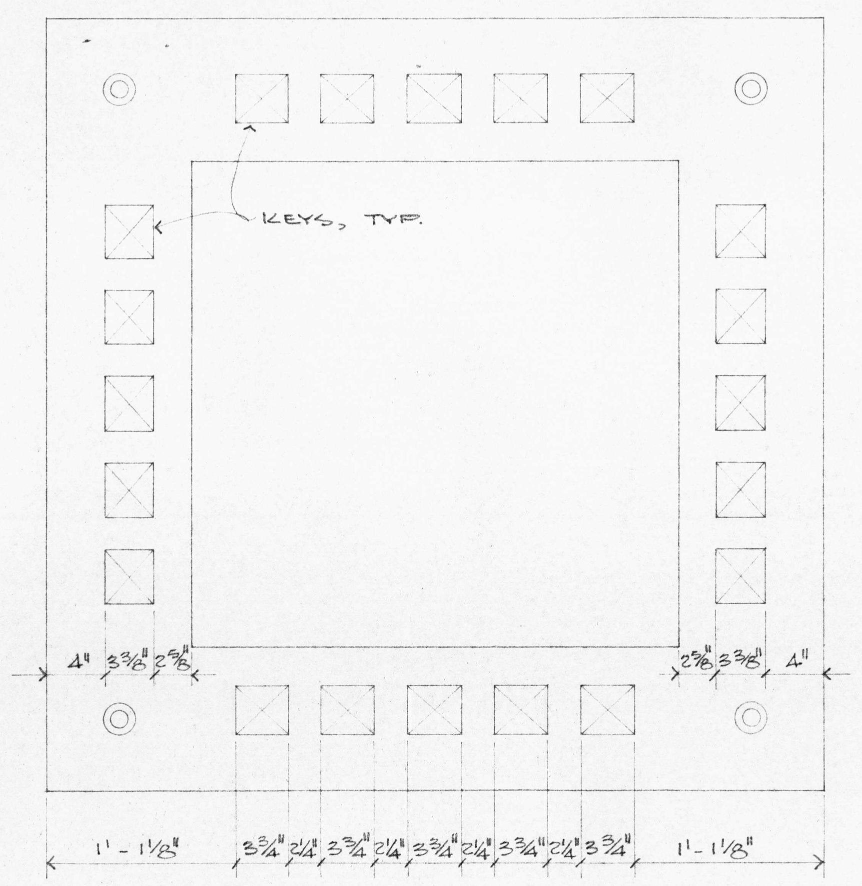
SCALE: as noted
DATE: JAN. 25, 1969
DRAWN BY: jmo

S5

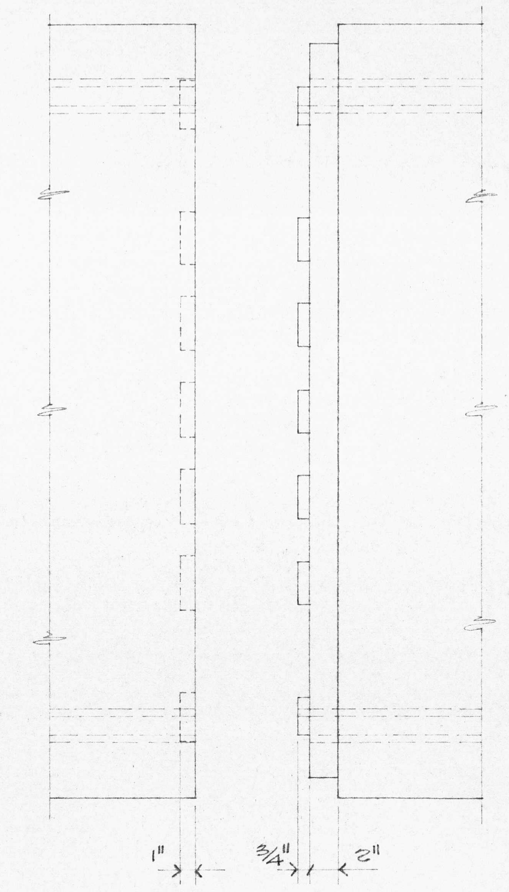
SHEET S5 OF 8



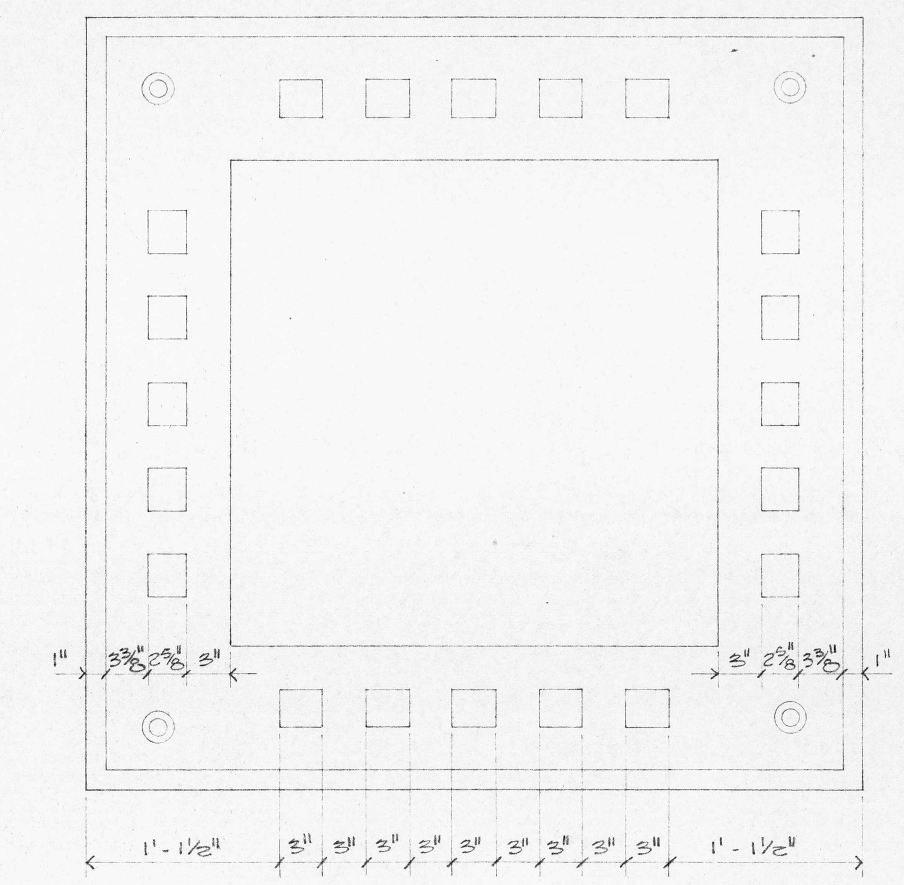
1 / S-6 SECTION - TYP. POST TENSIONED ELEMENT
1½" = 1' - 0"



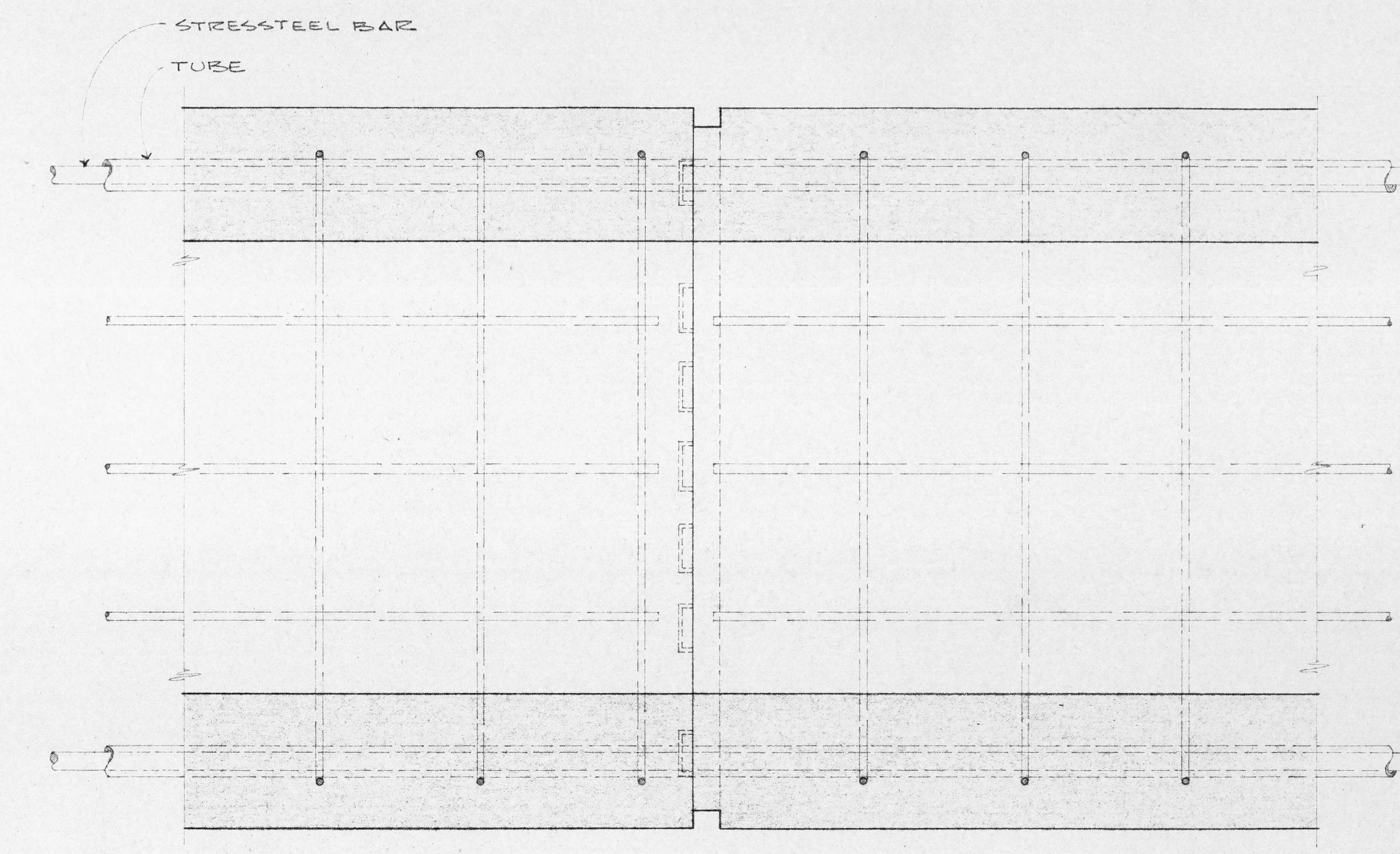
2 / S-6 END VIEW - TYPICAL
1½" = 1' - 0"



3 / S-6 SIDE VIEW OF ENDS
1½" = 1' - 0"

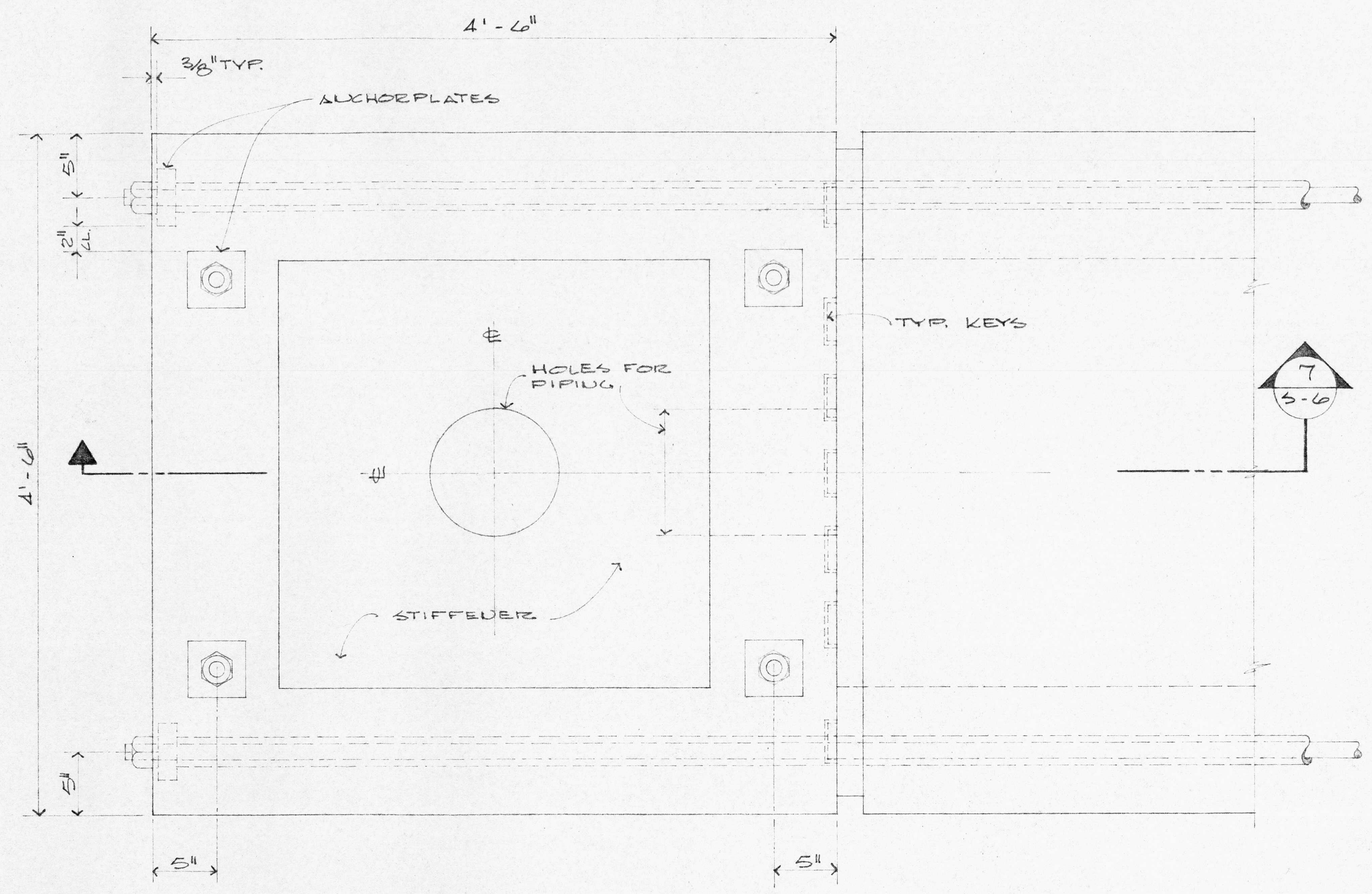


4 / S-6 END VIEW - TYPICAL
1½" = 1' - 0"



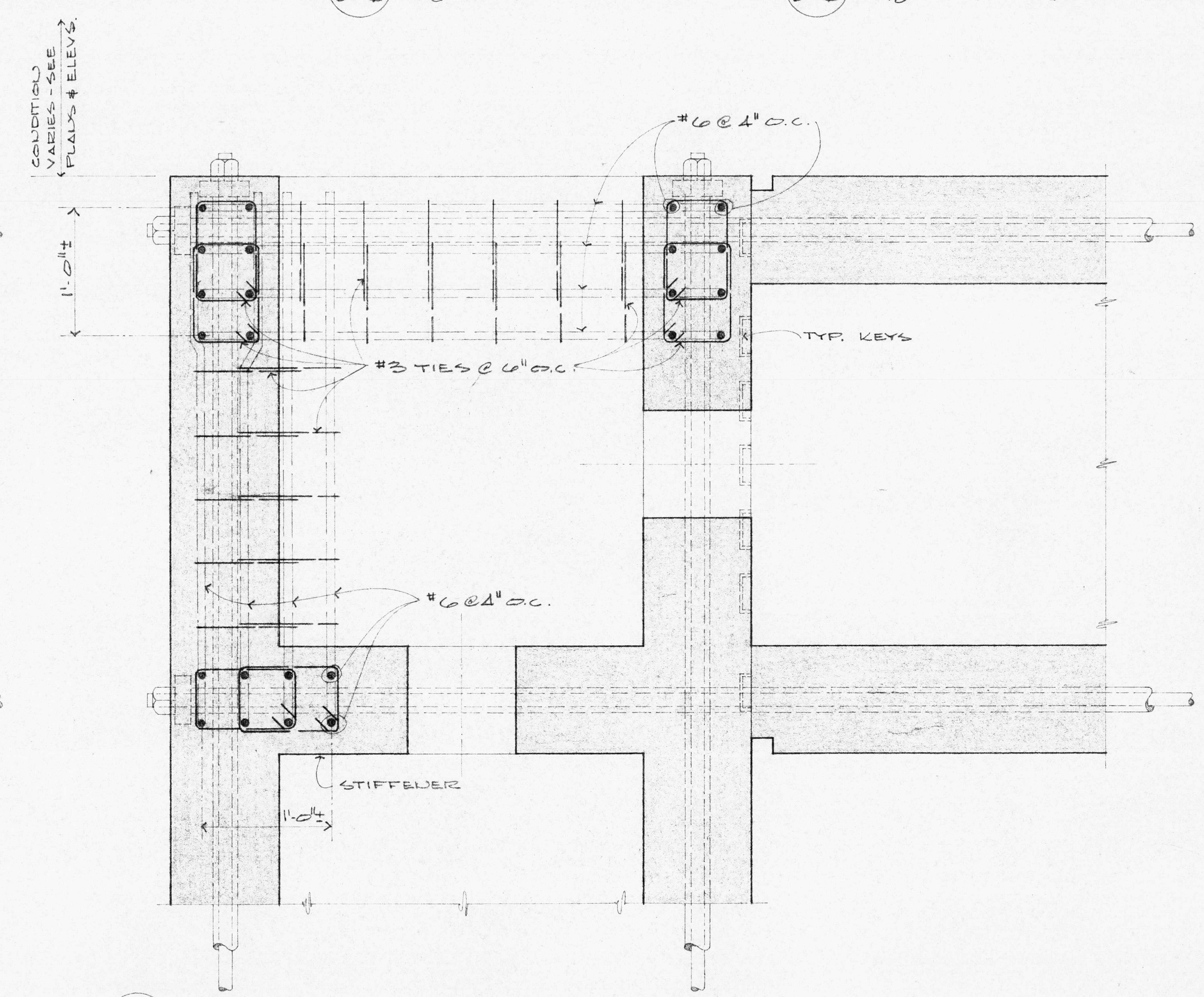
NOTE: BEFORE JOINING UNITS, SURFACES IN CONTACT AND KEYS SHALL BE COVERED WITH EPOXY GROUT.

5 / S-6 SECTION IN JOINT - TYP. END CONNECTION OF POST TENSIONED ELEMENTS
1½" = 1' - 0"

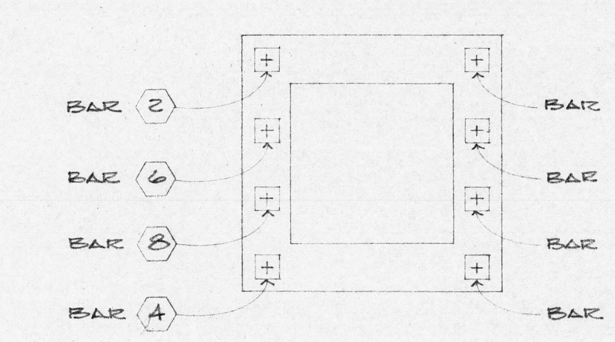


NOTE:
SIZE, NUMBER & LOCATIONS OF BARS & ANCHOR ℗'S VARY - SEE PLANS & ELEVS.

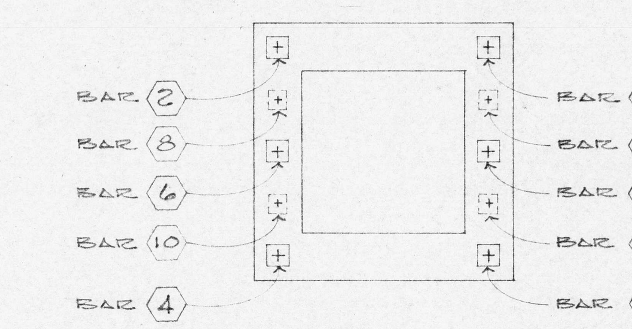
6 / S-6 PLAN - CONNECTION FOR PERPENDICULAR ELEMENTS
1½" = 1' - 0"



7 / S-6 SECTION
1½" = 1' - 0"



8 BAR ELEMENTS



4, 6 & 10 BAR ELEMENTS

SEQUENCE BARS NUMBER	MAXIMUM STRESS TO BE APPLIED IN ADDITION TO PREVIOUS
1	30ᵏ
2	70ᵏ
1	120ᵏ OR FINAL STRESS
2	80ᵏ OR FINAL STRESS
3	80ᵏ OR FINAL STRESS
4	150ᵏ OR FINAL STRESS
3	70ᵏ OR FINAL STRESS
5	150ᵏ OR FINAL STRESS
6	150ᵏ OR FINAL STRESS
BALANCE	STRESS SYMMETRICALLY IN ORDER SHOWN BY NUMBERS.

BAR DIA.	FINAL DESIGN LOAD	ANCHOR ℗ SIZE
1⅜" φ	143ᵏ	6½" x 6½" x 2"
1¼" φ	118ᵏ	6" x 6" x 1¾"
1⅛" φ	95ᵏ	5½" x 5½" x 1¾"
1" φ	75ᵏ	5" x 5" x 1½"
⅞" φ	58ᵏ	4½" x 4½" x 1½"
¾" φ	42ᵏ	4" x 4" x 1"

GENERAL NOTE:
ANCHOR ℗'S SHALL BE EITHER THREADED OR DRILLED FOR PASSAGE OF BARS. UN-THREADED ANCHOR ℗'S SHALL HAVE NUTS. ALL AS REQUIRED AND/OR AS DIRECTED TO ALLOW FOR PROPER SEQUENCE OF INSTALLATION.

EXCEPTION: FOR STRUCTURE NH-1 & EH-1 USES WEDGES IN LIEU OF NUTS.

NOTE: ALL ANCHOR PLATES, NUTS, WEDGES & END 1' OF BARS TO BE GALVANIZED.

8 / S-6 STRESSING SEQUENCE & ANCHOR ℗ SIZES

GFDS ENGINEERS
CIVIL & STRUCTURAL ENGINEERS
1620 MONTGOMERY ST., SAN FRANCISCO, CALIFORNIA

EMBARCADERO PLAZA

EMBARCADERO LOWER MARKET APPROVED REDEVELOPMENT PROJECT AREA E1

SCULPTURE

SECTIONS & DETS.- POST TENSIONED ELEMENTS

SAN FRANCISCO REDEVELOPMENT AGENCY IN COOPERATION WITH THE SAN FRANCISCO RECREATION AND PARK DEPARTMENT AND SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS

JOINT VENTURE ARCHITECTS:
LAWRENCE HALPRIN & ASSOCIATES
JOHN S. BOLLES ASSOCIATES
MARIO J. CIAMPI & ASSOCIATES

SCALE: as noted
DATE: JAN. 29, 1969
DRAWN BY: jmo

S6

SHEET S6 OF 8

GENERAL NOTES:
AT ALL OPENINGS & PIPING THROUGH LINING PL'S AND STIFFENER PL'S PROVIDE REINFORCING SIMILAR TO DET. 6/S-7

G F D S ENGINEERS
CIVIL & STRUCTURAL ENGINEERS
1620 MONTGOMERY ST., SAN FRANCISCO, CALIFORNIA

EMBARCADERO PLAZA
EMBARCADERO LOWER MARKET APPROVED REDEVELOPMENT PROJECT AREA E1

SCULPTURE
SECTIONS & DETS. - STEEL LINED ELEMENTS & CONNS.

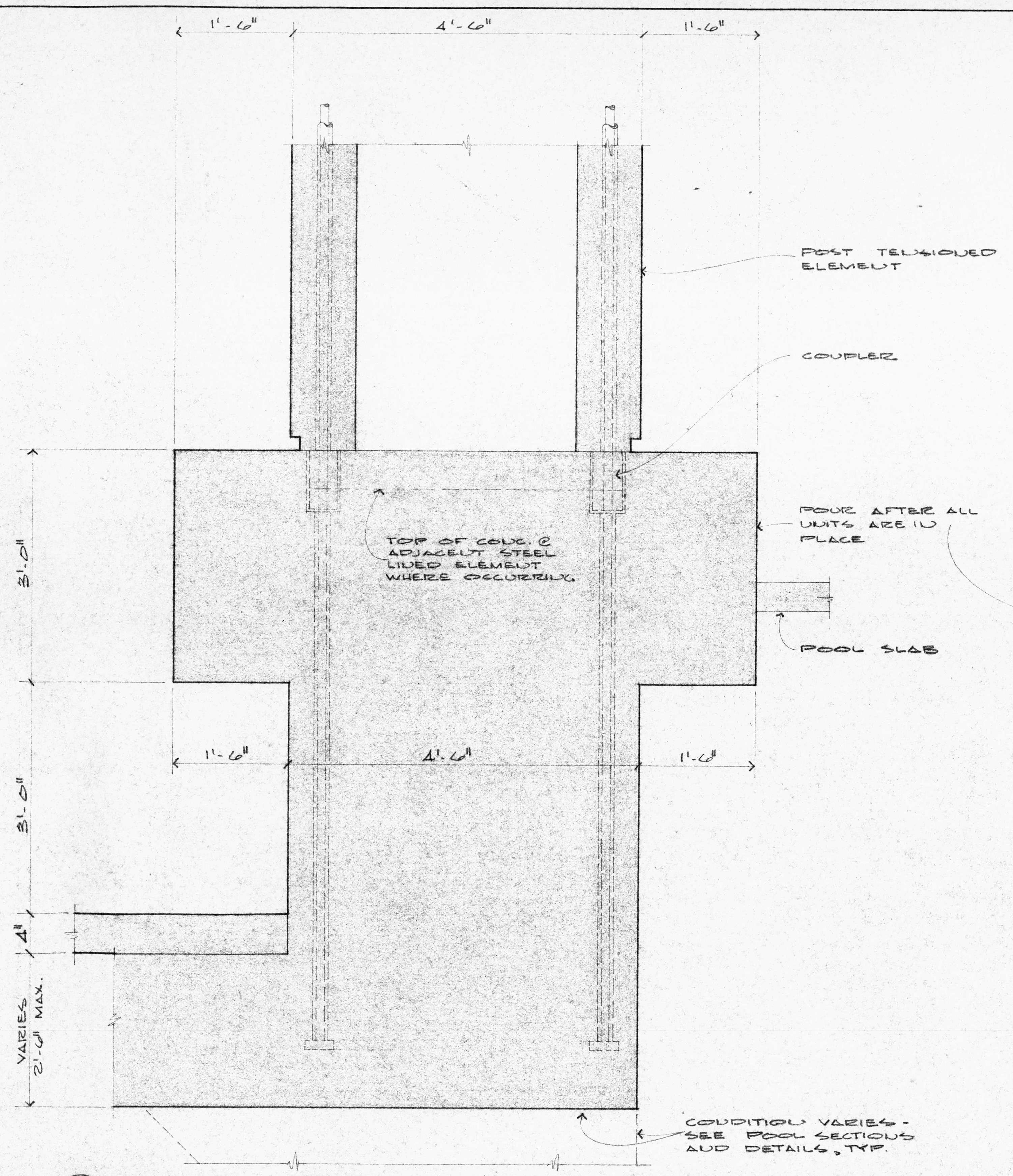
SAN FRANCISCO REDEVELOPMENT AGENCY IN COOPERATION WITH THE SAN FRANCISCO RECREATION AND PARK DEPARTMENT AND SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS

JOINT VENTURE ARCHITECTS:
LAWRENCE HALPRIN & ASSOCIATES
JOHN S. BOLLES ASSOCIATES
MARIO J. CIAMPI & ASSOCIATES

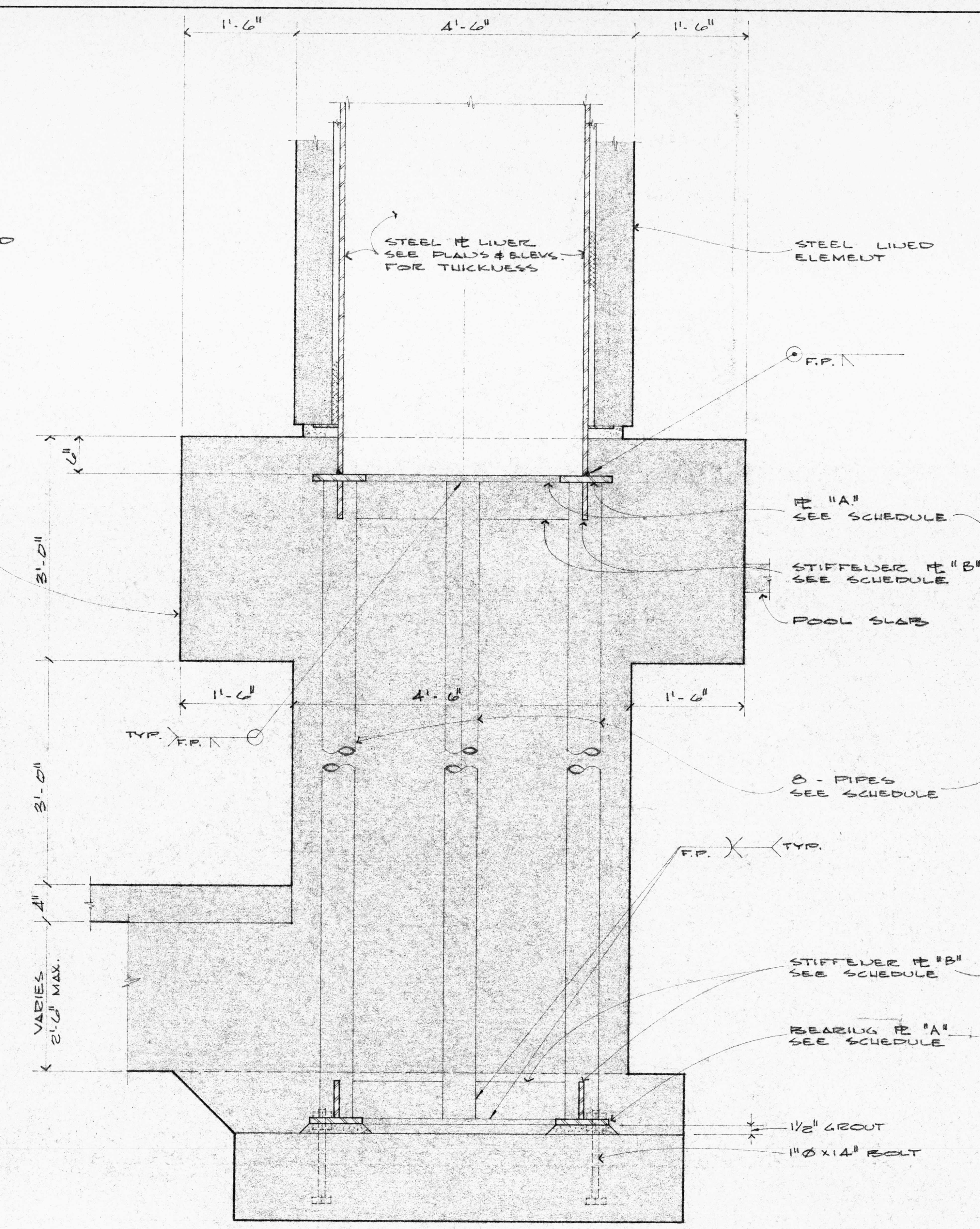
SCALE: as noted
DATE: JAN. 25, 1969
DRAWN BY: jmo

S7

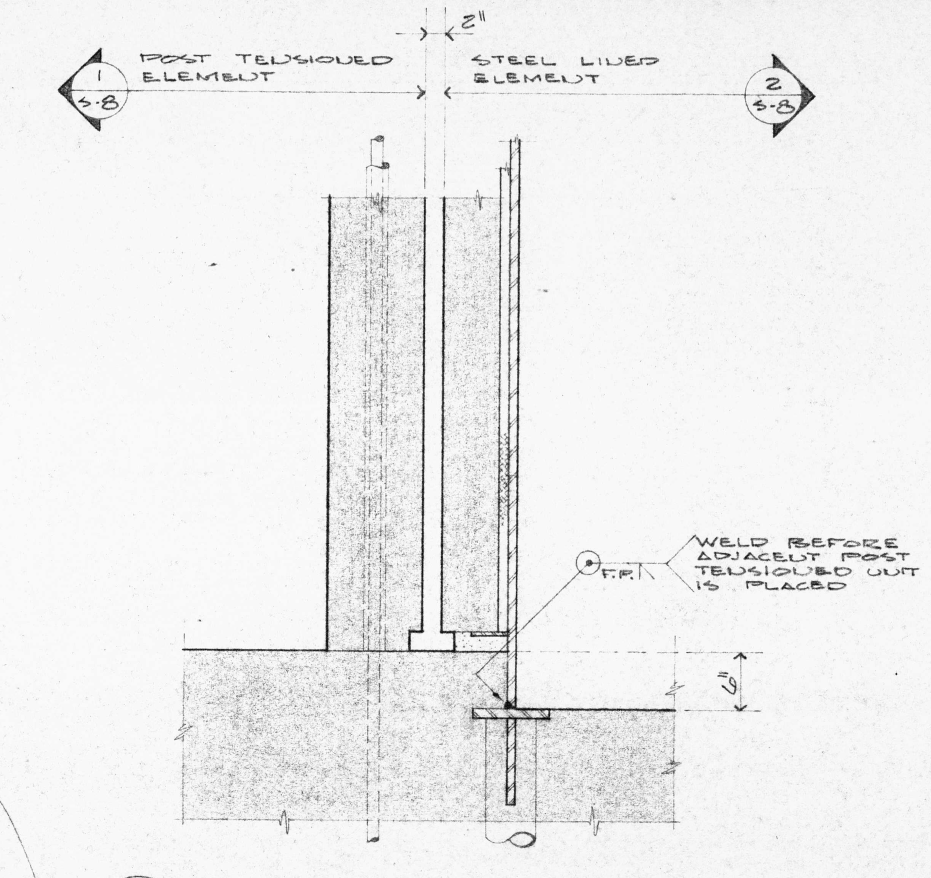
SHEET S 7 OF 8



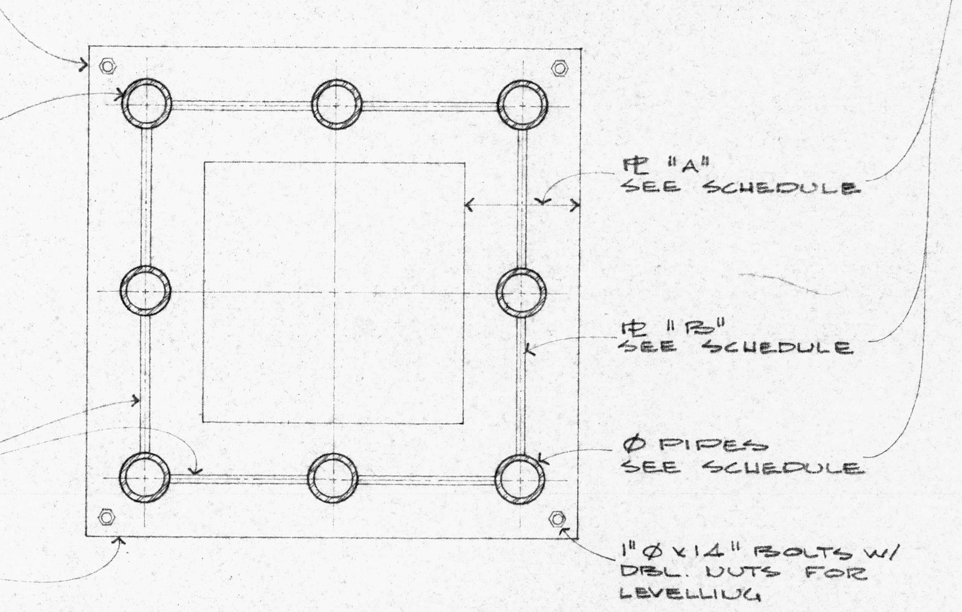
1/S-8 BASE CONNECTION - POST TENSIONED ELEMENT
1" = 1' - 0"



2/S-8 BASE CONNECTION - STEEL LINED "E" ELEMENTS
1" = 1' - 0"



3/S-8 SECTION
1" = 1' - 0"

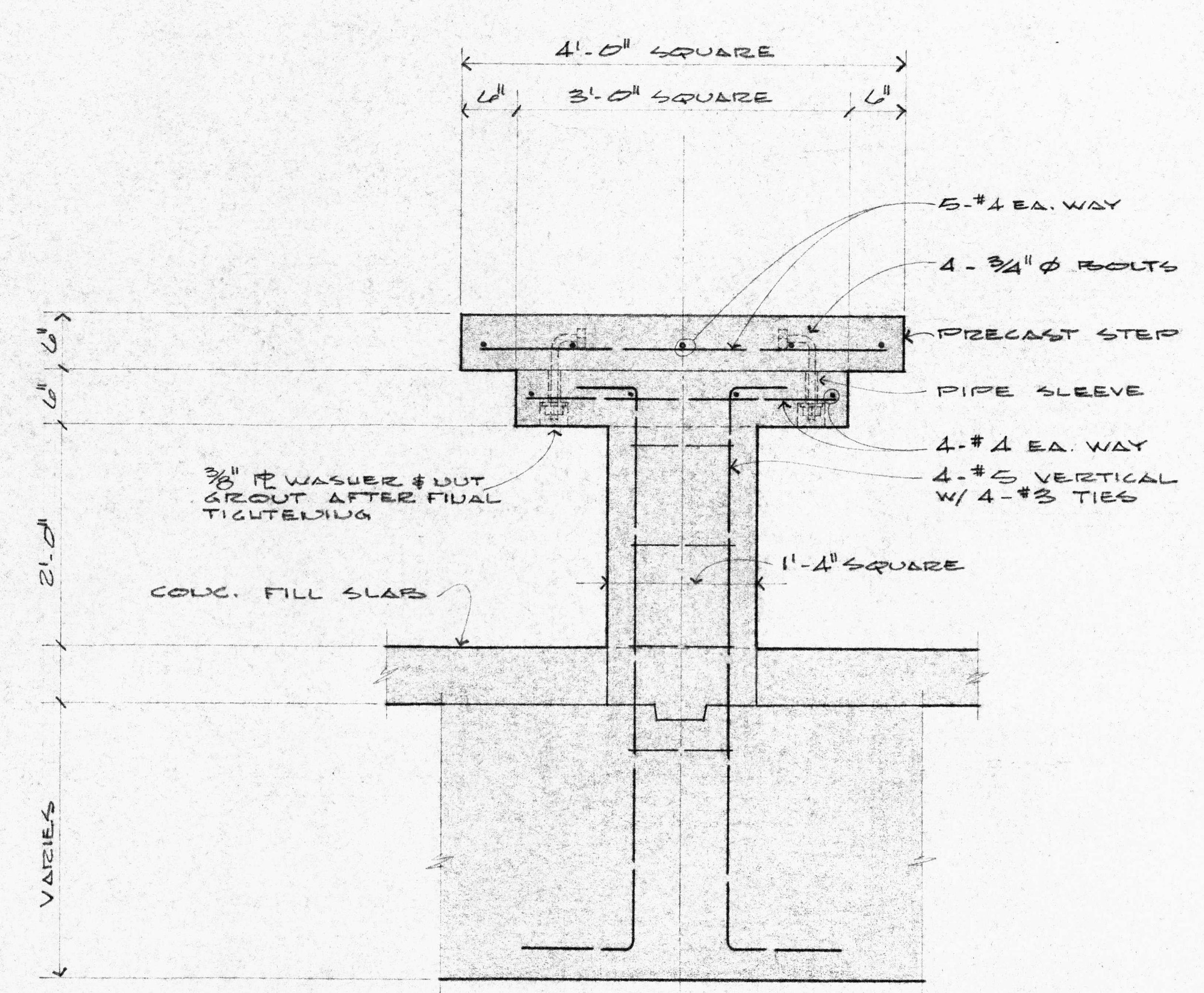


PLAN - PIPE RACK

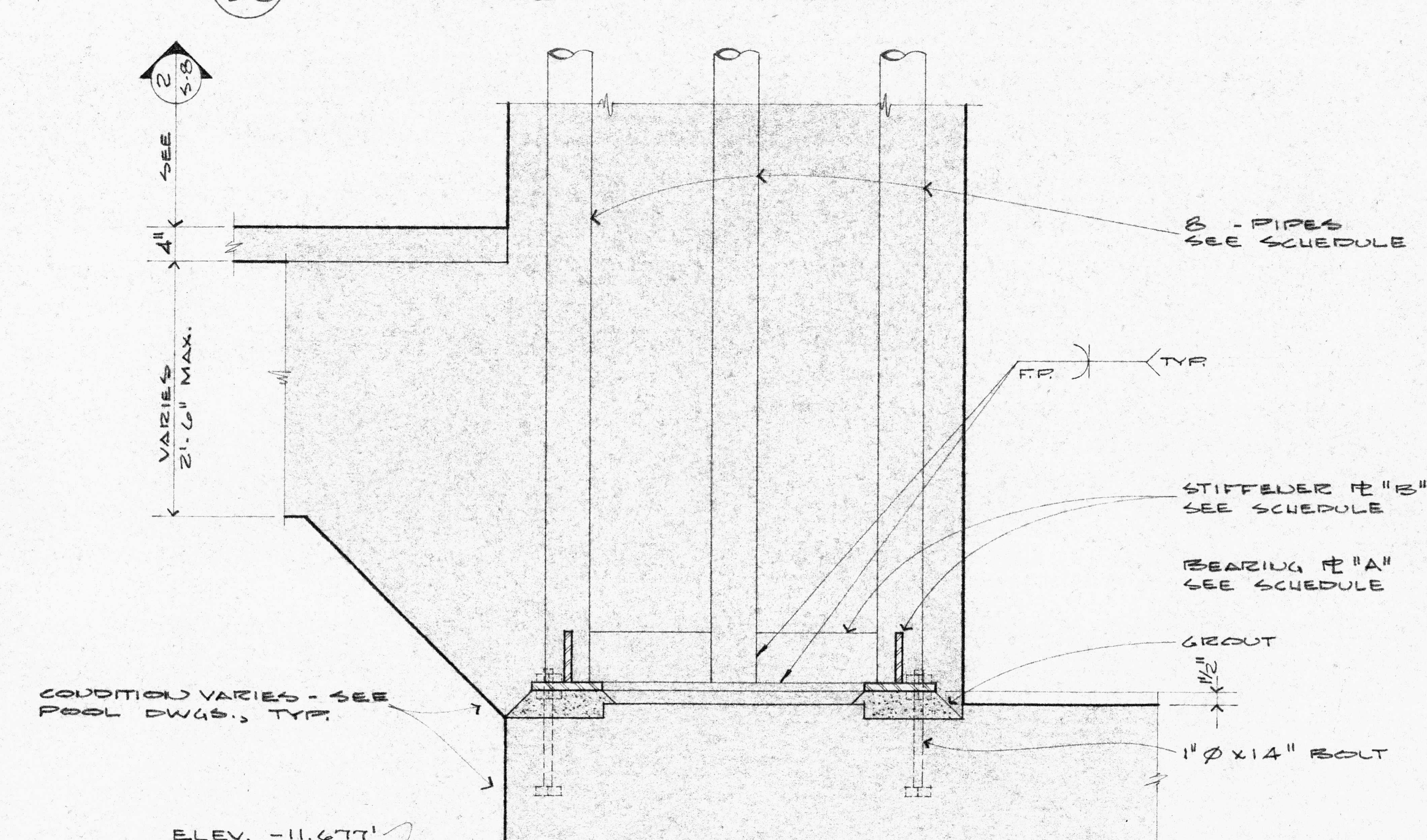
STRUCTURE	Ø PIPE	℄ "A"	℄ "B"
NL	8-5"Ø XX STRONG	9½" x 1¾"	8" x ¾"
EC	"	"	"
NC (1 & 13)	8-4"Ø XX STRONG	8½" x 1½"	"
EF	8-5"Ø X STRONG	6" x 1⅛"	6" x ¾"
EJ (1 & 12)	"	"	"
EO (1 & 10)	"	"	"
PA	8 - 4"Ø STD	3½" x ¾"	4" x ⅝"

6/S-8 PIPE RACK SCHEDULE

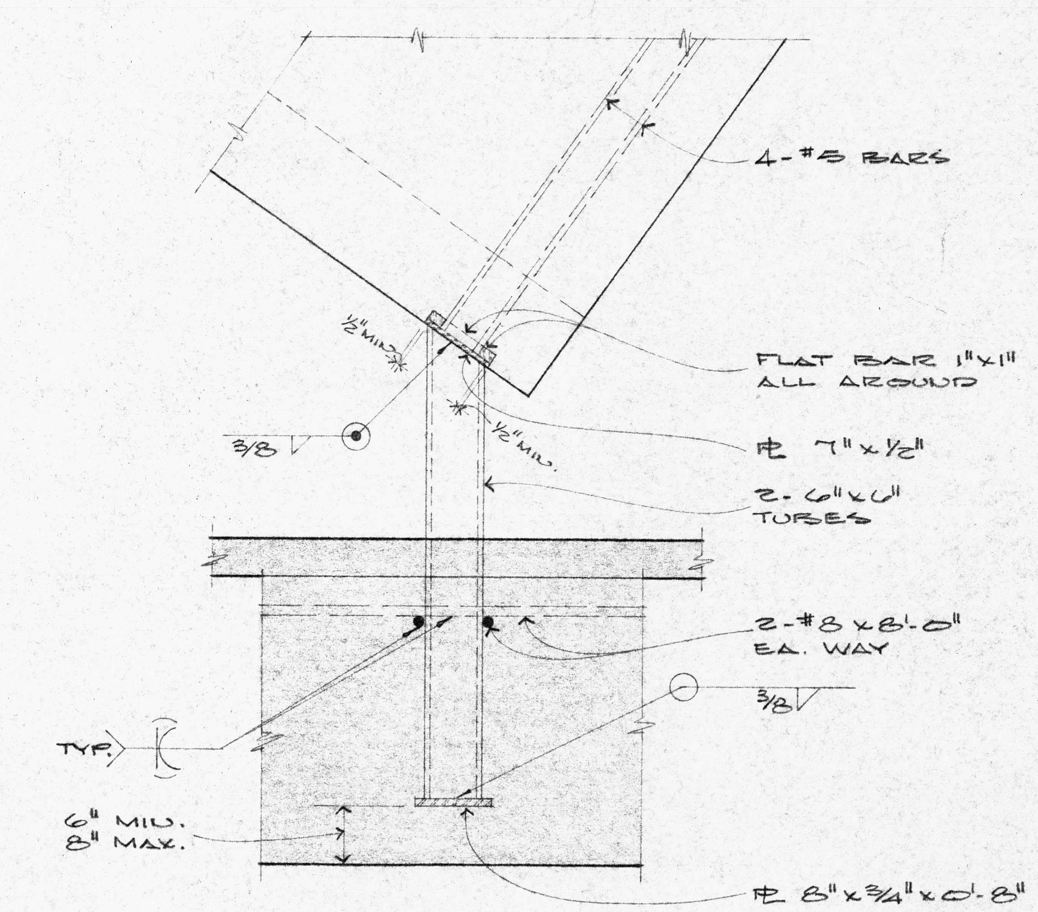
UNIT	℄ SIZE	NUMBER & SIZE 60 KSI BARS (EACH FACE)	FLAT BARS (EACH FACE)
NL-5	5" x 1"	7-#9	4-1" x 1½"
NC-5	5" x 1"	7-#9	4-1" x 1½"
NC-8		4-#5	4-1" x 1½"
EC-4 (BOTH ENDS)	7" x 1"	9-#9 x 5'-0"	4-1" x 1½" x 8"
EC-6 & 7	5 x ½"	6-#5 x 3'-0"	3-1" x 1¼" x 5"
EF-4 & 7	5 x ¾"	8-#6 x 3'-6"	3-1" x 1" x 5"
EJ-3	7 x ⅞"	6-#9	4-1" x 1½" x 8"
EJ-6	5" x ¾"	6-#8 x 4'-6"	4-1" x 1½" x 5"
EJ-8	5" x ½"	6-#5	3-1" x 1" x 5"
EO-5	5" x ⅞"	5-#9	4-1" x 1½" x 5"
EO-8		4-#5	3-1" x 1" x 5"
PA-4	5" x ½"	6-#5	3-1" x 1" x 5"
NK-2 & 4	7" x ¾"	8-#6	4-1" x 1½" x 8"



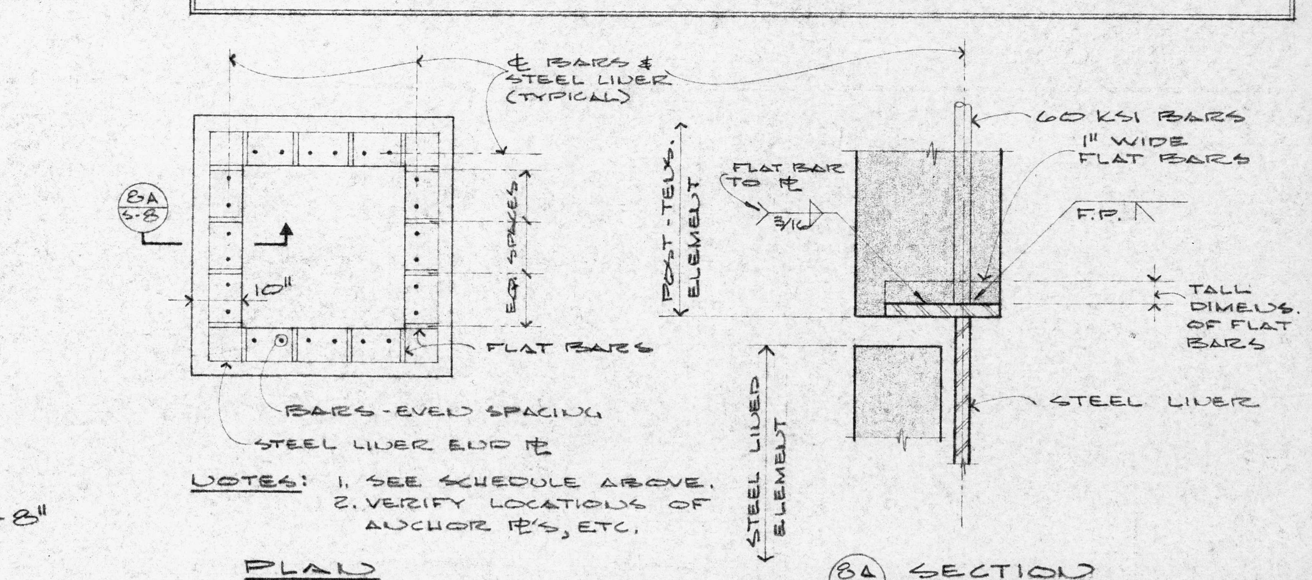
4/S-8 PRECAST CONCRETE PEDESTAL
1" = 1' - 0"



5/S-8 BASE CONNECTION - STEEL LINED "N" ELEMENTS
1" = 1' - 0"



7/S-8 SUPPORT TUBE DET.
1" = 1' - 0"



8/S-8 STEEL LINER END ℄ SCHEDULE & DETAILS

GFDS ENGINEERS
CIVIL & STRUCTURAL ENGINEERS
1620 MONTGOMERY ST., SAN FRANCISCO, CALIFORNIA

EMBARCADERO PLAZA
EMBARCADERO LOWER MARKET APPROVED REDEVELOPMENT PROJECT AREA E1

SCULPTURE
BASE, FOUNDATIONS, SECTIONS & DETAILS

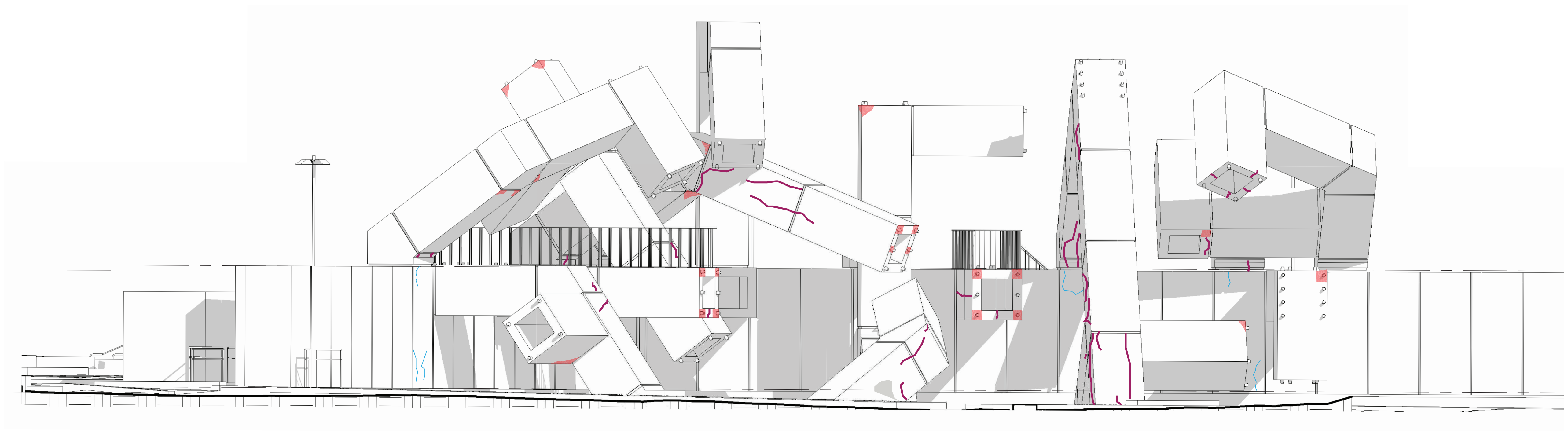
SAN FRANCISCO REDEVELOPMENT AGENCY IN COOPERATION WITH THE SAN FRANCISCO RECREATION AND PARK DEPARTMENT AND SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS

JOINT VENTURE ARCHITECTS:
LAWRENCE HALPRIN & ASSOCIATES
JOHN S. BOLLES ASSOCIATES
MARIO J. CIAMPI & ASSOCIATES

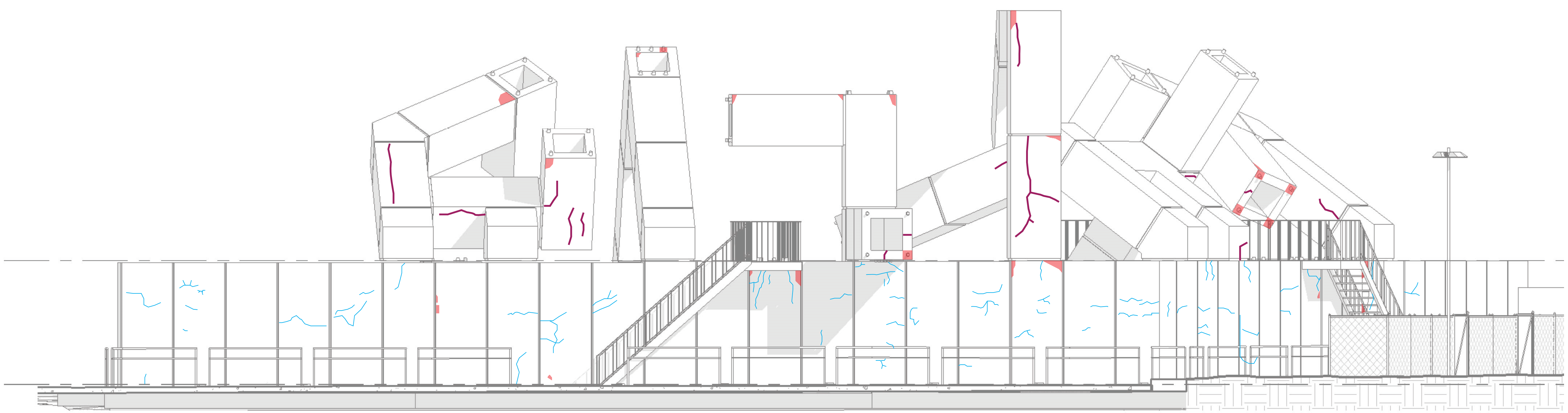
SCALE: as noted
DATE: JAN. 25, 1969
DRAWN BY: jmo

S8

SHEET S8 OF 8



WEST ELEVATION



EAST ELEVATION

LEGEND

- SPALLING
- CRACK
- HAIRLINE CRACK

Conditions Assessment
Annotated Elevation Drawings

VAILLANCOURT FOUNTAIN

PAGE&TURNBULL

APPLIED MATERIALS & ENGINEERING, INC.
980 41st Street
Oakland, CA 94608
Tel: (510) 420-8190
FAX: (510) 420-8186
e-mail: info@appmateng.com

February 20, 2025

Project No.: 1250111C

Ms. Carolyn Kiernat
PAGE & TURNBULL
170 Maiden Lane, 5th Floor
San Francisco CA 94108

Email: Kiernat@page-turnbull.com

Subject: Non-destructive Testing
Vaillancourt Fountain, San Francisco, CA

Dear Ms. Kiernat:

As requested, Applied Materials & Engineering, Inc. (AME) has completed ground penetrating radar (GPR) scans of the precast concrete sculpture for reinforcing steel and potential connections at the subject location.

PROCEDURES & RESULTS

GPR Survey Vaillancourt Precast Concrete Tubes

Ground Penetrating Radar (GPR) was used to survey the precast concrete tubes for reinforcing steel patterns and potential connections of the various angles/cantilevered sections.

Additional scans were made at the rear wall near the staircase to determine if the formed rough shapes protruding from the precast concrete were reinforced. No reinforcing was detected in the rough shapes protruding at rear wall.

Results of our GPR survey are shown in Table I.

Photos 1 through 4 show location and laid out markings (blue and red) where scans were conducted.

Please call if any questions arise.

Sincerely,

APPLIED MATERIALS & ENGINEERING, INC.

Brandon Antos
Project Manager

Reviewed by:

Armen Tajirian, Ph.D., PE
Principal

TABLE I

GPR SURVEY OF PRECAST CONCRETE TUBES TEST RESULTS

VAILLANCOURT FOUNTAIN ART

Embarcadero, San Francisco, CA

AME Project No. 1250111C

Photo I.D. *	Surveyed Area Description Summary
1	Precast tube reinforcing spacing is 12" on center each way with 4" and 3½" cover from outside face.
2	The precast tubes appear to have some sort of connection/through bolt or pipe holding cantilevered sections together. See red markings in Photo 2. Red markings indicate potential through bolt connections which line up with end caps at exterior of precast tube. Blue marking indicates reinforcing steel.
3	Steel plate at end cap.
4	Rear wall near staircase. No reinforcing at protruding precast formed shapes.

*See attached Photos 1, 2, 3 and 4.

Photo 1. Side view of one of the tubes with GPR scan markings on the face of the tube.

Photo 2. Red GPR scan markings indicate a rod of an unknown material connecting the tubes.

Photo 3. Steel plate at end cap.

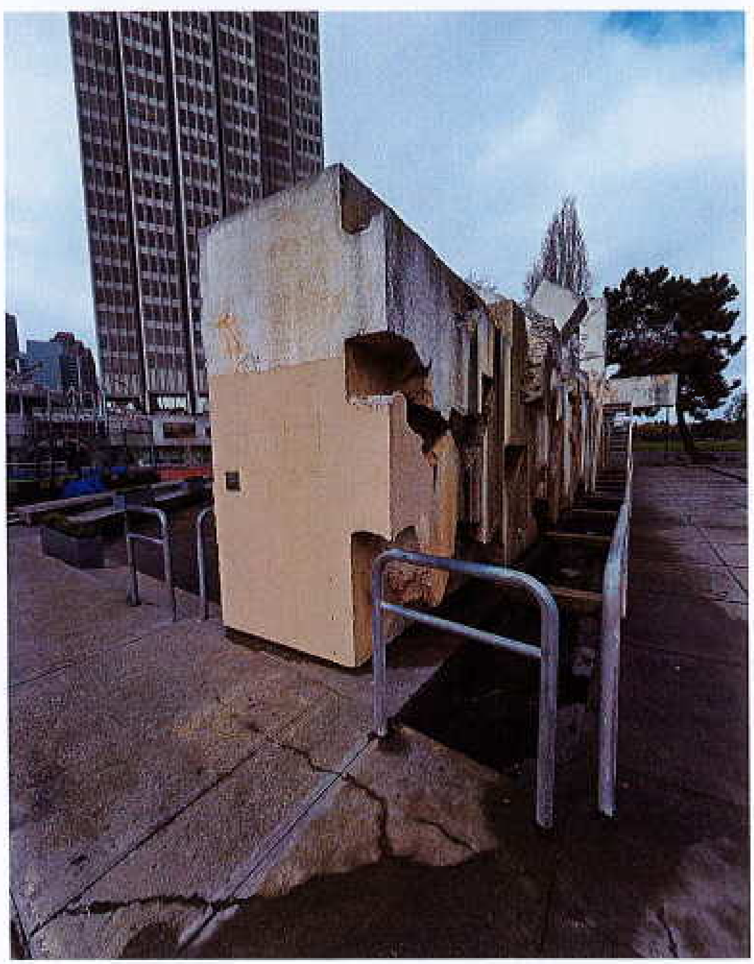


Photo 4. Rear wall – no reinforcing steel was found.

NORTH TOWER ENVIRONMENTAL
Hazardous Material Consultants

PRE-CONSTRUCTION HAZARDOUS MATERIAL SURVEY

Page & Turnbull
Vaillancourt Fountain
Embarcadero Plaza
San Francisco, California

PREPARED BY:
North Tower Environmental
1485 Bayshore Boulevard, #185
San Francisco, California

March 13, 2025
Revision 01 - April 25, 2025

PRE-CONSTRUCTION HAZARDOUS MATERIAL SURVEY

Page & Turnbull
Vaillancourt Fountain
Embarcadero Plaza
San Francisco, California

TABLE of CONTENTS

ATTACHMENTS

APPENDICES

A. EXECUTIVE SUMMARY

This summary is not to be read as a stand-alone document. The report shall be read in its entirety. The reader must review the detailed information provided in the accompanying text. Any interpretation, use and conclusion resulting from the data contained in this report is the responsibility of the reader.

North Tower Environmental (NTE) conducted a Pre-Construction Hazardous Materials Survey at the request of Page and Turnbull. The survey was conducted at the Vaillancourt Fountain located at the Embarcadero Plaza (Market Street and Steuart Street) in San Francisco, California. Sampling was limited to inspecting the sculpture, fountain basin, surrounding walkways and associated pump room for visible and accessible suspect Asbestos Containing Material (ACM) and Lead Based Paint (LBP) and Polychlorinated Biphenyl (PCB) sealant/building material.

B. INTRODUCTION

NTE was requested by Page and Turnbull to conduct a Pre-Construction Hazardous Materials Survey for visible and accessible ACM and LBP at the Vaillancourt Fountain located at the Embarcadero Plaza (Market Street and Steuart Street) in San Francisco, California. Building materials and areas impacted by the planned construction project include the sculpture, fountain basin, surrounding walkways and pump room.

Drawings and as-built plans were not provided to NTE for this project. The approach used to achieve the stated objective did not involve destructive surveying methods, such as breaking into wall voids or penetrating inaccessible wall or ceiling cavities to locate suspect materials, except for an attempt to access a potential waterproofing membrane beneath the fountain basin. NTE was able to use a concrete core drill to reach a depth of 1ft below ground surface at the fountain basin and did not encounter waterproofing membrane material. It should be assumed that a waterproofing membrane is present beneath the fountain basin and contains ACM.

The survey and report were conducted and issued by Pedro Rico and Carolyn Henry, Cal/OSHA Certified Asbestos Consultants and CDPH accredited professionals. Consultant certifications are contained in Appendix A.

C. ASBESTOS CONTAINING MATERIAL SURVEY AND FINDINGS

Bulk Asbestos Sample Collection and Testing Procedures: Bulk samples were collected from various suspect ACM and LBP. The sampling was limited to the scope of the planned renovation project. The samples were collected by cutting the materials with a razor knife, hammer, and/or scraping with a handheld chisel.

Laboratory results are presented in Tables 1 and 2, and laboratory reports are contained in Appendix B. All samples, along with a completed chain of custody, were delivered to LA Testing of Huntington Beach, California. LA Testing is accredited by the National Institute of Standards and Technology and by the National Voluntary Laboratory Accreditation Program. Bulk asbestos samples were analyzed by polarized light microscopy (PLM).

During the inspection 49 bulk samples of suspected asbestos containing material were collected. The Sample Location Diagram contained in Appendix E identifies the area where the bulk asbestos samples were collected.

Suspect materials in inaccessible locations (such as within some wall and ceiling cavities, and under sub-floors and behind mirrors/panels), if present, may not have been characterized by this survey. Such materials, if encountered, should be treated as ACM until and unless sampling and analysis conducted in accordance with EPA requirements reveal this to be otherwise. The identification and analysis of these materials should be conducted as the materials are encountered and prior to their disturbance.

Asbestos Sampling Results: Based on the sample analysis and findings, below is a list of the materials that have been determined to contain asbestos along with the corresponding NESHAPS category:

Asbestos Material	NESHAPS Category
Waterproof Membrane (Presumed)	Category II Non-Friable
Pump Room Pipe Insulation	Regulated Asbestos Containing Material - Friable
Boiler Rope Gasket	Regulated Asbestos Containing Material - Friable
Gaskets	Category I Non-Friable

The NESHAP and AHERA regulations define ACM as material containing more than 1% asbestos; materials containing less than 1% asbestos are not ACM under NESHAP or AHERA. However, Cal/OSHA worker protection regulations define asbestos containing construction material (ACCM) to be any material containing greater than 0.1% asbestos by weight. The California Division of Occupational Safety and Health (Cal/OSHA) defines four classes of asbestos-related construction work (Class I, Class II, Class III, and Class IV) which are regulated under the Construction Safety Orders for Asbestos. These work classes and their respective requirements pertain to materials containing more than 1% asbestos.

Analytical Results

A total of forty-nine (49) bulk samples of visible and accessible suspect ACM were collected during the survey. For a detailed listing of all materials sampled, refer to attached Table 1, Summary of Asbestos of Asbestos Sample Results (PLM) and Appendix B. The summary below is a compilation of the distinct types of materials and locations, reported by the laboratory, to contain detectable concentrations of asbestos.

SUMMARY OF ASBESTOS SAMPLING RESULTS			
Asbestos Containing Material	**Location**	**% Asbestos (Chrysotile)**	**Estimated Quantity**
Pipe Insulation	Pump Room (Note: This insulated pipe run exits the room through a wall opening, presumably to the exterior underground area)	40%	2 lf
Gaskets	Pump Room (at pipes throughout)	40 %	60 Gaskets
Boiler Rope Gasket	Boiler Door	60%	40 lf
Sealants, Ribbing Material, Gaskets and Insulation	Boiler Interior - Concealed /Inaccessible	Presumed ACM	No Applicable
Waterproof Membrane	Category II Non-Friable	Presumed ACM	Not Applicable
Fire Doors	Pump Room	Presumed ACM	Not Applicable

D. LEAD PAINT SURVEY AND FINDINGS

Background

The U.S. Department of Housing and Urban Development (HUD) is the federal agency responsible for assessing public housing for Lead-Based Paint (LBP) hazards, and HUD has developed and published procedures for use in measuring LBP in residential settings. HUD's Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (HUD, June 1995, with 1997 Chapter 7 Revision) are recognized as the industry standard for assessing LBP in residential properties. Although the HUD Guidelines do not directly apply to non-residential facilities, they do provide an industry benchmark for the testing and assessment of lead in soil, dust, and paint.

For reference purposes, HUD and the U. S. EPA define "lead-based paint" as paint having a concentration of lead equal to or greater than 1.0 milligram per square centimeter (1.0 mg/cm^2) by X-ray fluorescence (XRF) analyzer, or greater than 0.5% by weight [5,000 parts per million (ppm)] by laboratory analysis. For the purposes of this report, the sample may also have a lower lead content and be considered Lead Containing Paint (LCP), which is any paint indicating detectable concentrations of lead but less than 1.0 mg/cm^2 (0.5 % by weight).

The Cal/OSHA Construction Industry Safety Orders for Lead (8 CCR §1532.1, et. seq.) apply to all construction work (including renovation) where an employee may be exposed to lead, and the standard regulates construction work practices involving any detectable concentration of lead. Therefore, all construction-related work performed on surface coatings or building components containing detectable concentrations of lead must be done in compliance with the requirements of this standard.

CDPH also regulates lead-related construction (as well as the generation and control of lead hazards) in residential and public buildings. CDPH uses the same definition of "lead-based paint" as do HUD and EPA. CDPH enforces Title 17 of the California Code of Regulations, Division 1, Chapter 8 governing the Accreditation, Certification, and Work Practices for Lead-Based Paint and Lead Hazards (17 CCR §35001, et. seq.).

Lead Sampling Results

Bulk paint chip samples were collected from representative visible and accessible suspect painted surfaces that may be impacted during plan roof repair activities. The sampling was limited to the scope of the planned renovation project. The samples were collected by cutting and scraping the materials with a razor knife and/or scraping with a handheld chisel. Laboratory results are presented in Table 2 and laboratory reports are contained in Appendix C. A total of 13 bulk paint samples were submitted to the lab for Flame Atomic Absorption (Flame AA) analysis, along with a completed chain of custody, and were delivered to Micro Analytical Laboratories of Emeryville, California.

Laboratory results indicated that lead was present in the painted surfaces listed below. Table 2 contains a detailed listing of the materials tested for lead. Painted surfaces not sampled as part of this survey should be assumed to contain lead unless bulk paint chip sampling and laboratory analysis determines otherwise.

<table>
<tr><th colspan="3">SUMMARY OF LEAD SAMPLING RESULTS</th></tr>
<tr><th colspan="3">Vaillancourt Fountain, San Francisco, California</th></tr>
<tr><th>Type</th><th>Material</th><th>Location</th></tr>
<tr><td>Lead-Based Paint</td><td>Pump Room:
Beige, Red and Gray Paint and other color paints</td><td>Pump Room:
Throughout on painted surfaces including pumps, tanks and associated components; steel; steel bases/framing; doors/frames; all piping, conduits, lines; flanges; motors; ladder and associated components; Walls and Ceilings</td></tr>
<tr><td rowspan="2">Lead-Containing Paint</td><td>Fountain Area:
Beige Paint and all other painted/coated surfaces</td><td>Fountain Area:
Pump Room Fenced-In Enclosure Steel Posts; Metal Door/Hatch Access to Pump Room; and Railings</td></tr>
<tr><td>Pump Room: Dark Blue and Gray Floor Paint</td><td>Pump Room:
Painted Floors and Boiler</td></tr>
</table>

Lead Paint Hazards

Painted surfaces and coatings throughout the building interior and exterior inspected as part of this survey were noted to be in deteriorated condition in many areas, as documented in photos in Appendix F. The damaged paint includes primer and paint coatings on the exterior railings, support posts, doors and throughout the pump room interior. Suspect lead-containing debris and dust noted on horizontal surfaces and floor throughout the pump room should be cleaned and remediated.

E. POLYCHLORINATED BIPHENYL BULK SAMPLING

NTE conducted sampling for visible and accessible suspect polychlorinated biphenyl (PCB) containing building materials. The sampling was intended to provide information concerning suspected PCB-containing materials that could require removal and disposal per 40 CFR 761. NTE identified two suspect PCB sealants that were part of the fountain.

Two (2) caulking/sealants were sampled from the building exterior. Samples were submitted to EMSL Analytical of Indianapolis, Indiana, under chain-of-custody procedures for analysis according to the U.S. EPA method SW846 8082A.

Analytical results reported that the bulk samples did not contain PCBs above the laboratory detection limit. Table 3 contains a summary of the PCB analytical results. The PCB laboratory analytical report is contained in Appendix D of this report.

F. LIMITATIONS

The reported results in this report are intended for discussion and informational purposes only. These results should not be solely used in the preparation or design of specific asbestos abatement response options without the supplement of additional field-specific and material-specific information.

The judgments, conclusions, and recommendations described in this report pertain to the conditions judged to be present or applicable at the time the work was performed. Future conditions may differ from those described herein and this report is not intended for use in future evaluations of the facility unless an update is conducted by a Certified Asbestos Consultant familiar with currently used asbestos survey practices and this subject facility.

North Tower Environmental performed its services using that degree of care and skill ordinarily exercised under similar conditions by reputable members of our profession practicing in the same or similar locality. No other warranty, expressed or implied, is made or intended by our performance of consulting services or by furnishing our written report. This report has been prepared on behalf of and exclusively for the use of Page and Turnbull. This report shall not, in whole or in part, be disseminated or conveyed to any other party, or be used or relied upon by any other party, in whole or in part, without the prior written consent of North Tower Environmental.

Use of this report is provided to Page and Turnbull solely for its exclusive use and shall be subject to the terms and conditions in the applicable agreement between Page and Turnbull and North Tower Environmental. Any third-party use of this report shall also be subject to the terms and conditions governing the work in the agreement between Page and Turnbull and North Tower Environmental. Any unauthorized release or misuse of this report shall be without risk to North Tower Environmental.

Certain information contained in this report may have been rightfully provided to North Tower by third parties or other outside sources. North Tower Environmental does not make any warranties or representations, whether expressed or implied, regarding the accuracy of such information, and shall not be held accountable or responsible in the event that any such inaccuracies are present.

G. CONCLUSIONS and RECOMMENDATIONS

Asbestos Containing Material:

- The intent of sampling was to identify visible and accessible suspect Asbestos Containing Material (ACM), Lead Based Paint (LBP) and polychlorinated biphenyl (PCB) building materials expected to be impacted during the upcoming planned construction project. Materials not identified in this report that are present or discovered at the site must be assumed to contain ACM, LBP and/or PCBs until sampled and proven otherwise.

- Asbestos Containing Material identified in this survey report includes insulated pipes, pipe system gaskets, boiler door gaskets, the boiler interior and fire doors. ACM is also presumed to be present in the pump room fire doors and the waterproofing membrane concealed beneath the fountain floor/basin concrete slab.

- If planned renovation work will disturb asbestos containing materials, the asbestos should be abated by a licensed, certified, and registered asbestos abatement contractor prior to renovation activities. Abatement should be performed in accordance with a site-specific asbestos abatement specification and/or asbestos abatement work plan.

Lead Paint:

- Lead Based Paint and Lead Containing Paint were identified during this survey. All work to be performed on surfaces coated with any detectable level of lead, the contractor must comply with Cal/OSHA Construction Safety Orders, Lead, Section 1532.1, Title 8, CCR and CDPH Title 17.

- Painted surfaces and coatings inspected as part of this survey were noted to be in deteriorated condition on the exterior railings, support posts, doors and throughout the pump room interior. Suspect lead-containing debris and dust noted on horizontal surfaces and floor throughout the pump room should be cleaned and remediated.

- Paint and other suspect lead containing materials not sampled as part of this survey should be assumed to contain lead until and unless they are sampled by a CDPH-certified Inspector/Assessor, analyzed by an accredited laboratory, and reported to have no detectable concentrations of lead.

Polychlorinated Biphenyl Bulk Sampling:

- NTE conducted sampling for visible and accessible suspect polychlorinated biphenyl (PCB) containing building materials to provide information concerning suspected PCB-containing materials that could require removal and disposal per 40 CFR 761. NTE identified two suspect PCB sealants that were part of the fountain basin. Analytical results reported that the bulk samples did not contain PCBs above the laboratory detection limit.

TABLE 1 Asbestos Sampling Results - Polarized Light Microscopy (PLM) Analysis Vaillancourt Fountain Survey, San Francisco, California			
Fountain Sampling			
Sample Number	**Building Material**	**Location**	**Asbestos Content**
NT-5006-021425-FC-1A	Fountain Concrete	South East Inner Wall (Upper)	None Detected
NT-5006-021425-FC-2A	Fountain Concrete	Square Platform Base	None Detected
NT-5006-021425-FC-3A	Fountain Concrete	Square Platform Pad	None Detected
NT-5006-021425-FC-4A	Fountain Concrete	North East Pool/ Fountain Floor- 6" Depth	None Detected
NT-5006-021425-FC-5A	Fountain Concrete	West Middle Wall	None Detected
NT-5006-021425-FC-6A	Fountain Concrete	Perimeter Waterway Wall	None Detected
NT-5006-021425-SC-1A	Sculpture Concrete	Section #10 Inner Wall	None Detected
NT-5006-021425-SC-2A	Sculpture Concrete	Section #8 Inner Wall	None Detected
NT-5006-021425-SC-3A	Sculpture Concrete	Section #8 Outer Texture	None Detected
NT-5006-021425-SC-4A	Sculpture Concrete	Section #6 Outer Texture	None Detected
NT-5006-021425-SC-5A	Sculpture Concrete	Section #2 Inner Wall	None Detected
NT-5006-021425-PC-1A	Pebble Concrete	Fenced-In Pump Room Access Enclosure Area - Wall - Similar to SC	None Detected
NT-5006-021425-PC-2A	Pebble Concrete	Fenced-In Pump Room Access Enclosure Area - Wall - Similar to SC	None Detected
NT-5006-021425-CA-1A	Caulking	Fenced-In Pump Room Access Enclosure Area - Square Access Panel	None Detected
NT-5006-021425-CA-2A	Caulking	Fenced-In Pump Room Access Enclosure Area - Square Access Panel	None Detected
NT-5006-021425-BC-1A	Black Coating / Tar	Sculpture Section #6 - Steel Post Base at Fountain/Pool Floor	None Detected
NT-5006-021425-BC-2A	Black Coating / Tar	Sculpture Section #8 - Lower Inner Wall	None Detected
NT-5006-021425-BC-3A	Black Coating / Tar	North East Fountain/Pool Floor Drain	None Detected
NT-5006-021425-CA-1B	Caulking	Fountain Perimeter Waterway at Side Wall Metal Plate - North	None Detected

TABLE 1 Asbestos Sampling Results - Polarized Light Microscopy (PLM) Analysis Vaillancourt Fountain Survey, San Francisco, California			
Fountain Sampling			
Sample Number	**Building Material**	**Location**	**Asbestos Content**
NT-5006-021425-CA-2B	Caulking	Fountain Perimeter Waterway at Side Wall Metal Plate - East	None Detected
NT-5006-021425-CA-1C	White Caulking	Fountain Perimeter Wall Seam at Waterway - North	None Detected
NT-5006-021425-CA-2C	White Caulking	Fountain Perimeter Wall Seam at Waterway - East	None Detected
NT-5006-021425-CA-1D	Gray Caulking	Sidewalk Slab - East	None Detected
NT-5006-021425-CA-2D	Gray Caulking	Curb - East	None Detected
NT-5006-021425-SC-1A	Sidewalk Concrete	Floor - East of Fountain	None Detected
NT-5006-021425-SC-2A	Sidewalk Concrete	Floor - North of Fountain	None Detected
NT-5006-021425-GBM-1A	Gray Brick and Mortar	Floor - East of Fountain	None Detected
NT-5006-021425-GBM-2A	Gray Brick and Mortar	Floor - North of Fountain	None Detected
NT-5006-021425-RBM-1A	Red Brick and Mortar	Floor - West of Fountain	None Detected
NT-5006-021425-RBM-2A	Red Brick and Mortar	Floor - West of Fountain	None Detected
Fountain Mechanical Pump Room Sampling			
NT-5006-021425-C-1A	Concrete	Pad at Filtered Water Tank Lines- S/SW	None Detected
NT-5006-021425-C-2A	Concrete	East Closet- East Wall	None Detected
NT-5006-021425-C-3A	Concrete	Floor - Main Pump Room - West	None Detected
NT-5006-021425-G-1A	***Gasket***	***Pump #2 -24" Elbow***	***40% Chrysotile***
NT-5006-021425-G-2A	***Gasket***	***Pump #1 - Flange at South Wall***	***40% Chrysotile***
NT-5006-021425-G-3A	***Gasket***	***Pump #4 - Flange at South Wall***	***40% Chrysotile***
NT-5006-021425-PI-1A	***Pipe Insulation***	***East Closet- Upper Conduit at Concrete Wall***	***40% Chrysotile***
NT-5005-021425-PI-2A	***Pipe Insulation***	***East Closet- Upper Conduit at Concrete Wall***	***40% Chrysotile***
NT-5006-021425-PI-3A	***Pipe Insulation***	***East Closet- Upper Conduit at Concrete Wall***	***40% Chrysotile***

TABLE 1 Asbestos Sampling Results - Polarized Light Microscopy (PLM) Analysis Vaillancourt Fountain Survey, San Francisco, California			
Fountain Sampling			
Sample Number	**Building Material**	**Location**	**Asbestos Content**
NT-5006-021425-PI-1B - Wrap	Hard-Pack Pipe Insulation	Insulated Water Line to West Boiler-Main Pump Room	None Detected
NT-5006-021425-PI-1B - Insulation	Hard-Pack Pipe Insulation	Insulated Water Line to West Boiler-Main Pump Room	None Detected
NT-5006-021425-PI-2B - Wrap	Hard-Pack Pipe Insulation	Insulated Water Line to West Boiler-Main Pump Room	None Detected
NT-5006-021425-PI-2B - Insulation	Hard-Pack Pipe Insulation	Insulated Water Line to West Boiler-Main Pump Room	None Detected
NT-5006-021425-PI-3B- Wrap	Hard-Pack Pipe Insulation	Insulated Water Line to West Boiler-Main Pump Room	None Detected
NT-5006-021425-PI-3B-Insulation	Hard-Pack Pipe Insulation	Insulated Water Line to West Boiler-Main Pump Room	None Detected
NT-5006-021425-RI-1A	Rope Insulation	East Closet - 8" Cast Iron Pipe at Concrete Wall	None Detected
NT-5006-021425-RI-2A	Rope Insulation	East Closet - 8" Cast Iron Pipe at Concrete Wall	None Detected
NT-5006-021425-RI-1B	Rope Insulation	East Closet - 4" Abandoned Metal Conduit at Concrete Wall	None Detected
NT-5006-021425-RI-2B	Rope Insulation	East Closet - 4" Abandoned Metal Conduit at Concrete Wall	None Detected
NT-5006-021425-BG-1A	***Boiler Door Gasket***	***Main Pump Room at Boiler***	***60% Chrysotile***
NT-5006-021425-BG-2A	***Boiler Door Gasket***	***Main Pump Room at Boiler***	***60% Chrysotile***
NT-5006-021425-IP-1A	Insulation Paper	East Closet - 8" Cast Iron Line at Concrete Wall	None Detected

TABLE 2

Lead Paint Chip Sampling Data - Flame AA Analysis

Vaillancourt Fountain Survey, San Francisco, California

Sample Number	Sample Date	Sample Information	Sample Location/Substrate	Condition	Sample Results (% by weight)
NT-5006-021425-L01	2/14/2025	Beige and Red Paint	Main Pump Room- Pump #2 Metal Flange Cap	Deteriorated	8.40%
NT-5006-021425-L02	2/14/2025	Beige and Red Paint	Main Pump Room - Pump #1 - 24" Metal Elbow	Deteriorated	0.49%
NT-5006-021425-L03	2/14/2025	Beige and Red Paint	Main Pump Room - 12" Cast Iron Pipe Between Pump 3 & 4	Deteriorated	6.80%
NT-5006-021425-L04	2/14/2025	Beige and Red Paint	Main Pump Room - 4" Metal Gas Supply Conduit	Deteriorated	11%
NT-5006-021425-L05	2/14/2025	Beige Paint	Main Pump Room - 9" Cast Iron Pool Drain Line	Deteriorated	9.00%
NT-5006-021425-L06	2/14/2025	Gray and Red Paint	Main Pump Room - Pump #4 Metal Motor	Deteriorated	0.25%
NT-5006-021425-L07	2/14/2025	Gray and Red Paint	Main Pump Room - NE Metal Ladder Rails	Deteriorated	0.34%
NT-5006-021425-L08	2/14/2025	Beige and Red Paint	Main Pump Room - Pump #1 Steel Base/Frame	Deteriorated	0.50%
NT-5006-021425-L09	2/14/2025	Gray Paint	Main Pump Room- Concrete Floor	Deteriorated	0.42%
NT-5006-021425-L10	2/14/2025	Beige and Gray Paint	Main Pump Room - Metal Door at Electrical Room	Deteriorated	0.31%
NT-5006-021425-L11	2/14/2025	Dark Blue Paint	Main Pump Room - Metal Boiler	Deteriorated	0.02%
NT-5006-021425-L12	2/14/2025	Beige Paint	Fenced-In Pump Room Access Enclosure - Metal Post - Good	Good	0.03%
NT-5006-021425-L13	2/14/2025	Beige Paint	Pump Room Square Access Door - Metal - Damaged	Deteriorated	0.31%
NT-5006-021425-L14	2/14/2025	Black Paint/ Coating	Sculpture Section #8 - Steel Post at Fountain/Pool Floor - Damaged	Deteriorated	< 0.0064%
NT-5006-021425-L15	2/14/2025	Beige Paint	Sculpture Section #6 - Outer Concrete Wall - Good	Good	< 0.0064%
NT-5006-021425-L16	2/14/2025	Beige and Green Paint	Sculpture Bridge #1 (North) - Metail Railings - Some Damage	Deteriorated	0.13%

TABLE 3 SUMMARY OF PCB SAMPLE RESULTS (EPA 8082 Analysis) Vaillancourt Fountain Survey, San Francisco, California				
Sample Number	**Sample Date**	**Building Material**	**Location**	**PCB Analysis Result**
NT-5006-PCB-1A	02/14/25	Caulking	Fountain to Waterway Seam - Street Level	None Detected
NT-5006-PCB-1B	02/14/25	Caulking	Perimeter Waterway at Metal Plate - Street Level	None Detected

APPENDIX A
(CONSULTANT CERTIFICATIONS)

APPENDIX B

(ASBESTOS LABORATORY REPORTS / CHAIN OF CUSTODY DOCUMENTATION)

LA Testing

5431 Industrial Drive Huntington Beach, CA 92649
Tel/Fax: (714) 828-4999 / (714) 828-4944
http://www.LATesting.com / hblab@latesting.com

LA Testing Order: 332504551
Customer ID: NORT49
Customer PO:
Project ID:

Attention: Carolyn Henry
North Tower Environmental
1485 Bayshore Boulevard
#185
San Francisco, CA 94124

Phone: (415) 933-8170
Fax: (415) 933-8171
Received Date: 02/19/2025 9:50 AM
Analysis Date: 02/19/2025
Collected Date: 02/14/2025

Project: NT-5006 / VAILLACOURT FOUNTAIN SURVEY - SAN FRANCISCO, CALIFORNIA

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
NT-5006-021425-C-1A *332504551-0001*	PAD AT FILTERED WATER TANK LINES - S/SW - CONCRETE	Gray Non-Fibrous Homogeneous		25% Quartz 75% Non-fibrous (Other)	None Detected
NT-5006-021425-C-2A *332504551-0002*	EAST CLOSET - EAST WALL - CONCRETE	Gray Non-Fibrous Homogeneous		25% Quartz 75% Non-fibrous (Other)	None Detected
NT-5006-021425-C-3A *332504551-0003*	FLOOR - MAIN PUMP ROOM - WEST - CONCRETE	Gray/Blue Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
NT-5006-021425-G-1A *332504551-0004*	PUMP #2 - 24" ELBOW - GASKET	Gray/Black/Rust Fibrous Homogeneous		60% Non-fibrous (Other)	**40% Chrysotile**
NT-5006-021425-G-2A *332504551-0005*	PUMP #1 - FLANGE AT SOUTH WALL - GASKET	Gray/Black/Rust Fibrous Homogeneous		60% Non-fibrous (Other)	**40% Chrysotile**
NT-5006-021425-G-3A *332504551-0006*	PUMP #4 - FLANGE AT SOUTH WALL - GASKET	Gray Fibrous Homogeneous		60% Non-fibrous (Other)	**40% Chrysotile**
NT-5006-021425-PI-1A *332504551-0007*	EAST CLOEST - UPPER CONDUIT AT CONCRETE WALL - PIPE INSULATION	Beige Fibrous Homogeneous		60% Non-fibrous (Other)	**40% Chrysotile**
NT-5006-021425-PI-2A *332504551-0008*	EAST CLOEST - UPPER CONDUIT AT CONCRETE WALL - PIPE INSULATION	Beige Fibrous Homogeneous		60% Non-fibrous (Other)	**40% Chrysotile**
NT-5006-021425-PI-3A *332504551-0009*	EAST CLOEST - UPPER CONDUIT AT CONCRETE WALL - PIPE INSULATION	Beige Fibrous Homogeneous		60% Non-fibrous (Other)	**40% Chrysotile**
NT-5006-021425-PI-1B-Wrap *332504551-0010*	INSULATED WATER LINE TO WEST BOILER - MAIN PUMP ROOM - HARD-PACK PIPE INSULATION	White Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (Other)	None Detected
NT-5006-021425-PI-1B-Insulation *332504551-0010A*	INSULATED WATER LINE TO WEST BOILER - MAIN PUMP ROOM - HARD-PACK PIPE INSULATION	Beige Fibrous Homogeneous	15% Min. Wool	85% Non-fibrous (Other)	None Detected
NT-5006-021425-PI-2B-Wrap *332504551-0011*	INSULATED WATER LINE TO WEST BOILER - MAIN PUMP ROOM - HARD-PACK PIPE INSULATION	White Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (Other)	None Detected

Initial report from: 02/19/2025 19:24:09

LA Testing
5431 Industrial Drive Huntington Beach, CA 92649
Tel/Fax: (714) 828-4999 / (714) 828-4944
http://www.LATesting.com / hblab@latesting.com

LA Testing Order: 332504551
Customer ID: NORT49
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
NT-5006-021425-PI-2B-Insulation *332504551-0011A*	INSULATED WATER LINE TO WEST BOILER - MAIN PUMP ROOM - HARD-PACK PIPE INSULATION	Beige Fibrous Homogeneous	15% Min. Wool	85% Non-fibrous (Other)	None Detected
NT-5006-021425-PI-3B-Wrap *332504551-0012*	INSULATED WATER LINE TO WEST BOILER - MAIN PUMP ROOM - HARD-PACK PIPE INSULATION	White Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
NT-5006-021425-PI-3B-Insulation *332504551-0012A*	INSULATED WATER LINE TO WEST BOILER - MAIN PUMP ROOM - HARD-PACK PIPE INSULATION	Gray Fibrous Homogeneous	20% Min. Wool	80% Non-fibrous (Other)	None Detected
NT-5006-021425-RI-1A *332504551-0013*	EAST CLOSET - 8" CAST IRON PIPE AT CONCRETE WALL - ROPE INSULATION	Brown/White Fibrous Heterogeneous	30% Cellulose 25% Synthetic	45% Non-fibrous (Other)	None Detected
NT-5006-021425-RI-2A *332504551-0014*	EAST CLOSET - 8" CAST IRON PIPE AT CONCRETE WALL - ROPE INSULATION	Brown/Gray Fibrous Heterogeneous	35% Cellulose 30% Synthetic	35% Non-fibrous (Other)	None Detected
NT-5006-021425-RI-1B *332504551-0015*	EAST CLOSET - 4" ABANDONED METAL CONDUIT AT CONCRETE WALL - ROPE INSULATION	Brown/White Fibrous Heterogeneous	30% Cellulose 30% Synthetic	40% Non-fibrous (Other)	None Detected
NT-5006-021425-RI-2B *332504551-0016*	EAST CLOSET - 4" ABANDONED METAL CONDUIT AT CONCRETE WALL - ROPE INSULATION	Brown/White Fibrous Heterogeneous	60% Synthetic	40% Non-fibrous (Other)	None Detected
NT-5006-021425-BG-1A *332504551-0017*	MAIN PUMP ROOM AT BOILER - BOILER DOOR GASKET	Tan/Rust Fibrous Homogeneous		40% Non-fibrous (Other)	**60% Chrysotile**
NT-5006-021425-BG-2A *332504551-0018*	MAIN PUMP ROOM AT BOILER - BOILER DOOR GASKET	Tan/Rust Fibrous Homogeneous		40% Non-fibrous (Other)	**60% Chrysotile**
NT-5006-021425-IP-1A *332504551-0019*	EAST CLOSET - 8" CAST IRON LINE AT CONCRETE WALL - INSULATION PAPER	Brown/Tan/Black Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (Other)	None Detected

Initial report from: 02/19/2025 19:24:09

#332504551

NORTH TOWER ENVIRONMENTAL

1485 Bayshore Blvd., Suite 185, San Francisco, CA 94124 (415) 347-7089

Chain of Custody Record

Turn Around Time:	RUSH	6 Hours	24 Hours	48 Hours	72 Hours
Analysis:	AA	Lead Wipe	PLM	OTHER	TTLC

Project Number: NT-5006	Project Name: Vaillacourt Fountain Survey - San Francisco, California
Project Manager: Carolyn Henry	Comments: Please e-mail results to pedro@northtowerenv.com and carolyn@northtowerenv.com

Sample Number	Date	Sample Information	Sample Location	Remarks or Area
NT-5006-021425-C-1A	2-14-25	Concrete	Pad at Filtered Water Tank Lines - S/SW	
NT-5006-021425-C-2A	2-14-25	Concrete	East Closet - East Wall	
NT-5006-021425-C-3A	2-14-25	Concrete	Floor - Main Pump Room - West	
NT-5006-021425-G-1A	2-14-25	Gasket	Pump #2 - 24" Elbow	Main Pump Room
NT-5006-021425-G-2A	2-14-25	Gasket	Pump #1 - Flange at South Wall	Main Pump Room
NT-5006-021425-G-3A	2-14-25	Gasket	Pump #4 - Flange at South Wall	Main Pump Room
NT-5006-021425-PI-1A	2-14-25	Pipe Insulation	East Closet - Upper Conduit at Concrete Wall	
NT-5006-021425-PI-2A	2-14-25	Pipe Insulation	East Closet - Upper Conduit at Concrete Wall	
NT-5006-021425-PI-3A	2-14-25	Pipe Insulation	East Closet - Upper Conduit at Concrete Wall	
NT-5006-021425-PI-1B	2-14-25	Hard-Pack Pipe Insulation	Insulated Water Line to West Boiler - Main Pump Room	
NT-5006-021425-PI-2B	2-14-25	Hard-Pack Pipe Insulation	Insulated Water Line to West Boiler - Main Pump Room	
NT-5006-021425-PI-3B	2-14-25	Hard-Pack Pipe Insulation	Insulated Water Line to West Boiler - Main Pump Room	
NT-5006-021425-RI-1A	2-14-25	Rope Insulation	East Closet - 8" Cast Iron Pipe at Concrete Wall	
NT-5006-021425-RI-2A	2-14-25	Rope Insulation	East Closet - 8" Cast Iron Pipe at Concrete Wall	

Relinquished By:	Signature:	Date:	Received By:	Signature:	Date:
Pedro Rico		2-13-25 1347	Jonathan Sanford (EA)		2/19/25 9:50a

Page 1 Of 2

OrderID: 332504551

#332504551

NORTH TOWER ENVIRONMENTAL

1485 Bayshore Blvd., Suite 185, San Francisco, CA 94124 (415) 347-7089

Turn Around Time: RUSH 6 Hours 24 Hours 48 Hours 72 Hours

Chain of Custody Record

Analysis: AA Lead Wipe PLM OTHER TTLC

Project Number: NT-5006	Project Name: Vaillacourt Fountain Survey - San Francisco, California
Project Manager: Carolyn Henry	Comments: Please e-mail results to pedro@northtowerenv.com and carolyn@northtowerenv.com

Sample Number	Date	Sample Information	Sample Location	Remarks or Area
NT-5006-021425-RI-1B	2-14-25	Rope Insulation	East Closet - 4" Abandoned Metal Conduit at Concrete Wall	
NT-5006-021425-RI-2B	2-14-25	Rope Insulation	East Closet - 4" Abandoned Metal Conduit at Concrete Wall	
NT-5006-021425-BG-1A	2-14-25	Boiler Door Gasket	Main Pump Room at Boiler	
NT-5006-021425-BG-2A	2-14-25	Boiler Door Gasket	Main Pump Room at Boiler	
NT-5006-021425-IP-1A	2-14-25	Insulation Paper	East Closet - 8" Cast Iron Line at Concrete Wall	

Relinquished By:	Signature:	Date:	Received By:	Signature:	Date:
Pedro Rico	[signature]	2-17-25 1347			

Page 2 Of 2

OrderID: 332504551

LA Testing

5431 Industrial Drive Huntington Beach, CA 92649
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LA Testing Order: 332504553
Customer ID: NORT49
Customer PO:
Project ID:

Attention: Carolyn Henry
North Tower Environmental
1485 Bayshore Boulevard
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San Francisco, CA 94124

Phone: (415) 933-8170
Fax: (415) 933-8171
Received Date: 02/19/2025 9:50 AM
Analysis Date: 02/19/2025
Collected Date: 02/14/2025

Project: NT-5006 / VAILLACOURT FOUNTAIN SURVEY - SAN FRANCISCO, CALIFORNIA

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
NT-5006-021425-FC1A *332504553-0001*	SOUTH EAST INNER WALL (UPPER) - FOUNTAIN CONCRETE	Gray/Black/Beige Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
NT-5006-021425-FC2A *332504553-0002*	SQUARE PLATFORM BASE - FOUNTAIN CONCRETE	Gray/Black/Beige Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
NT-5006-021425-FC3A *332504553-0003*	SQUARE PLATFORM PAD - FOUNTAIN CONCRETE	Gray/Tan/Black Non-Fibrous Homogeneous		15% Quartz 85% Non-fibrous (Other)	None Detected
NT-5006-021425-FC4A *332504553-0004*	NORTH EAST POOL/FOUNTAIN FLOOR - FOUNTAIN CONCRETE	Gray Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
NT-5006-021425-FC5A *332504553-0005*	WEST MIDDLE WALL - FOUNTAIN CONCRETE	Gray Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
NT-5006-021425-FC6A *332504553-0006*	PERIMETER WATERWAY WALL - FOUNTAIN CONCRETE	Gray Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
NT-5006-021425-SC-1A *332504553-0007*	SECTION #10 INNER WALL - SCULPTURE CONCRETE	Gray/White/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
NT-5006-021425-SC-2A *332504553-0008*	SECTION #8 INNER WALL - SCULPTURE CONCRETE	Gray/Tan/Peach Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
NT-5006-021425-SC-3A *332504553-0009*	SECTION #8 OUTER TEXTURE - SCULPTURE CONCRETE	Gray/Tan/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
NT-5006-021425-SC-4A *332504553-0010*	SECTION #6 OUTER TEXTURE - SCULPTURE CONCRETE	White Non-Fibrous Homogeneous		5% Quartz 95% Non-fibrous (Other)	None Detected
NT-5006-021425-SC-5A *332504553-0011*	SECTION #2 INNER WALL - SCULPTURE CONCRETE	White Non-Fibrous Homogeneous		5% Quartz 95% Non-fibrous (Other)	None Detected
NT-5006-021425-PC-1A *332504553-0012*	FENCED-IN PUMP ROOM ACCESS ENCLOSURE AREA - WALL - PEBBLE CONCRETE	Gray/Tan/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
NT-5006-021425-PC-2A *332504553-0013*	FENCED-IN PUMP ROOM ACCESS ENCLOSURE AREA - WALL - PEBBLE CONCRETE	White Non-Fibrous Homogeneous		15% Quartz 85% Non-fibrous (Other)	None Detected

Initial report from: 02/19/2025 19:45:02

LA Testing
5431 Industrial Drive Huntington Beach, CA 92649
Tel/Fax: (714) 828-4999 / (714) 828-4944
http://www.LATesting.com / hblab@latesting.com

LA Testing Order:	332504553
Customer ID:	NORT49
Customer PO:	
Project ID:	

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
NT-5006-021425-CA-1A *332504553-0014*	FENCED-IN PUMP ROOM ACCESS ENCLOSURE AREA - SQUARE ACCESS PANEL - CAULKING	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
NT-5006-021425-CA-2A *332504553-0015*	FENCED-IN PUMP ROOM ACCESS ENCLOSURE AREA - SQUARE ACCESS PANEL - CAULKING	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
NT-5006-021425-BC-1A *332504553-0016*	SCULPTURE SECTION #6 - STEEL POST BASE AT FOUNTAIN/POOL FLOOR - BLACK COATING / TAR	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
NT-5006-021425-BC-2A *332504553-0017*	SCULPTURE SECTION #8 - LOWER INNER WALL - BLACK COATING / TAR	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
NT-5006-021425-BC-3A *332504553-0018*	NORTH EAST FOUNTAIN/POOL FLOOR DRAIN - BLACK COATING / TAR	Black/Rust Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
NT-5006-021425-CA-1B -Caulk *332504553-0019*	FOUNTAIN PERIMETER WATERWAY AT SIDE WALL METAL PLATE - NORTH - CAULKING	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
NT-5006-021425-CA-1B -Concrete *332504553-0019A*	FOUNTAIN PERIMETER WATERWAY AT SIDE WALL METAL PLATE - NORTH - CAULKING	Tan/Black Non-Fibrous Homogeneous		10% Quartz 90% Non-fibrous (Other)	None Detected
NT-5006-021425-CA-2B *332504553-0020*	FOUNTAIN PERIMETER WATERWAY AT SIDE WALL METAL PLATE - EAST - CAULKING	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
NT-5006-021425-CA-1C *332504553-0021*	FOUNTAIN PERIMETER WALL SEAM AT WATERWAY - NORTH - WHITE CAULKING	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
NT-5006-021425-CA-2C *332504553-0022*	FOUNTAIN PERIMETER WALL SEAM AT WATERWAY - EAST - WHITE CAULKING	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
NT-5006-021425-CA-1D -Caulk *332504553-0023*	CONCRETE CURB/SIDEWALK SEAM - EAST - GRAY CAULKING	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 02/19/2025 19:45:02

LA Testing
5431 Industrial Drive Huntington Beach, CA 92649
Tel/Fax: (714) 828-4999 / (714) 828-4944
http://www.LATesting.com / hblab@latesting.com

LA Testing Order:	332504553
Customer ID:	NORT49
Customer PO:	
Project ID:	

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
NT-5006-021425-CA-1D -Concrete 332504553-0023A	CONCRETE CURB/SIDEWALK SEAM - EAST - GRAY CAULKING	Gray Non-Fibrous Homogeneous		15% Quartz 85% Non-fibrous (Other)	None Detected
NT-5006-021425-CA-2D 332504553-0024	CONCRETE CURB/SIDEWALK SEAM - EAST - GRAY CAULKING	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
NT-5006-021425-SC-1A 332504553-0025	SIDEWALK SLAB - EAST - SIDEWALK CONCRETE	Tan Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
NT-5006-021425-SC-2A 332504553-0026	CURB - EAST - SIDEWALK CONCRETE	Gray Non-Fibrous Homogeneous		25% Quartz 75% Non-fibrous (Other)	None Detected
NT-5006-021425-GBM-1A-Brick 332504553-0027	FLOOR - EAST OF FOUNTAIN - GRAY BRICK AND MORTAR	Gray Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
NT-5006-021425-GBM-1A-Mortar 332504553-0027A	FLOOR - EAST OF FOUNTAIN - GRAY BRICK AND MORTAR	Beige Non-Fibrous Homogeneous		15% Quartz 85% Non-fibrous (Other)	None Detected
NT-5006-021425-GBM-2A-Brick 332504553-0028	FLOOR - NORTH OF FOUNTAIN - GRAY BRICK AND MORTAR	Gray Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
NT-5006-021425-GBM-2A-Mortar 332504553-0028A	FLOOR - NORTH OF FOUNTAIN - GRAY BRICK AND MORTAR	Tan Non-Fibrous Homogeneous		15% Quartz 85% Non-fibrous (Other)	None Detected
NT-5006-021425-RBM-1A-Brick 332504553-0029	FLOOR - WEST OF FOUNTAIN - RED BRICK AND MORTAR	Red Non-Fibrous Homogeneous		10% Quartz 90% Non-fibrous (Other)	None Detected
NT-5006-021425-RBM-1A-Mortar 332504553-0029A	FLOOR - WEST OF FOUNTAIN - RED BRICK AND MORTAR	Gray Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
NT-5006-021425-RBM-2A-Brick 332504553-0030	FLOOR - WEST OF FOUNTAIN - RED BRICK AND MORTAR	Red Non-Fibrous Homogeneous		10% Quartz 90% Non-fibrous (Other)	None Detected
NT-5006-021425-RBM-2A-Mortar 332504553-0030A	FLOOR - WEST OF FOUNTAIN - RED BRICK AND MORTAR	Gray Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected

Initial report from: 02/19/2025 19:45:02

#332504553

NORTH TOWER ENVIRONMENTAL

1485 Bayshore Blvd., Suite 185, San Francisco, CA 94124 (415) 347-7089

Chain of Custody Record

Turn Around Time:	RUSH	6 Hours	24 Hours	48 Hours	72 Hours
Analysis:	AA	Lead Wipe	PLM	OTHER	TTLC

Project Number: NT-5006	**Project Name:** Vaillacourt Fountain Survey - San Francisco, California
Project Manager: Carolyn Henry	**Comments:** Please e-mail results to pedro@northtowerenv.com and carolyn@northtowerenv.com

Sample Number	Date	Sample Information	Sample Location	Remarks or Area
NT-5006-021425-FC-1A	2-14-25	Fountain Concrete	South East Inner Wall (Upper)	
NT-5006-021425-FC-2A	2-14-25	Fountain Concrete	Square Platform Base	
NT-5006-021425-FC-3A	2-14-25	Fountain Concrete	Square Platform Pad	
NT-5006-021425-FC-4A	2-14-25	Fountain Concrete	North East Pool/Fountain Floor	6" depth
NT-5006-021425-FC-5A	2-14-25	Fountain Concrete	West Middle Wall	
NT-5006-021425-FC-6A	2-14-25	Fountain Concrete	Perimeter Waterway Wall	
NT-5006-021424-SC-1A	2-14-25	Sculpture Concrete	Section #10 Inner Wall	
NT-5006-021424-SC-2A	2-14-25	Sculpture Concrete	Section #8 Inner Wall	
NT-5006-021424-SC-3A	2-14-25	Sculpture Concrete	Section #8 Outer Texture	
NT-5006-021424-SC-4A	2-14-25	Sculpture Concrete	Section #6 Outer Texture	
NT-5006-021424-SC-5A	2-14-25	Sculpture Concrete	Section #2 Inner Wall	
NT-5006-021424-PC-1A	2-14-25	Pebble Concrete	Fenced-In Pump Room Access Enclosure Area - Wall	Similar to SC
NT-5006-021424-PC-2A	2-14-25	Pebble Concrete	Fenced-In Pump Room Access Enclosure Area - Wall	Similar to SC
NT-5006-021425-CA-1A	2-14-25	Caulking	Fenced-In Pump Room Access Enclosure Area - Square Access Panel	

Relinquished By:	Signature:	Date:	Received By:	Signature:	Date:
Pedro Rico		2-17-25 1338	Jonathan Santore (EFX)		2/19/25 9:50a

Page 1 Of 3

OrderID: 332504553

NORTH TOWER ENVIRONMENTAL

1485 Bayshore Blvd., Suite 185, San Francisco, CA 94124 (415) 347-7089

Chain of Custody Record

Turn Around Time:	RUSH	6 Hours	24 Hours	48 Hours	72 Hours
Analysis:	AA	Lead Wipe	PLM	OTHER	TTLC

Project Number: NT-5006	Project Name: Vaillacourt Fountain Survey - San Francisco, California
Project Manager: Carolyn Henry	Comments: Please e-mail results to pedro@northtowerenv.com and carolyn@northtowerenv.com

Sample Number	Date	Sample Information	Sample Location	Remarks or Area
NT-5006-021425-CA-2A	2-14-25	Caulking	Fenced-In Pump Room Access Enclosure Area - Square Access Panel	
NT-5006-021425-BC-1A	2-14-25	Black Coating / Tar	Sculpture Section #6 - Steel Post Base at Fountain/Pool Floor	
NT-5006-021425-BC-2A	2-14-25	Black Coating / Tar	Sculpture Section #8 - Lower Inner Wall	
NT-5006-021425-BC-3A	2-14-25	Black Coating / Tar	North East Fountain/Pool Floor Drain	
NT-5006-021425-CA-1B	2-14-25	Caulking	Fountain Perimeter Waterway at Side Wall Metal Plate - North	
NT-5006-021425-CA-2B	2-14-25	Caulking	Fountain Perimeter Waterway at Side Wall Metal Plate - East	
NT-5006-021425-CA-1C	2-14-25	White Caulking	Fountain Perimeter Wall Seam at Waterway - North	
NT-5006-021425-CA-2C	2-14-25	White Caulking	Fountain Perimeter Wall Seam at Waterway - East	
NT-5006-021425-CA-1D	2-14-25	Gray Caulking	Concrete Curb / Sidewalk Seam - East	
NT-5006-021425-CA-2D	2-14-25	Gray Caulking	Concrete Curb / Sidewalk Seam - East	
NT-5006-021425-SC-1A	2-14-25	Sidewalk Concrete	Sidewalk Slab - East	
NT-5006-021425-SC-2A	2-14-25	Sidewalk Concrete	Curb - East	
NT-5006-021425-GBM-1A	2-14-25	Gray Brick and Mortar	Floor - East of Fountain	
NT-5006-021425-GBM-2A	2-14-25	Gray Brick and Mortar	Floor - North of Fountain	

Relinquished By:	Signature:	Date:	Received By:	Signature:	Date:
Pedro Rico		2-17-25 1338			

#332504553

NORTH TOWER ENVIRONMENTAL

1485 Bayshore Blvd., Suite 185, San Francisco, CA 94124 (415) 347-7089

Chain of Custody Record

Turn Around Time:	RUSH	6 Hours	24 Hours	48 Hours	72 Hours
Analysis:	AA	Lead Wipe	PLM	OTHER	TTLC

Project Number: NT-5006	Project Name: Vaillacourt Fountain Survey - San Francisco, California
Project Manager: Carolyn Henry	Comments: Please e-mail results to pedro@northtowerenv.com and carolyn@northtowerenv.com

Sample Number	Date	Sample Information	Sample Location	Remarks or Area
NT-5006-021425-RBM-1A	2-14-25	Red Brick and Mortar	Floor - West of Fountain	
NT-5006-021425-RBM-2A	2-14-25	Red Brick and Mortar	Floor - West of Fountain	

Relinquished By:	Signature:	Date:	Received By:	Signature:	Date:
Pedro Rico	[signature]	2-17-25 1338			

Page 3 Of 3

OrderID: 332504553

APPENDIX C

(LEAD LABORATORY REPORTS / CHAIN OF CUSTODY DOCUMENTATION)

LA Testing
5431 Industrial Drive, Huntington Beach, CA 92649
Phone/Fax: (714) 828-4999 / (714) 828-4944
http://www.LATesting.com hblab@latesting.com

LA Testing Order:	332504548
CustomerID:	NORT49
CustomerPO:	
ProjectID:	

Attn: **Carolyn Henry**
North Tower Environmental
1485 Bayshore Boulevard
#185
San Francisco, CA 94124

Phone:	(415) 933-8170
Fax:	(415) 933-8171
Received:	2/19/2025 09:50 AM
Collected:	2/14/2025

Project: **NT-5006 / VAILLACOURT FOUNTAIN SURVEY - SAN FRANCISCO, CALIFORNIA**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client SampleDescription	*Collected*	*Analyzed*	*Weight*	*RDL*	*Lead Concentration*
NT-5006-021425-L12 *332504548-0001*	2/14/2025	2/19/2025 Site: FENCED-IN PUMP ROOM ACCESS ENCLOSURE - METAL POST Desc: BEIGE PAINT	0.2562 g	0.0064 % wt	0.032 % wt
NT-5006-021425-L13 *332504548-0002*	2/14/2025	2/19/2025 Site: PUMP ROOM SQUARE ACCESS DOOR - METAL Desc: BEIGE PAINT	0.2195 g	0.0073 % wt	0.31 % wt
NT-5006-021425-L14 *332504548-0003*	2/14/2025	2/19/2025 Site: SCULPTURE SECTION #8 - STEEL POST AT FOUNTAIN/POOL FLOOR Desc: BLACK PAINT/COATING	0.327 g	0.0064 % wt	<0.0064 % wt
NT-5006-021425-L15 *332504548-0004*	2/14/2025	2/19/2025 Site: SCULPTURE SECTION #6 - OUTER CONCRETE WALL Desc: BEIGE PAINT	0.2715 g	0.0064 % wt	<0.0064 % wt
NT-5006-021425-L16 *332504548-0005*	2/14/2025	2/19/2025 Site: SCULPTURE BRIDGE #1 (NORTH) - METAL RAILINGS Desc: BEIGE AND GREEN PAINT	0.2584 g	0.0064 % wt	0.13 % wt

Michael Chapman

Michael Chapman, Laboratory Manager
or other approved signatory

Initial report from 02/19/2025 17:09:20

#332504548

NORTH TOWER ENVIRONMENTAL

1485 Bayshore Blvd., Suite 185, San Francisco, CA 94124 (415) 347-7089

Turn Around Time: RUSH 6 Hours 24 Hours 48 Hours 72 Hours

Chain of Custody Record

Analysis: AA Lead Wipe PLM OTHER TTLC

Project Number: NT-5006	Project Name: Vaillacourt Fountain Survey - San Francisco, California
Project Manager: Carolyn Henry	Comments: Please e-mail results to pedro@northtowerenv.com and carolyn@northtowerenv.com

Sample Number	Date	Sample Information	Sample Location	Paint Condition
NT-5006-021425-L12	2-14-25	Beige Paint	Fenced-In Pump Room Access Enclosure - Metal Post	Good
NT-5006-021425-L13	2-14-25	Beige Paint	Pump Room Square Access Door - Metal	Damaged
NT-5006-021425-L14	2-14-25	Black Paint / Coating	Sculpture Section #8 - Steel Post at Fountain/Pool Floor	Damaged
NT-5006-021425-L15	2-14-25	Beige Paint	Sculpture Section #6 - Outer Concrete Wall	Good
NT-5006-021425-L16	2-14-25	Beige and Green Paint	Sculpture Bridge #1 (North) - Metal Railings	Some Damage

Relinquished By:	Signature:	Date:	Received By:	Signature:	Date:
Pedro Rico		2-17-25 1340	Jonathan Santarc (EFx)		2/19/25 9:50a

Page 1 Of 1

OrderID: 332504548

LA Testing
5431 Industrial Drive, Huntington Beach, CA 92649
Phone/Fax: (714) 828-4999 / (714) 828-4944
http://www.LATesting.com hblab@latesting.com

LA Testing Order:	332504550
CustomerID:	NORT49
CustomerPO:	
ProjectID:	

Attn: **Carolyn Henry**
North Tower Environmental
1485 Bayshore Boulevard
#185
San Francisco, CA 94124

Phone:	(415) 933-8170
Fax:	(415) 933-8171
Received:	2/19/2025 09:50 AM
Collected:	2/14/2025

Project: **NT-5006 / VAILLACOURT FOUNTAIN SURVEY - SAN FRANCISCO, CALIFORNIA**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client SampleDescription	*Collected*	*Analyzed*	*Weight*	*RDL*	*Lead Concentration*
NT-5006-021425-L01 *332504550-0001*	2/14/2025	2/19/2025 Site: MAIN PUMP ROOM - PUMP #2 METAL FLANGE CAP Desc: BEIGE AND RED PAINT	0.273 g	0.64 % wt	8.4 % wt
NT-5006-021425-L02 *332504550-0002*	2/14/2025	2/19/2025 Site: MAIN PUMP ROOM - PUMP #1 - 24" METAL ELBOW Desc: BEIGE AND RED PAINT	0.298 g	0.032 % wt	0.49 % wt
NT-5006-021425-L03 *332504550-0003*	2/14/2025	2/19/2025 Site: MAIN PUMP ROOM - 12" CAST IRON PIPE BETWEEN PUMP 3 & 4 Desc: BEIGE AND RED PAINT	0.2892 g	0.64 % wt	6.8 % wt
NT-5006-021425-L04 *332504550-0004*	2/14/2025	2/19/2025 Site: MAIN PUMP ROOM - 4" METAL GAS SUPPLY CONDUIT Desc: BEIGE AND RED PAINT	0.2937 g	0.64 % wt	11 % wt
NT-5006-021425-L05 *332504550-0005*	2/14/2025	2/19/2025 Site: MAIN PUMP ROOM - 9" CAST IRON POOL DRAIN LINE Desc: BEIGE PAINT	0.2995 g	0.64 % wt	9.0 % wt
NT-5006-021425-L06 *332504550-0006*	2/14/2025	2/19/2025 Site: MAIN PUMP ROOM - PUMP #4 METAL MOTOR Desc: GRAY AND RED PAINT	0.2693 g	0.0064 % wt	0.25 % wt
NT-5006-021425-L07 *332504550-0007*	2/14/2025	2/19/2025 Site: MAIN PUMP ROOM - NE METAL LADDER SIDE RAILS Desc: BEIGE AND GRAY PAINT	0.2854 g	0.0064 % wt	0.34 % wt
NT-5006-021425-L08 *332504550-0008*	2/14/2025	2/19/2025 Site: MAIN PUMP ROOM - PUMP #1 STEEL BASE/FRAME Desc: BEIGE AND GRAY PAINT	0.2556 g	0.032 % wt	0.50 % wt
NT-5006-021425-L09 *332504550-0009*	2/14/2025	2/19/2025 Site: MAIN PUMP ROOM - CONCRETE FLOOR Desc: GRAY PAINT	0.3827 g	0.0064 % wt	0.042 % wt

Michael Chapman

Michael Chapman, Laboratory Manager
or other approved signatory

Analysis following Lead in Paint by LA Testing SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.008% wt based on the minimum sample weight per our SOP. "<" (less than) result signifies the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. Definitions of modifications are available upon request.
Samples analyzed by LA Testing Huntington Beach, CA AIHA LAP, LLC-ELLAP Accredited #101650, CA ELAP 1406

Initial report from 02/19/2025 17:10:22

LA Testing
5431 Industrial Drive, Huntington Beach, CA 92649
Phone/Fax: (714) 828-4999 / (714) 828-4944
http://www.LATesting.com hblab@latesting.com

LA Testing Order:	332504550
CustomerID:	NORT49
CustomerPO:	
ProjectID:	

Attn: **Carolyn Henry**
North Tower Environmental
1485 Bayshore Boulevard
#185
San Francisco, CA 94124

Phone:	(415) 933-8170
Fax:	(415) 933-8171
Received:	2/19/2025 09:50 AM
Collected:	2/14/2025

Project: **NT-5006 / VAILLACOURT FOUNTAIN SURVEY - SAN FRANCISCO, CALIFORNIA**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client SampleDescription	*Collected*	*Analyzed*	*Weight*	*RDL*	*Lead Concentration*
NT-5006-021425-L10 *332504550-0010*	2/14/2025	2/19/2025 Site: MAIN PUMP ROOM - METAL DOOR AT ELECTRICAL ROOM Desc: BEIGE AND GRAY PAINT	0.2873 g	0.0064 % wt	0.31 % wt
NT-5006-021425-L11 *332504550-0011*	2/14/2025	2/19/2025 Site: MAIN PUMP ROOM - METAL BOILER Desc: DARK BLUE PAINT	0.31 g	0.0064 % wt	0.015 % wt

Michael Chapman

Michael Chapman, Laboratory Manager
or other approved signatory

Analysis following Lead in Paint by LA Testing SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.008% wt based on the minimum sample weight per our SOP. "<" (less than) result signifies the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. Definitions of modifications are available upon request.
Samples analyzed by LA Testing Huntington Beach, CA AIHA LAP, LLC-ELLAP Accredited #101650, CA ELAP 1406

Initial report from 02/19/2025 17:10:22

#332504550

NORTH TOWER ENVIRONMENTAL

1485 Bayshore Blvd., Suite 185, San Francisco, CA 94124 (415) 347-7089

Turn Around Time: RUSH 6 Hours 24 Hours 48 Hours 72 Hours

Chain of Custody Record

Analysis: AA Lead Wipe PLM OTHER TTLC

Project Number: NT-5006	**Project Name:** Vaillacourt Fountain Survey - San Francisco, California
Project Manager: Carolyn Henry	**Comments:** Please e-mail results to pedro@northtowerenv.com and carolyn@northtowerenv.com

Sample Number	Date	Sample Information	Sample Location	Paint Condition
NT-5006-021425-L01	2-14-25	Beige and Red Paint	Main Pump Room - Pump #2 Metal Flange Cap	Damaged
NT-5006-021425-L02	2-14-25	Beige and Red Paint	Main Pump Room - Pump #1 - 24" Metal Elbow	Damaged
NT-5006-021425-L03	2-14-25	Beige and Red Paint	Main Pump Room - 12" Cast Iron Pipe Between Pump 3 & 4	Damaged
NT-5006-021425-L04	2-14-25	Beige and Red Paint	Main Pump Room - 4" Metal Gas Supply Conduit	Damaged
NT-5006-021425-L05	2-14-25	Beige Paint	Main Pump Room - 9" Cast Iron Pool Drain Line	Damaged
NT-5006-021425-L06	2-14-25	Gray and Red Paint	Main Pump Room - Pump #4 Metal Motor	Some Damage
NT-5006-021425-L07	2-14-25	Beige and Gray Paint	Main Pump Room - NE Metal Ladder Side Rails	Damaged
NT-5006-021425-L08	2-14-25	Beige and Red Paint	Main Pump Room - Pump #1 Steel Base/Frame	Damaged
NT-5006-021425-L09	2-14-25	Gray Paint	Main Pump Room - Concrete Floor	Damaged
NT-5006-021425-L10	2-14-25	Beige and Gray Paint	Main Pump Room - Metal Door at Electrical Room	Some Damage
NT-5006-021425-L11	2-14-25	Dark Blue Paint	Main Pump Room - Metal Boiler	Damaged

Relinquished By:	Signature:	Date:	Received By:	Signature:	Date:
Pedro Rico		2-17-25 1347	Jonathan Sandore (EFxx)		2/19/25 9:50a

APPENDIX D

(PCB LABORATORY REPORTS / CHAIN OF CUSTODY DOCUMENTATION)

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 2503H14

Report Created for: North Tower Environmental, Inc

1485 Bayshore Blvd., #185
San Francisco, CA 94124

Project Contact: Pedro Rico
Project P.O.:
Project: NT-5006; Vaillancour Fountain, SF

Project Location: San Francisco, California
Project Received: 03/25/2025

Analytical Report reviewed & approved for release on 03/27/2025 by:

Tracy Babjar

Tracy Babjar
Project Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current regulatory standards, where applicable, unless otherwise stated in a case narrative.

NELAP ACCREDITED TNI LABORATORY

1534 Willow Pass Rd. Pittsburg, CA 94565 ♦ TEL: (877) 252-9262 ♦ FAX: (925) 252-9269 ♦ www.mccampbell.com
CA ELAP 1644 ♦ NELAP 4033 ORELAP

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: North Tower Environmental, Inc **WorkOrder:** 2503H14

Project: NT-5006; Vaillancour Fountain, SF

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
CCV	Continuing Calibration Verification.
CCV REC (%)	% recovery of Continuing Calibration Verification.
CPT	Consumer Product Testing not NELAP Accredited
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 μm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
LCS2	Second LCS for the batch. Spike level is lower than that for the first LCS; applicable to method 1633.
LQL	Lowest Quantitation Level
MB	Method Blank
MB IS/SS % Rec	% Recovery of Internal Standard or Surrogate in Method Blank, if applicable
MB SS % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit [1]
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit [2]
RPD	Relative Percent Difference
RRT	Relative Retention Time
RSD	Relative Standard Deviation
SNR	Surrogate is diluted out of the calibration range

[1] MDL is the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results. Definition and Procedure for the Determination of the Method Detection Limit, Revision 2, 40CFR, Part 136, Appendix B, EPA 821-R-16-006, December 2016. Values are based upon our default extraction volume/amount and are subject to change.

[2] RL is the lowest level that can be reliably determined within specified limits of precision and accuracy during routine laboratory operating conditions. (The RL cannot be lower than the lowest calibration standard used in the initial calibration of the instrument and must be greater than the MDL.) Values are based upon our default extraction volume/amount and are subject to change.

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Glossary of Terms & Qualifier Definitions

Client: North Tower Environmental, Inc **WorkOrder:** 2503H14

Project: NT-5006; Vaillancour Fountain, SF

SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
TNTC	“Too Numerous to Count;” greater than 250 colonies observed on the plate.
TZA	TimeZone Net Adjustment for sample collected outside of MAI's Coordinated Universal Time (UTC). (Adjustment for Daylight Saving is not accounted.)
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Analytical Report

Client:	North Tower Environmental, Inc	**WorkOrder:**	2503H14
Date Received:	03/25/2025 14:14	**Extraction Method:**	SW3546/3630C
Date Prepared:	03/26/2025	**Analytical Method:**	SW8082A
Project:	NT-5006; Vaillancour Fountain, SF	**Unit:**	mg/kg

Polychlorinated Biphenyls (PCBs) Aroclors w/ Column Style Clean-up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
PCB-1A / Fountain to Waterway Seam	**2503H14-001A**	**Caulk**	**02/14/2025 13:15**	**GC40 03262592.d**	**314004**

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	10	20	03/27/2025 06:30
Aroclor1221	ND	10	20	03/27/2025 06:30
Aroclor1232	ND	10	20	03/27/2025 06:30
Aroclor1242	ND	10	20	03/27/2025 06:30
Aroclor1248	ND	10	20	03/27/2025 06:30
Aroclor1254	ND	10	20	03/27/2025 06:30
Aroclor1260	ND	10	20	03/27/2025 06:30
PCBs, total	ND	10	20	03/27/2025 06:30

Surrogates	REC (%)	Limits	Date Analyzed
Decachlorobiphenyl	111	70-130	03/27/2025 06:30

Analyst(s): EEV

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
PCB-1B / Perimeter Waterway at Metal Plate	**2503H14-002A**	**Caulk**	**02/14/2025 13:20**	**GC40 03262593.d**	**314004**

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	10	20	03/27/2025 06:45
Aroclor1221	ND	10	20	03/27/2025 06:45
Aroclor1232	ND	10	20	03/27/2025 06:45
Aroclor1242	ND	10	20	03/27/2025 06:45
Aroclor1248	ND	10	20	03/27/2025 06:45
Aroclor1254	ND	10	20	03/27/2025 06:45
Aroclor1260	ND	10	20	03/27/2025 06:45
PCBs, total	ND	10	20	03/27/2025 06:45

Surrogates	REC (%)	Limits	Date Analyzed
Decachlorobiphenyl	112	70-130	03/27/2025 06:45

Analyst(s): EEV

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Quality Control Report

Client:	North Tower Environmental, Inc	**WorkOrder:**	2503H14
Date Prepared:	03/26/2025	**BatchID:**	314004
Date Analyzed:	03/27/2025	**Extraction Method:**	SW3546/3630C
Instrument:	GC40	**Analytical Method:**	SW8082A
Matrix:	Caulk	**Unit:**	mg/kg
Project:	NT-5006; Vaillancour Fountain, SF	**Sample ID:**	MB/LCS/LCSD-314004

QC Summary Report for SW8082A w/ Column Clean-up

Analyte	MB Result	MDL	RL	SPK Val	MB IS/SS %REC	MB IS/SS Limits
Aroclor1016	ND	0.050	0.050	-	-	-
Aroclor1221	ND	0.050	0.050	-	-	-
Aroclor1232	ND	0.050	0.050	-	-	-
Aroclor1242	ND	0.050	0.050	-	-	-
Aroclor1248	ND	0.050	0.050	-	-	-
Aroclor1254	ND	0.050	0.050	-	-	-
Aroclor1260	ND	0.050	0.050	-	-	-
Surrogate Recovery						
Decachlorobiphenyl	0.053			0.05	106	70-130

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Aroclor1016	0.15	0.15	0.15	101	98	70-130	3.53	20
Aroclor1260	0.16	0.15	0.15	105	102	70-130	2.04	20
Surrogate Recovery								
Decachlorobiphenyl	0.055	0.056	0.050	111	112	70-130	1.11	20

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CHAIN-OF-CUSTODY RECORD

WorkOrder: 2503H14 **ClientCode: NTE**

☐ WaterTrax ☐ CLIP ☐ EDF ☐ EQuIS ☐ Dry-Weight ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☐ Detection Summary ☐ Excel

Report to:
Pedro Rico
North Tower Environmental, Inc
1485 Bayshore Blvd., #185
San Francisco, CA 94124
415-740-8969 FAX: 41-933-8171

Email: pedro@northtowerenv.com
cc/3rd Party: carolyn@northtowerenv.com;
PO:
Project: NT-5006; Vaillancour Fountain, SF

Bill to:
Accounts Payable
North Tower Environmental, Inc
1485 Bayshore Blvd., #185
San Francisco, CA 94124
carolyn@northtowerenv.com

Requested TAT: 3 days;

Date Received: 03/25/2025
Date Logged: 03/25/2025

Lab ID	ClientSampID	Matrix	Collection Date	Hold	1	2	3	4	5	6	7	8	9	10	11	12
					Requested Tests (See legend below)											
2503H14-001	PCB-1A / Fountain to Waterway Seam	Caulk	2/14/2025 13:15	☐	A	A										
2503H14-002	PCB-1B / Perimeter Waterway at Metal Plate	Caulk	2/14/2025 13:20	☐	A	A										

Test Legend:

1	8082_PCB_SG_Caulk	2	PRDisposal Fee	3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Lilly Ortiz

Comments:

NOTE: Soil samples are discarded 60 days after receipt unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: NORTH TOWER ENVIRONMENTAL, INC **Project:** NT-5006; Vaillancour Fountain, SF **Work Order:** 2503H14

Client Contact: Pedro Rico **QC Level:** LEVEL 2

Contact's Email: pedro@northtowerenv.com **Comments** **Date Logged:** 3/25/2025

☐ WaterTrax ☐ CLIP ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

LabID	ClientSampID	Matrix	Test Name	Cont./ Comp.	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
001A	PCB-1A / Fountain to Waterway Seam	Caulk	SW8082A (PCBs w/ Column Style Clean-up)	1	Plastic Baggie, Medium	☐	☐	☐	2/14/2025 13:15	3 days	3/31/2025		☐	☐
002A	PCB-1B / Perimeter Waterway at Metal Plate	Caulk	SW8082A (PCBs w/ Column Style Clean-up)	1	Plastic Baggie, Medium	☐	☐	☐	2/14/2025 13:20	3 days	3/31/2025		☐	☐

NOTES: *** STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).**

- ISM prep requires 5 to 10 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 6 to 11 days from sample submission). Due date listed on WO summary will not accurately reflect the time needed for sample preparation.

- Organic extracts are held for 40 days before disposal; Inorganic extract are held for 30 days.

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

U = An unpreserved container was received for a method that suggests a preservation in order to extend hold time for analysis.**

Cont./Comp. = Containers /Composites

RUSH! **General COC** MAI Work Order # 2503H44

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CHAIN OF CUSTODY RECORD

Turn Around Time: 1 Day Rush		2 Day Rush		3 Day Rush	●	STD		Quote #	
J-Flag / MDL		ESL		Cleanup Approved		Dry Weight		Bottle Order #	
Delivery Format:	PDF	●	GeoTracker EDF		EDD		CLIP EDT (DW)		Detect Summary

Report To: Pedro Rico & Carolyn Henry Bill To: Same
Company: North Tower Environmental
Email: pedro@northtowerenv.com and carolyn@northtowerenv.com
Alt Email: Tele: 415-846-4270
Project Name: Vaillancour Fountain, SF Project #: NT-5006
Project Location: San Francisco, California PO #
Sampler Signature:

Analysis Requested

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	PCBs 8082A
PCB-1A / Fountain to Waterway Seam	2-14-25	1315	1	Bulk/Caulking	Ice	X
PCB-1B / Perimeter Waterway at Metal Plate	2-14-25	1320	1	Bulk/Caulking	Ice	X

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
Pedro Rico / North Tower Env.	3-25-25	1414	[signature]	3/25/25	1414

Comments / Instructions

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other
Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp 5.1/4.2 °C Initials LO
1K39

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Sample Receipt Checklist

Client Name:	North Tower Environmental, Inc		Date and Time Received:	3/25/2025 14:14
Project:	NT-5006; Vaillancour Fountain, SF		Date Logged:	3/25/2025
			Received by:	Lilly Ortiz
WorkOrder №:	2503H14	Matrix: Caulk	Logged by:	Lilly Ortiz
Carrier:	Client Drop-In			

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Sample IDs noted by Client on COC?	Yes ☑	No ☐	
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐	
Sampler's name noted on COC?	Yes ☐	No ☑	
COC agrees with Quote?	Yes ☐	No ☐	NA ☑

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	NA ☐
Samples Received on Ice?	Yes ☑	No ☐	
	(Ice Type: WET ICE)		
Sample/Temp Blank temperature	Temp: 5.1°C		NA ☐
ZHS conditional analyses: VOA meets zero headspace requirement (VOCs, TPHg/BTEX, RSK)?	Yes ☐	No ☐	NA ☑
Sample labels checked for correct preservation?	Yes ☑	No ☐	
pH acceptable upon receipt (Metal: <2)?	Yes ☐	No ☐	NA ☑

UCMR Samples:

pH tested and acceptable upon receipt (200.7: ≤2; 533: 6 - 8; 537.1: 6 - 8)?	Yes ☐	No ☐	NA ☑
Free Chlorine tested and acceptable upon receipt (<0.1mg/L) [not applicable to 200.7]?	Yes ☐	No ☐	NA ☑

Comments:

APPENDIX E

(SAMPLE LOCATION DIAGRAMS)

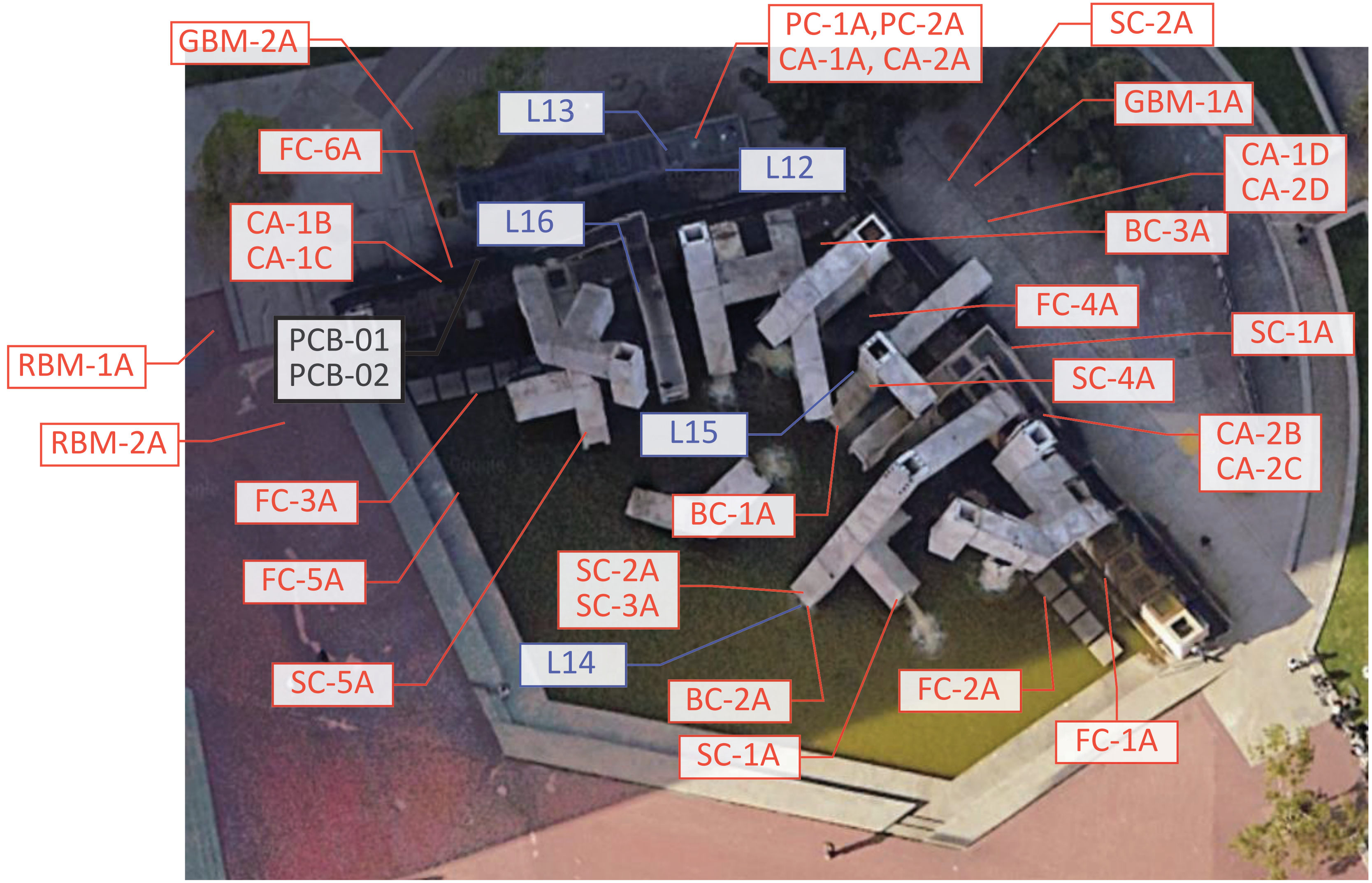


photo source: google earth

APPENDIX D
Sample Location Map
(Not to Scale)

Vaillancourt Fountain
Embarcadero Plaza
San Francisco, California

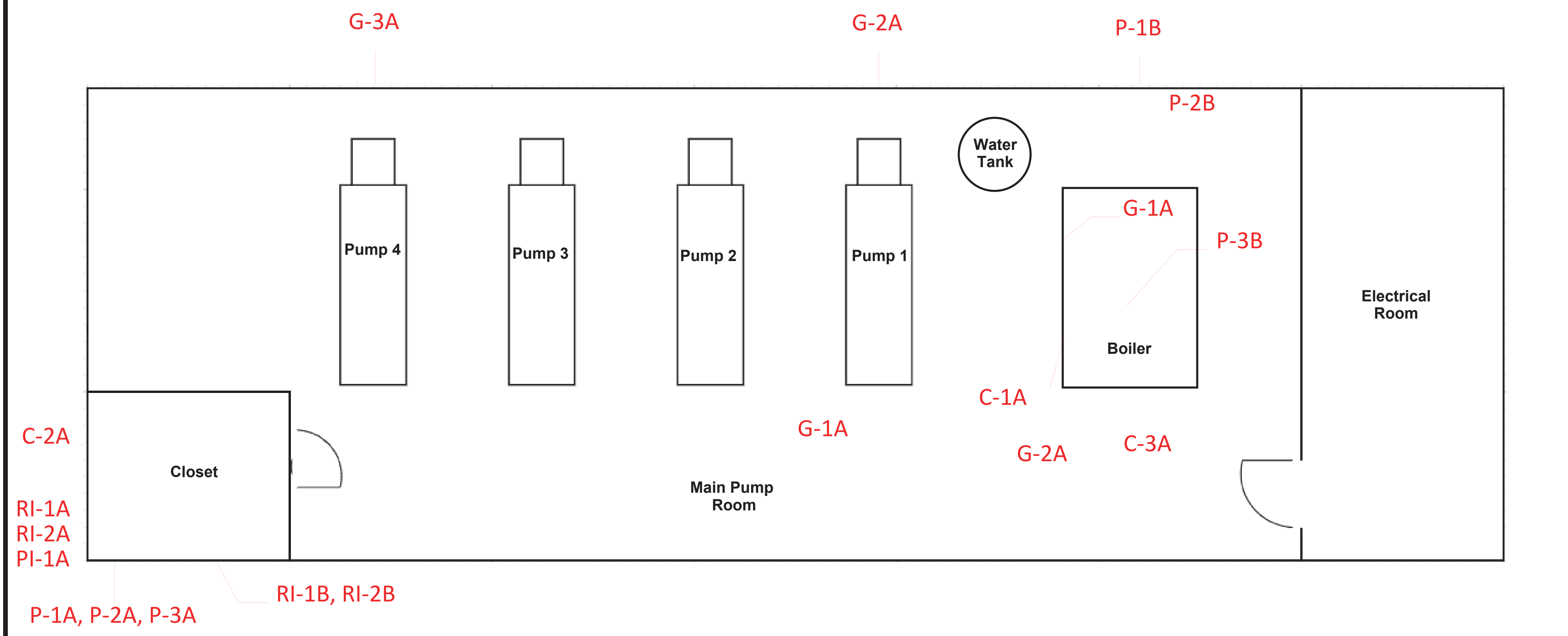
NORTH TOWER ENVIRONMENTAL
Hazardous Material Consultants

Date: March 14, 2025

N

Project North

RED = Asbestos Samples, BLUE = Lead Samples



APPENDIX D (Figure 2)
Sample Location Map
(Not to Scale)
Vaillancourt Fountain
Pump Room
Embarcadero Plaza
San Francisco, California

NORTH TOWER ENVIRONMENTAL
Hazardous Material Consultants

N
Project North

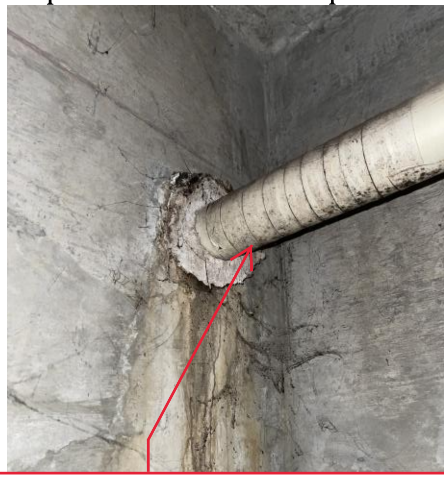
Date: April 1, 2025

RED = Asbestos Samples, BLUE = Lead Samples

APPENDIX F - PHOTOS

Photo # 1

Description: ACM[1] Pipe Insulation at Pump Room Closet



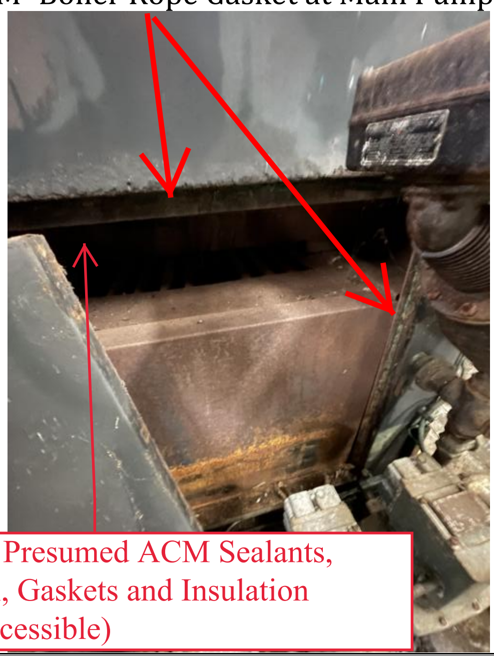
This is the only area where ACM pipe insulation was identified. This insulated pipe run exits the room through a wall opening, presumably to the exterior underground area)

Photo # 2

Description: ACM[1] Pipe Gasket and Multiple LBP[2] Surfaces at Main Pump Room

Photo # 3

Description: ACM[1] Boiler Rope Gasket at Main Pump Room



Boiler Interior is Presumed ACM Sealants, Ribbing Material, Gaskets and Insulation (Concealed/ Inaccessible)

Photo # 4

Description: Close Up of ACM[1] Pipe Gaskets at Main Pump Room

[1]ACM=Asbestos-Containing Material, [2]LBP=Lead-Based Paint, [3]LCP=Lead-Containing Paint, [4]ND=No Asbestos Detected In

Photo # 5

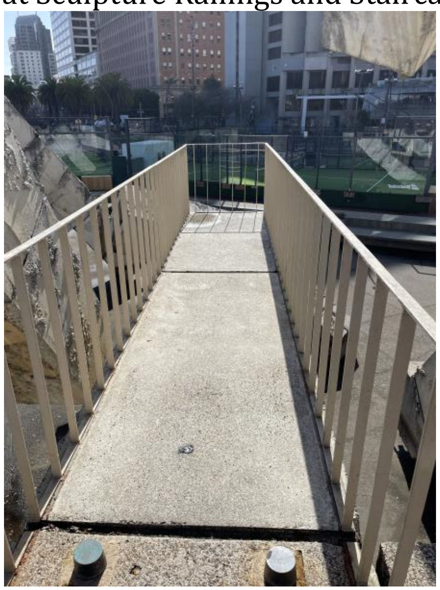
Description: ACM[1] Gaskets at Pipe Flanges and Caps, LBP[2] and LCP[3] Surfaces Throughout Main Pump Room

Photo # 6

Description: ACM[1] Gaskets at Pipe Flanges and Caps, LBP[2] and LCP[3] Surfaces Throughout Main Pump Room

Photo # 7

Description: LCP[3] at Sculpture Railings and Staircases



[1]ACM=Asbestos-Containing Material, [2]LBP=Lead-Based Paint, [3]LCP=Lead-Containing Paint, [4]ND=No Asbestos Detected In

DCI ENGINEERS

www.dci-engineers.com

Structural Observation and Evaluation
Vaillancourt Fountain
Embarcadero Plaza | San Francisco, CA

Prepared For:
PAGE & TURNBULL

May 19, 2025

135 Main Street
Suite 1800
San Francisco, CA 94105
Phone: 415.781.1505 ▪ www.dci-engineers.com

Service Innovation Value

PROJECT OVERVIEW

Vaillancourt Fountain, located within Embarcadero Plaza in San Francisco, is a sprawling urban structure designed by Canadian artist Armand Vaillancourt and constructed in 1971. The fountain is situated across the Embarcadero from the San Francisco Ferry building and covers nearly a quarter (¼) acre of land including the pool that encompasses it. The modernist fountain structure was constructed when the double-deck elevated Embarcadero Freeway ran along the waterfront in front of the Ferry Terminal. Research on the fountain indicates it was designed to activate the urban landscape in front the Embarcadero Freeway and distract visitors from the harshness and noise of the viaduct.

The fountain's structure is assembled from precast concrete tubes, which are configured at various angles and into various assemblages to create "pipes". These pipe elements were designed to facilitate the flow of water, which fell into the pool below the fountain (reference *Figure 1* through *Figure 3*). Water no longer flows through the "pipes" and the pool no longer contains water. It is understood the pump system within the fountain failed years ago and has not been repaired. The precast concrete tubes and sunken pool are supported on a variable thickness concrete mat foundation.

DCI Engineers (DCI) was engaged by Page & Turnbull to perform a structural evaluation of the Vaillancourt Fountain. The scope of the evaluation includes a review of available documentation or reports related to the fountain, a visual observation of the fountain's existing conditions, and a structural analysis to establish anticipated performance during a seismic event. This report is intended to address each of those three items.

Figure 1: Vaillancourt Fountain Circa 2007– Courtesy of Wikipedia Open Source

Figure 2: Vaillancourt Fountain – April 2025

Figure 3: Vaillancourt Fountain – April 2025

STRUCTURAL OBSERVATION

SITE VISIT AND DOCUMENT OVERVIEW

DCI visited the fountain site on April 8, 2025, to observe existing conditions and visually evaluate the structure. The fountain was not operational due to the noted maintenance problems with the pump system. Therefore, no water was flowing and there was no water within the sunken pool. The drained pool allowed additional access to observe not only the entirety of the pre-cast concrete tube elements, but also the supporting structures that would normally be below the waterline.

As part of the document review process, DCI was able to reference architectural drawings and a three-dimensional Building Information Model (BIM), which were developed by *Page & Turnbull* architects (reference *Figure 4*). The original structural drawings were also available. These drawings are contained in two separate packages, both dated January 25, 1969. One set of structural drawings covers the site-built mat foundation that supports the fountain and tubes. The other set, prepared by DFDS Engineers, addresses the precast concrete elements. Finally, a material survey report, which consisted of survey scanning of the pre-cast concrete tubes, was also available. This report, which was generated by *Applied Materials & Engineering, Inc.*, was utilized to correlate and confirm the reinforcement within the precast concrete drawings.

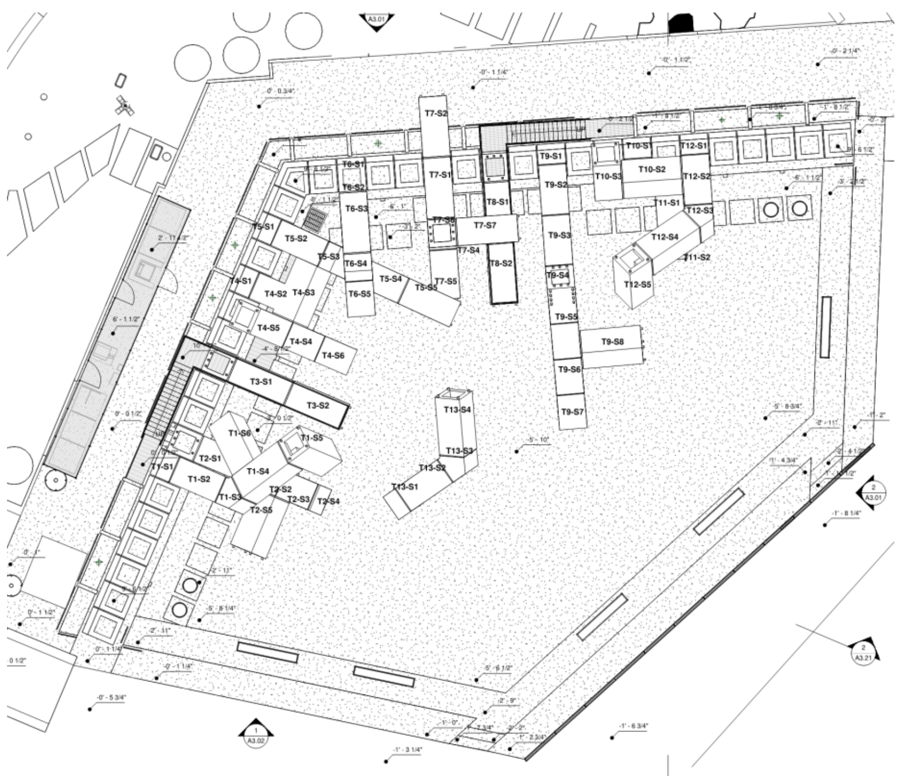


Figure 4: Vaillancourt Fountain Schematic Plan – Courtesy Page and Turnbull

STRUCTURAL SYSTEM

As noted, the fountain structure consists of hollow, precast concrete tube sections arranged across the fountain's pool to form "pipes". The standard precast sections are four and-a-half feet (4'-6") square and ten to eleven feet (10'-0" to 11'-0") long. As shown in the original structural drawings, there are two types of precast tubes. Precast concrete "shell" tubes are reinforced with an internal, steel plate box lining, while the remainder of the concrete tubes are locked together with continuous, high-strength steel tension rods. These high-strength tension rods are denoted as "post-tensioned" elements in the original drawings and are sleeved longitudinally through steel pipes embedded in the tubes. The concrete wall thicknesses are six (6") inches and ten (10") inches for the steel plate lined tubes and post-tensioned tubes respectively. For the steel-lined tubes, the steel plates are connected to the concrete shell with regularly spaced steel tabs and isolated from the concrete shell by a one-inch-thick foam-filled gap. Given the above composition and dimensions, both types of precast concrete sections have an individual weight of approximately ten (10) tons (20,000 pounds).

The steel-lined, precast concrete shell tubes are typically located within the vertical segments of the pipes and are utilized to anchor the precast to the mat foundation. Conversely, the steel tension rod sections of precast concrete are typically situated within the cantilevered, horizontal sections of the pipes. Connections between the steel-lined tube segments are accomplished utilizing partial penetration welds along the entire perimeter of the joint. Grout was utilized to fill in the joint gaps after erection and installation of the structure. The existing details also indicate that asbestos was utilized extensively for fire protection at the joints. At transition joints between the two systems, the steel plates from the steel-lined elements are welded to anchor plates that attach to the rod system.

Protruding, cylindrical caps are observable at the ends of most precast concrete tubes and designate anchor locations of the steel tension rods. In locations where these anchor caps are damaged or missing, embedded steel pipes can be seen running longitudinally through the precast concrete tubes (reference *Figure 5* through *Figure 7*).

Most of the precast concrete tubes that have additional steel rods form the more dramatic shapes within the fountain, including the extensive cantilevers. These cantilevered precast concrete tubes extend 30 feet or more from the back-wall façade of the fountain where they are anchored. Other precast concrete tubes that extend off the back-wall façade and land within the fountain are supported by steel tube sections, which are founded at the base of the pool and cast-in with the mat foundation.

The original structural drawings indicate that typical reinforcement, beyond the steel plates and tension rods, within the precast concrete sections is minimal and consists of #4 or #5 rebar at twelve inches (12") on center in each direction. This reinforcement is most likely designed and installed for shrinkage and crack control. Since the reinforcement is not continuous or connected between the tubes, it does not provide strength to support the tubes. The *Applied Materials & Engineering, Inc.* scanning report correlates with this reinforcement design configuration.

The scanning report also indicated that the precast elements along the back-wall of the fountain are unreinforced. However, the original drawings indicate that these free-standing units are anchored to the mat foundation with ¾" diameter bars at each corner.

Figure 5: Vaillancourt Fountain - Cantilevered Elements Showing Tension Rods and Caps

Figure 6: Vaillancourt Fountain – Cantilevered Elements Showing Tension Rods and Caps

Figure 7: Vaillancourt Fountain - Cantilevered Observation Deck and Fountain Elements.

FOUNDATION SYSTEM AND GEOTECHNICAL CONDITIONS

Geotechnical information related to the site, including geotechnical borings from adjacent, development, indicates the area of the fountain is underlain by poor soils. Specifically, the top twenty feet (20’) to forty feet (40’) of soil consists of poorly consolidated fill. This fill was placed following the construction of San Francisco’s sea walls, which progressively extended the shoreline eastward beyond its original location at approximately Sansome Street. The fill likely consists of variable materials, including fragments of old structures. Underneath the fill, to a depth of approximately ninety feet (90’) to 120 feet (120’) below surface grade is soft Bay Mud. This soft Bay Mud covers much of the San Francsico Bay and is a highly organic mixture of silts and sands.

As previously noted, the fountain is supported on a variable thickness concrete mat foundation. Ideally, the mat allows the fountain to “float” on top of the unconsolidated fill and soft Bay Mud. However, these soils conditions are highly susceptible to a combination of liquefaction during an earthquake as well as long-term settlement concerns.

VISUAL OBSERVATION

Various signs of structural damage and deterioration due to corrosion were observed during the site observation. At the floor of the sunken pool, various precast frame sections were observed to be supported on 6x6 steel tube pedestals or concrete pedestals. All the steel tubes were noted to be heavily corroded (reference *Figure 8*). This is expected as a result of the constant immersion in water when the fountain was operational, as well as the continued exposure to the corrosive effects of the humid San Francisco marine air. The corrosion damage observed most likely impacts the structural integrity and ultimately the capacity of these steel tubes.

Figure 8: Vaillancourt Fountain - Corroded Steel Tubes and Spalled and Cracked Concrete

As mentioned, many of the precast concrete tube sections are connected by steel rods inserted through embedded steel tubes. These steel rods are anchored at square steel plates, which are embedded at the ends of the precast concrete tubes. The anchored steel rods are then covered with the previously noted conical caps to protect them from weather. At multiple sections, significant concrete spalling was documented behind the anchor plates. In addition, spalling at the joints between the precast concrete sections was observed in numerous locations. These spalled areas have further exposed the embedded steel anchor plates, as well as the reinforcement within the concrete, and facilitated extensive corrosion of the steel elements. Although it is not observable, the documented corrosion suggests the steel liner plates within the vertical precast concrete tubes are also likely experiencing significant corrosion and degradation.

Figure 9: Vaillancourt Fountain - Showing Spalled Ends

The corrosion has also led to rust stains along the surface of the precast concrete. Many of the rust stains extend down from the anchor plates and cylindrical caps. Based on this observance, it is likely the steel rods connecting the precast concrete tubes have also begun to rust, are in various states of corrosion, and have compromised strength (reference *Figure 9* through *Figure 12*).

At one of the suspended cantilevered precast tube sections, the conical end cap has fallen off. This missing cap exposes the embedded steel tube, which is intended to house the steel connection rod. However, the steel connecting rod is missing, and the exposed steel tube and anchor plate are heavily corroded (reference Figure 11). As a result of the missing steel connecting rod, the structural integrity of this precast section is significantly compromised. There are only four (4) steel rods connecting this precast concrete section together; the single missing rod reduces the capacity of this section by 25 percent (25%).

Figure 10: Vaillancourt Fountain - Spalled and Cracked Concrete and Corrosion of Steel Elements

Figure 11: Vaillancourt Fountain – Showing Corroded End Plate and Absence of Thru Rod and Spalled Concrete Surface

Figure 12: Vaillancourt Fountain Cracked and Spalled Concrete and Water Damage Stains

At the interface between the cantilevered, cane-shaped tube (designated as section "T6" by the Page & Turnbull drawings) and the H-shaped cantilevered tube (designated as section T4-T5 on the Page & Turnbull drawings), various longitudinal, significant cracks were observed. These cracks extend across the joint between the T5-S4 and T5-S5 sections. The cracks appear to be the result of stress and subsequent deformation of the concrete tubes.

This conclusion is emphasized by the fact the cantilevered, cane-shaped T6 frame appears to have settled onto, and is now partially supported by, the cantilevered T5 leg below it. This situation invariably imposes unanticipated forces on both cantilevered sections (reference *Figure 13* and *Figure 14*). The displacement of the cane-shaped T6 frame is possibly the result of deformation from the yielding of the steel plate lining during previous seismic events, or loss of strength due to corrosion.

Figure 13: Vaillancourt Fountain – TS6 Frame on TS4-TS5 Assembly - Cracks and Corrosion

Figure 14: Vaillancourt Fountain – TS6 Frame resting on TS4-TS5 Assembly with Cracks and Corrosion Close Up

STRUCTURAL EVALUATION AND ANALYSIS

ANALYSIS MODELS

In order to evaluate the anticipated performance of the existing fountain structure in the event of various seismic events, DCI constructed multiple linear, finite element computer models that are representative of the precast concrete tubular structures (reference *Figure 15* and *Figure 16*). The computer models utilize meshed plate elements with steel and concrete material properties including mass and stiffness. Localized stresses in the steel plates, concrete shells, and forces at the steel tension rod connection system are also accounted for as part of the model. Seismic forces acting on the tube structures were calculated based on predicted ground accelerations at the site, as prescribed by the United States Geological Survey (USGS). These seismic forces were applied in multiple directions to account for the variability of earthquakes. Material properties were based on those documented in the original structural drawings. The precast concrete was modeled with a maximum compressive strength of 3,000 pounds per square inch (PSI), while the high strength rods were modeled with ultimate strengths of 160,000 PSI and yield strength of 120,000 PSI. Effective section properties and concrete cracking were accounted for by providing an effective elastic modulus equal to 35 percent (35%) compared to the uncracked section.

Figure 15: Current Precast Frame

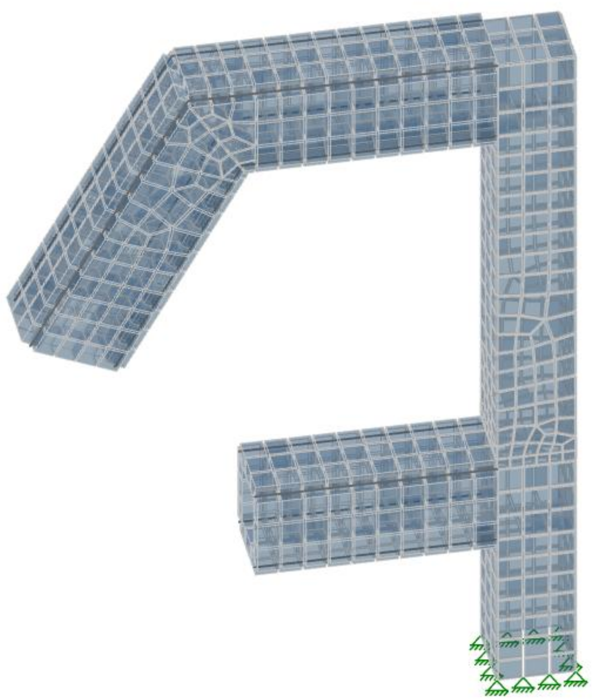


Figure 16: Analysis model with Showing Meshed Concrete and steel Elements.

LOAD CASES

Numerous load cases and seismic conditions, including those standards for non-building structures as defined by the San Francisco Building code, were considered as part of the analysis. This approach allowed all possible scenarios and estimated performance levels to be captured. The seismic conditions evaluated include the following.

1) **ASCE 7-16; Chapter 15** (*Seismic Design of Nonbuilding Structures*) utilizing a Response Modification Factor (R) of 1.25, as defined by the San Francisco Building Code
2) **Maximum Considered Earthquake (MCE)** event with a Short Period Spectral Response Acceleration (S_S) of 1.5
3) **Design Basis Earthquake (DBE)** with a Design Short Period Spectral Response Acceleration (S_{DS}) of 1.2
4) **Service Level Event (SLE)** correlated to an approximate 50-year return period, typically utilized as a threshold at which structures should incur no seismic damage

For the latter three cases, all seismic accelerations were applied to the model without reduction factors.

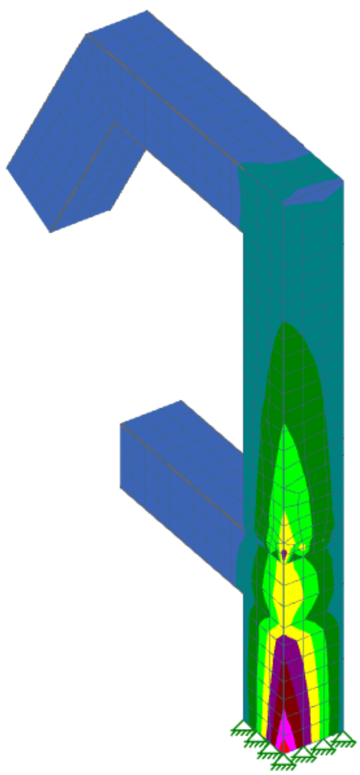


Figure 17: Stress Contours in the Precast concrete and Steel Elements

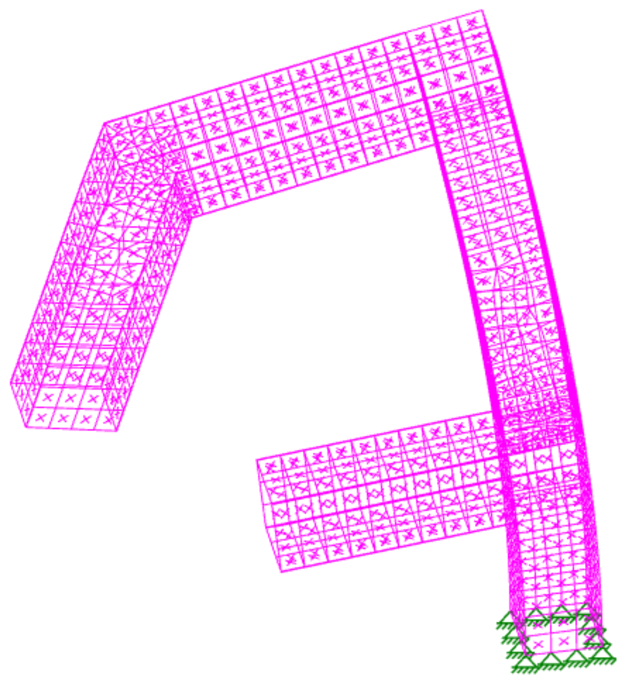


Figure 18: Deflection of Precast Concrete and steel tube elements

SUMMARY

The demand-capacity ratio (DCR) is a commonly referenced engineering term that represents the maximum force that will be applied to a structure, or a component within a structure, divided by the capacity of that structure or component. If the DCR exceeds 1.0, then the demand on the element is greater than the capacity of the element, and some level of failure is anticipated.

As illustrated in *Table 1* of this report, which represents the results of the four seismic loading conditions on the cantilevered, cane-shaped precast concrete tube referred to as the "T6" frame, total DCRs for the built-up steel plate box lining exceed 1.0 for both the Maximum Considered Earthquake (MCE) and Design Basis Earthquake (DBE) loading. The loading from the MCE level event that is anticipated to occur in San Francisco will result in a maximum DCR of 1.02. This DCR reflects the stresses in the steel plate lining induced by combined overturning forces. Furthermore, as seen in the stress contour plot (reference *Figure 17*), the corners of the steel plate box are exhibiting stresses up to 41 Kips per Square Inch (KSI) under MCE loading, shown in pink and red. This magnitude of stress exceeds the allowable design limit of 36 KSI for the steel plates. As a result, the steel plates will locally yield and deform, likely causing permanent deformation and shifting of the overall concrete tubes (reference *Figure 18*). Similar results are applicable for the other precast concrete frames.

It should noted the Demand Capacity Ratios indicated in *Table 1* are based on idealized material properties and cross-sections. Corrosion and deterioration of the materials, which is documented in this report and pervasive throughout the fountain structure, will significantly reduce the materials strength and cross-section. These reductions could result in substantially higher DCR's and more significant anticipated failure. Further on-site evaluation, testing, and analysis would be required to accurately determine current seismic performance levels of the fountain.

Vaillancourt Fountain Precast Concrete Frame "T6" with Steel Plate Lining	SEISMIC LOAD CASES			
	ASCE 7 CH15	MCE Ss = 1.5	DBE S_{DS} = 1.2	SLE SDS = 0.6
Fy (ksi)	36	36	36	36
Steel Plate Thickness (in)	1	1	1	1
Required Z (in.^{3})	1010	1304	1195	746
Total M/S (Flexural Stress, ksi)	31.1	42.4	37.7	21.5
Total, DCR	**0.83**	**1.02**	**1.01**	**0.58**

Table 1: Seismic Analysis Results of Built-Up Steel Plate Lining at Cane-Shaped Precast Frame (T6)

CONCLUSIONS

Visual observations indicate significant corrosion and damage have occurred to the precast concrete tubes and steel components that make up the Vaillancourt Fountain in San Francisco. This deterioration is the result of spalling of the concrete, which has exposed the steel anchor plates and reinforcing to the marine atmosphere. The degradation of the structure is such that the steel connecting rods, which lock together the precast concrete tubes, are missing in at least one location. Any missing steel rods substantially reduce the capacity of the fountain to self-support or resist potential earthquakes. In addition, non-visible corrosion is likely pervasive throughout the steel plate lining that is used to reinforce vertical precast concrete elements. This corrosion and degradation have a significant impact on the resilience of the tubes to resist future seismic events.

Given the proximity of the site to the San Francisco Bay, soil conditions below the fountain consist of unconsolidated fill and Bay Mud. These materials tend to amplify seismic risk, increase liquefaction potential, and in general result in poorer seismic resiliency. Since the fountain sculpture and pool structures are not supported on a deep foundation or pile system, the shallow mat foundation is susceptible to excessive settlement and resulting, associated damage.

The results of the preliminary linear seismic structural analysis, which is based on idealized capacities and does not account for any level of material degradation, indicate the seismic force demands on the fountain under both Maximum Considered Earthquake (MCE) and Design Basis Earthquake (DBE) loading will exceed the capacity of the steel plate lining system. As a result, the steel plates will locally yield and deform, likely causing additional displacements and permanent shifting of the precast tube structures. This situation will be further exacerbated by the continued corrosion of the steel plates.

DISASSEMBLY AND REASSEMBLY POSSIBILITY

Disassembling the precast concrete tube frames section by section is feasible. However, it would require substantial effort and time to perform. Given the overall weight (approximately 10 tons) of each precast section and the cantilevered distances of the tubes, a heavy temporary steel shoring system would first need to be constructed below the precast concrete elements. As noted, the individual precast concrete sections are connected either by longitudinal steel rods or welded steel plates. Those precast concrete tubes connected by steel rods could be de-tensioned and disassembled fairly easily. However, the precast concrete tubes with steel plate lining would require an individual to climb into the pipes and cut (torch) the steel plates. This would be an extremely hazardous effort given the confined space and the temporary support system holding up the tubes. This process would also require a large mobile crane to stabilize and move the precast concrete elements throughout any repair, retrofit, or disassembly process. Finally, the existing structural details indicate asbestos is utilized extensively for fire protection purposes at the section joints, thus, posing safety hazards to the construction crew and further complicating the disassembly process.

May 2025

Vaillancourt Fountain

Executive Summary

The Vaillancourt Fountain, installed in 1971, has exceeded its functional life expectancy and has been fully inoperable since May 2024 due to the failure of the last operational pump. The system's mechanical and electrical infrastructure is obsolete, and its underground vault poses significant safety hazards. A full restoration and modernization is required for safe, code-compliant, and sustainable operation into the future.

Condition Assessment

- Mechanical and Electrical Failure
  - The fountain's pumps and motors are all original and have progressively failed. All four pumps are now inoperable.
  - Equipment has experienced severe degradation from flooding and age-related wear.
  - Electrical distribution systems are outdated, corroded, and dangerous, frequently tripping breakers and impacting plaza-wide power systems.
- Underground Vault Hazards
  - The underground pump station is classified as a confined space under modern OSHA standards and is no longer accessible for maintenance staff.
  - It is not waterproof, allowing inches of standing water to accumulate, and relies on a lift pump system with no backup power.
  - During outages, the vault floods, damaging motors, electrical panels (MCCs), and control systems.
- Fountain Basin and Waterproofing
  - The existing waterproofing membrane has failed. The basin must be completely stripped and rebuilt to pool-grade waterproofing standards to prevent leaks and structural damage.
- Lighting System Nonfunctional
  - While some lighting lenses appear intact, the fixtures are nonfunctional, and wiring is deteriorated beyond reuse.
  - A complete rewiring and fixture replacement is required.

Maintenance Summary

The Vaillancourt Fountain has historically required extensive, near-daily maintenance, reflective of its aging infrastructure and its visibility as a prominent public landmark. Over the course of its operational life, maintenance tasks have spanned preventive care, cosmetic upkeep, routine system checks, and emergency response—often requiring multi-trade coordination and specialized access protocols.

As a highly visible urban feature, the fountain has been a frequent target of graffiti and vandalism. City crews routinely responded to incidents involving defacement of the concrete surfaces, railings, and access points. These responses typically included repainting, chemical cleaning, and restoration of aesthetic elements.

Preventive maintenance was a continuous operational requirement, carried out by stationary engineers who performed daily inspections, monitored pump functionality, cleared debris, adjusted water levels, and managed electrical and mechanical systems. This included coordination with electricians for troubleshooting circuit failures and with laborers for physical clean-up.

One of the most labor-intensive recurring tasks was the quarterly draining of the fountain basin, which was necessary to remove accumulated sediment, debris, algae, and other biological material. These cleanouts were essential to avoid clogging and to maintain visual quality and system efficiency.

However, chronic waterproofing failures and system infiltration greatly intensified maintenance demands. The fountain's infrastructure suffered from persistent leakage and inadequate drainage, allowing water to seep into the underground mechanical vault. This created hazardous working conditions, led to frequent pump failure, and necessitated the deployment of vactor trucks to remove standing water. The lack of adequate separation between wet and dry zones within the vault further increased the likelihood of electrical system compromise and accelerated corrosion of critical components.

Confined space access requirements, coupled with these water-related hazards, made many routine tasks logistically complex and resource-intensive. In multiple cases, maintenance crews had to isolate power, deploy temporary ventilation, or stage mobile equipment simply to complete basic repairs.

In total, maintenance of the Vaillancourt Fountain averaged approximately $100,000 per year, inclusive of documented labor costs, travel and equipment time, material handling, and additional support activities which reflect tens of thousands of cumulative labor hours.

Full Scope of Systems and Components Needing Replacement

Mechanical Systems

- Circulation Pumps (4 units)
    - All existing pumps are inoperable.
    - Replacement with modern, energy-efficient models required.
- Pump Motors
    - Obsolete and flood-damaged; require full replacement.
- Pump Control Systems

    - Nonfunctional electrical controls must be rebuilt.
- Chemical Control System
  - Currently nonexistent. New system must include:
    - Chlorine injection
    - pH control
    - Safety sensors
- Filtration System
  - No filtration currently in place.
  - Requires commercial-grade multi-stage filter system (sand, cartridge, etc.).
- Lift Pump System for Vault Dewatering
  - Must be replaced or upgraded with automated sump system and flood sensors.
- Backflow Prevention Devices
  - Required for any modern water distribution system per public health code.

Electrical Systems

- Main Electrical Switchgear
  - Corroded and obsolete; must be replaced.
- Motor Control Centers (MCCs)
  - Severely water-damaged and outdated.
- Wiring and Conduit
  - Entire underground and basin lighting wiring must be replaced.
- Breaker Panels & Disconnects
  - Needed for modern load control, access, and safety.
- Lighting Systems
  - Fixtures (surface-mounted lenses are nonfunctional)
  - Wiring & Drivers/Transformers must be replaced.
  - Upgrade to LED or programmable lighting is recommended.
- Event Power Separation
  - Plaza systems are currently linked; must be restructured to avoid power interference.

Structural & Architectural Components

- New Above-Ground Pump Building
  - Code-compliant, weatherproof, and accessible.
  - Includes:
    - Ventilation systems
    - Equipment pads
    - Dedicated mechanical and electrical rooms
- Concrete Work
  - Repair or replace spalled or cracked fountain surfaces.
  - Reinforcement as required.
- Waterproofing Membrane
  - Full removal and replacement of basin waterproofing membrane.
  - Upgrade to pool-grade, chemical-resistant membrane.
- Drainage & Grading Improvements
  - Around pump building and basin to prevent water intrusion and protect foundation integrity.

Control and Monitoring Systems

- Automated Control System
    - Centralized controller for:
        - Pump operation
        - Water levels
        - Chemical dosing
- Remote Monitoring Capabilities
    - Optional feature for offsite diagnostics and alerts.
- Sensors & Alarms
    - Water level sensors
    - Chemical monitoring
    - Flood alarms
    - System failure alerts

Recommended Upgrades and Additions

- Backup Power System
    - Generator or battery backup to support:
        - Sump/lift pumps
        - Emergency lighting
        - Control systems
- Energy Efficiency Measures
    - Variable frequency drives for pumps
    - LED lighting upgrades
- Security Features
    - Access control system for new pump building
    - Cameras or surveillance system

Conclusion and Recommendation

The systems of the Vaillancourt Fountain are functionally and electrically beyond repair in its current state. The system has reached the end of its service life due to a combination of age, environmental exposure, and evolving safety standards. Decades of continuous operation in a challenging marine environment, coupled with original infrastructure not designed for long-term sustainability, have contributed to the fountain's deterioration.

Given the widespread failure of mechanical and electrical systems and waterproofing infrastructure, any attempt at partial repair or isolated upgrades would be insufficient. A full restoration and redesign project is required to address safety, code compliance, operational reliability, and long-term resilience. This work would include full replacement of mechanical and electrical systems and improvements to waterproofing, drainage, and accessibility.