NPS Form 10-900
(3-82)

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United States Department of the Interior
National Park Service

National Register of Historic Places Inventory—Nomination Form

For NPS use only
received JAN 14 1986
date entered FEB 13 1986

See instructions in *How to Complete National Register Forms*
Type all entries—complete applicable sections

1. Name

historic Belt Railroad Engine House and Sandhouse

and/or common Beltline Railroad Roundhouse and Sandhouse

2. Location

street & number Block bounded by Lombard, Sansome & The Embarcadero N/A not for publication

city, town San Francisco N/A vicinity of

state California code 06 county San Francisco code 075

3. Classification

Category	Ownership	Status	Present Use	
___ district	_X_ public	___ occupied	___ agriculture	___ museum
_X_ building(s)	___ private	___ unoccupied	_X_ commercial	___ park
___ structure	___ both	_X_ work in progress	___ educational	___ private residence
___ site	**Public Acquisition**	**Accessible**	___ entertainment	___ religious
___ object	___ in process	_X_ yes: restricted	___ government	___ scientific
	___ being considered	___ yes: unrestricted	___ industrial	___ transportation
	_X_ N/A	___ no	___ military	___ other:

4. Owner of Property

name Port of San Francisco (see continuation sheet)

street & number Ferry Building

city, town San Francisco N/A vicinity of state California 94111

5. Location of Legal Description

courthouse, registry of deeds, etc. San Francisco County Recorder

street & number San Francisco City Hall, Room 167

city, town San Francisco state California

6. Representation in Existing Surveys

(Tax certification, Part I, 12/14/82)

title Landmarks Preservation Advisory Board has this property been determined eligible? _X_ yes ___ no

date 10/8/80 Landmark #114 ___ federal ___ state ___ county _X_ local

depository for survey records City & County of San Francisco, Department of City Planning

city, town San Francisco state California

7. Description

Condition		Check one	Check one
X excellent	___ deteriorated	___ unaltered	X original site
___ good	___ ruins	X altered	___ moved date N/A
___ fair	___ unexposed		

Describe the present and original (if known) physical appearance

The Beltine Railroad Complex consists of the "Engine House" (later called the roundhouse), built in 1913 and an accessary building, the "sandhouse", built in 1914. Both buildings are reinforced concrete construction with an exterior finish of cement plaster. The buildings are simple utilitarian structures of this period, built to service the Beltline Railroad system along the Embarcadero. The buildings were originally altered in the 1950's replacing the 5 main doors with industrial type roll-up doors set back from the facade. The 1984 renovation work included replication of the original doors and installation in the original location. The other features of the buildings exterior remain unaltered and the buildings have retained their original design integrity. The interior has been altered with the introduction of a floating mezzanine. The mezzanine is indepently supported and held away from the exterior walls a minimum of 6'0.

Wood frame utility buildings, No. 3, 4, & 5, were demolished by the San Francisco Port Authority in 1979 prior to their agreement with the developer. A new building was constructed in their location. The new building is a 4 story reinforced concrete building using the same kind of column/spandrel design of the roundhouse. The windows in the new building are steel multi-pane industrial windows to harmonize with the roundhouse.

The buildings, situated on a triangular site, were designed to service the Beltline Railroad built in 1890. This system serviced the entire San Francisco waterfront along the Embarcadero with minimal rail operations continuing today. The setting of the buildings in association with the rail system still exists.

The roundhouse is a wedged-shaped, single-story structure with 5 bays. The front and rear facades are faceted reflecting the five bays. The front portion of the building has a sloping roof with large roof vents over each bay and at the high end of the roof. Near the rear (south side) the roof steps down to a lower flat roof portion. Between the two roofs levels a series of clerestory windows provides additional light into the Engine Room. The roundhouse provided a drop-pit machine shop, blacksmith shop, storeroom and engine house.

The structurally reinforced concrete skeleton of the building is exposed showing the concrete columns and beams on the exterior and the interior. The building is then enclosed using concrete spandrels and lintels, and industrial steel sash with small glass panes. The roof and roof beams are also reinforced concrete with the structure exposed with the form board marks still showing. (See continuation sheets)

8. Significance

Period	Areas of Significance—Check and justify below				
___ prehistoric	___ archeology-prehistoric	___ community planning	___ landscape architecture	___ religion	
___ 1400–1499	___ archeology-historic	___ conservation	___ law	___ science	
___ 1500–1599	___ agriculture	___ economics	___ literature	___ sculpture	
___ 1600–1699	___ architecture	___ education	___ military	___ social/ humanitarian	
___ 1700–1799	___ art	X engineering	___ music		
___ 1800–1899	X commerce	___ exploration/settlement	___ philosophy	___ theater	
X 1900–	___ communications	___ industry	___ politics/government	X transportation	
		___ invention		___ other (specify)	

Specific dates 1913/1914 **Builder/Architect** Newman, Freeman & Alden

Statement of Significance (in one paragraph)

The Beltine roundhouse complex, built in 1913/1914, is significant for its historic association with the Beltine Railroad system that the linked San Francisco piers and industrial areas with the railroad systems of the country. This complex is one of thte few remaining elements of the Beltline Railroad system and is the only roundhouse remaining in San Francisco. The property has been designated City and County of San Francisco Landmark #114. The building also derives its significance from its engineering and architecture, specifically the use of reinforced concrete columns, and its exposed skeleton frame as part of its industrial design expression. This building represents an innovative approach to the use of reinforced monolithic concrete and reinforced concrete columns.

Historical Signficance (From the Landmark #114 File)

A beltline railroad, linking San Francisco's piers and industrial areas with the railroad system of the country, was first proposed in 1873, but actual construction did not take place until 1890.

The spurs for the construction of a beltline system were the completion of the transcontinental railroad in 1869 and the construction of the continuous seawall around the San Francisco waterfront which provided new land for the peripheral or belt railroad. The first section of the seawall was completed at what is now Fisherman's Wharf in 1880; the next sections, to Pacific Street, by 1886.

The building of the continuous seawall created new, filled land equivalent to more than thirty 50 vara lots between Powell and Pacific Streets, but under the law this new land could be used only for parks, not for commercial purposes. It wasn't until 1890 that an amendment was passed which allowed the Harbor Commission to use these seawall lots for commercial purposes such as switch yards, warehouses, and railroad tracks. (See continuation sheets)

9. Major Bibliographical References

See Continuation Sheet

10. Geographical Data

Acreage of nominated property .67 Acres
Quadrangle name San Francisco, North **Quadrangle scale** 1:24000
UTM References

	Zone	Easting	Northing
A	10	552670	4184090
B			
C			
D			
E			
F			
G			
H			

Verbal boundary description and justification

See Continuation Sheet

List all states and counties for properties overlapping state or county boundaries

state	N/A	code	county	N/A	code
state	N/A	code	county	N/A	code

11. Form Prepared By

name/title Dan Peterson, AIA, Historic Preservation Architect
organization Interactive Resources, Inc. **date** 9/27/85
street & number 117 Park Place **telephone** (415) 236-7435
city or town Point Richmond **state** California 94801

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

___ national ___ state X local

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

State Historic Preservation Officer signature Kathryn Gualtieri

title State Historic Preservation Officer **date** 12/30/85

For NPS use only

I hereby certify that this property is included in the National Register

Entered in the National Register **date** 2-13-86

Delores Byrd
Keeper of the National Register

Attest:
Chief of Registration **date**

United States Department of the Interior
National Park Service

National Register of Historic Places Inventory—Nomination Form

For NPS use only
received
date entered

OWNER OF PROPERTY

Owner of Record Title: Port of San Francisco
Ferry Building
San Francisco, CA 94111

Lessees & Taxpayers: Roundhouse Investors
850 Montgomery Street, Suite 400
San Francisco, CA 94133

The main doors in each bay area double hinged, stile and rail, with multi-pane glass lights above and below an intermediate rail. The windows on the sides, rear, and clerestory are steel type industrial sash divided in small panes. Over each main door in a frieze is the bay number (No. 1, No. 2, No. 3, No. 4, No. 5). Bay No. 3 was designed with new entrance doors for pedestrian access. They were installed behind the large doors which are left in the open position.

Main access to the building was by a series of tracks, switched to move the railroad engines from the main line into the Engine house for service and repair. These tracks still exist as part of the new use of the building.

The shape of the roundhouse, functional for railroad type access, also relat ed well to the triangular shape of the sea wall lots.

The sandhouse building, located to the south of the Engine House, is a single-story reinforced concrete building. This building was built as a supply station. The exterior is concrete covered with plaster. There is a small plaster cornice around the perimeter of the building below the parapet. There is a plaster base around the building at the sidewalk level.

The structural concrete skeleton is exposed only on the interior, and is not reflected on the exterior as in the Roundhouse. The interior finishes are of board formed concrete.

The windows are all wood sash with muntin divisions. The doors are stile and rail with solid wood panels.

The building has not been altered, with the exception of the introduction of the glass-type French doors and the introduction of a floating type mezzanine in the interior. Those alterations were approved during the rehabilitation. The property has been rehabilitated in accordance with the Secretary of the Interior's Standards.

The first section of the Beltline Railroad was constructed in 1890. It started from the freight ferry slip at the foot of Lombard Street, and ran north to Powell and south to Pacific Street, a total length of about a mile. This first railroad consisted of three tracks, to handle both standard and narrow gauge cars. One segment of this three-rail track can still be seen where Front Street meets Commerce, between Green and Union Streets. The use of these tracks and the Lombard Street ferry slips was assigned to the South Pacific Coast Railway Company (of the Southern Pacific Company) and the San Francisco and North Pacific Company (which operated the narrow gauge cars). The early rails were light, laid on ties without ballast, and with planking between the rails. In the first seven years, approximately 99,000 cars were switched with one locomotive which, with one flat and one hand car, comprised the total rolling stock. For some years the Beltline operated at a loss; by 1892, the total revenue was but $17,480.

Business increased by 173% between 1887 and 1900 however. New and heavier rails were laid on a regular paved roadway in 1907. But the system was still handicapped by the fact that it was not continuous; a gap between the northern and southern portions still existed in front of the Ferry Building. This gap wasn't bridged until 1912--at which time revenues from the Beltline jumped immediately.

The earthquake and fire of 1906 led not only to the reconstruction of large parts of the city, but to a greatly improved waterfront, sparked by the San Francisco Harbor Improvement Act of 1909 with a $9 million appropriation. By the Biennial Report for the years ending June 30, 1914, the Harbor Commission was able to boast that "San Francisco undoubtedly now has the most complete harbor beltline railroad switching system in the world...it is used to connect up, for the switching of freight cars, the various piers, the yards of other railroads, and private warehouses and industries generally...even such a great seaport as New York has no harbor belt line."

A roundhouse was built to handle the increased freight activity; work was completed on April 30, 1914. The Biennial Report for the period ending June 30, 1914 stated: --"A reinforced concrete Engine House containing five stalls was erected on Seawall Lot 8, bounded by Lombard and Sansome Streets and the Embarcadero. This building is provided with a drop pit, machine shop, blacksmith shop, and store room; the engine house proper and the machine shop are floored with wooden blocks on a concrete base, the store room with concrete and the blacksmith shop with cinders. It is expected that this Engine House will suffice for the needs of the belt railroad for several years and when additional stalls are required another engine house should be built on the southern division."

In 1914 a small reinforced concrete bulding was built in the railyard on the corner of Lombard and the Embarcadero; this became a supply station. In January of 1919 an oil tank and sand house (no longer there) were built alongside the southern back of the roundhouse, and by the Biennial Report for the period ending June 30, 1928, "a change room, in which are installed toilets, showers and lockers for the shop and trainmen" had been built of wood in the railroad yard. Two other buildings, used for storage, abutting the change room on the east and extending along Lombard Street to Sansome, were built of wood in 1927 and 1928.

In 1912 what the Biennial Report referred to as the "necessary link" was completed from "Folsom to Washington Street, and crossing in front of the Ferry Building...to connect the north and south divisions of the belt railroad." The construction of this "necessary link" was immediately profitable. The Biennial Report for the period ending June 30, 1916, reported that "The rapid extension of the beltline and the building of the connecting link...have borne fruit in good measure...the receipts of the biennial period just ended, July 1, 1916, exceed those of the preceeding biennial period by 45.7 percent, and exceed those of the biennial period ending July 1, 1912, by 78.5 percent."

The Beltline Railroad was extended through the Fort Mason tunnel to Beach Street for the Panama-Pacific International Exposition of 1915, and in June 1917 the line was extended, "on request of the War Department," to the Presidio. In 1923, Harbor Commissioner Edward Morphy noted that the beltline by then consisted for 54 miles of tracks and eight locomotives. Morphy wrote: "One of San Francisco's unique and most important features today, and one that distinguishes it from practically every other great port on the western continent is the efficiency of its Belt Railroad, so called, whereby every pier and practically every berth alongside is connected directly with the railway systems of America."

The tracks along the Embarcadero still exist, although operation of the rail system is greatly reduced by the changing uses of the waterfront.

Engineering & Architectural Significance

The roundhouse building (1913) was built, with the absence of ornamentation, allowing the structual skeleton to remain exposed. The window spandrel and lintel items were recessed between the columns which became features of future design styles of the twentieth century.

During this era, some utilitarian buildings were being designed and build in San Francisco utilizing design features found in the various styles of the era. The buildings were basically flat wall structures, with the openings piercing the walls and no expression of the internal structural system. Architectural features such as decorative cornices, stepped or decorated parapets, arched windows, etc., effecting more classic features were often the design patterns being used on these utilitarian buildings. Such an example was the San Francisco pumping station #2 built in 1912 of concrete in the Mission style. (Carole Rifkind, "A Field Guide to American Architecture", illustration #449). This was also true with the number of bulkhead buildings (1910-1920) built along the Embarcadero as facades for the docks. This was the era when the waterfront was greatly improved for the 1915 Panama Pacific International Exposition.

The brick buildings built along the waterfront were decorated with dentils, shaped and decorated parapets and arched openings.

"This first decade of the twentieth-century saw enthusiastic use of and experimentation with concrete" (Carole Rifkind "A Field Guide to American Architecture", pp. 293 1900-1940 Age of Industry).

The use of reinforced concrete (patented 1878) was promoted first on the west coast 1874 - 1888 by E. L. Ransome who built the first reinforced concrete bridge in the United States (1889) located in Golden Gate Park, San Francisco. Concrete columns were not used until after 1900. Designs of columns were tested from 1902-1908 with experimental work being done during the period of 1908 - 1916 and few new facts were revealed in the published material.

Concerns expressed during this period with the use of monolithic reinforced concrete were:

1. The effect of long term loadings.

2. Plastic flow of concrete and its effect in transferring loads from the concrete to the steel.

3. Effects of shrinkage of the concrete on the stresses in the steel.

It was not until 1929 that the American Concrete Institute (ACI) sponsored a comprehensive investigation of concrete columns reinforced in different ways and of different sizes. The conclusions were used to publish their specifications for columns in the 1940 report of the ASC.

(This information is from a paper prepared by Jasper O. Draffin, University of Illinois, October 27, 1942 entitled "A Brief History of Lime, Cement, Concrete and Reinforced Concrete".)

BIBLIOGRAPHY

Dwyer, J.J., Williams, T.S., McCallum, John H. Biennial Report of the Board of State Harbor Commissioners: For the Fiscal Years Commencing July 1, 1912, and Ending June 30, 1914. California State Printing Office, 1914.

Newlon, Jr., Howard. A Selection of Historic American Papers on Concrete: 1876 - 1926. Detroit: American Concrete Institute, 1976.

Rifkind, Carole. A Field Guide to American Architecture. New York: The New American Library, 1980.

City and County of San Francisco Landmarks Preservation Board, Final Case Report, " Beltline Railroad Roundhouse Complex", March 27, 1980.

Draffin, Jasper O., "A Brief History of Lime, Cement, Concrete and Reinforced Concrete", University of Illinois, October 27, 1942.

NPS Form 10-900-a
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GEOGRAPHICAL DATA

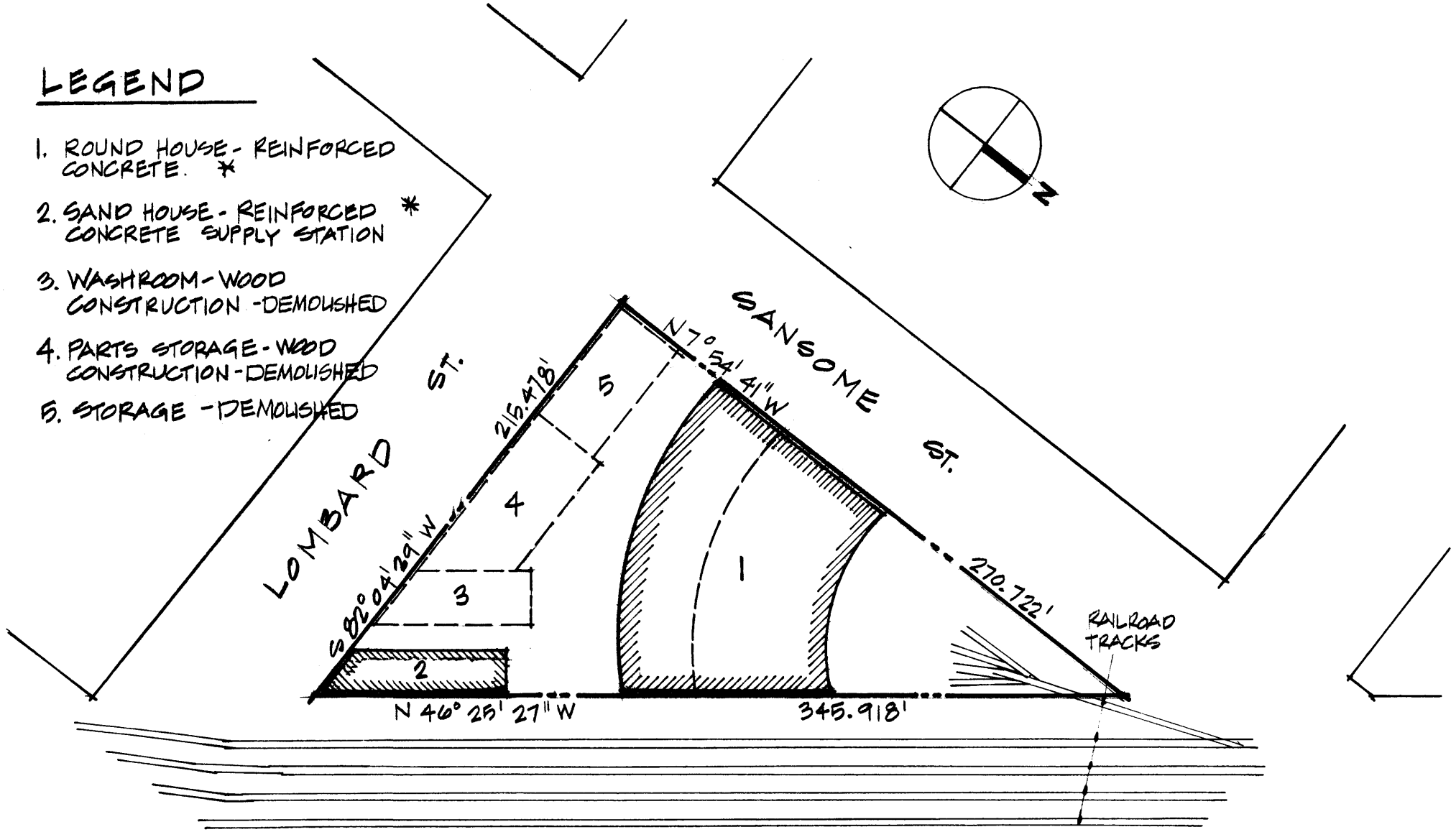
VERBAL BOUNDARY DESCRIPTION AND JUSTIFICATION

The property is described as being Lot #1, Block #58, Seawall Lot #38, at a point beginning at the intersection of Lombard Street and The Embarcadero, proceed N. 46 25' 27" W., 345.91 feet along The Embarcadero, thence N. 7 54' 41" W., 270.722 feet along Sansome Street, thence S. 82 04' 29" W., 215.478 feet along Lombard Street to a point of beginning.

Lombard and Sansome Street originall terminated at "E" Street. Construction of the Seawall resulted in the Seawall Lots and The Embarcadero. In 1890 the Harbor Commission was allowed to use these lots for commercial purposes. These were the original property lines; boundaries are drawn upon the historic lot line encompassing the resource.

LEGEND

1. ROUND HOUSE - REINFORCED CONCRETE. *
2. SAND HOUSE - REINFORCED CONCRETE SUPPLY STATION *
3. WASHROOM - WOOD CONSTRUCTION - DEMOLISHED
4. PARTS STORAGE - WOOD CONSTRUCTION - DEMOLISHED
5. STORAGE - DEMOLISHED



* NATIONAL REGISTER NOMINATIONS

BELT RAILROAD ENGINE HOUSE & SANDHOUSE

Lot 1. Block 58. Lombard, Sansome, & the Embarcadero.
San Francisco, San Francisco County, Calif.

SITE PLAN 1" = 60' ±

BUILDINGS SHOWN ON THE 1948 SANBORN MAP.