

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED JAN 14 1980

DATE ENTERED

MAY 31 1980

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

1 NAME

HISTORIC Jefferson Substation

AND/OR COMMON Jefferson Substation

LOCATION

STREET & NUMBER
37 S. W. Jefferson Street

--NOT FOR PUBLICATION

CITY, TOWN
Portland

CONGRESSIONAL DISTRICT

VICINITY OF

Third

STATE
Oregon

CODE
41

COUNTY
Multnomah

CODE
051

CLASSIFICATION

CATEGORY	OWNERSHIP	STATUS	PRESENT USE
<input type="checkbox"/> DISTRICT	<input type="checkbox"/> PUBLIC	<input type="checkbox"/> OCCUPIED	<input type="checkbox"/> AGRICULTURE
<input checked="" type="checkbox"/> BUILDING(S)	<input checked="" type="checkbox"/> PRIVATE	<input checked="" type="checkbox"/> UNOCCUPIED	<input type="checkbox"/> MUSEUM
<input type="checkbox"/> STRUCTURE	<input type="checkbox"/> BOTH	<input type="checkbox"/> WORK IN PROGRESS	<input type="checkbox"/> COMMERCIAL
<input type="checkbox"/> SITE	PUBLIC ACQUISITION	ACCESSIBLE	<input type="checkbox"/> EDUCATIONAL
<input type="checkbox"/> OBJECT	<input type="checkbox"/> IN PROCESS	<input checked="" type="checkbox"/> YES: RESTRICTED	<input type="checkbox"/> ENTERTAINMENT
	<input type="checkbox"/> BEING CONSIDERED	<input type="checkbox"/> YES: UNRESTRICTED	<input type="checkbox"/> GOVERNMENT
		<input type="checkbox"/> NO	<input type="checkbox"/> INDUSTRIAL
			<input type="checkbox"/> MILITARY
			<input checked="" type="checkbox"/> OTHER: Vacant

OWNER OF PROPERTY

NAME Lincoln Land Company

STREET & NUMBER
208 S. W. Stark Street

CITY, TOWN
Portland

VICINITY OF

STATE
Oregon 97204

LOCATION OF LEGAL DESCRIPTION

COURTHOUSE,
REGISTRY OF DEEDS, ETC. Multnomah County Courthouse

STREET & NUMBER
1021 S. W. First Avenue

CITY, TOWN
Portland

STATE
Oregon 97204

6 REPRESENTATION IN EXISTING SURVEYS

TITLE Portland Historical Landmark (pending)

DATE 1979

FEDERAL STATE COUNTY LOCAL

DEPOSITORY FOR
SURVEY RECORDS Portland Historical Landmarks Commission, 424 SW Main Street

CITY, TOWN
Portland

STATE
Oregon 97204

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
<input type="checkbox"/> EXCELLENT	<input type="checkbox"/> DETERIORATED	<input type="checkbox"/> UNALTERED	<input checked="" type="checkbox"/> ORIGINAL SITE
<input checked="" type="checkbox"/> GOOD	<input type="checkbox"/> RUINS	<input checked="" type="checkbox"/> ALTERED	<input type="checkbox"/> MOVED DATE _____
<input type="checkbox"/> FAIR	<input type="checkbox"/> UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The Jefferson Substation occupies a site at the corner of First and Jefferson Streets on Block 8 of Portland's original town plat, on property acquired from Frank C. Ludesher. When the first unit of the present structure was completed in the summer of 1909, Block 8 was fully developed with masonry buildings except for the substation site which contained a three story wood frame rooming house. Adjacent to the north was the four story brick and cast-iron structure housing the J. N. Matschek Candy Co. (see photo #4), and through the block at First and Madison was the Mattheson Hotel, later known as the Wabash. In 1925 the Matchek Candy Co. building was razed and the Substation expanded to its present configuration.

The blocks around the Substation stayed substantially the same until after WWII when urban renewal and highway programs had a significant impact on the area. Except for one small brick structure north of the Substation, Block 8 is presently vacant, having been acquired by Multnomah County for an access ramp to the Hawthorne Bridge. The County has planted grass and shrubs on the unpaved area. On the block to the south is the 17 story Benjamin Franklin Plaza completed in 1977, and catercorner is Columbia Square, a 15 story structure nearing completion. Across Jefferson Street to the west is the seven level City Parking Garage. Further north is the recently completed Willamette Center, and the two block high-rise office complex, 1 Main Plaza, scheduled for completion in 1981. While partly surrounded by new high-rise construction, the simple unadorned structure of the Jefferson Substation fits well with its larger neighbors.

1909 UNIT

The original building, occupying all of Lot 5, is a 50' x 100' reinforced concrete structure with solid brick infill walls. Planned by the owner, the Portland Railway Light & Power Co., the structural system was known as the "Kahn System of Reinforced Concrete" (see attached plans), and was designed by the Trussed Concrete Steel Co. of Detroit. Construction was by the Hurley Mason Co. of Tacoma and Portland.

The main entrance to the Substation is near midlevel at the high point of the site on Jefferson near the corner of First Avenue. From the entrance landing, concrete stairs lead to the basement and to the first, or main floors. The basement has, a concrete floor slab and a narrow (7'-3") central longitudinal bay formed by 15" thick concrete walls. Equal outer bays are formed by the exterior walls which are framed by 22" x 20" concrete columns in seven primary transverse bays on 14'-0" centers. Similar columns are set in three equal bays at the front and rear walls. Columns are tied together with a continuous 14" x 30" concrete girder at the first floor line. In the outer bays the 5" thick

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first floor slab is supported by 12" x 26" transverse concrete beams at 7'-0" centers, and at the center bay by smaller irregularly spaced beams. A loading area, open to the first floor is located in the southeast corner bay where the street grade is the same as the basement floor level.

Except for a small office cubicle at the west end, the first floor is one clear span open space which housed the large transformers and other related equipment. Twenty feet above the floor is a 30" deep continuous girder. On the long north and south walls the girder is corbelled out from the wall to allow for a steel track that carries a 20 ton travelling crane. Above are the clear span transverse girders which are supported by the perimeter columns. Girders are haunched at the ends and tapered at the top, and measure 5'-6" deep at the center. Longitudinal beams support the concrete roof slab which has four large ventilators. The clear space measures 48' wide x 98' long x 32' high.

All concrete and brick surfaces on both floors are painted. All electrical equipment has been removed except some control panels and switch gear. Most original single lamp incandescent light fixtures, located on the perimeter columns, are still in place. Only one retains its original glass canopy. (see photo #6).

The simple concrete structure is the dominant element of the exterior -- three equal vertical bays along First Street and seven equal bays along Jefferson. Horizontal divisions are articulated by the first floor girder, the crane girder and the roof girder. The roof girder is flush with the column faces while the lower girders are recessed a few inches.

The concrete frame was infilled with common red brick, wood windows and panels, and cement sills. At the ground floor, typical bays had paired windows with brick mullions and jambs. Sash is double hung, four lights over four. The entrance door occupies a window space in the westerly bay on Jefferson Street, and the loading doors take up all of the easterly bay. Bays between the first floor girder and the crane girder had brick jambs and paired double hung windows, six lights over six, at the top. Under the upper sash in alternating bays are paired six light awning sash and paired wood panels. Below, in all bays, were brick panels that featured square cast cement corner blocks and a central diamond element. The top bays had brick jambs and a fixed 30 light cross window. Above the roof girder is a

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corbelled brick parapet, accented at the columns. Rear and side walls are plain brick without openings.

Alterations to the exterior include: stucco over all brick surfaces, except the parapet, on the south and west walls; paint on all brick and concrete surfaces; replacement of the swinging loading doors with an overhead door; and security screens on basement windows.

1925 ADDITION

In 1925 a 34' wide by 100' deep addition was built on the north. The addition has a basement and two stories with the first floor on the same level as the first floor of the 1909 building.

Reinforced concrete and brick construction is similar to the original building. The basement and first floor are nearly identical -- three equal longitudinal bays and ten equal transverse bays creating a grid approximately ten feet square. Basement columns are 18" square and those at the first floor are 15". Transverse beams are reinforced concrete, haunched at the ends, at the first floor, and steel (15" x 60. 8# I) encased in concrete at the second floor. First and second floor slabs are 8" thick. Centered longitudinally on the second floor is a concrete switch gear housing above which are steel double channel columns, irregularly spaced, which support a steel channel beam and transverse sloping roof beams -- steel encased in concrete -- and a 4" concrete roof slab.

The front (west) bay is open from the basement to the roof. At mid-bay near the roof is a transverse I-beam which supports a travelling hoist that was used to lift heavy equipment from the grade level loading dock at the southwest corner.

A concrete stair leading to all floors is located east of the loading dock. A similar stair situated along the rear wall extends to all floors and the roof. Both stairways have steel pipe railings. Connection between the 1909 and 1925 units is through a fire door at the center bay of the first floor, and by a stair and door in the basement (the basement floor of the 1925 unit is 6'-4" below the 1909 basement).

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Brick sidewalls are plastered, and all brick and concrete surfaces except the basement floor have been painted. Except for one transformer in the basement, all electrical equipment has been removed. Cabinets for 11,000 volt "Switch Tanks" are still in place.

With a few minor exceptions the exterior treatment of the addition duplicates the original work on the 1909 unit. The front facade is divided into two equal vertical bays that are nearly the same width as the original front bays. The concrete frame, brick jambs and panels, are intact, though they have been painted.

Sash is steel rather than wood. In the north bay the basement opening contains steel louvers. Large swinging doors to the loading dock are located in the south bay. Upper story windows are identical -- paired 25 light units with a thin vertical mullion, and a six light horizontally pivoted sash centered in each unit.

PROPOSED REHABILITATION

The present owner plans to rehab the structure for a mixed-use of office, retail and restaurant. The 1925 Annex will have retail on the ground floor and offices on upper floors. Restaurant use is planned for the large, 32' high space of the original building. The partial mezzanine proposed for this room will be designed in such a manner that the scale and spatial quality of the original will be maintained.

New windows on the north and east (non-street) walls are planned to provide city and river views, and will be harmonious with existing designs. New windows are also proposed in place of the present wood panels at the first floor level of the 1909 unit. These windows will match the existing windows in adjacent bays. Other exterior work will include repair of existing surfaces and repainting.

8 SIGNIFICANCE

PERIOD		AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW				
<input type="checkbox"/> PREHISTORIC	<input type="checkbox"/> ARCHEOLOGY-PREHISTORIC	<input type="checkbox"/> COMMUNITY PLANNING	<input type="checkbox"/> LANDSCAPE ARCHITECTURE	<input type="checkbox"/> RELIGION		
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> ARCHEOLOGY-HISTORIC	<input type="checkbox"/> CONSERVATION	<input type="checkbox"/> LAW	<input type="checkbox"/> SCIENCE		
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> AGRICULTURE	<input type="checkbox"/> ECONOMICS	<input type="checkbox"/> LITERATURE	<input type="checkbox"/> SCULPTURE		
<input type="checkbox"/> 1600-1699	<input checked="" type="checkbox"/> ARCHITECTURE	<input checked="" type="checkbox"/> EDUCATION	<input type="checkbox"/> MILITARY	<input type="checkbox"/> SOCIAL/HUMANITARIAN		
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> ART	<input type="checkbox"/> ENGINEERING	<input type="checkbox"/> MUSIC	<input type="checkbox"/> THEATER		
<input type="checkbox"/> 1800-1899	<input type="checkbox"/> COMMERCE	<input type="checkbox"/> EXPLORATION/SETTLEMENT	<input type="checkbox"/> PHILOSOPHY	<input type="checkbox"/> TRANSPORTATION		
<input checked="" type="checkbox"/> 1900-	<input type="checkbox"/> COMMUNICATIONS	<input checked="" type="checkbox"/> INDUSTRY	<input type="checkbox"/> POLITICS/GOVERNMENT	<input type="checkbox"/> OTHER (SPECIFY)		
		<input type="checkbox"/> INVENTION				

SPECIFIC DATES 1909 and 1925 BUILDER/~~ARCHITECT~~ Hurley Mason Co.

STATEMENT OF SIGNIFICANCE

The Jefferson Substation achieves architectural and engineering significance as a relatively rare extant example in Portland of an early electrical substation -- it is the only remaining structure of its type in downtown Portland -- and as a very early local instance of a building with a reinforced concrete superstructure.

Also of significance is the important role the Substation played in the early days of electrical distribution in Portland's business district, particularly for street lighting and the street railway system.

Portland's introduction to electric lighting occurred in May, 1879 with the arrival of the steamship, State of California, which had six carbon arc lights, four in the cabin and two in the engine room. According to the Oregonian of May 31, 1879,...

"The novelty of the light attracted a large crowd of our citizens, and during the evening probably 500 persons including a large number of ladies, visited the vessel... The light is pure white and gives day colors to all objects viewed by it... The electric light is as much superior to gas as gas is superior to coal oil."

The same year Thomas Edison succeeded in making a commercially practical incandescent lamp using a carbon filament in a vacuum, and had also perfected the direct current dynamo (generator) and the 110-220-volt 3-wire distribution system. These developments aroused the interest of railroad and shipping magnate Henry Villard, who visited Edison at his laboratory in Menlo Park, New Jersey. Villard was so impressed that he ordered dynamos and incandescent lamps for the steamer Columbia, then under construction for the Oregon Railroad & Navigation Company in Philadelphia. Except for Edison's original plant at Menlo Park, this was the first installation of the Edison system. Commenting on this fact, the Oregonian stated at a later date,

"The enterprise of a western railroad in 1880 gave Edison's greatest invention, the electric light, its first practical use while the conservative east was still trying to laugh it off as a ridiculous joke."

9 MAJOR BIBLIOGRAPHICAL REFERENCES

See continuation sheet

UTM NOT VERIFIED ACREAGE NOT VERIFIED

10 GEOGRAPHICAL DATA

Portland, Oregon-Washington Quadrangle
Scale: 1:24000

ACREAGE OF NOMINATED PROPERTY .193
UTM REFERENCES

A 10 525445 5039870
ZONE EASTING NORTHING

B
ZONE EASTING NORTHING
D
ZONE EASTING NORTHING

VERBAL BOUNDARY DESCRIPTION

Lot 5, South 34' of Lot 6, Block 8, City of Portland

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

Table with 4 columns: STATE, CODE, COUNTY, CODE. Two rows for listing overlapping boundaries.

11 FORM PREPARED BY

NAME / TITLE

George A. McMath, A. I. A.

September 1979

ORGANIZATION

ALLEN McMATH HAWKINS Architects

DATE

STREET & NUMBER

213 S. W. Stark Street

TELEPHONE

(503) 228-5154

CITY OR TOWN

Portland, Oregon 97204

STATE

12 STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS:

NATIONAL

STATE

LOCAL X

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

[Handwritten Signature]

TITLE State Historic Preservation Officer's Designee

DATE December 1979

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

ATTEST: [Signatures]
DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION
KEEPER OF THE NATIONAL REGISTER

DATE 5/31/80
KEEPER OF THE NATIONAL REGISTER
DATE 5/21/80

FHR-8-300A
(11/78)

UNITED STATES DEPARTMENT OF THE INTERIOR
HERITAGE CONSERVATION AND RECREATION SERVICE

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RECEIVED APR 16 1980
DATE ENTERED MAY 31 1980

Jefferson Substation
Portland, Multnomah County, Oregon

Addendum -- April 1980

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Of the four remaining Portland General Electric substations built in the early 1900s, the original 1909 Jefferson Substation was unique in its use of a patented reinforced concrete structural system (see attached drawing), and in the clear expression of the structure on the exterior. (The Sellwood Substation has stone exterior walls and a steel roof truss; Knott Substation is a neo-classic design with brick exterior walls and a steel roof truss; and Northern Substation is a simple structure also with brick walls and steel roof truss. Northern has a c. 1928 addition with concrete walls and a steel roof truss.)

The concrete structural system had no particular regional significance but it was an early if not the earliest example of its kind in Portland--no earlier examples are known. In subsequent years, this type of fireproof construction became quite common for urban industrial buildings requiring long clear floor and roof spans.

Also of significance is the fact that Jefferson Substation is the only remaining example of an early substation in the downtown core of Portland. During the early years, the substation played an important role in serving the downtown street light and railway systems.

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The Columbia arrived in the City in the summer of 1880 and again Portlanders experienced the electric light through a marine installation. Exhibitions were held whenever the Columbia was in port, and on September 7, 1880 the Oregonian described such an event:

"Monday night wires were run from the steamship Columbia to the porch of the Clarendon Hotel, and the electric light used in the vessel's rigging suspended over the center of First Street. The powerful rays lighted up the whole neighborhood to the brightness of day. Thousands visited the light and the vessel, and like all others who have seen the Columbia, were greatly pleased."

Also in September 1880, George W. Weidler erected a dynamo to operate 10 electric arc lamps in his sawmill on the Willamette River across from Albina. In addition to lighting the mill yard the circuit was extended to serve the Ainsworth Dock with three arc lamps and a single lamp at the Clarendon Hotel at First and F (Flanders) Streets. The success of the new lighting prompted orders from several merchants and Weidler became the first Portlander to market electric lighting.

In the spring of 1884, Weidler, along with L. L. Hawkins, P. F. Morey, and F. V. Holman organized the United States Electric Lighting & Power Co., the first corporate predecessor of the present Portland General Electric Co. (P. G. E.) The new company added larger Westinghouse steam engines, new Weston dynamos and extended service to all parts of the business district. The steam boilers were fueled by mill waste, more commonly known as "hog fuel." A year later the company received the first street lighting contract from the City for lights along First and Third Streets.

For several years there had been considerable interest and research on the possibility of hydro-electric power at the Oregon City Falls. The first comprehensive survey was done in 1883 by a Swiss engineer, P. Miescher, under commission by Henry Villard. The survey results indicated the feasibility of such a venture but Villard's subsequent financial collapse doomed any development at that time.

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It wasn't until 1888 that the first hydro-power went into service at Oregon City. The Oregon City Electric Company, formed by E.L. Eastham, installed a 450-light Edison dynamo in the Excelsior and Shoddy Mill. The dynamo was belted to the existing water wheel.

Eastham, foreseeing the manufacturing possibilities of Willamette Falls water power and its importance to both Oregon City and Portland, formed a syndicate which acquired several hundred acres of land contiguous to the Falls and bought control of Willamette Transportation and Locks Co. and all other O.R. & N. Co. properties at the Falls. The reorganized Locks Co. thus came into possession of the basin, locks, water rights, and ample land for factory sites. Within weeks the Oregon City Co. merged with Portland's U.S. Electric to form the Willamette Falls Electric Co. The new company received a street lighting franchise from Portland in April 1889. Two months later the company generated the country's first long distance (13 miles) commercial transmission of direct current hydro-electric power. The power came from Brush arc dynamos located in Station "A" on the east side of the Willamette River in Oregon City.

Also in 1889, electrification of street railways was begun in Portland, and gradually all horse car lines were converted to electric. Nearly all the companies operating street car lines had their own electric plants. The city was growing and likewise the electric load, so P.F. Morey, who had become president of the company upon Eastham's death in 1891, sought financial aid in the East for the purpose of building a new generating plant on the West side of the Willamette at the Falls. This resulted in the organization of the Portland General Electric Co. (the first company of that name) in August 1892, financed by the Old Colony Trust Co. of Boston (First Boston Corp.) and the General Electric Co. which furnished the generating equipment for the new 9000 kw facility to be known as Station "B".

By 1890 the generation and distribution of electricity had reached a state of complexity that resulted in the development of substations whose primary role was to convert high voltage power from the generating plants to the several modes used for street lighting, street rail lines, commercial and residential. The first of these facilities in Portland was the Montgomery Substation built in 1890 on the west side of the Willamette at the foot of

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Montgomery Street. Two years later the East Portland Substation was built on Union Avenue near Morrison St. In 1894 the Alder Substation (station 'a') was built at the northeast corner of Broadway and Alder. (In 1910 the Electric Building, P. G. E. 's headquarters, was built on this quarter block site. Alder Substation occupied the basement and part of the first floor.)

The three original substations sufficed for about 10 years. Portland's rapid growth after the 1905 Lewis & Clark Exposition, the accelerating demand for electrical energy and the consolidation of electric companies, brought in a new generation of power plants and substations. The first of the new substations was Sellwood ("b") in 1905, followed by Knott ("d") in 1906, Northern (St. Johns) ("c") in 1906-07, Piedmont ("f") in 1908, and Jefferson ("e") in 1909.

Initial equipment in the Jefferson Substation included one 1000 kw rotary generator, two 1000 kw frequency changer sets, all the mercury arc street lighting equipment and nine 375 kw transformers for light and power distribution. This equipment all came from Alder Substation which had to shut down for construction of the Electric Building. When put on line Jefferson Substation received its power from Station "B", the hydro plant at the Falls, and from Stations "C" and "E", steam plants located in northwest Portland.

A significant event in the history of Portland's utility industries occurred on June 29, 1906 when the Portland Railway Light and Power Company was incorporated. A holding company P. R. L. & P. Co. took over all of the Portland Railway properties, and the Oregon Water Power and Railway Co. At the end of 1907 the company completed its consolidation by a merger with P. G. E. and became Portland's first monopoly, comprising 19 companies, 161 miles of railway covering the entire city, 43 franchises and 6 power plants.

In 1925 a major addition was built at the Jefferson Substation, more than doubling the floor area. Three 5000 - kva banks of transformers were installed to serve the underground and overhead service. (In 1907 the City adopted an ordinance for an "underground district" roughly bounded by Jefferson, 14th, Glisan and the river.) The new transformers replaced the equipment at the Alder Substation which was eventually phased out.

The Jefferson Substation continued in active use, through several corporate upheavals, and modifications of equipment, until 1977 when it was purchased by the present owners. During its 68 years of continuous service the Jefferson Substation had the primary mission of electrical distribution for downtown

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Portland's street light and railway systems.

None of the original P. G. E. substations built prior to 1900 remain. Of the second generation substations, Sellwood, Knott, Northern, and Jefferson are still standing. All but Jefferson are on sites of active P. G. E. substations but the buildings are only marginally used. The Jefferson Substation, the only one of its era remaining on the west side is scheduled for rehabilitation and adaptive re-use. (See section 7).

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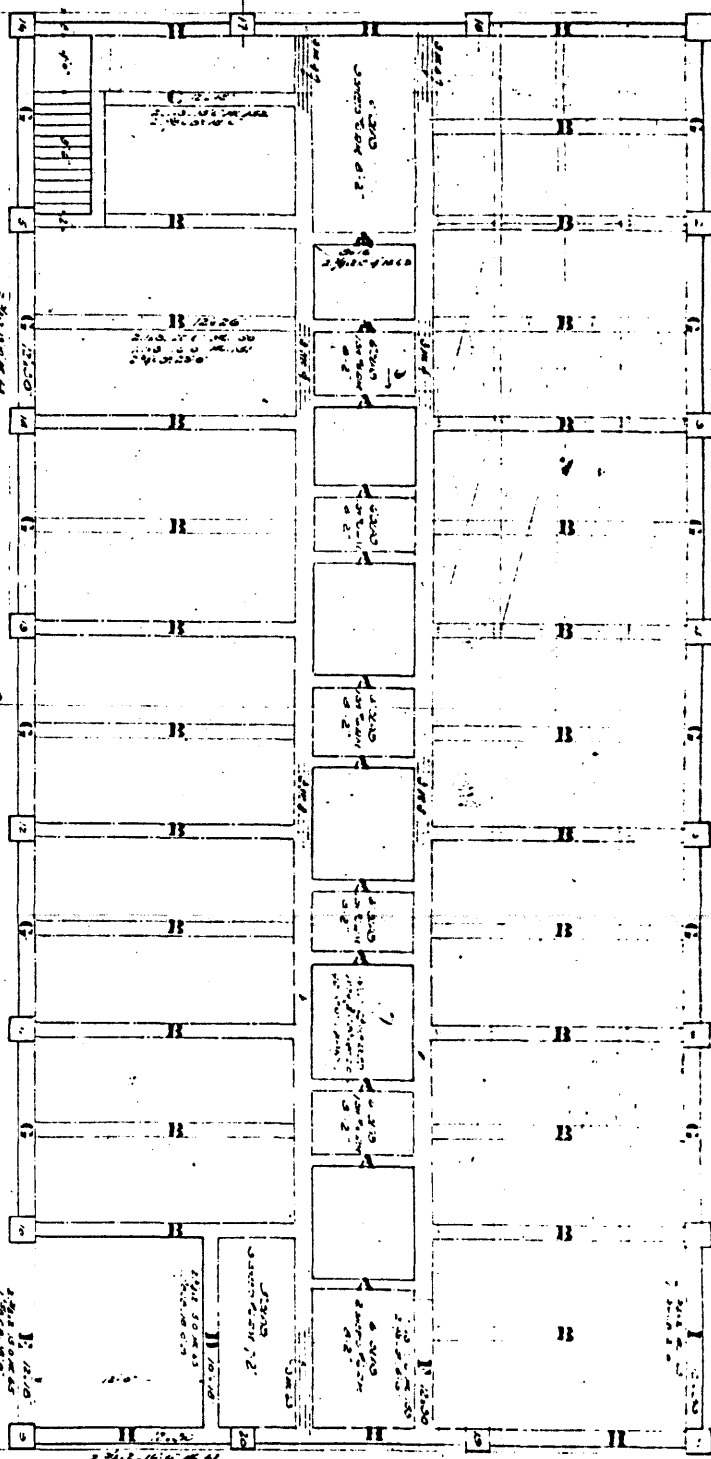
-Robley, R. R., Portland Electric Power Co. With Its Predecessor and Subsidiary Companies, December 16, 1860 - December 31, 1935, Portland, 1935.

-MacColl, E. Kimbark, The Shaping of a City, Portland, 1976.

-"Early Days of Electricity in Portland," Oregon Historical Quarterly, (December 1941), 279-94.

-Architectural drawings of 1909 building, dated December 1908 - elevations, sections, and main floor framing plan. Drawings on file with Chilless-Nielson Architects, Portland, Oregon.

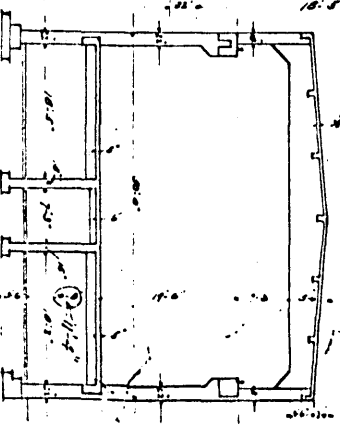
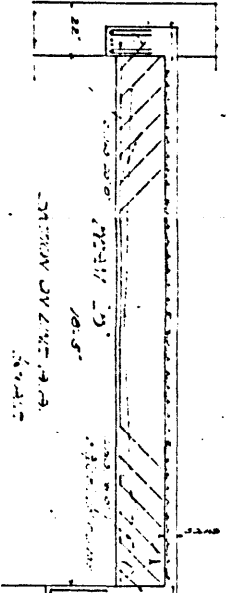
-Architectural drawings of 1925 addition dated February 1925 - plans, sections, elevations and details. Drawings on file with Chilless-Nielson Architects, Portland, Oregon.



DIRTY 3.0M. S. 1.00 TO 2.00 IN REINFORCING
NEED REINFORCING 3.00 TO 5.00 C

TABLE OF MATERIALS

NO.	DESCRIPTION	QUANTITY	UNIT
1	CONCRETE	100	CU YD
2	REINFORCING	100	LB
3	STEEL	100	LB
4	WOOD	100	CU YD
5	PAINT	100	GA



MARIN SYSTEM OF REINFORCED CONCRETE
FIRST FLOOR PLAN
POWER HOUSE
PORTLAND BY LIGHT & POWER CO.
PORTLAND, ORE.
 DRAWN BY: M. J. MCM.
 3680-B

APR 16 1980