

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

FOR NPS USE ONLY

RECEIVED **JAN 27 1982**

DATE ENTERED **MAR 9 1982**

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

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

1 NAME

HISTORIC.

American Firebrick Company

AND/OR COMMON

Interpace Corporation - Mica Brickyard

2 LOCATION

STREET & NUMBER

WA 27
State Highway #27

CITY, TOWN

Mica

NOT FOR PUBLICATION

CONGRESSIONAL DISTRICT

STATE

Washington

VICINITY OF
CODE

COUNTY

Spokane

CODE

5th
99023

3 CLASSIFICATION

CATEGORY

- DISTRICT
- BUILDING(S)
- STRUCTURE
- SITE
- OBJECT

OWNERSHIP

- PUBLIC
- PRIVATE
- BOTH
- PUBLIC ACQUISITION**
- IN PROCESS
- BEING CONSIDERED

STATUS

- OCCUPIED
- UNOCCUPIED
- WORK IN PROGRESS
- ACCESSIBLE**
- YES: RESTRICTED
- YES: UNRESTRICTED
- NO

PRESENT USE

- AGRICULTURE
- COMMERICAL
- EDUCATIONAL
- ENTERTAINMENT
- GOVERNMENT
- INDUSTRIAL
- MILITARY
- MUSEUM
- PARK
- PRIVATE RESIDENCE
- RELIGIOUS
- SCIENTIFIC
- TRANSPORTATION
- OTHER:

4 OWNER OF PROPERTY

NAME

International Pipe and Ceramics Corporation

STREET & NUMBER

CITY, TOWN

Mica

VICINITY OF

STATE

Washington 99023

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE,
REGISTRY OF DEEDS, ETC.

Spokane County Courthouse

STREET & NUMBER

North 1116 Broadway Avenue

CITY, TOWN

Spokane

STATE

Washington 99260

6 REPRESENTATION IN EXISTING SURVEYS

TITLE

Washington State Cultural Resource Survey; Spokane County Cultural Resource Survey.

DATE

June, 1980

FEDERAL STATE COUNTY LOCAL

DEPOSITORY FOR
SURVEY RECORDS

Washington State Office of Archaeology and Historic Preservation

CITY, TOWN

Olympia

STATE

Washington 98504

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
<input type="checkbox"/> EXCELLENT	<input checked="" type="checkbox"/> DETERIORATED	<input type="checkbox"/> UNALTERED	<input checked="" type="checkbox"/> ORIGINAL SITE
<input 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 brick plant is located in Mica, Washington about 15 miles southeast of Spokane. The land originally owned by the Oudin Company has been cut in two by Highway 27, with the main portion of the brickyard and clay pits located on the eastern side of the road where Interpace Corporation continues to operate the brick plant.

Because the Mica brickyard is still a functioning operation, the complex includes a variety of structures and buildings, both old and new. (see diagram #1.)

Many of the original buildings and structures remain on the site. Five of the beehive kilns (1,4,5,6, & 7), the stacks, burner shed, test kiln and brick horse barn were built before 1911. Kiln 10 was constructed in 1925 and kilns 2 and 3 were added in 1953-54 to replace earlier kilns.

Originally a three story sewer pipe plant was located just east of the beehive kilns. It was dismantled in 1960. The original brick plant was located to the south and was replaced in 1957 by the current plant. The main office building, built in 1955 faces Highway 27.

Two other buildings are included in the complex: The company "hotel" or boarding house, and the plant supervisor's house. Both were built in the 1920s.

The primary structures of the nomination are the beehive kilns which are arranged in parallel rows with the ventilating stacks in the center. While no two kilns are exactly alike in their dimensions, their general construction is the same. The kilns (pronounced "kills") are one story circular structures with domed roofs, constructed entirely of brick. Several iron bands encircle each structure to prevent the kiln from being damaged by expansion during the firing process. The dome or "crown" of the kiln is one course of brick laid in a circular pattern ending at the peak of the crown with a specially made keystone brick. Holes or cooling vents are located in various places on the crown. These are closed off during the firing process. The brick crown is covered with "platen", a mixture of sand, cement and lime used for a weather sealer. The platen has worn off the crowns of kilns 4 and 5 exposing the brick construction.

The walls of the kiln stand 10 feet high and are made of brick and mortar laid in an English bond. The upper portion of the wall is about 2 1/2 feet thick. The lower 6 feet of the wall forms the "hub" of the kiln where the fire boxes are located. This portion of the wall is 3 1/2 feet thick, built to accomodate the fire boxes and give added support and insulation to the kiln during firing.

Each kiln has from 8 to 12 fire boxes around its circumference where the wood or coal (currently, natural gas) was burned to create the high temperatures necessary to firing brick (2300°F). The number of fire boxes in each kiln varies depending on the diameter of the kiln. The early kilns are smaller, about 28 feet in diameter, and have 8 fire boxes each.

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CONTINUATION SHEET Description ITEM NUMBER 7 PAGE 1

On the exterior, the fire boxes appear as arched openings, evenly spaced around the hub of the wall, about 6 feet high. Doors made of brick and refracrete covered the small opening where the coal or wood was put in. Directly beneath the door opening was a grate which allowed the ashes to fall into a pit and be removed through a lower opening in the wall. Holes at the base of each fire box allowed the proper amount of oxygen to be maintained during the firing process. With the use of natural gas fuel instead of wood or coal, the doors have been removed and the openings bricked up. This is the only alteration made to the kilns.

Two arched doorways are located on opposite sides of each kiln, about 7 feet high. A fan-shaped arch over the doorway is made of vertically laid bricks. After bricks have been set in the kiln, the openings are filled with brick and plastered over to close off the kiln. When the firing is completed, the brick "doors" are torn down and rebuilt the next time the kiln is fired.

The interior of the kiln is approximately 16 feet high to the center of the dome. Small, semi-circular walls, called fire bags, about 4 1/2 feet high and 3 feet in diameter, stand in front of each fire box. The floor of the kiln is made of specially shaped bricks which are laid so that small holes appear in the floor. The floor bricks rest on brick stringers built around a center well.

Flue pipes, 12 inches in diameter, radiate out from the center well toward the outside wall. The "main" tunnel or central flue, also leads away from the center well underground toward the stack located several feet away. At least three kilns are connected to each stack.

The stacks, also constructed of brick, stand about 40 feet tall, about 9 feet wide, built almost square. The stack between kilns 4, 5, and 10 is a double stack, added on to in 1936 to improve the draft.

The construction of the kiln is designed to facilitate the firing process. (see diagram #2) Hot gases from the fire box hit the firebag walls and rise toward the domed ceiling where they are deflected down through the ware. The gases continue down through the holes in the floor into the flues in the subfloor. The flues direct the hot air toward the center well and into the central flue leading to the stack outside the kiln. Thus the firebags, the domed ceiling, the perforated floor, and even the arrangement of the bricks set in the kiln determine the flow of hot air around the ware and insure the proper circulation of heat.

The kilns at Mica are periodics, meaning that only one set of ware can be burned and cooled per firing. The process takes between 25 and 30 days and is equally divided between burning and cooling.

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CONTINUATION SHEET Description ITEM NUMBER 7 PAGE 2

A brick horse barn which housed the horses used in the clay mining process, the Company "hotel", or boarding house, and the superintendent's house are the other early buildings located on the site. The "hotel", built in 1921, is located on Belmont Road in Mica, just south of the brickyard. It is a two story rectangular building constructed of hollow clay tile called Dennison's interlocking blocks which were produced at the brick plant. The blocks are covered with stucco. No structural changes have been made to the building.

The plant superintendent's home, built in 1927, is located on the hill east of the brick plant. It is a small, brick bungalow built on a rectangular plan. It is one story with a full basement. The outer walls are red brick laid in a stretcher bond and the roof is hipped gable.

Other buildings on the site but not associated with the early brickyard included the brick plant and warehouses built in 1958, and the office building facing Highway 27.

Boundary Justification:

The boundaries chosen for the nomination allow for the inclusion of all the remaining structures associated with the American Firebrick Company. Section lines, the railroad and Belmont Road were chosen as easily identifiable lines in an otherwise undeveloped and unsurveyed rural area. All of the land within the boundaries has always been owned and used by the brick company.

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 type="checkbox"/> ARCHITECTURE	<input 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 1902 - 1929

BUILDER/ARCHITECT

STATEMENT OF SIGNIFICANCE

Brick manufacture was a key industry to the economic and architectural development of Spokane County at the turn of the century. Of the dozen brickyards established in the area, only the one in Mica survived intact, having remained in continuous operation since its beginning.

Established in 1902 by Charles P. Oudin, the American Firebrick Company at Mica quickly surpassed its competitors, becoming one of the most well-known brick manufacturing companies in the Pacific Northwest. The diversity and high quality of its products can be seen in many of the buildings and industries in almost every major city of Oregon, Washington, Idaho, and Montana.

The beehive kilns at Mica are among only a few in the country dating back to the turn of the century. Their architectural design gives us a rare glimpse of early industrial technology.

At least five of the original kilns built between 1903-1911 have managed to survive. Three other beehive kilns and a tunnel kiln built later are also located on the site. The brick kilns, both old and new, represent a unique example of the evolving technology of brickmaking in the United States.

HISTORY

Brickmaking in the Spokane area was begun as early as 1880 when the region was just beginning to emerge from a primitive frontier wilderness to a modern industrial and commercial trade center. By 1910, more than a dozen brickyards had been established in or around Spokane to take advantage of the building boom which was sweeping the Pacific Northwest at the turn of the century.

With the construction of new business and office buildings, schools, hospitals and government buildings, a heavy demand was put on the construction industry to supply building material that would give the growing towns of the Pacific Northwest an air of permanence and prosperity. Following the examples of their Eastern counterparts, city builders most often chose brick or granite for their new buildings.

Several metropolitan fires, most notably the 1889 fire which virtually destroyed the city of Spokane, gave further stimulus to the use of brick or stone for building.

9 MAJOR BIBLIOGRAPHICAL REFERENCES

UNRECORDED
ACREAGE NOT VERIFIED

Searle, Alfred B. Modern Brickmaking.
London: Scott, Greenwood & Son, 1911.

Spokesman Review: July 17, 1887; December 3, 1887; October 8, 1889; April 11, 1893;
June 22, 1897; October 6, 1901; June 12, 1902; October 5, 1903;

see attach

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY 80 Acres

QUADRANGLE NAME Freeman Quadrangle

QUADRANGLE SCALE 1:24000

UTM REFERENCES

A

1	1
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4	8	4	0	0	0
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5	2	6	7	4	2	0
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B

1	1
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4	8	4	5	7	5
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5	2	6	7	4	2	0
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C

1	1
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4	8	4	5	8	0
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5	2	6	6	7	5	0
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D

1	1
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4	8	4	1	6	0
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5	2	6	6	7	8	0
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E

1	1
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4	8	4	0	6	0
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5	2	6	6	8	2	0
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F

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G

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H

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VERBAL BOUNDARY DESCRIPTION The nominated property is located in the south half of the northwest quarter and the north half of the southwest quarter of S23-T24N-R44E. It is bounded on the west by the OWR & N Railroad right of way and on the south by Belmont Rd.

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

STATE	CODE	COUNTY	CODE
None			
STATE	CODE	COUNTY	CODE

11 FORM PREPARED BY

NAME / TITLE

Sara Patton Program Historian

ORGANIZATION

City/County Office of Historic Preservation

DATE

June, 1980

STREET & NUMBER

North 721 Jefferson

TELEPHONE

458-2536

CITY OR TOWN

Spokane,

STATE

Washington 99260

12 STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS:

NATIONAL

STATE

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

Joseph E. Thom

TITLE

DATE

1/20/82

FOR NPS USE ONLY

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

Kevin A. Booke

DATE

3/9/1982

ATTEST: *Cynthia Jane Sava*

DATE

3-4-82

CHIEF OF REGISTRATION

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CONTINUATION SHEET Significance ITEM NUMBER 8 PAGE 1

For at least a decade after Spokane's fire, rebuilding the city had top priority in the area. With the increasing demand for brick, local production became a highly profitable enterprise. Small brickyards were set up wherever large quantities of clay were found.

By the turn of the century, brick production had increased ten-fold. Not only were Spokane brickyards supplying local contractors with building material but they were also filling orders from as far away as Seattle, Portland, Boise and British Columbia. Dozens of the most significant buildings, and industries, even roads, in Spokane and other cities in the Pacific Northwest, were constructed with products manufactured at the Mica brickyards: from millionaire mansions to paper mills, from the most imposing commercial structures like the Chronicle building and Masonic Temple to crematoriums and industrial cookie ovens. In 1903, Spokane newspapers were boasting that Spokane would soon rival Akron, Ohio, in the manufacturing of brick and tile.

Most of the brickyards around Spokane were small, fair weather operations that produced inexpensive, common brick in temporary kilns. Because the bricks produced in these open kilns were imprecisely made and fitted, they were used primarily as back-up brick. Face brick, fire brick and other specialized products which required more precise manufacturing needed a more efficient method of production.

In 1893, Charles P. Oudin and Martin L. Bergman organized the Oudin and Bergman Fire Clay and Manufacturing Company, hoping to produce a variety of clay products, including fire brick, terra cotta, sewer and chimney pipes, and brick paving blocks. The company was located on the western side of the road opposite the present location of the brickyard. It lasted only a few years and finally dissolved in 1907 when, according to local stories, the two partners had a falling out.

In the meantime, Oudin, along with three other men, Lucien Oudin, James Kilbreth, and Frank Watson, started the American Firebrick Company in 1902 locating their plant just east of the original brickyard. From the beginning, Oudin set out to build an efficient, highly productive operation. The machinery was of the latest design. The kilns were permanent structures instead of the open, seasonal kilns commonly used at other Spokane brickyards.

A townsite was platted on farmland near the brickyard in 1904 and the post office and store were moved from another location to be closer to the brickyard. Most of the workmen lived in the little town of Mica or on nearby farms. For those men without families, Oudin built a company "hotel", or boarding house, near the plant. The first hotel was a two story wooden structure which lasted only a few years. A second hotel, built of Dennison interlocking blocks made at the brick plant, was erected in 1921 and still stands. A house for the plant manager was also built on the hillside overlooking the plant. It burned in 1926 and was immediately replaced with a brick house that still stands.

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CONTINUATION SHEET Significance ITEM NUMBER 8 PAGE 2

In 1902, with a work force of between 25 and 40 men, the company started production of firebrick and sewer pipe. It was the first company to manufacture high temperature fire brick in the west. By 1911 the company succeeded in making quality paving brick used to pave streets.

Orders for a variety of other products increased rapidly over the next few years. Dennison interlocking blocks used in the construction of hospitals, warehouses, office buildings, hotels, and even homes were shipped out to towns all over Washington, Idaho, Oregon, and Montana. High quality firebrick was sent to mine smelters at Bunker Hill and Sullivan in Idaho. The Great Northern Railroad also used it to line the fireboxes of more than 1800 oil-burning locomotives.

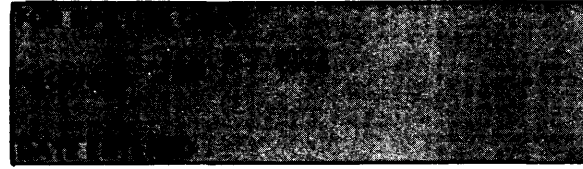
In September 1929, a short time before the stock market crash, Oudin decided to retire, selling the plant to a California firm, Gladding McBean. In spite of the Depression and a decreased demand for brick, Gladding McBean managed to hold on until better times. By the mid-1930s, production had begun to increase. World War II brought new demands for products fired in the Mica kilns. In the early 1950s, two of the old beehive kilns were replaced by new ones and in 1958 a new tunnel kiln and brick plant were built replacing the original plant.

The brick factory is still in full production today. Modern technology has been introduced to make the process faster and more efficient but the fundamentals of brick-making have remained essentially unchanged.

Few industrial structures survive demolition over the years. With new techniques and changing technology, obsolescence often forces a company to abandon, demolish or modify outdated structures. Consequently, the scarcity of historic industrial structures is nationwide. The brick kilns at Mica provide a rare link to our industrial and technological heritage, not only in Spokane County, but for the Pacific Northwest.

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CONTINUATION SHEET

ITEM NUMBER 9 PAGE 1

July 30, 1911; September 21, 1911; August 16, 1915; April 1, 1917.

Spokane Valley Herald: July 3, 1958.

Interviews:

Harold Brown 929 East 34th Street, Spokane, WA. June 2, 1980.

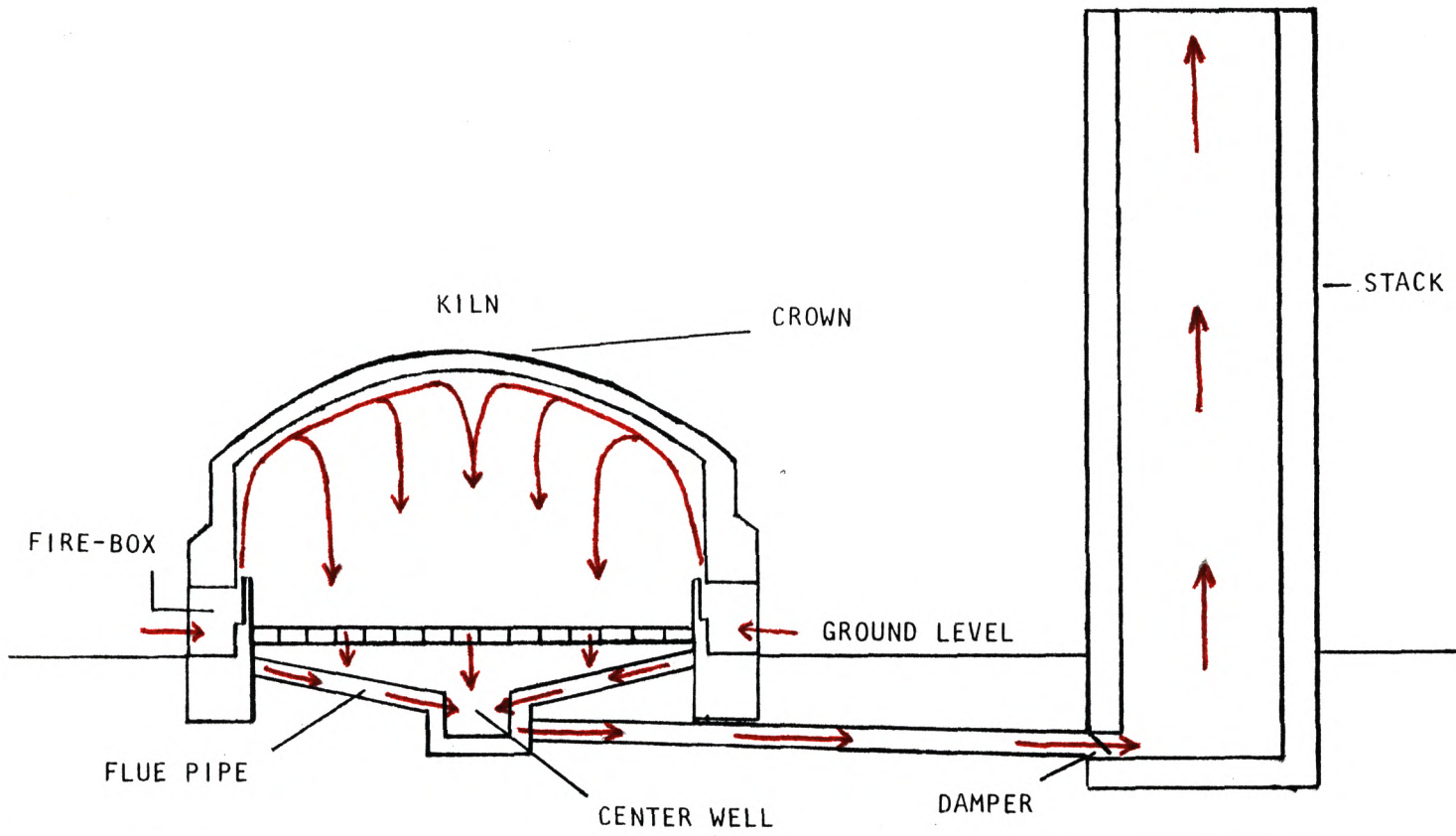
Fred Pitner Valleyford, WA. June 10, 1980

Item Number 10 -- continued.

excluding the southerly 150' of the westerly 210'. The eastern boundary is formed by the north-south quarter section line and the northern boundary by the east-west quarter-quarter section line.

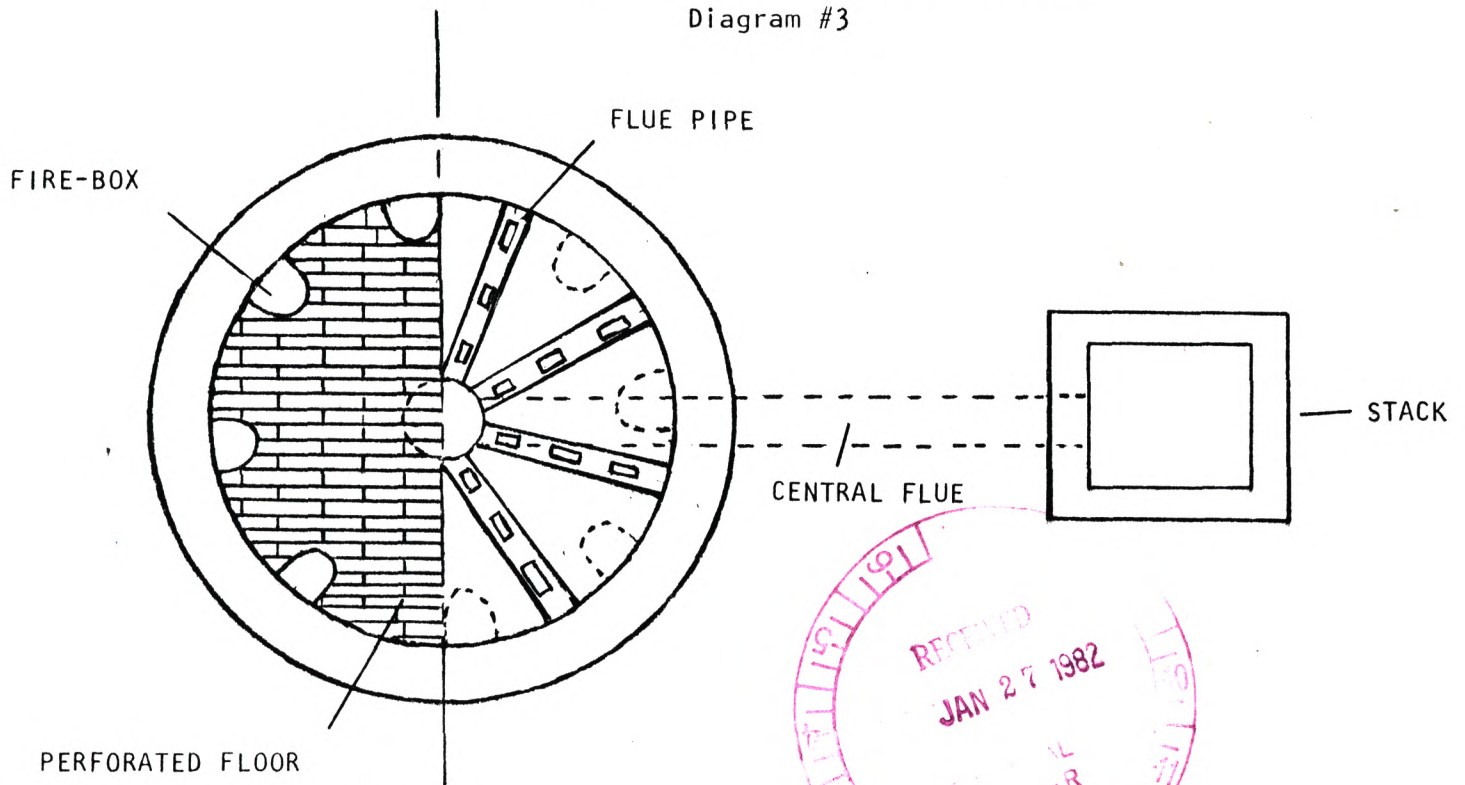
AIRFLOW CHART OF BEEHIVE DOWN DRAFT KILN

Diagram #2



FLOOR PLAN OF BEEHIVE DOWN DRAFT KILN

Diagram #3



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LABORATORY

