Form No. 10-300 (Rev. 10-74) PH#366692

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY
RECEIVED DEC 6 1976
DATE ENTERED JAN 5 1978

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

1 NAME

HISTORIC
~~Jasper Stone Company and Quarry~~

AND/OR COMMON
Jasper Stone Company and Quarry

2 LOCATION

STREET & NUMBER
HJ MN 23

__NOT FOR PUBLICATION

CITY, TOWN
Jasper __ VICINITY OF

CONGRESSIONAL DISTRICT
Sixth

STATE	CODE	COUNTY	CODE
Minnesota	27	Rock	133

3 CLASSIFICATION

CATEGORY	OWNERSHIP	STATUS	PRESENT USE	
__DISTRICT	__PUBLIC	X OCCUPIED	__AGRICULTURE	__MUSEUM
__BUILDING(S)	X PRIVATE	__UNOCCUPIED	__COMMERCIAL	__PARK
__STRUCTURE	__BOTH	__WORK IN PROGRESS	__EDUCATIONAL	__PRIVATE RESIDENCE
X SITE	**PUBLIC ACQUISITION**	**ACCESSIBLE**	__ENTERTAINMENT	__RELIGIOUS
__OBJECT	__IN PROCESS	__YES: RESTRICTED	__GOVERNMENT	__SCIENTIFIC
	__BEING CONSIDERED	__YES: UNRESTRICTED	X INDUSTRIAL	__TRANSPORTATION
		__NO	__MILITARY	__OTHER:

4 OWNER OF PROPERTY

NAME
C.F. Lytle

STREET & NUMBER
14575 Garden Road

CITY, TOWN
Golden __ VICINITY OF

STATE
Colorado, 80401

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC.
Rock County Courthouse - Registry of Deeds

STREET & NUMBER

CITY, TOWN
Luverne

STATE
Minnesota

6 REPRESENTATION IN EXISTING SURVEYS

TITLE
Statewide Historic Sites Survey

DATE
1973 __FEDERAL X STATE __COUNTY __LOCAL

DEPOSITORY FOR SURVEY RECORDS
Minnesota Historical Society, Building 25, Fort Snelling

CITY, TOWN
St. Paul

STATE
Minnesota

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
_EXCELLENT	_DETERIORATED	_UNALTERED	X ORIGINAL SITE
X GOOD	_RUINS	_ALTERED	_MOVED DATE_____
_FAIR	_UNEXPOSED	not applicable	

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The Jasper quarry is one of only three remaining in this country from which hard rock is extracted to produce grinding media and mill lining blocks. Owing to the characteristics of the quartzite mined at Jasper, which is marketed under the trade name of "Adamant Silica," the firm's products lead in this unique field.

Chemically, the product is 98.68% silicon dioxide, and that purity, along with the inherent toughness, hardness, and close-grained structure, has established it as ideal grinding media for industrial processing where contamination of materials being ground by wear of metallic grinding cannot be tolerated.

Among the materials that are ground by Jasper media and mill liner blocks are silica flour, foundry sands, ceramic and pottery materials, feldspar, talc, gypsum, fertilizers, and paint pigments.

Although quartzite has been extracted from the site for nearly seven decades, the property has virtually inexhaustible reserves of raw material for the products now made. The stone is known geologically as the Sioux Quartzite and it is quarried selectively.

Here is where the long and hard-earned experience of the stonecutter is first brought into play. Following the removal of a few feet of overburden by a dragline, the exposure is "eye-balled" in order to judge on the basis of experience whether the stone can be cut with the minimum of waste. This entails examination of grain, fracture planes, and any apparent inclusion of any undesirable sediments entrapped when the original sands (later metamorphosed into quartzite) were deposited.

If judged suitable, the stone is drilled both vertically and horizontally with an Ingersoll-Rand wagon drill. The drilling is done in a way that outlines blocks with dimensions of 40"x80"x10'or 12'. This provides a basic block to which multiples of 5" and 10" can be applied in subsequent cutting of finished products.

The number of holes and their spacing depends on the character of the stone, i.e., whether the fracture and bedding planes will contribute to a well-shaped rectangular, workable block, or will produce an excessive amount of rubble.

Naturally, shattering of the block is avoided, and the drill holes are normally charged with black powder in just enough of a load to jar the block loose from the face. The charge is initiated with electric blasting caps.

Blocks are removed from a working face that averages about 40' in height. There is quartzite present to a greater depth; but below that level, the stone gets even harder, is quite difficult to cut, and the water table becomes a problem.

After a tong-like clamp is attached to a block, it is raised up out of the quarry by the same Koehring 605 machine that takes care of overburden stripping.

At this point, each block is scored, drilled and split into roughly-sized units from which multiples of liner block and cubes are subsequently cut. A quarry run block is first scored with a "tracer" -- a hand-held wedge struck with a hammer -- along lines that will result in a workable rough block, and then a number of holes are drilled along the scores with a sinker-type pneumatic hand drill. The latter is fitted with Atlas Copco carbide bits, with which holes are drilled to a depth of about 3". Each bit requires sharpening after sinking nine or ten holes, and bit life averages about 110 holes.

(see continuation sheet)

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	__ENGINEERING	__MUSIC	__THEATER
X 1800-1899	__COMMERCE	__EXPLORATION/SETTLEMENT	__PHILOSOPHY	__TRANSPORTATION
X 1900-	__COMMUNICATIONS	X INDUSTRY	__POLITICS/GOVERNMENT	__OTHER (SPECIFY)
		__INVENTION		

SPECIFIC DATES ca.1890 - present BUILDER/ARCHITECT

STATEMENT OF SIGNIFICANCE

Quarry activities began in Jasper shortly after the town was founded in 1888. Five Rae Brothers, Alexander, Andrew, William, Robert and George were the primary organizers and promoters using immigrant, Swedish stone cutters to produce building stone and paving blocks. Use of paving blocks was widespread until their replacement by portland cement and bituminous concrete materials. The building stone characterized by its hardness, elegance and permanent pink color was used in the construction of more than a dozen stone structures in Jasper and buildings in Minneapolis and Pipestone, Minnesota; Sioux Falls, South Dakota; Sioux City, Iowa and Chicago, Illinois.

The growth in use of concrete for paving led to the concentration on production of grinding media at the quarry. In 1915, the quarry was purchased by C.F. Lytle (grandfather of present owners), a general contractor involved in road building. It was his intent to produce concrete aggregates by crushing the quartzite. The rock proved too tough for economical crushing and that operation stopped.

The quarry stood idle until after the start of World War I. Previously, American industry was importing stone from Europe which was used in grinding ores and the production of metals. Following the outbreak of the war, America ceased the importation of this rock. This sparked the renewal of operations at Jasper and concentration has remained on production of these grinding materials to this day. The materials ground by the Jasper media are silica flour, foundry sands, ceramic and pottery materials, feldspar, talc, gypsum, fertilizers and paint pigments. The stone is marketed under its trade name, Adamant Silica,and has been shipped to most parts in North Central and South America and to Germany, England, Australia and the Philippines.

The quarry personnel are established residents of Jasper and in some cases are third generation employees. Recruiting for apprentice stone cutters is done within the community schools to ensure future skilled labor.

In an age of automation involving sophisticated equipment, the demand for quarry products, the quality of the material and the craftsmanship in its production have ensured the future of the age-old stone cutting art and the Sioux Quartzite Quarry at Jasper.

9 MAJOR BIBLIOGRAPHICAL REFERENCES

Buren C. Herod, "Jasper Stone Company," Pit and Quarry, July, 1969.

Mrs. Carlyle Johnson, History of the Jasper Stone Quarry, Jasper: Jasper Civic Club, 1976.

Geraldine Alexander Pederson, Jasper Celebrates the Bicentennial, 1776-1976.

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY 6

UTM REFERENCES

	ZONE	EASTING	NORTHING
A	14	709600	4857890
B			
C			
D			

VERBAL BOUNDARY DESCRIPTION

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

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

11 FORM PREPARED BY

NAME / TITLE

Charles W. Nelson, Architectural Historian and Susan Zeik, Research Associates

ORGANIZATION — DATE

Minnesota Historical Society — 2 November 1976

STREET & NUMBER — TELEPHONE

Building 25, Fort Snelling — 612-726-1171

CITY OR TOWN — STATE

St. Paul — Minnesota

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 Russell W. Fridley

TITLE Russell W. Fridley
State Historic Preservation Officer

DATE 11/29/76

FOR NPS USE ONLY

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

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION — KEEPER OF THE NATIONAL REGISTER

DATE 1.5.78

ATTEST: Charles Adams

~~KEEPER OF THE NATIONAL REGISTER~~

DATE 1.4.78

GPO 892-453

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Jasper Stone Company and Quarry

Wedges are then inserted into the holes, and are driven down to split the rock along the scores. The roughly-sized resultant blocks are loaded into a Koehring Dumptor and are hauled down to an area on the old quarry floor where the stonecutters have their individual sheltered working stations known as "motions."

As each stonecutter requires, a block is brought to his motion from a stockpile by a Case fork-lift. After reading the grain in the rough block, the stonecutter decides which of the sizes of liner block the company markets he will dress out of the rough unit. His tools include tracers, wedges, and square-headed dressing hammers, and he does his finish stone-cutting at a workbench known in the trade as a "banker."

First, he scores the basic unit, generally to result in 5"x20" workable blocks. Another worker then drills holes along the scores with a pneumatic drill. He performs the same function for each stonecutter, but the latter do the subsequent splitting with wedges themselves.

The workable block is then lifted by hard to the stonecutter's "banker," where the final cutting and dressing are done. He may make any of four sizes of liner block to dimensions of 5"x8" -- 10", with thicknesses ranging from 2½" to 5"; or any of four sizes of grinding cubes to dimensions of 1"x2½", 2½x3"x4" and 4"x5".

Finished cubes are tossed into bins of individual sizes, and the liner blocks are placed, also by size, on pallets. Bins and pallets are moved by the fork-lift to a storage yard from which rail and truck shipments are loaded.

Although the output varies from man to man, the average for each stonecutter is 100 liner blocks per day. In terms of units 5" thick, this amounts to better than a ton of product.

Owing to the requirements of many customers, a large percentage of the grinding cubes are processed through a tumbler to round off the sharp edges and corners. The tumbler, a small tube mill, is itself lined with Jasper quartzite, which in this operation has a life of about three years.

Today, aside from the use of equipment to lift heavy blocks and to drill the hard rock, every step in the process involves the manual skill and art of the stonecutter.

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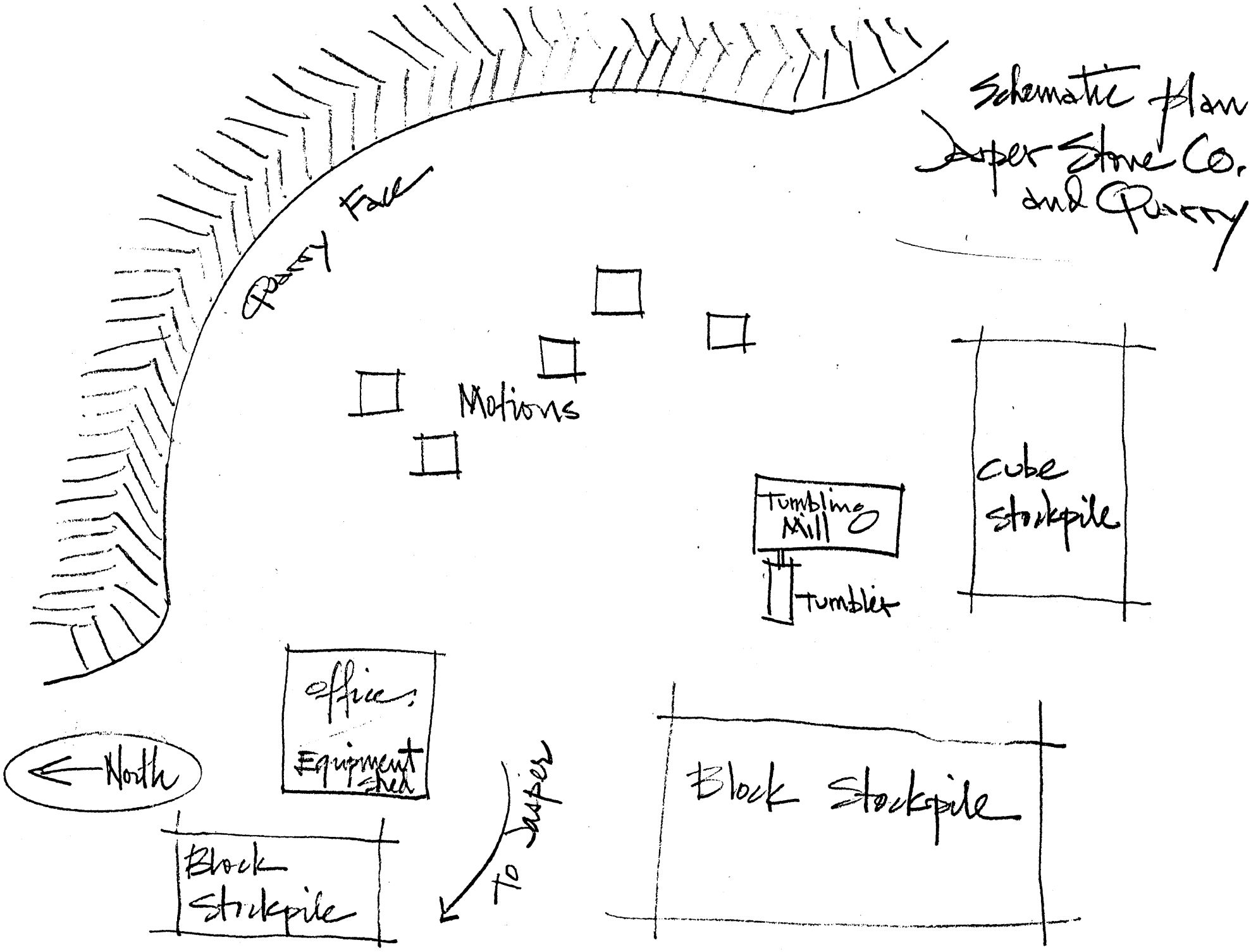
Occupying approximately six acres, the Jasper Stone Company and Quarry consists of a combination of 3 permanent structures, temporary structures called "motions", and two major stockpiles. (see attached schematic plan) The structures are ranged in proximity from the quarry face in accordance with the steps in the process from rough stone to the finished block.

Situated nearest to the quarry face are several temporary open-shed type structures called "motions". These are the individual stations for the stone cutters. In general, these structures are constructed of poles or timbers at the corners corrugated galvanized metal for roof coverings. The stonecutter's bench occupies one end of the "motion". Small stockpiles of rough and finished blocks are arranged around the "motion".

The tumbling mill is a concrete block and wood structure. The function of this mill is to tumble cubes of quartzite to round off the sharp corners and reduce the cubes into grinding media. The cubes are rotated in a tumbler until they become smooth. Dust from the tumbling process is expelled through large ducts with powerful fans. Cubes are then stockpiled immediately adjacent to the tumbling mill.

The office and equipment storage is relegated to a modern concrete-block building at the entrance to the quarry area. Block stockpiles are situated to either side of the entrance road within the immediate vicinity of the office.


Schematic Plan
Jasper Stone Co.
and Quarry
Face
Quarry
Motions
Tumbling Mill
Tumbler
Cube Stockpile
Office
Equipment Shed
North
To Jasper
Block Stockpile
Block Stockpile