

**United States Department of the Interior  
National Park Service**

For NPS use only

**National Register of Historic Places  
Inventory—Nomination Form**

received

date entered

See instructions in *How to Complete National Register Forms*

Type all entries—complete applicable sections

**1. Name**

historic Rock Island Arsenal Rodman Plan - Old Stone Buildings

and or common Arsenal Island Historic Stone Buildings

**2. Location**

street & number NA

\_\_\_ not for publication

city, town NA

X vicinity of Rock Island

state Illinois

code IL

county Rock Island

code IL161

**3. Classification**

Category	Ownership	Status	Present Use	
<input checked="" type="checkbox"/> district	<input checked="" type="checkbox"/> public	<input checked="" type="checkbox"/> occupied	___ agriculture	<input checked="" type="checkbox"/> museum
___ building(s)	___ private	___ unoccupied	___ commercial	___ park
___ structure	___ both	___ work in progress	___ educational	___ private residence
___ site	<b>Public Acquisition</b>	<b>Accessible</b>	___ entertainment	___ religious
___ object	___ in process	<input checked="" type="checkbox"/> yes: restricted	___ government	___ scientific
	___ being considered	___ yes: unrestricted	<input checked="" type="checkbox"/> industrial	___ transportation
		___ no	<input checked="" type="checkbox"/> military	___ other:

**4. Owner of Property**

name United States Department of the Army

street & number The Pentagon

city, town Arlington

\_\_\_ vicinity of

state Virginia

**5. Location of Legal Description**

courthouse, registry of deeds, etc. Rock Island County Courthouse

street & number 1504 3rd Ave,

city, town Rock Island

state Illinois

**6. Representation in Existing Surveys**

NR, & NHL Surveys  
title HABS/HAER Inventory

has this property been determined eligible?  yes \_\_\_ no

date 1937; 1969; 1981, 1985

federal \_\_\_ state \_\_\_ county \_\_\_ local

depository for survey records National Park Service  
Library of Congress/Division of Prints and Photographs

city, town Washington

state D.C.

## 7. Description

### Condition

excellent  
 good  
 fair

deteriorated  
 ruins  
 unexposed

### Check one

unaltered  
 altered

### Check one

original site  
 moved    date \_\_\_\_\_

### Describe the present and original (if known) physical appearance

The Rock Island Arsenal's proposed National Historic Landmark district is situated on a 948 acre island in the upper Mississippi River between the cities of Rock Island, Illinois and Davenport, Iowa. From 1862 to the present, the island has been the constant site of the Rock Island Arsenal. The year 1987 marks the 125th anniversary of the Rock Island Arsenal. The nomination of the Rock Island Arsenal's Rodman Plan - Old Stone Buildings as a National Historic Landmark district would be a splendid way of commemorating such an occasion. The reception of the nation's most prestigious historic honor would be a source of pride for the employees of Arsenal Island and for the communities that surround Rock Island.

Rock Island, or Arsenal Island as it is known today, is a military installation owned and operated by the United States Army. In 1955, the Army established a command headquarters at Rock Island in addition to the Arsenal.<sup>1</sup>

Since that year the Rock Island Arsenal has been the host to a series of headquarters. Currently, the US Army Armament, Munitions, and Chemical Command (AMCCOM) has its headquarters located at Arsenal Island. Major General Fred Hisson is the present commanding general of AMCCOM and Colonel John S. Cowings is the current commanding officer of the Rock Island Arsenal.

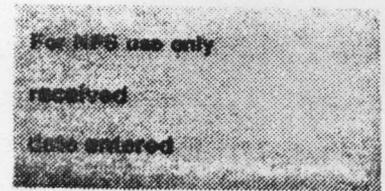
The vivid history of Arsenal Island includes many colorful chapters. First there was the Fort Armstrong frontier era of 1816-1836; then the railroad era with the first railroad bridge built across the Mississippi River, erected in 1856, rebuilt in 1868, and relocated in 1872; and next the Rock Island Prison Barracks era of the Civil War. A prison camp for Confederate prisoners-of-war was operated on the island from 1863-1865. Unfortunately, very little remains from these pre-arsenal eras that possesses the historic integrity required for a National Historic Landmark nomination.

The boundaries of the Rock Island Arsenal are naturally formed by the north and south channels of the Mississippi River. The mainland approaches at the three access bridges are also federal property.<sup>2</sup> The fences at the bridges and the river channels form the boundary lines for Arsenal Island's nomination in the National Register of Historic Places which was approved in 1969.

The boundaries for the National Historic Landmark district proposed by this document are within the Rock Island Arsenal. There are two zones to this historic district which comprise primarily the Thomas J. Rodman designed or influenced stone structures. Zone A, the historic industrial zone, includes the Clock Tower Building, Building 205; the Old Gatehouse, Building 321, at the western tip of Rock Island; Rodman Avenue, the main east-west thoroughfare that leads to the industrial core situated in the interior of the island; and the Rodman Plan - Old Stone Buildings, located in the central interior of Rock Island. Zone B of the proposed National Historic Landmark district comprises the north central shore of the island that, under General Rodman's plan, was set aside a staff residential area.

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NATIONAL HISTORIC LANDMARK DISTRICT: The Rock Island Arsenal Rodman Plan - Old Stone Buildings

Brevet Brigadier General Thomas J. Rodman, known as the "Father of the Rock Island Arsenal," devised a master plan for an arsenal of grand design at Rock Island.<sup>3</sup> The plan called for the construction of 10 large manufacturing shops, built of stone, supplemented by a variety of administrative, residential, maintenance, storage, and utility buildings. General Rodman relocated the arsenal's main site from its original position at the western tip of the island to the high ground of the central interior. The move allowed for greater expansion and use of water power necessary for a grand arsenal.<sup>4</sup>

The boundary of the Arsenal's historic industrial zone of the proposed National Historic Landmark district begins at Zone A, at the western tip of the island, where the Clock Tower Building (Building 205) is situated. A descriptive synopsis and photograph of the Clock Tower and the other limestone structures, which comprised the Rock Island Arsenal in the late nineteenth century through the early days of the 1900s, has been included in this nomination. Also, a map depicting the boundary lines of Zones A and B that form the historic stone building district has been included with this documentation.

Zone A: Historic RIA Industrial Zone

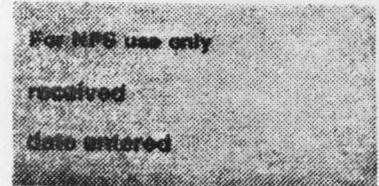
The Clock Tower Building is the principal feature of the western tip of the historic industrial zone. The original stone Gate House (Building 321), constructed in 1875 and not used since the last decade, is the other historic stone building at the west end of Zone A. The Clock Tower Building represents the beginning of the arsenal at Rock Island and is physically located at the western approach to the greater arsenal complex. It is the only building erected from the original arsenal plans. The initial plans called for the construction of a small arsenal for primarily depot activities and not manufacturing at Rock Island.

The Clock Tower Building

Begun under Rock Island Arsenal's first commanding officer, Major Charles P. Kingsbury, only the foundation and portions of the first floor of the Clock Tower Building were completed during his command. The majority of the building was completed under the supervision of General Thomas J. Rodman, Major Kingsbury's successor.<sup>5</sup> Since its completion in 1867, the Clock Tower Building has been in continuous possession of the federal government. In 1941 the U.S. Army Corps of Engineers received control of the structure and has maintained it to this date.<sup>5</sup> The Rock Island Arsenal Gate House still serves as the formal entry onto Rodman Avenue.

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Old Gate House and Rodman Avenue

The other structures at the west end of the island are of more recent construction and therefore should not be included in the Arsenal's historic district. From the Clock Tower Building and Old Gate House at the entrance of the arsenal, Zone A extends east on Rodman Avenue and leads to the Rodman plan manufacturing core of the Rock Island Arsenal.

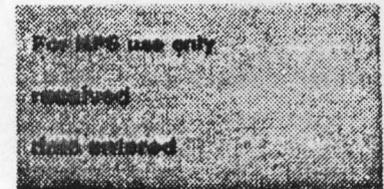
Rodman Avenue, originally designated Main Avenue, was conceived by General Rodman as the primary east-west thoroughfare for Arsenal Island. Main Avenue linked the original site of the arsenal, near the Clock Tower Building, with the subsequent "Grand Arsenal" developed during General Rodman's and his successor, Major Daniel W. Flagler's commands.<sup>8</sup> Major Flagler, later in his career, rose to the rank of Brigadier General and became the Chief of the US Army Ordnance Department.

By the mid-1870s the Rock Island Arsenal stone shop complex had begun to take on the appearance of an arsenal of grand design. Improvements were made in the formal appearance of Rodman Avenue. The Gate House (Building 321) and entry gates were built in 1875, and "trees along both sides of Main Rodman Avenue, from the gates eastward to the foot of the high grounds were planted in 1876."<sup>7</sup>

The intended feeling of a grand entrance and approach to the 10 massive stone shops has been maintained in a park-like setting. This feeling of grandeur was enhanced by quality landscape architecture, representative of the later nineteenth century. The approach projected a sense of formal splendor with vistas, up a gradual incline, lessened by a framework of plants, shrubs, and trees. In recent years preservation of these greenways has been encouraged. Dutch Elm disease, storms, and pavement have intruded upon the Rodman Avenue's flanking greenway over the last 100 years. Any additional encroachment upon the boulevard-like character of Rodman Avenue should be avoided.

Today, as in the past, visitors approach the core of the arsenal by traveling past the imposing Clock Tower Building and the circa 1875 Gate House. Approximately one mile up an arrow-straight thoroughfare, visitors encounter the old Rock Island Arsenal Headquarters Building (Building 360) with its post flag planted in the front lawn. Building 360 is situated on the northwest corner of Rodman and Gillespie Avenues opposite the Post Building (Building 225). Today Building 225 houses the fire and police departments as it did when the building was constructed in 1873. These ancillary or auxiliary buildings were placed immediately to the west of 10 impressively large stone shops that formed the industrial core of General Rodman's arsenal of grand design.

Zone A contains four large Rodman plan ancillary buildings: A Barracks, (Building 90); Post Building, (Building 225); the old Rock Island Arsenal Headquarters (Building 360); and a Storehouse (Building 56) for Shop K. These auxiliary buildings

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flank the historic Rodman plan industrial core. The Barracks Building and the Storehouse for Shop K both are located on East Avenue. The old Headquarters Buildings and the Post Building are situated just west of the 10 stone shops at the intersection of Gillespie and Rodman Avenues. The Barracks (Building 90), completed in 1873, currently houses the US Army Management Engineering Training Activity (AMETA). The Post Building was completed in 1874. Building 360 functioned as the headquarters building for the Rock Island Arsenal from 1889 - 1922. Although this structure's exterior has remained as originally built, the interior has been renovated. During the 1930s the building was converted into officer's family housing.<sup>9</sup> In 1893, the final Rodman plan building was constructed at the rear of Shop K (Building 68). Constructed as a storehouse for Shop K, Building 56, as it is now designated, functions as classrooms for the original AMETA program. This structure is the Arsenal's only surviving storehouse from the original Rodman plan.<sup>10</sup> Only two such buildings were built. The other one, Storehouse A was destroyed by fire in 1903.<sup>11</sup>

The Rock Island Arsenal's 10 historic Stone Shop Buildings are bound east and west by the ancillary buildings situated on East and Gillespie Avenues, respectively. The structures on North and South Avenues between Gillespie and East form the northern and southern boundaries of the historic industrial zone. Today the 10 Rodman plan shops stand basically as they were constructed at their original locations, approximately a mile east of the Clock Tower Building, toward the central portion of the island.

Initially Rodman's 10 shops were designated by letters. They were known as shops A, B, C, D, E, F, G, H, I, and K. Under Rodman's plan, the shops were divided into Armory and Arsenal Rows.<sup>12</sup> Shops B, D, F, H, and K, aligning Rodman Avenue on the north, formed the installation's Armory Row. These structures are now designated as Buildings 60, 62, 64, 66, and 68, respectively.

A historic properties report, prepared by a private firm for the United States Army in 1985, contained the following general assessment regarding the Arsenal's old stone buildings.

Surviving in highly intact condition, the buildings make a cohesive statement that, in terms of both their scale and style, has no counterpart among government installations in the Midwest.<sup>13</sup>

The report included the following description of the 10 Rodman Plan stone shops.

The ten Stone Shops (Buildings 60, 62, 66, 68, 102, 104, 106, 108, and 110), massive "U"-shaped structures, each with a central section 210 feet by 60 feet, flanked by wings measuring 300 feet by 60 feet . . . The shops' exteriors are constructed of pillowed limestone accented by pilasters, architraves and pedimented gable ends. The regularly spaced windows originally featured six-over-six,

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double-hung wood sash. The original slate roofing, supported by iron framing, has been replaced by either composition or metal roofing.<sup>14</sup>

The buildings originally featured an open bay interior plan designed to provide light and room for manufacturing operations. Now most of the stone shops contain offices and corridors formed by portable partitions. Evidence of the original 19th century interior in the form of cast-iron and a few wrought iron columns, and decorative cast iron stairways, is present in these structures today.<sup>15</sup>

The Historic American Buildings Survey/Historic American Engineering Records Inventory Cards for these 10 stone shops and their stone ancillary buildings cites these buildings as being in good condition.<sup>16</sup> In recent years, the Army has undertaken a major effort to rehabilitate these structures, including restoration of the exteriors. There are no current plans to demolish or significantly alter these structures.

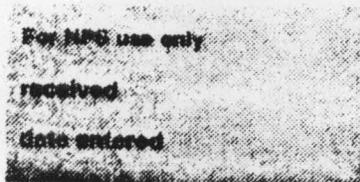
Four connecting links, designated buildings 61, 67, 103, and 109, were built between eight of the Stone Shops in 1918 by Stone and Webster Engineering Company. The stone annexes were designed to match the Greek revival style of the original stone shops.<sup>17</sup>

Construction during World Wars I and II had, out of wartime necessity, intruded upon the arsenal's 19th century design and had ushered in the mechanized era of the next century. Variations in building style and arrangement from the original stone building concept began around WWI in the industrial complex west of Gillespie Avenue.<sup>18</sup> However, careful placement of these and later 20th century buildings along Rodman Avenue assured that the Rock Island Arsenal would continue to project the feeling of a grand arsenal. Though the Rock Island Arsenal is listed on the National Register of Historic Places, it continues today to be a vital manufacturing arsenal for the United States.

Zone B: The Principal Officer's Residential Quarters Area

Directly north of the stone shops, General Rodman and his successor, Major Flagler, developed the officer's family quarters.<sup>19</sup> The shops and quarters are presently separated by the Rock Island Golf Course that continues the landscape interspace which has been part of the planning and development of the area from the outset.

In 1881, a pedestrian access path that included a double-arched stone bridge was constructed as a link between the Arsenal's central industrial complex and the officer's residence area. The bridge remains today, but, the low lying pond that it once spanned has been drained. Modern sidewalks and roads have replaced this path; therefore, it is no longer the pedestrian route between the officer's quarters and the industrial shops. The small bridge, which still stands, is in fair

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condition.<sup>20</sup>

The elegant residential area was intended to be clearly distinguishable from the industrial area. The symmetry and formal classical architecture of the shop buildings gave way to a picturesque though massive adaptation of the Italian villa form of Quarters One. The subaltern officers' quarters were constructed with a more restrained Italianate character.

The Commanding Officer's Quarters, Building 301, completed in 1871 and designed by General Rodman, still functions today as the family residence of the highest ranking officer on Arsenal Island. Building 301 is a massive structure containing over 19,000 square feet of floor space, two and one-half stories with a three and one-half story tower. A wide porch stairway, projecting bays, and porches conceal the buildings basically cube shape design.<sup>21</sup> Now known as Quarters One, the Commanding Officer's Quarters is currently the family residence of Major General Fred Hissong, Commanding General of the US Army Armament, Munitions, and Chemical Command. The High Victorian Italian Villa architectural style of Quarters One became the model for the scaled-down Italianate design of the Subaltern Officers' Quarters built to the east of Quarters One.<sup>22</sup> The Subaltern Officers' Quarters (Buildings 2, 3, and 4) are two story, hip roof, stone veneer structures that feature bracketed cornices and projecting two story bays instead of towers. The historic properties report of 1985 recommends that:

Provisions should be made for adequate protection of the buildings' settings i.e., spacious yards, vistas, landscaping, and original or early yard and street fixtures, including fountains, fences, and streetlamps.<sup>23</sup>

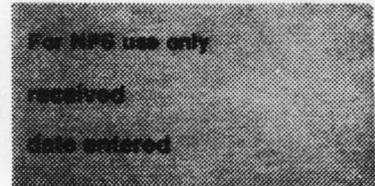
These General Rodman-designed and-inspired quarters, built in the period 1871-1874, are imposing stone mansions that are different in character but architecturally compatible to the design of the stone shops.

Major Daniel W. Flagler, Rodman's successor, supervised the construction of the original three Subaltern Officers' Quarters, designated as Quarters Two, Three, and Four. Subaltern Officer's Quarters Six, though not of the same design as the 1874 circa officers' quarters, should be included in this historic zone. It was constructed in 1905, to accommodate the officers who had accompanied the small arms mission to Rock Island from the east at the turn of the century.<sup>24</sup> General Rodman's plans for a combined armory and arsenal at Rock Island became a reality with the arrival of these officers.

Quarters Six, a large three-story, quoined Milwaukee brick building with flaired-eave gables and palladian windows, is today the family quarters of Colonel John S. Cowings, the commanding officer of the Rock Island Arsenal. It has been the arsenal commanding officer's quarters ever since the arrival of the command

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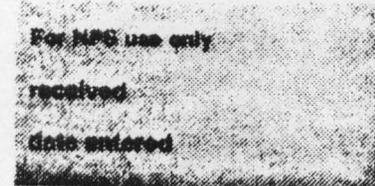
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headquarters in 1955. Quarters Six is included in Zone B of the Historic Landmark district. Though not of the same style and material as the earlier Rodman-influenced quarters, this turn-of-the-century quarters was constructed in a style and scale that complements the earlier period architecture of the older Subaltern Officers' Quarters. The great interspace in landscape setting between Quarters Six and its earlier counterparts also serves to diminish any possible sense of discord between the styles of the older and newer quarters.

The Rodman-plan and Rodman-inspired old stone buildings, including the ten shops, officers' quarters, and ancillary buildings, are generally classified by the Army as Category I historic properties. Only Quarters Six currently possesses a lower classification. For a complete listing of these historically significant buildings, see Table 1.

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<sup>1</sup>A Historical Summary, 1 July through 31 December, 1954, (Rock Island: Rock Island Arsenal, 1955) p. 1-3

<sup>2</sup>Major Daniel W. Flagler, A History of the Rock Island Arsenal from its Establishment in 1863 to December 1876: and of the Island of Rock Island, the Site of the Arsenal, from 1804 to 1863, (Washington: Government Printing Office, 1877) pp. 152, 156, 250, 380-381. This is also known as Ordnance Memorandum #20. It is hereafter referred to as Flagler.

<sup>3</sup>Flagler, p. 261.

<sup>4</sup>Ibid, p. 123.

<sup>5</sup>MacDonald and Mack Partnership, Historic Properties Report, Rock Island Arsenal, Final Report, 1985, This document was prepared by the MacDonald and Mack Partnership, Minneapolis, Minnesota, under Contract CX-0001-2-0033 between Building Technology Incorporated, Silver Spring, Maryland, and the Historic American Buildings Survey/Historic American Engineering Record, National Park Service; U.S. Department of the Interior. It is hereafter referred to as MacDonald and Mack.

<sup>6</sup>On 11 September 1941, the US Army Ordnance Department permanently transferred ownership of the Clock Tower Building together with a surrounding triangle of 6.90 acres of land from the Rock Island Arsenal to the Corps of Engineers.

<sup>7</sup>Flagler, p. 272.

<sup>8</sup>Henry B. Moy and Titus M. Karlowitz, Cultural Resources Inventory and Evaluation of Rock Island Arsenal, Rock Island, Illinois, (Normal, Illinois, Midwestern Archeological Research Center, Department of Sociology, Anthropology and Social Work, Illinois State University, p. 58.

<sup>9</sup>Ibid., p. 78; Ira O. Nothstein, "Rock Island Arsenal Its History and Development," unpublished manuscript: Works Progress Administration Project, 1937.

<sup>10</sup>MacDonald and Mack, p. 99; Ira O. Nothstein, p. 169.

<sup>11</sup>Ibid., p. 86.

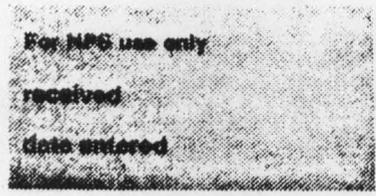
<sup>13</sup>MacDonald and Mack, p. 84.

<sup>14</sup>MacDonald and Mack, p. 85.

<sup>15</sup>Ibid., p. 86.

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<sup>16</sup>Historic American Buildings Survey/Historic American Engineering Records Inventory Cards, inventoried by Barbara Hightower, Building Technology, Inc., May 1984 Document level II. US Department of the Interior, National Park Service, Washington DC. The Inventory Cards are on reserve at the Library of Congress in the nation's capital.

<sup>17</sup>MacDonald and Mack, p. 107.

<sup>18</sup>Ibid., p. 52

<sup>19</sup>Ibid., pp. 36 and 43.

<sup>20</sup>Ibid., p. 43.

<sup>21</sup>Ibid., p. 91.

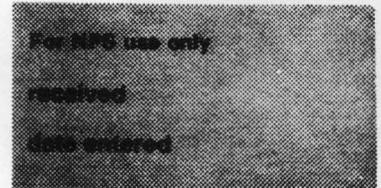
<sup>22</sup>Ibid.

<sup>23</sup>Ibid., p. 92.

<sup>24</sup>Ibid., p. 45

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Important aspects of the Rock Island Arsenal's Old Stone Buildings historic district are revealed in the following individual building historic descriptions.

Individual Building Descriptions (See HABS/HAER Inventory Cards)

The following list enumerates only those arsenal buildings within the boundaries of the proposed historic landmark district that contribute to the historic district. Buildings within areas of the arsenal excluded from the landmark district are not enumerated.

Subaltern Officer's Quarters - (Quarters 2, 3, and 4)

Army classified category I historic property. Italianate style architecture. Series of 3 subaltern officer's quarters constructed during Major D. W. Flagler's command (1871-1886). Presently used as officer's family quarters. Part of ensemble related to Commanding Officer's Quarters situated directly to the west. Picturesque 19th century landscape planning provided by total ensemble of residential quarters. Under Rodman's plan, north central shore of island set aside as staff residential area. These quarters continue to function in their original capacity.

Subaltern Officer's Quarters 2, Building 2

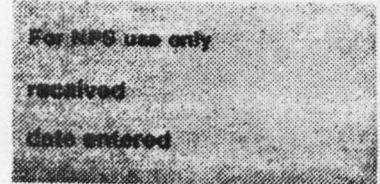
Army category I historic property. Italianate style architecture. Rectangular, 48' x 28' 2-story, square ground floor plan, cruciform on second floor, coursed rock faced ashlar limestone foundation and load bearing walls; low hip roof with flat deck; Completed in 1874  
Building faces north onto Terrace Drive and overlooks Mississippi River. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

Subaltern Officer's Quarters 3, Building 3

Army category I historic property. Italianate style architecture. 2-story, L-shaped, 53' x 40' Coursed rock faced ashlar limestone foundation and load bearing walls; low hip roof with flat deck. Bracketed cornice with panelled frieze; stone quoins; cast iron columns, brackets, and balustrade on north porch. Building faces north onto Terrace Drive and overlooks Mississippi River. Completed in 1872. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

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Subaltern Officer's Quarters 4, Building 4

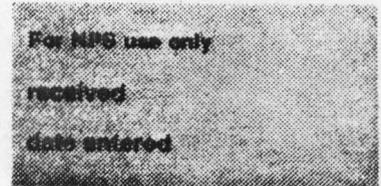
Army category I historic property. Italianate style architecture, 2-story, irregular shaped, 41' x 28' coursed rock faced ashlar limestone foundation and load bearing walls; low hip roof with flat deck. Bracketed cornice with panelled frieze; stone quoins; cast iron columns brackets, and balustrade on north porch. Completed in 1872. Building faces north onto Terrace Drive and overlooks Mississippi River. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

Subaltern Officer's Quarters 6, Building 6

Army category III historic property. Not an Italianate style building. The landscape space allotted for possible Quarters 5 which was never built, provides a natural break with Quarters 6 situated apart from Quarters 4 thus avoiding conflict or contrast of style. 3 stories and basement, Brick foundation with load bearing walls of tan Milwaukee brick laid in stretcher bond. Irregular shaped, 47' x 36' with combination hip and mansard roof. Building faces north onto Terrace Drive and overlooks the Mississippi River. Completed in 1905, to accommodate the enlarged officer staff required by the small arms plant established at the arsenal in the early twentieth century. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

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Storehouse K, Building 56

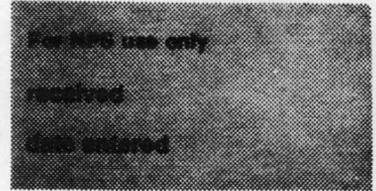
Army category I historic property. Greek Revival Architecture  
Massive coursed rock faced ashlar limestone foundation and  
load bearing walls. Walls approximately 4' thick in basement  
decreasing about 6" with each higher story. Rectangular in  
shape, 234' x 60', projecting north and south pavilions 60' by  
15'. Cross gable roof, and wrought iron Fink trusses. 2 1/2  
stories plus basement. Basically building has kept its  
original appearance despite modification and replacement of  
entrances. The only surviving storehouse from Rodman's  
original plan. Rodman planned for eight storehouses to be  
constructed for each of the eight shop buildings excluding  
the forge and foundry in shops E and F. However only two  
were constructed. Storehouse A was destroyed by fire in 1903.  
Walls lined with brick, floors supported by iron columns and  
carried on wood joists and girders. Completed in 1893, it  
currently functions as US Army Management Training Activity  
Annex. Storehouse K is located northwest of the intersection  
of Gillespie Avenue and North Avenue north of the stone shops.  
(See HABS/HAER Inventory Cards, inventoried by Barbara  
Hightower, affiliated with Building Technology, Inc., May 1984.)

Ten Original Stone Shops

In 1865, General Thomas J. Rodman devised a master plan for RIA  
calling for the construction of ten large manufacture shops,  
five on each side of the island's major east-west thoroughfare.  
Historically, these shops have formed the manufacturing core of  
the Rock Island Arsenal. The Rodman plan stone buildings  
represented one of the largest military construction projects  
of the late 19th Century. Surviving in highly intact condition,  
the buildings have no counterpart in scale and size in the Midwest.

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Stone Shop B, Building 60

Army category I historic property. Greek Revival Architecture 2 1/2 stories plus basement, massive rock faced ashlar limestone foundation and load bearing walls, 3' thick in basement, decreasing about 6" with each higher story. U-shaped, 210' x 300' with south wing 90' x 60'; two projecting pavilions 60' x 15' on east and west sides. Initial construction, 1867. Floors carried by wrought iron stringers and joists with brick arches between the joists; iron columns on first and second floors; decorative iron stairways. One of the original ten manufacturing buildings of the Rodman plan. Presently houses Post Restaurant, Museum, and Officers' Club. Shop B, Building 60 faces south onto Rodman Avenue and forms the western terminus of the northern row of shops often referred to as Armory Row, along Rodman Avenue. Completed in 1873. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

Stone Shop Annex, Building 61

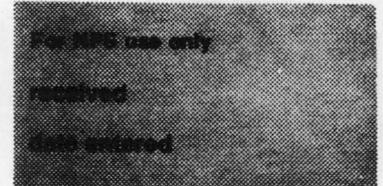
Army category II historic property. Greek Revival Architecture 2 1/2 stories, with concrete foundation. Reinforced concrete structure clad with coursed stone veneer. Rectangular, with 90' x 55' dimensions. Designed by Stone and Webster Engineering Company to match the original stone shops. Completed in 1918. Original used for material handling, presently Building 61 houses the Credit Union. Building faces south onto Rodman Avenue and joins Building 60 at its southeast pavilion. One of four identical links constructed between eight of the stone shops. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology Inc., May 1984.)

Stone Shop D, Building 62

Army category I historic property. Greek Revival Architecture Massive rock faced ashlar limestone foundation and load bearing walls; 3' thick in basement and decreasing about 6" with each succeeding story. U-shaped, 210' x 300', south wing 90' x 60', east and west wings 300' x 60'; two projecting pavilions 60' x 15' on east and west sides. 2 1/2 stories, plus basement. Seamed metal cross gable roof; metal Fink trusses. Stone bearing the date 1871 above central entrance on forth facade, citing initial construction of building. Floors carried by wrought iron stringers and joists with brick arches between the joists; iron columns on first and second floors; decorative iron stairways. Completed in 1876, presently used for offices, Building 62 faces south onto Rodman Avenue, forming part of Armory Row, west of 2nd Street.

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Building's dimensions identical to Shop B and the other stone shops save Shops E and F. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology Inc., May 1984.)

Stone Shop F, Building 64

Army category I historic property, Greek Revival Architecture Massive rock faced ashlar limestone foundation and load bearing walls. U-shaped, 210' x 300', south wings 90' x 60'; 300' x 60' east and west wings; two projecting pavilions 60' x 15' on east and west sides. 1 1/2 stories, with seamed metal cross gable roof; metal frame; gabled monitor. Building 64 included in group of ten stone shops that formed the manufacturing core of Rodman's master plan. Originally used as Rolling Mill and Forging Shop. Presently used as Electroplating Shop. Initial construction began 1874 and building was completed in 1878. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology Inc., May 1984.)

Stone Shop H, Building 66

Army category I historic property. Greek Revival Architecture Surviving in highly intact condition, Building 66, as with the other nine original stone shops, form a cohesive architectural statement in terms of scale and style. They have no counter part among government installations in the midwest. Building 66 has identical dimensions with the other Rodman plan shops, with the exception of Buildings 64 and 106 (Shops F and E). Presently Shop H used as Small Arms Assembly building. The small arms mission production began in 1904. Initial construction of Shop H occurred in 1878 and building completed 1886. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology Inc., May 1984.)

Stone Annex Building, Building 67

Army category II historic property. Greek Revival Architecture Concrete foundation, reinforced concrete structure clad with course stone veneer. Rectangular, 90' x 60', 2 1/2 stories. Annex Building 67 connects buildings 66 and 68. One of four identical links constructed between eight of the stone shops. Annex buildings 61, 67, 103, and 109 provide evidence of early interest at Rock Island Arsenal in preserving the uniformity and regularity of the Stone Shops. Wartime needs were met without sacrificing the architectural integrity of the ensemble.

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Designed by Stone and Webster Engineering Company to match original stone shops. Originally used for material handling, presently used for shop offices. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

Stone Shop K, Building 68

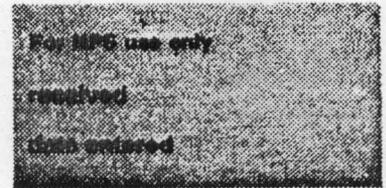
Army category I historic property. Greek Revival Architecture Except for the foundry and forge shops (Buildings 64 and 106) the Rodman plan stone shops have identical dimensions. Buildings 60, 62, 66, 68, 102, 104, 108, and 110 are all 2 1/2 stories plus basement; U-shaped, with seamed metal cross gable roof; metal Fink trusses; arched openings with rusticated stone surrounds and keystones; six-over-six light double hung sash with rusticated stone sills, and flat lintels; pedimented gable ends; stone raking and horizontal cornices; floors carried by wrought iron stringers and joists with brick arches between the joists. Building 68 presently used as a small arms assembly building. Small arms production began at Rock Island Arsenal in 1904. Building 68's initial construction began 1881. Building completed in 1893. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology Inc., Mary 1984.)

Stone Building, Building 90

Army category I historic property. Greek Revival Architecture 2 1/2 stories plus basement. Massive coursed rock faced ashlar limestone foundation and load bearing walls. Rectangular 155' x 57', with central projecting pedimented pavilion on west side 49' x 10' and a parellel addition 41' x 21' on east side. Main building has cross gable roof. Main entrance has arched opening with rusticated stone surround and keystone; six-over-six-light double hung sash and glass block windows with stone sills and flat lintels. Pedimented gable ends; stone pilasters, entablature, and horizontal and raking cornices. Decorative wrought iron balustrades on either side of cornices. Building 90 faces west onto East Avenue northeast of the stone shops. Constructed in 1873-74. In 1917 an addition containing laundry facilities and bathrooms was built, connecting to main building at first and second floors. Originally a barracks, presently Building 90 provides training and offices for the US Army Management Engineering Training Activity (AMETA). (See HABS/HAER Inventory Cards inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

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Stone Shop A, Building 102

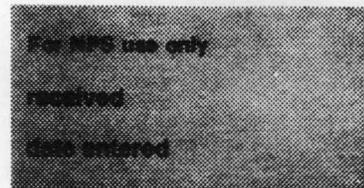
Army category I historic property. Greek Revival Architecture 2 1/2 stories plus basement. One of the ten U-shaped manufacturing shops that formed the industrial core of General Rodman's master plan for Rock Island Arsenal. Basically the same dimensions as the other stone shops with the exceptions of Shop E and F. Initial construction began in 1873. Completed in 1876. Constructed as part of Arsenal Row, the five shops that aligned Rodman Avenue on the south presently used for offices. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Ind., May 1984.)

Stone Shop Annex, Building 103

Army category II historic property. Greek Revival Architecture 2 1/2 stories plus basement. One of four identical links built between eight of the stone shops. Concrete foundation, reinforced concrete structure clad with coursed stone veneer. Rectangular 90' x 60'. Connects buildings 102 and 104. Designed by Stone and Webster Engineering Company to match the original stone shops. Completed in 1918. Originally used for material handling, presently used for office space. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

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Stone Shop C, Building 104

Army category I historic property. Greek Revival Architecture  
Massive rock faced ashlar limestone foundation and load bearing  
walls. Same U-shape and dimensions as other Rodman plan manufact-  
uring shops. Originally part of Arsenal Row, Shop 104 today is  
used for offices. Initial construction 1867. Completed 1872.  
(See HABS/HAER Inventory Cards, inventoried by Barbara Hightower,  
affiliated with Building Technology, Inc., May 1984.)

Incinerator Building 105

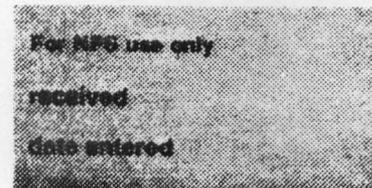
Army category I historic property. Greek Revival Architecture  
Stone foundation. Coursed ashlar limestone load bearing walls;  
concrete walls on addition situated between original building  
and stack. Rectangular, 40'x54'. One story. Metal gable roof.  
Window openings closed in with stone; massive stone sills and  
lintels. Stone pilasters. On south side truncated brick stack  
set on stone base. Inscription above south opening, AD MDCCCLXXI.  
Building situated in courtyard on south side of Building 104, north  
of South Avenue. Originally used as boiler room for shop C.  
Presently used as an incinerator. (See HABS/HAER Inventory Cards,  
inventoried by Barbara Hightower, affiliated with Building Technology,  
Inc., May 1984.)

Stone Shop E, Building 106

Army category I historic property. Greek Revival Architecture  
Massive rock faced ashlar limestone foundation and load bearing  
walls. U-shaped, Rodman plan foundry, 210' x 300', north wing  
90' x 60', east and west wings 300' x 60'. Two projecting pavi-  
lions 60' x 15' on east and west sides. 1 1/2 stories. Completed  
in 1874. Continues to operate today as the Rock Island Arsenal's  
foundry. Operational through the Indian wars of the later 19th century,  
the Spanish-American War, the Phillipine Insurrection, World Wars  
I and II, Korean Conflict, and the Vietnam War. This building is  
vital for understanding the history of American ordnance development and  
production through the later 19th and 20th century. (See HABS/HAER  
Inventory Cards, inventoried by Barbara Hightower, affiliated with  
Building Technology, Inc. May 1984.)

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Stone Shop G, Building 108

Army category I historic property. Greek Revival Architecture. Massive rock faced ashlar limestone foundation and load bearing walls, 3' thick in the basement, decreasing about 6" with each succeeding story. U-shaped, 210 x 300', same dimensions as the other stone manufacturing building except for buildings 64 and 106 (Shops F and E). Shop G contains the same architectural features as the other stone shops. Presently AMCCOM command offices; print shop and photo laboratory; and prototype shop are housed in Building 108. Initial construction 1877. Completed 1882. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

Stone Shop Annex, Building 109

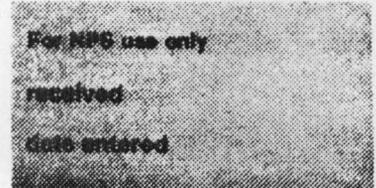
Army category II historic property. Greek Revival Architecture. Concrete foundation, reinforced concrete structure clad with coursed stone veneer. Rectangular, 90' x 60'. 2 1/2 stories. Designed by Stone and Webster Engineering Company to match the original stone shops. Originally used for material handling, presently utilized as offices for AMCCOM. Built in 1918 as one of four identical links constructed between eight of the stone shops. Building 109 connects Buildings 108 and 110. It is an historically significant example of military-industrial design that augmented RIA's industrial efficiency while preserving its overall architectural integrity. Embodies an equal concern for utilitarian and aesthetic considerations that became increasingly rare during subsequent wartime construction programs. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

Stone Shop I, Building 110

Army category I historic property. Greek Revival Architecture. Basically identical with the other stone manufacturing buildings in terms of dimensions, style, and material. Along with Buildings 102, 104, 106, 108, collectively formed Rodman's Arsenal Row, five large stone manufacturing shops that align Rodman Avenue. Initial construction began 1878, completed 1883. Presently used as offices for AMCCOM elements. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

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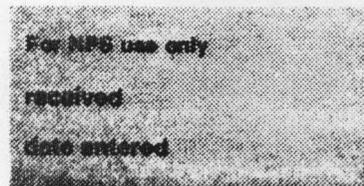
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Clock Tower Building, Building 205

Army category I historic property. Earliest extant building associated with Rock Island Arsenal. Major Charles P. Kingsbury began initial construction in 1863. Building completed during General Rodman's command in 1867. Only building erected from original arsenal plans. Constructed of LeClaire limestone. Originally used as a storehouse, arsenal turned building over to US Army Corps of Engineers in 1941. The Corps of Engineers had occupied the portions of building during construction of Lock and Dam at Rock Island. Building's four face clock has 12' diameter dials. Minute hand 6' long and hour hand is approximately 5'. Clock made by A. S. Hotchkiss Company, New York. Purchased for tower in 1867 considered to be finest in United States. The clock may be the only timepiece of this type that is still operating with its original parts. The clock was switched over to electricity in 1950, eliminating handwinding. Massive weights drive clock hang down three floors. Clock's bell weighs about 3,500 pounds. Construction authorized by act of 11 July 1862. Building is 180' long x 60' wide and 58' high. Foundation walls are 4' thick, decreasing 6" with each additional story. Clock's tower reaches 117' high. Begun during President Lincoln's administration, the building today is one of the major historical landmarks along the upper Mississippi River. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, Building Technology, Inc., May 1984.)

Post Building, Building 225

Army category I historic property. Greek Revival Architecture 2 stories, with basement under west wing. Stone foundation, coursed rock faced ashlar limestone load bearing walls; hose tower walls are brick. Cross-shaped center wing 39' x 58', center wing 39' x 33', west wing 10' x 10', 10' x 10' hose tower in southwest corner. Cross gable roof, originally functioned as main guard house, fire engine house, and storehouse. Today still operates as police office and fire station. Building faces north onto Rodman Avenue and is located southwest of the intersection of Rodman Avenue. Completed in 1874. Hose tower added in 1919. (See HABS/HAER Inventory Cards inventoried by Barbara Hightower, Building Technology, Inc., May 1984.)

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Commanding Officer's Quarters, Building 301

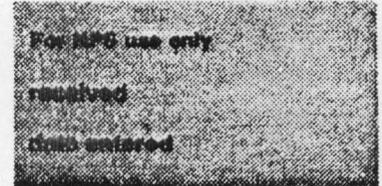
Army category I historic property. High Victorian Italian Villa style architecture. 2 1/2 stories plus full basement. Stone foundation. Smooth dressed coursed ashlar limestone load bearing walls. Basically L-shaped; main block is 74' x 52'; west wing is 31' x 44'; tower on east side is 19' x 14'. wraparound porch, approximately 73' x 9' on east and north sides. north side has 2 1/2 story rectangular bay with one story polygonal bay and 42' x 9' proch. South side has 19' x 18' porte cochere, 7' x 13' entrance porch, raised open terrace, and two one-story rectangular bays 7' x 13'. Tower is 3 1/2 stories. Truncated hip roof with copper deck main block; hip roof west wing; tower has parapeted hip roof; north bay gable roof. Three interior chimneys. Heavy rustic stone quoins; deep stone cornice with prominent scrolled brackets; pedimented gable end on north bay; dentiled cornices on one-story bays; decorative cast-iron detailing and paired columns on porte cochere and wraparound porch. Constructed in 1871, Building 301 is still functioning as the family quarters for the highest ranking officer on Arsenal Island. Building 301, also known as Quarters 1, faces east and is located on the north shore of the island, west of Gillespie Avenue. Numerous dignitaries from the United States and foreign countries have visited Quarters 1 in its 116 years. Possibly the largest single family dwelling owned by the US Army. Its style and scale compliment that of the ten large stone manufacturing shops. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, Building Technology, Inc., May 1984).

Gate House, Sentry Station Building 321

Army category I historic property. Gothic Revival style architecture. Stone foundation. Coursed rock-faced ashlar limestone load-bearing walls. Rectangular, 19' x 24'. One story. Steeply pitched gable roof. One-over-one-light double hung sash; stone sills and stone pointed arch hoodmolds; oculus in the gable ends. Notable departure from the arsenal's predominant use of Greek revival detailing for its stone buildings. Originally erected in 1875 and used as the Gate House, presently building is used as a Sentry Station.

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Old Stone Headquarters Building, Building 360

Army category I historic property. Greek Revival Architecture 2 1/2 stories and basement. Coursed rock faced ashlar limestone foundation and load bearing walls. Rectangular, approximately 83' x 56' with projecting pavilion on south facade. Cross gable roof, panelled brick interior chimneys with corbelled caps. Main entrance, north side, arched opening with stone surround and keystone; one-over-one-light double hung sash with stone sills and flat lintels; arched windows with stone surround in east and west gable ends and entrance on north side. Pedimented gable ends; stone pilasters with egg and dart capitals stone raking and horizontal cornices and entablature; decorative cast iron balustrade at east entrance. From 1889 - 1922 Building 360 was headquarters for the Rock Island Arsenal. Housed offices of post commander and his assisting officers. Eight commanding officers ran the arsenal from the Commander's Office in this building. They were: Colonel J. M. Whittemore, 1888-1891; Colonel A. R. Buffington, 1892-1897; Major Stanhope E. Blunt, 1897-1907; Lieutenant Colonel George W. Burr, 1911-1918; Colonel L. T. Hillman, 1918; Colonel Harry B. Jordan, 1919-1921; and Colonel David M. King, 1921-1931. Urgent orders for arms, ammunition, and equipment were received by these officers during the Indian uprising of 1891 in the West; the Spanish-American War of 1898; the Mexican Expeditionary search for Pancho Villa in 1916; and during World War I. Due to consolidation of activities and offices during the peacetime years after the Great War, the headquarters was moved to one of the industrial buildings, Building 210, Shop R. During the 1930's Building 360 was converted to family quarters for officers. Today it functions in this capacity. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

Table I

## List of Historically Significant Old Stone Buildings at the Rock Island Arsenal

Bldg. #	Date (s)	National Register Area of Significance	US Army T.M. 5-801-1	**Building Condition
2	1873-73	Architecture	1	good
3	1871-71	"	1	"
4	1871-72	"	1	"
6	1905	"	3	"
56	1893	"	1	"
60	1867-72	"	1	"
62	1871-76	"	1	"
64	1874-78	"	1	"
65	1876	"	1	"
66	1878-86	"	1	"
68	1881-93	"	1	"
90	1873-74	"	1	"
102	1873-76	"	1	"
104	1867-72	"	1	"
105	1871	"	1	"
106	1871-74	"	1	"
108	1877-82	"	1	"
110	1878-83	"	1	"
205	1863-67	"	1	"
225	1873-74	"	1	"
301	1870-71	Architecture & Military History	1	"
321	1875	Architecture	1	"
360	1889	Architecture	1	"
Annex Bldg. #				
103	1918			
61	1917-18	"	1	"
109	1918			
67	1917-18	"	1	"

\* Categories taken from MacDonald and Mack Partnership, Minneapolis, Minnesota, Historic Properties Report, Rock Island Arsenal, 1985, "Category I Historic Properties p. 79-93, Category II Historic Properties p. 94-104, and Category III Historic Properties p. 105-125"  
Historic Architectural Building Study/Historical Architectural Engineering Record Master Cards, Inventoried by Barbara Hightower, Building Technology, Inc. May 1984.

\*\* Ibid.

## 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 checked="" type="checkbox"/> military	<input type="checkbox"/> social/
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> art	<input type="checkbox"/> engineering	<input type="checkbox"/> music	<input type="checkbox"/> humanitarian
<input checked="" type="checkbox"/> 1800-1899	<input type="checkbox"/> commerce	<input type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy	<input type="checkbox"/> theater
<input checked="" type="checkbox"/> 1900-	<input type="checkbox"/> communications	<input checked="" type="checkbox"/> industry	<input type="checkbox"/> politics/government	<input type="checkbox"/> transportation
		<input type="checkbox"/> invention		<input type="checkbox"/> other (specify)

**Specific dates** 1862, 1867, 1871, 1893 **Builder/Architect** Thomas J. Rodman/Ordnance Department

**Statement of Significance (in one paragraph)**

The Rock Island Arsenal's proposed historic landmark district derives its significance largely from the General Thomas J. Rodman planned and inspired Old Stone Buildings.<sup>1</sup> These buildings represented one of the largest military construction projects of the late nineteenth century.<sup>2</sup> After assuming command of the Rock Island Arsenal in 1865, Brevet Brigadier General Thomas J. Rodman devised a master plan for the installation that called for the construction of ten large manufacturing shops supplemented by a variety of ancillary buildings.<sup>3</sup> Under General Rodman's plan, the arsenal's main industrial site was transferred to the high ground at the center of the island.<sup>4</sup> Also, the north central shore of the island was set aside for a staff residential area. Surviving in highly intact condition, the buildings make a cohesive architectural statement that, in terms of both their scale and style have no counterpart among government installations in the midwest.<sup>5</sup> In addition to their architectural importance, the Rodman plan - Old Stone Buildings are the administrative and technological core of the Rock Island Arsenal. These buildings are vital for understanding the history of American ordnance development and production from the Spanish-American War to the present. Because of their architectural, historical, and/or technological merit, the Rodman plan buildings are classified by the US Army as category I historic properties.<sup>6</sup>

### Historical Overview

Established in 1862 as a small military storage and repair depot, Rock Island Arsenal plans were upgraded to the status of an ordnance manufacturing facility two years later. However, for the next thirty years, the arsenal primarily concentrated on the completion of an ambitious construction program designed by its second commandant, General Thomas J. Rodman, 1865-1871. His plan was largely implemented by his successor, Brevet Colonel Daniel W. Flagler, 1871-1886. Colonel Flagler later rose to the rank of Brigadier General and served as Chief, US Army Ordnance Department during the Spanish-American War.<sup>7</sup>

The Arsenal's last Stone Shop; Shop K, Building 68; was completed in 1893. A year later, Rock Island Arsenal began the manufacture of artillery carriages which has remained as one of the arsenal's chief areas of specialization to the present time. In 1899, Rock Island Arsenal was also authorized to manufacture small arms, which became an important production item during World War I.<sup>8</sup> At the conclusion of that conflict, the arsenal experienced peacetime reduction in force and operations. While manufacturing activities at the Arsenal were greatly curtailed during the inter-war period great strides were made at Rock Island Arsenal in experimental and development work. During World War II, Rock Island Arsenal was a center for the design and reconditioning of artillery carriages, recoil mechanisms, gun mounts, machine guns, and rocket launchers. Except for the rocket launcher activities, which were terminated in 1962, Rock Island Arsenal continues to

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perform these responsibilities. Since the 1960's the arsenal has become a production center for a variety of high-priority, small-lot ordnance items that private industry cannot economically manufacture.<sup>9</sup> In 1978 the Rock Island Arsenal began a mission of producing M45 recoil mechanisms for the US Army's new 155mm M198 Towed Howitzer that was scheduled to replace the World War II vintage M114/M114A1 Towed Howitzer. Furthermore, the Arsenal has had the added responsibility of integrating and assembling the four major components of the M198 Howitzer into a complete field artillery piece. In 1968 the Rock Island Arsenal had developed the X198 prototype Howitzer and manufactured the initial production, of 19 M198 15mm Howitzers, in house.<sup>10</sup> At the present, the Rock Island Arsenal comprises about 235 structures, with approximately two dozen dating from the nineteenth century.<sup>11</sup>

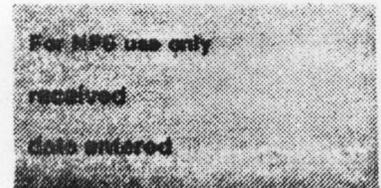
Rock Island is situated approximately halfway between St. Paul, Minnesota and St. Louis, Missouri at the point in which the Mississippi River bends away from its normal north-south course and flows westward. At this site the river divides into two main channels around a footprint-shaped isle known as Rock Island. This 948 acre island is located in the heart of four communities that are collectively called the Quad Cities. Individually these cities are Moline, and Rock Island, Illinois; and Bettendorf, and Davenport, Iowa. Approximately 100 of the island's total acres are within the Rock Island Arsenal's Old Stone Buildings - Historic District.<sup>12</sup> Rock Island is now the home for both the Rock Island Arsenal and the US Army Armament, Munitions and Chemical Command headquarters. Around 10,000 federal workers are employed on Arsenal Island. Of this figure, approximately 3,000 are Rock Island Arsenal employees, 6,000 are employed by AMCCOM headquarters, and the rest are personnel from other government tenant agencies. The US Army AMCCOM Command headquarters at Rock Island oversees over 30 other installations that include Army Ammunitions Plants, Research and Development Centers, and the Army's only other active manufacturing arsenal, Watervliet Arsenal. The Rock Island Arsenal's peak employment figures occurred during World War II prior to the command's arrival in 1955. The Rock Island Arsenal reached its highest figure of 18,467 employees in June 1943.<sup>13</sup>

Architectural Significance

The inception and growth of the Rock Island Arsenal's Old Stone Buildings took place during the succeeding commands of Major Charles P. Kingsbury, July 1863-June 1865; Brevet Brigadier General Thomas J. Rodman, August 1865-June 1871; and Major Daniel W. Flagler, June 1871-April 1886. At the conclusion of Major Flagler's command, the direction of the development was firmly enough established to be carried on for an additional decade and without major deviation.<sup>14</sup> Although significant individually, it is collectively as the Arsenal of grand design that these buildings merit National Historic Landmark consideration. Constructed during peacetime and completed over a twenty-five year period, these old stone buildings reflect the feeling of manifest destiny that permeated Congress and the nation in the latter nineteenth century. The integrity of this grand plan remains intact.

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The proposed Rock Island Arsenal historic landmark district comprises two zones, a manufacturing area labeled Zone A and a staff residential area, designated Zone B. The construction of the Arsenal's ten shops that formed the core of the Rock Island Arsenal's original manufacturing complex evolved without significant departure in design between October 1866 and the 1883 completion of the last stone shop, Shop K, Building 68. The austere, simplicity of these mid-19th century Greek Revival architectural style buildings enhances the collective uniformity of the buildings with their projecting porticoes, repeating pilasters, and unifying horizontal band delineating the top of the second story contributes to a sense of harmony and simplicity.<sup>15</sup>

Although some minor differences in color, texture and even the cut of the stone exists from building to building, they are minor, and they do not distract from the uniformity of the ensembles.<sup>16</sup>

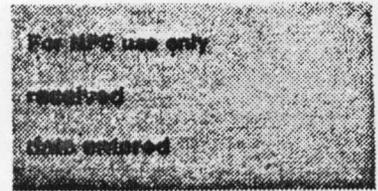
The minor variants in stone, though slight is due to the different locations from which the stone was quarried. The limestone for the Clock Tower Building was furnished by Joseph Parkins and quarried at Le Claire, Iowa.<sup>17</sup> Stone for the various stone buildings constructed over a twenty-five year period came from several locations. Sangers and Steel of Joliet, Illinois provided a good deal of the limestone for the initial construction of the ten manufacturing shops, especially Shops B & C, Buildings 60 and 104.<sup>18</sup> Later buildings were constructed with stone quarried by prisoners from the Iowa State Prison at Anamosa, Iowa. A Mr. J. A. Green of Anamosa, Iowa was the contractor.<sup>19</sup> Mr. Edwin Walker, of Lamont, Illinois provided some of the stone used in construction at Rock Island.<sup>20</sup> It would be extremely difficult to maintain the same contractor for over a quarter-of-a century, due to delays in delivery, disputes over price, and quality of work the procurement of stone was a major headache for the Rock Island Arsenal Commanders. The Old Stone Buildings collectively form a unique and yet significant example of military planning, design, and construction. Remarkably the Arsenal's long range planning and construction occurred during peacetime and with peacetime funds. Not until 1918 would the entire ten shops that comprised the original manufacturing core of the Rock Island be engaged in production.<sup>21</sup>

The Thomas J. Rodman Connection

Although the idea of constructing a great western armory and arsenal at Rock Island had appeared in Major Charles P. Kingsbury's correspondence to the Chief of the Army Ordnance his suggestions for upgrading the planning of the arsenal under construction at Rock Island, seemed to annoy and alienate his superiors who were pre-occupied with the greater Civil War picture. After two frustrating years (1863-1865) of delays and rejections Major Kingsbury requested to be relieved of command of the construction at Rock Island. Unfortunately, Major Kingsbury departed Rock Island without a building to show for his efforts. In taking leave of the Rock Island Arsenal, Major Kingsbury wrote to the Ordnance Department:

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Having been ordered hence at his own request, Major Kingsbury transfers his duties to his successor with the hope that the latter, will not be tried with the numerous delays and vexations which have attended the period of his connection with the Rock Island Arsenal.<sup>22</sup>

The appointment of the famous General Thomas J. Rodman as the second Rock Island Commander was a good indication that the Ordnance Department was thinking more seriously about upgrading the arsenal plans at Rock Island. Brevet Colonel Daniel W. Flagler, a contemporary of General Rodman and a distinguished officer in his own right, wrote in his history of the Rock Island Arsenal, published in 1877 six years after Rodman's death, that:

No better evidence could be desired that the Ordnance Department intended to construct a great armory and arsenal at Rock Island than the fact that an officer of such high standing as General Rodman, and one whose services were so valuable to the department in every way, was selected for the command.<sup>23</sup>

During General Thomas J. Rodman's tenure as Commanding Officer at the Rock Island Arsenal Storehouse A, the Clock Tower Building, was completed; the water reservoir built; two shop buildings, and the Commanding Officer's Quarters nearly completed; a wagon bridge to city of Rock Island erected; water power contracted; arsenal grounds cleared; roads laid out and built; plans for a combined armory and arsenal at Rock Island approved; the relocation of the Chicago, Rock Island and Pacific Railroad to the western edge of the island took place; the construction of a steel double deck bridge from Rock Island to Davenport; and the settlement of property claims held by private parties.

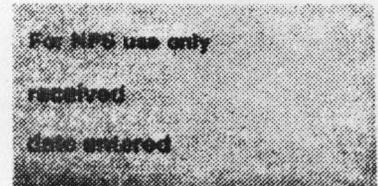
Though General Rodman had been commander of the Watertown Arsenal at the time of his appointment to Rock Island he was known chiefly as developer of the Rodman Gun. Rock Island Arsenal historians, beginning with Daniel W. Flagler, have claimed General Rodman as the "Father of the Rock Island Arsenal". After making a study of Rock Island, General Rodman recommended to the Chief of Ordnance a new location for the arsenal. Discussions regarding a new arsenal and armory at Rock Island transpired in meetings held in the east between Generals Rodman and Dyer, Chief of Ordnance. Colonel Flagler wrote that:

From the time of his return, in October, until the following February, (1866) General Rodman was busy preparing a map and plans for the arsenal.<sup>24</sup>

General Rodman presented his drawings, a map, and explanations of them to the Chief of Ordnance in early 1866. Colonel Flagler explained that:

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The plans for armory and arsenal shops, as indicated in General Rodman's letter of February 7, 1866, are shown on the map on plate I. The row of five shops south of main avenue are for the arsenal, and the five north of the same avenue are for the armory. The center shop (Shop E) in the arsenal row is the forging shop and foundry for the arsenal, and the other four are finishing, wood, metal, and leather working shops of all kinds for the manufacture of all the material of war manufactured at the arsenals of the United States. . . . The center shop in each row is only one story high, and the other four in each row have a basement and three other stories. The ground plans of the whole ten shops are exactly alike.<sup>25</sup>

General Rodman's final life's work was the planning and constructing of the Rock Island Arsenal stone buildings. The Army and Navy Journal published a sketch of General Rodman's life and services following his death on 7 June 1871. The article included these comments regarding his command at Rock Island:

In the summer of 1865 General Rodman was transferred to the command of Rock Island arsenal. This new station at once felt the influence of his enlarged views and his energy of action. A new plan for a combined arsenal and armory, on a scale of colossal proportions was proposed, the appropriations obtained, and soon work was vigorously commenced to carry it into effect. The care and responsibility attending such work, and the incessant labor with which it was accompanied, particularly to one, who attended so much to detail as he did, began to tell on a constitution already weakened by previous excessive labor, and he was warned by his physician of the absolute necessity of his taking a leave of absence for the sake of rest and recreation.<sup>26</sup>

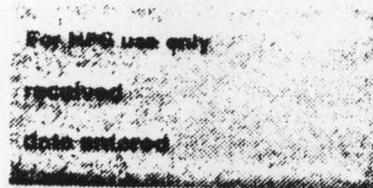
According to Colonel Daniel W. Flagler:

The plans for the work [the construction of the Rock Island Arsenal] were his, . . . . His extraordinary ability, wide influence, and the complete confidence reposed in him by the Department, the Government, and all whose assistance was needed for the work, gave him a certainty of success in carrying out the plans for the great work that no one else could have.<sup>27</sup>

Colonel Flagler penned this final tribute in his 1877 History of the Rock Island Arsenal:

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At the request of the Chief of Ordnance he [Thomas A. Rodman] was buried at the arsenal, on a lot of ground set apart for that purpose near the national cemetery at the east end of the island. He was so closely identified with the work of building the [Rock Island] arsenal, and his labors form so important a part of its history. . . .<sup>28</sup>

Over a century after his death, the Rodman plan - Old Stone Buildings remain standing and in active use. Shop E and F, Buildings 106 and 64 respectively, continue to function as part of the Arsenal's manufacturing operations. Shop E, the Rock Island Arsenal foundry building, began its operations in the early 1870s and today continues to function in that same capacity. Shop F, the Rock Island Arsenal's original rolling mill and forge shop, currently houses the Arsenal's plating shop. Shop H and K, Building 66 and 68 respectively, continue to have small arms activities within those structures. Shop I currently houses the printing plant which has produced Army skirmish targets within the Old Stone Buildings since 1881. All the Old Stone Buildings continue to be actively used by the US Government.

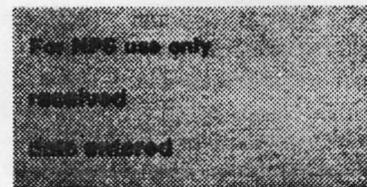
Throughout its history many visitors, foreign and domestic, have marveled at the symmetrical placement of the Rock Island Arsenal's Old Stone Shops. In 1905, Mr. F. A. Stanley authored a series of eight featured articles, totaling over 50 pages, which appeared weekly in the American Machinist Magazine issues, 2 February 1905 through 30 March 1905. One entire article was devoted to acquainting, his readers with the size of the western arsenal, at Rock Island. Mr. Stanley wrote:

In the preceding article an effort was made to give readers some idea of the immensity of the manufacturing establishment which our government maintains in the Mississippi Valley [at Rock Island] . . . . of [the] U-shaped [shops], arranged in two rows which face each other with the legs of the U, or the wings, extending to the rear, the buildings present a decidedly imposing appearance. The two lines of shops are about 123 yards apart and are known as Armory Row and Arsenal Row, the one to the south of Main avenue - a broad macadam throughfare as hard and white as marble, which stretches away from Fort Armstrong avenue to a point well beyond the shops. . . . West of Armory Row is located the office building, and directly across Main avenue and in line with Arsenal Row is a guard and fire engine-house.<sup>29</sup>

After visiting the Rock Island Arsenal Stanley wrote of his surprise at the extent of the plant. He wrote:

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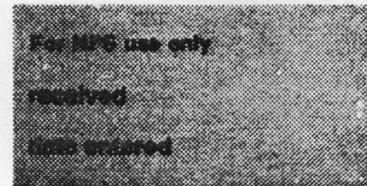
For here in the East, at least, the attention of those interested in a general way in the development of the national factories, quiet naturally, perhaps, has been centered more especially on the Watervliet shops and the Springfield Armory - the latter until recently the nation's only small arms plant. Then, too, the technical press, so far as can be recalled at the moment, has never exploited the work of this Western arsenal, altho [although] for years the establishment has been supplying the regular army and militia with such equipment as haversacks, canteens, saddles, bridles, etc. and building siege and field gun carriages, and producing material generally which is absolutely essential to the maintenance of the army . . . .<sup>30</sup>

Technological Significance

Today, Rock Island Arsenal is one of only two "old-line" nineteenth century arsenals still engaged in munitions production.<sup>31</sup> Therefore, the Arsenal's buildings are vital for understanding the history of American ordnance development and manufacture, from the Spanish-American War to the present. Lieutenant General Levin H. Campbell, Chief of Ordnance, US Army, 1942-1946, wrote in his work The Industry-Ordnance Team that:

After World War I, the United States dismantled most of its munitions plants, with the important exception of five federal arsenals and one armory constructed during the nineteenth century. Although these government-owned -and -operated installations functioned at minimum capacities during the next twenty years [inter war years], they preserved the technological expertise necessary for rebuilding the American Armament industry during World War II.<sup>32</sup>

Since The Industry-Ordnance Team was published in 1946, the number of "old line" arsenals engaged in munitions production has been reduced to two. Watervliet Arsenal near Albany, New York is the other nineteenth century arsenal that remains active today. Both Watervliet and Rock Island Arsenals are critical to the nation's defense. Watervliet Arsenal specializes in cannon production, whereas the Rock Island Arsenal is recognized as the nation's recoil mechanism factory. Rock Island is also the sole remaining Army Arsenal possessing the technological expertise required for the production of artillery carriages, armaments and mounts for tracked vehicles, and infantry weapons.

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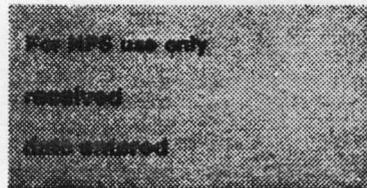
A greater portion of the production effort, at the Rock Island Arsenal before the Spanish-American War, concentrated on the building of General Rodman's ambitious construction program. This program was largely implemented by his successor, Colonel Daniel W. Flagler.<sup>33</sup> The rolling mill [Shop F, Building 64] produced most of the roof trusses and machinery shafting from 1878 to 1900. The foundry [Shop E, Building 106] and machine shop [Shop C, Building 104] produced much of the machinery and building hardware such as locks and stairways. A majority of the iron and brass works used in the construction of the buildings were cast in Shop E, Building 106. The Arsenal produced brass castings, hinges, roof straps, window pulleys, and door knobs; and iron columns, beams, girders, gratings, and water and sewer pipes used in the Old Stone Buildings. The carpenter shop [Shop C] made the window frames. Contract labor did some of the work while civilian employees and soldiers did other portions of the job.<sup>34</sup>

Manufacturing of ordnance began slowly, although as early as 1869, the Rock Island Arsenal reported in the Report of the Chief of Ordnance, that it had cleaned and packed 55,361 pieces of infantry accoutrements, 36,340 pieces of horse equipment and 503 sets of artillery harnesses.<sup>35</sup> In May 1875, chief of ordnance, Stephen V. Benet, had visited Rock Island, and soon after instructed Major Flagler to begin the manufacture of infantry and cavalry equipment.<sup>36</sup> This initial manufacturing took place in the tin shop and harness shop in Shop C, Building 104. By<sup>37</sup> 1879 280 men were employed on the island and working in the Old Stone Shops.

The Rock Island Arsenal, by 1875 had begun to supply nearly all the ordnance stores required by the Army in the west.<sup>38</sup> During the winter of 1891 an Indian uprising occurred in South Dakota, Rock Island Arsenal Commander, Colonel James M. Whittemore, reported that within one hour after receiving an order for arms and ammunitions a railroad car had been loaded at the Storehouse (Clock Tower Building), and was on its way to troops in the field.<sup>39</sup> Another incident of the Rock Island Arsenal supporting military campaigns in the west occurred in 1916. Following Francisco "Pancho" Villa's repeated raids into New Mexico and Texas, the Rock Island Arsenal was notified by telegram that the militias of various states had been mobilized. In seven days the Arsenal had issued full war-time equipment to fourteen different national guard units.<sup>40</sup> However the Rock Island Arsenal's first major test to meet emergency war-time production had occurred earlier, in 1898, at the outbreak of the Spanish-American War. It performed admirably, although the arsenal's potential was hardly tapped. Only one and a half of the ten original industrial shops were used in the war effort. Not until World War I would all ten of the Arsenal stone shops be used as manufacturing buildings.<sup>41</sup> A small workforce of less than 500 men and boys had been employed in these shops at the beginning of the Spanish-American War. At the end of the war the Arsenal's manpower had increased to approximately six times its prewar figure. The Rock Island Arsenal turned out 6,000 complete outfits of infantry equipment daily during its peak war-time employment of August 1898.<sup>42</sup> In August of 1898 the Arsenal workforce comprised 2,900 employees.

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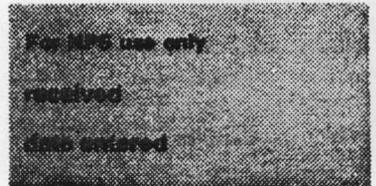
As a result of the Spanish-American War, the Rock Island Arsenal received valuable experience in the production of personal soldier accoutrements; infantry, cavalry and horse equipment; and field and siege artillery carriages. This experience provided the basis for technological achievements accomplished at the Arsenal in later years.

On 22 April 1898, the Rock Island Arsenal equipment department began working day and night on two ten-hour shifts in an effort to complete orders for infantry equipment, cavalry accoutrements, and horse equipment that numbered over 50,000 sets.<sup>43</sup> Thousands of tin meat cans, canteens, eating utensils, and tin cups were manufactured at Rock Island Arsenal during the war. The Rock Island Arsenal also produced a variety of cavalry and horse equipment. These included such items as wooden saddle frames or saddle trees, plus an assortment of rings, hooks, straps, etc., for carrying or holding cavalry accoutrements. Personal soldier accoutrements such as pistol holsters, spurs, and saber belts were produced by the Arsenal. In addition the Rock Island Arsenal manufactured leather items that included carbine scabbards, saddlebags, saddles, surcingles (girth), bridles, halters, straps, and artillery harnesses.

After the sinking of the Maine, the Army discovered it did not have sufficient carriages and harnesses for the number of modern field guns on hand. Moreover, production of field and siege guns, along with their carriages, had been drastically increased. In early April 1898, the Rock Island Arsenal commander received an urgent directive to "press work on all field gun and siege gun carriages as rapidly as possible, employing extra shifts of men as far as economical."<sup>44</sup> The Rock Island Arsenal received war-time orders in addition to the production of carriages for siege guns. During the Spanish-American War, the Army discovered major defects in its standard-issue Krag-Jorgensen rifle. The Krag-Jorgensen rifle had been manufactured at Springfield Armory in Massachusetts. To expedite the production of a new weapon as quickly as possible, Congress in 1899 appropriated funds to equip the almost empty armory shops at Rock Island Arsenal with small arms machinery. By 1903 the Army had selected a new make of Springfield rifle as a replacement of the Krag-Jorgensen. By December 1904 the small-arms plant at Rock Island Arsenal had begun production. Over the next ten years, Rock Island Arsenal assembled more than 200,000 model 1903 Springfield rifles. The production equipment used in this operation no longer survives at the arsenal.<sup>45</sup>

Quarters Number Six, described under the item seven, physical description of buildings, was constructed in the officer's family residential area to accommodate the additional officers necessitated by the establishment of the small-arms plant.

During the Spanish-American War, the Rock Island Arsenal had begun to develop its expertise in the technology of manufacturing or methods of machining that transferred design into actual products. The practical application of these methods would lead

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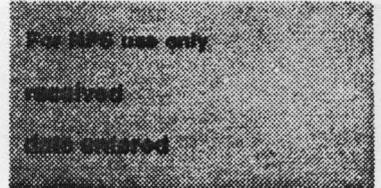
the Arsenal to develop the US Army's first twentieth-century-type military uniform webbed gear. The Army's Infantry Equipment Board, in session at Rock Island Arsenal from 1909 - 1910, adopted the new webbed infantry equipment, model 1910. The majority of the design and experimental work of this board was accomplished in the equipment shops located in Shop K, Building 68.<sup>46</sup>

The US Army Cavalry Equipment Board held a similar session at the Rock Island Arsenal in the years 1910-1912, the Arsenal performed the board's original investigation and experimentation.<sup>47</sup> Shop E, Building 106, cast the metal parts used in the production of the board's experimental items. The Infantry Equipment Board evaluated domestic and foreign items such as canteens, meat cans, tin cups, bayonet holders, issue knives, entrenching tools, tools for use in maintenance of weapons, individual load carrying equipment and beltware. The Cavalry Equipment Board evaluated domestic and foreign produced saddles, harnesses, pistol holsters, saber scabbards, and helmets. Equipment from European countries, and from far east nations such as Japan and Siam were examined, evaluated, and their best features combined in the experimental designs. Examples of the board's experimental equipment, that were designed and produced at the Rock Island Arsenal, have been maintained by the Rock Island Arsenal Museum. Established in 1907, the museum has a unique collection of personal soldier accoutrements which has proven to be a valuable resource for researchers of such historic equipment.

The United States Army's transformation from horse to auto drawn artillery occurred at the Rock Island Arsenal. The Rock Island Arsenal had begun to manufacture field and siege artillery carriages in 1892. By 1894 it was producing machine gun carriages; field gun carriages; limbers, caissons, battery wagons and carriages for siege guns.<sup>48</sup> These additional responsibilities for Rock Island Arsenal came in the 1890s as a result of a reorganization in the Army's manufacturing program. During the 1880s, the Ordnance Department had designated Watervliet Arsenal near Albany, New York, as the site of a new gun tube factory for heavy-caliber seacoast defense cannons. Watertown Arsenal near Boston, could not handle the production of both the new carriages and its old production schedules. To expedite work on the heavy carriages, the Army selected Rock Island Arsenal to manufacture some of the carriages formerly produced at Watertown Arsenal.<sup>49</sup>

Rock Island Arsenal's machine shop and field gun carriage shop were initially set up in Shop C and later in 1899 moved to Shop G. The last example of a US Army non-recoil field gun was produced in these shops in 1899. Captain Wheeler, Ordnance Department, designed and the Arsenal constructed his three inch non-recoil field gun.<sup>50</sup>

The Rock Island Arsenal's workforce more than doubled to 4,786 employees within 10 weeks after the United States entered World War I in 1917. Peak wartime employment occurred at the arsenal in June 1918 when more than 10,000 workers were on the Rock Island Arsenal's payroll.<sup>51</sup> During World War I, almost all of the manufacturing

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at the Arsenal occurred in the ten stone shops on Rodman Avenue, (Buildings 60, 62, 64, 66, 68, 102, 104, 106, 108, and 110). For the first time these shops were fully equipped with machinery. Rock Island Arsenal's production for World War I included artillery harnesses, mess kits, haversacks, model 1903 Springfield rifles, and a variety of gun carriages and recoil mechanisms.

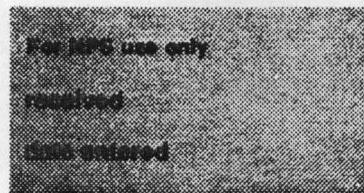
The production of field and siege artillery carriages naturally led to the manufacturing of recoil mechanisms at the Rock Island Arsenal. During World War I, the US War Department had been assigned the difficult mission of manufacturing the French 75mm recuperators to the Rock Island Arsenal.<sup>52</sup> A recuperator is that portion of the recoil mechanism that regulates the return of a gun to firing position. Rock Island Arsenal machinists studied the French 75mm recoil gun of 1897 and applied French methods to American production.<sup>53</sup> The French 75mm gun made all other field artillery cannons obsolete.

After the Great War, virtually all the recuperator-producing equipment, and all the recuperators, not in service, were shipped to Rock Island Arsenal.<sup>54</sup> The production of these recoil mechanisms required particularly skilled mechanics because of their close machining tolerances. Rock Island Arsenal became the center for the manufacture of hydropneumatic recoil mechanisms. The Chief of Army Ordnance designated the Rock Island Arsenal as the sole custodian of the recuperator phase of ordnance development from 1919-1939.<sup>55</sup> The Arsenal's artillery section became the Army's peacetime producer of recoil mechanisms and the advisor to other plants scheduled to produce the mechanisms during national emergencies. From this inter war period on, the Rock Island Arsenal manufactured all types of mobile, artillery recoil mechanisms and carriages. Until approximately the mid-1930s, the Arsenal's<sup>56</sup> recoil mechanism production was housed in Shop G and I, Building 108 and 110.

In the inter-war years, the Rock Island Arsenal became the progressive leader in the application of welding to armament.<sup>57</sup> The first attempt to use weldments for the production of artillery carriages occurred at the Arsenal in 1928. By 1932, the Rock Island Arsenal had produced the largest all-welded gun carriage ever fabricated, the new 155mm eight-inch howitzer carriage, T2. The Arsenal completed the carriage in 87 working days.<sup>58</sup>

The Rock Island Arsenal had earlier, in 1924, proposed to produce hydropneumatic recoil mechanisms from seamless steel tubing instead of composite forgings. The Army studied the process, but did not adopt it until 1940.<sup>59</sup>

Another inter-war period innovation introduced by the Rock Island Arsenal was the use of rotary honing rather than longitudinal stroking machining methods to produce recoil mechanisms. In the years between the world wars, Rock Island Arsenal developed an Army-wide maintenance procedure for the storage of weapons and mechanical equipment. The Arsenal, in particular, devised a special system for storing

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recuperators and carriages turned into the Rock Island Arsenal Depot after World War I. The Rock Island Arsenal had encountered and studied serious corrosion problems in regard to storage of weapons and equipment. The Rock Island Arsenal Laboratory pioneered the use of the synthetic rubber compound known as Duprene for packing recoil mechanisms scheduled for storage.<sup>60</sup> Other arsenals and depots, plus the US Army Corps of Engineers, sought Rock Island Arsenal's assistance in solving their corrosion problems.<sup>61</sup>

In World War II the Army moved its design work for self-propelled gun carriages from Washington, D.C., to Rock Island Arsenal.<sup>62</sup> The modern Army tank evolved from the Rock Island Arsenal's design section and artillery shop in the years 1919-1939.<sup>63</sup> In the spring of 1919 the Rock Island Arsenal received an order for the assembly of 100 Mark VIII Tanks which they completed in 286 days.<sup>64</sup> Portions of the tank parts had to be manufactured at the Rock Island Arsenal because the parts shipped from England were faulty. Later in the inter war period, considerable work, with the use of volute springs, was performed on the suspension system for tanks.<sup>65</sup> Furthermore, the Arsenal developed a successful technique of welding light armor plate for the experimental armored car T4. The T4, had an innovative armor plate hull and turret of all welded construction. In addition, it was the first attempt by the US Army to use rubber-jointed tracks on armored vehicles.<sup>66</sup>

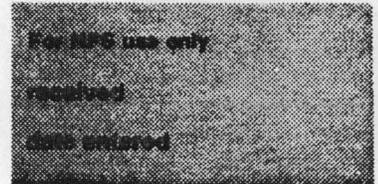
At the outbreak of World War II, the nation's government-owned arsenals, such as Rock Island Arsenal, were virtually the only manufacturing establishments in the country with experience in producing military hardware and ammunition.<sup>67</sup> To quicken private contractors with ordnance blueprints and specifications in their various areas of specialization. During the Second World War, Rock Island Arsenal initially provided extensive consulting work on the manufacture of artillery vehicles, but later in the war, expanded its advisory role, and became the nation's main research-and-development center for gun carriages, gun mounts, recoil mechanisms, and rocket launchers.<sup>68</sup> In addition, the Arsenal also manufactured and reconditioned these items. Below is a listing, by building, of the Old Stone Shops manufacturing operations during the second world war.<sup>69</sup>

Shop B: The Engine Overhaul Division, engaged in the over-  
[Building 60] haul of tank engines and miscellaneous automotive  
equipment, occupied the east wing of Shop B until  
April, 1944. A proof-firing range and a cleaning  
section for small arms were located in the west wing  
of the basement.

Shop C: The Woodworking Division, producing all types of  
[Building 104] crates, boxes, parts for target frames, storage  
racks and miscellaneous items, occupied the entire  
west wing and the first floor, east wing, of Shop C.

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The Cloth and Leather Division, turning out a wide variety of cloth and leather items occupied the second floor and the northeast corner of the basement were devoted to the Printing Division, which produced targets and various printed forms.

Shop D:  
[Building 62] In April, 1944, the Engine Overhaul Division took over the entire west wing of Shop D. A section for the overhaul and modification of .50 caliber machine guns was established on the second floor, east wing, in April, 1943. The Tripod Division, engaged in the repair, modification and overhaul of machine gun tripods, mounts and miscellaneous small metal parts, occupied the first floor, east wing.

Shop E:  
[Building 106] The Foundry Division, producing all manner of iron, bronze and aluminum castings, was housed in the east wing of Shop E. The Pattern Division, manufacturing patterns for all types of castings, occupied the west wing and front bay of Shop E.

Shop F:  
[Building 64] Shop F was partially devoted to the Heat Treating Section, which handled heavy forgings, castings and other large items.

Shop G:  
[Building 108] Shop G was devoted to a machine division manufacturing Belleville springs, parts for recoil mechanisms, artillery carriages and experimental projects.

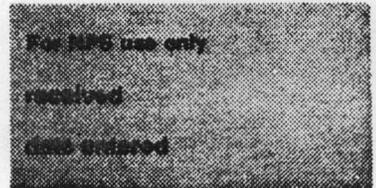
Shop H:  
[Building 66] The Small Arms Division, manufacturing metallic belt links and parts for .30 cal[iber] machine guns and overhauling and heat treating small arms material, was located in Shop H.

Shop I:  
[Building 110] Shop I was occupied by the Assembly Division which overhauled and assembled various types of artillery carriages and recoil mechanisms.

Shop K:  
[Building 68] The Small Arms Division, devoted to the manufacture, assembly and proof firing of .30 cal[iber] machine guns, occupied Shop K.

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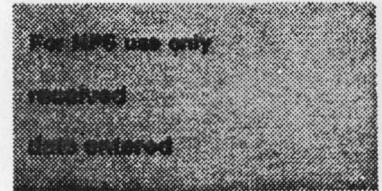
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After the Second World War, the Rock Island Arsenal substantially cutback its production and overhaul activities. In the later 1940s, Rock Island Arsenal produced limited quantities of machine guns, ammunition loaders for gun mounts, and metal shipping crates; experimental design work for mortars, rocket launchers, recoil mechanisms and machine guns, and overhaul of artillery, tanks, automotive equipment, and small arms were part of the Arsenal's work.

During the Korean War, the arsenal engaged principally in the activities of development and manufacture of rocket launchers and mortars, and the overhaul and rehabilitation of tanks, artillery, and small arms. In 1962, most of Rock Island Arsenal's rocket launcher mission was transferred to Watertown Arsenal. But shortly thereafter, the installation acquired increased responsibilities for small arms design and production, when Springfield Armory in Massachusetts, the government's previous center for such work, was closed by the Army in 1967. Rock Island Arsenal activities during the Vietnam War focused on the design and development of aircraft machine gun systems, artillery recoil mechanisms, and gun mounts, as well as the overhaul of small arms, artillery and combat vehicles. But after the removal of the arsenal's tank rebuild activity in 1972, its manufacturing program increasingly became a custom-order operation for "a great variety of small job lot components or assemblies which private industry could not supply at economical prices."

In the aftermath of the Vietnam War, Rock Island Arsenal continued its role as a custom-order shop for specialty ordnance items and concentrated its general research, manufacturing, and overhaul operations on artillery recoil mechanisms, gun mounts, and machine gun systems.

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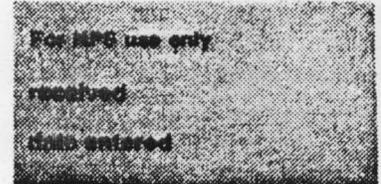
## Notes

<sup>1</sup>Thomas J. Rodman received his engineering education in classical architecture from the US Military Academy, West Point, New York. The Academy prior to the Civil War was considered the nation's foremost school of engineering. Rodman's architectural training at West Point included studying the classical massive stone buildings of Ancient Greece. As a military cadet Thomas J. Rodman learned to build, in stone, permanent projects not encumbered by cost of construction. His construction at Watertown Arsenal, especially the Commanding Officer's Quarters, is an example of such permanent type construction. A brilliant scientist and an aggressive administrator, Rodman had a history of acting independently. He did not always wait for instructions from his superiors before acting. While commanding Watertown Arsenal, near Boston, Massachusetts, at the outbreak of the Civil War, Thomas J. Rodman mobilized that arsenal, and engaged the services of Watertown manufacturers. He did this before any orders had arrived or any expenditures had been authorized by the government. Rodman had these men engaged in moulting shot for cannisters without waiting to see if or how they were to be paid.

After the Civil War, a congressional investigation explored the possibility that Rodman had excessively spent government funds in the construction of the Commanding Officer's Quarters at Watertown Arsenal.

Rodman had rejected the original plans sent to him from Washington. He submitted his own in their place for approval. General Alexander Dyer had approved Rodman's plans for a more lavish commanding officer's quarters than originally designed. The investigation, however, resulted in no formal charges being brought against General Rodman. Shortly thereafter, he was reassigned to command the construction of the western arsenal being built at Rock Island. Notions of constructing a larger arsenal at Rock Island than originally planned had existed before General Rodman arrived at the island. Rodman's predecessor, Major Charles P. Kingsbury, expressed in letters to the Chief of Ordnance his interest in expanding the original plans for the construction of a small arsenal of repair and deposit on Rock Island. But it was Rodman, who had, prior to and preceding his appointment as commanding officer of the Rock Island Arsenal, held lengthy personal discussions with General Dyer, Chief of Ordnance, pertaining to the future construction and plans for the Rock Island Arsenal. Rodman took the initiative and prepared a map to accompany plans that included a new construction site for the arsenal, drawings of buildings, and size of construction. He presented his plans, at General Dyer's request, in meetings held in New York and Washington DC in 1866. In regard to these meetings, Rodman's successor, Daniel W. Flagler stated in his History of the Rock Island Arsenal that:

There is very little correspondence or other matter on record during this time respecting the projected work at Rock Island. What the arsenal should be, its magnitude, capacity, and general plans were determined by General Rodman and General Dyer in their conferences during the time General Rodman was East.

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Some details of Rodman's plans outlined in his letter to the Chief of Ordnance dated February 7, 1866 were changed as a result of their meetings. However, Rodman's plan basically remained intact. In addition, once in charge, General Rodman took it upon himself to revise the construction plans of the Clock Tower Building. Not begun under his command and already under construction when he arrived at Rock Island, the Clock Tower was not overlooked by Rodman. He immediately requested permission to raise the building's roof and increase the height of the tower to create a more imposing appearance. With this in mind, it is then reasonable to consider the Rock Island Arsenal Stone Buildings as the Thomas J. Rodman plan buildings.

<sup>2</sup>The ten stone shops that form the original manufacturing core of General Rodman's plan are U-shaped, the wing facing Rodman is 210' x 300'; the two wings projecting to the rear of the building are 300' x 60'; two projecting pavilions 60' x 15'. In addition the entire 948 acres of Rock Island were reserved for expansion of the Rock Island Arsenal.

<sup>3</sup>General Rodman's letter to General Dyer, Chief of Army Ordnance, dated 7 February 1866. Daniel W. Flagler, Major, U. S. Army Ordnance, A History of the Rock Island Arsenal from its Establishment in 1863 to December 1876; of the island of Rock Island, the site of the Arsenal, from 1804 to 1863, (Washington: Government Printing Office, 1877) pp. 118-126. This work is also known as Memorandum #20. It is hereafter referred to as Flagler.

Thomas J. Rodman received his Brevet Brigadier General rank for faithful, meritorious, and distinguished services in the Ordnance Corps on 13 March 1865. He served in command of the Rock Island Arsenal from August 1865 to death on 7 June 1871. He died at the age of 53, four years after his promotion to Lieutenant Colonel.

<sup>4</sup>Ibid., p. 118.

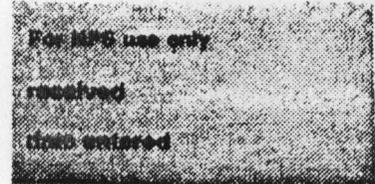
<sup>5</sup>MacDonald and Mack Partnership, Historic Properties Report, Rock Island Arsenal, Final Report, 1985. This document was prepared by the MacDonald and Mack Partnership (Minneapolis, Minnesota, under contract CX-0001-2-0033 between Building Technology Incorporated, Silver Springs, Maryland, and the Historic American Buildings Survey/Historic American Engineering Record, National Park Service; U. S. Department of Interior, p. 84. It is hereafter referred to as MacDonald and Mack.

<sup>6</sup>Ibid., pp. 84-85.

<sup>7</sup>Ibid., Executive Summary, first page.

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<sup>8</sup>U. S. Army, Ordnance Department, Annual Report of the Chief of Ordnance to the Secretary of War for the Fiscal Year 1899 (Washington, GPO, 1899), Appendix 4, Small-Arms Plants. p. 82. MacDonald and Mack, Executive Summary, first page.

<sup>9</sup>MacDonald and Mack, Executive Summary, first and second page.

<sup>10</sup>"Background and Procurement History", Procurement Plan No. CAW 76-1, Howitzer Towed, 155mm XM198, Summary of Action, pp. 4-5; "M198 Howitzer", Rock Island Arsenal Annual Historical Review FY 1977, prepared by ARRCOM Historical Office, p. 27.

<sup>11</sup>MacDonald and Mack, p. 15.

<sup>12</sup>The Rock Island Arsenal Facilities Engineering Office provided the figures for the total acres of the historic district and for Arsenal Island.

<sup>13</sup>Clifford W. Stephens, Rock Island Arsenal 1862-1955, (Rock Island: U.S. Army, Rock Island arsenal, 1973), p. 28.

<sup>14</sup>Henry B. Moy and Titus M. Karlowicz, Cultural Resource Inventory and Evaluation of Rock Island Arsenal, Rock Island, Illinois, (Normal, Illinois: Midwestern Archeological Research Center, Department of Sociology, Anthropology, and Social Work, Illinois State University) p. 9. It is hereafter referred to as Moy and Karlowicz.

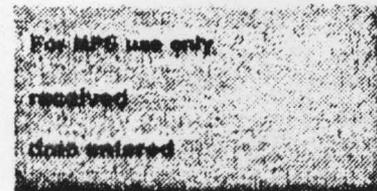
After Flagler's departure, Rock Island Arsenal was commanded in rapid succession by Colonel Thomas G. Baylor (1886-1888), Colonel James M. Whitmore (1888-1891), and Colonel Adelbert R. Buffington (1892-1897). During the tenure of these officers, the last stone buildings exemplifying Rodman's Greek Revival design were completed.

<sup>15</sup>Moy and Karlowicz, p. 81.

<sup>16</sup>Ibid. Our Italianate style residences were built in the officer's family quarters area located directly north of the stone shops. The most imposing of these quarters is the Commanding Officer's Quarters, Building 301, a massive Italian villa containing over 19,000 square feet of floor space. Completed in 1871, it served as the model for the three smaller subaltern officer's quarters that followed. Descriptions of these quarters can be found under item 7, titled description of individual buildings. Since 1871, Building 301 has been the residence of commanding officers and, after 1954, of the commanding generals stationed on Arsenal Island. For over a century, dignitaries from the United States and foreign nations have visited Quarters One, Building 301. One bedroom suite is named after Charles Lindbergh, famed American aviator, who had visited the Quad Cities in 1927 and was the guest of the Rock Island Arsenal.

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The elegant residential area was intended to be clearly distinguishable from the industrial area. The symmetry and formal classical architecture of the Greek Revival designed shop buildings gave way to a picturesque, though massive, adaptation of the Italian villa form of Quarters One. The subaltern officers' quarters were constructed with a more restrained Italianate character.

<sup>17</sup>Flagler, p. 106.

<sup>18</sup>Ibid., p. 256.

<sup>19</sup>Ibid., p. 283.

<sup>20</sup>Ibid., p. 260.

<sup>21</sup>Ira O. Nothstein, "Rock Island Arsenal, its History and Development," (unpublished manuscript: Works Progress Administration Project, 1937,) p. 189. It is hereafter referred to as Nothstein.

<sup>22</sup>Ronald Tweet, The Rock Island Clock Tower, From Ordnance to Engineers, (No place of publication listed, Rock Island District U. S. Army Corps of Engineers, May 1977) p. 15. Flagler, p. 111.

<sup>23</sup>Flagler, p. 116.

<sup>24</sup>Ibid., p. 117.

<sup>25</sup>Ibid., p. 123.

<sup>26</sup>Ibid., p. 266.

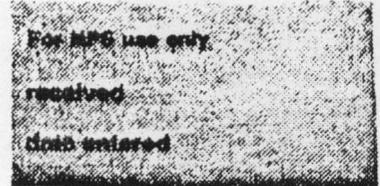
<sup>27</sup>Ibid., pp. 261-262.

<sup>28</sup>Ibid., p. 262.

<sup>29</sup>F. A. Stanley, "The United States Arsenal at Rock Island, Parts I and II," American Machinist Magazine, 2 and 9 February 1905, np.

<sup>30</sup>Ibid., Part II, 9 February 1905, np.

<sup>31</sup>MacDonald and Mack, p. 84.

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<sup>32</sup>Levin H. Campbell, The Industry-Ordnance Team (New York & London: Whittlesey House, 1946) p. 40. Lieutenant General Levin H. Campbell served as Chief of Ordnance, U. S. Army, 1942-1946 during the critical years of World War II. In September 1923, Major L. H. Campbell reported for duty at Rock Island Arsenal and was assigned as officer-in-charge of the Arsenal's design section. On 27 January 1932, RIA Commander David M. King died, and Major Campbell assumed temporary command of the Rock Island Arsenal. In 1935, Major Campbell, officer-in-charge of manufacturing at the Rock Island Arsenal was transferred to Frankford Arsenal. He said of the "old-line" arsenals: "We have studied in these arsenals, worked in their shops, and learned from master craftsmen the secrets of one of the most highly specialized professions in the world."

<sup>33</sup>Following Rodman's master plan, Flagler built a Boiler House (Building 105) for Shop C in 1872, a Storehouse (destroyed by fire in 1903) for Shop A in 1885 and seven manufacturing buildings on Rodman Avenue: Shop A and D in 1876, Shop E in 1874, Shop F in 1878, Shop G in 1882, Shop G in 1886, and Shop I in 1883 (Buildings 102, 62, 106, 64, 108, 66 and 110). Around this core of manufacturing facilities, he added a magazine (Building 280) and Barracks (Building 90) in 1873, a Post Building (Building 225) combining fire station, guard house, and storehouse in 1874, a Gate House (Building 321) in 1875, a lumber shed (Building 138) in 1886 and Quarters 2, 3 and 4. MacDonald and Mack, p. 36.

<sup>34</sup>Robert Bouilly, "Arsenal Island", Joined By a River:Quad Cities, ed., Frederick I. Anderson (n. pl. Lee Enterprises, Incorporated, 1982) pp. 125-126. Dr. Robert H. Bouilly is the Senior Historian at AMCCOM Historical Office, Rock Island Arsenal. It is hereafter referred to as Bouilly.

<sup>35</sup>U. S. Army, Ordnance Department, Annual Report of the Chief of Ordnance to the Secretary of War for the Fiscal Year 1869 (Washington, GPO, 1869) np.

<sup>36</sup>Bouilly, pp. 125-126.

<sup>37</sup>Ibid., p. 126.

<sup>38</sup>Moy and Karlowicz, p. 25.

<sup>39</sup>Nothstein, p. 150.

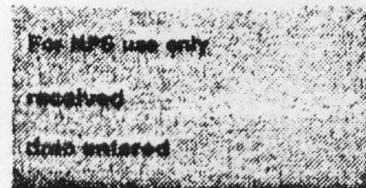
<sup>40</sup>Ibid., p. 178.

<sup>41</sup>Ibid., p. 189.

<sup>42</sup>B. F. Tillinghast, Rock Island Arsenal in Peace and in War, (Chicago, Illinois, Henry O. Shepard Co., 1898) pp. 75-76.

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<sup>43</sup>Ibid., pp. 78-79.

<sup>44</sup>Ibid., p. 78.

<sup>45</sup>MacDonald and Mack, p. 45.

<sup>46</sup>No author, "History of Rock Island Arsenal, 1862-1913", (unpublished manuscript, called for by O. O., 25301-D-195) p. 42.

<sup>47</sup>Ibid.

<sup>48</sup>Ibid., p. 16.

<sup>49</sup>MacDonald and Mack, p. 44.

<sup>50</sup>U. S. Army, Ordnance Department, Annual Report of the Chief of Ordnance to the Secretary of War for the Fiscal Year 1899, (Washington: GPO, 1899) Appendix 4, Arsenal Output and Working Force, p. 80.

<sup>51</sup>MacDonald and Mack, p. 49.

<sup>52</sup>Ira O. Nothstein and Clifford W. Stephens, A History of Rock Island from Earliest Times to 1954, Vol II, ed, Clifford W. Stephens, (Rock Island, U. S. Army, Rock Island Arsenal, 1965) p. 24. It is hereafter referred to as Nothstein and Stephens, p. 317.

<sup>53</sup>Albert Manucy, Artillery Through the Ages (Washington: GPO, reprint 1962) p. 22.

<sup>54</sup>Nothstein and Stephens, p. 318.

<sup>55</sup>Ibid., p. 327.

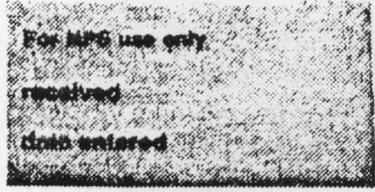
<sup>56</sup>Nothstein and Stephens, pp. 322 and 324.

<sup>57</sup>John W. Slattery, and Walter W. Ransom, "The Application of Welding to Armament, Rock Island Arsenal, A Center of Progress in the Art", Army Ordnance, Volume XVII, Number 69, November - December 1931, pp. 202-205.

<sup>58</sup>John W. Slattery, "Building a Great Weapon in Record Time, the Longest All-Welded Gun Carriage Ever Fabricated", Army Ordnance, Volume XII, Number 72, May-June 1932, p. 391.

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<sup>59</sup>Nothstein and Stephens, pp. 325 and 331.

<sup>60</sup>Ibid., pp. 330 and 332.

<sup>61</sup>Ibid., p. 330.

<sup>62</sup>Ibid., p. 338.

<sup>63</sup>Ibid., p. 341

<sup>64</sup>Ibid., pp. 336-338; No author, War's Greatest Workshop, Rock Island Arsenal, (Tri-Cities: Arsenal Publishing Company, 1922) pp. 56-57.

<sup>65</sup>Nothstein and Stephens, p. 326.

<sup>66</sup>Ibid.

<sup>67</sup>MacDonald and Mack, p. 62.

<sup>68</sup>Campbell, pp. 40-41; Nothstein and Stephens, Volume III, pp. 401, 414-416, 449-450; Neil M. Johnson; Twenty years of Rocket Launcher Work Reviewed by Rock Island Arsenal," pp. 1-3, unpublished, RIA Historical Office.

<sup>69</sup>MacDonald and Mack, pp. 63-64.

<sup>70</sup>Ibid., p. 66.

# 9. Major Bibliographical References

See continuation sheet

# 10. Geographical Data

Acreeage of nominated property 101

Quadrangle name Rock Island, Illinois

Quadrangle scale 7.5 minute

UTM References

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	Zone	Easting	Northing

B	<u>1</u> <u>5</u>	<u>7</u> <u>0</u> <u>4</u> <u>5</u> <u>15</u> <u>0</u>	<u>4</u> <u>5</u> <u>9</u> <u>8</u> <u>8</u> <u>5</u> <u>0</u>
	Zone	Easting	Northing

C	<u>1</u> <u>5</u>	<u>7</u> <u>0</u> <u>4</u> <u>5</u> <u>15</u> <u>0</u>	<u>4</u> <u>5</u> <u>9</u> <u>8</u> <u>9</u> <u>0</u> <u>0</u>
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\*See Continuation Sheet

Verbal boundary description and justification

\*See Continuation Sheet

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

state NA code NA county NA code NA

state NA code NA county NA code NA

# 11. Form Prepared By

name/title Thomas J. Slattery, Historian

organization AMCCOM Historical Office

date June 1987

street & number NA

telephone (309)782 - 1269

city or town Rock Island

state Illinois 61299-6000

# 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

title \_\_\_\_\_ date \_\_\_\_\_

For NPS use only

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

date \_\_\_\_\_

Keeper of the National Register

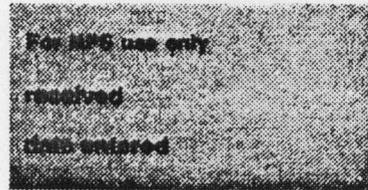
Attest:

date \_\_\_\_\_

Chief of Registration

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National Park Service

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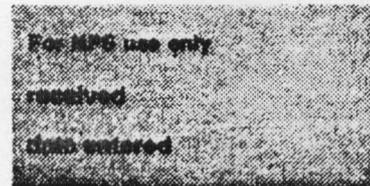
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Magazines

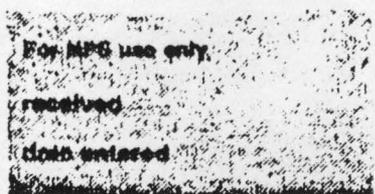
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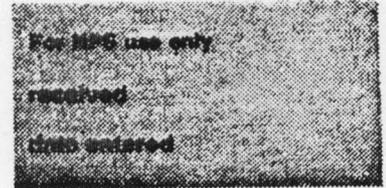
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Zone Easting                      Northing	CC. /15/ /7/04/450                      /45/99/350

Note: The 1000 Meter Universal Transverse Mecator Grid references were desk extrapolated from existing polyconic projection. The proposed National Historic Landmark district comprises 101 acres of the 948 total acres of Rock Island. Rock Island Arsenal Facilities Engineers Office provided these figures.

The proposed boundary for the Rock Island Arsenal's National Historic Landmark district comprises the original stone buildings and main approach or avenue which formed the core of nineteenth-century Rock Island Arsenal. This proposed district consists primarily of the Thomas J. Rodman-planned and inspired Old Stone Buildings. Historically, these buildings formed the industrial core and residential area of the nineteenth-century Rock Island Arsenal. The arsenal's Old Stone Buildings represented one of the largest military construction projects of that century. Surviving in highly intact condition the buildings make a cohesive architectural statement that, in terms of both their scale and style have no counterpart among government installations in the midwest. Congress intended that the arsenal at Rock Island should be made the great arsenal of manufacturing and storage for the Mississippi River Valley, that it should possess the production capacity equal to the national armory at Springfield, Massachusetts, and that it should become one the nation's largest manufacturing arsenals. The Rock Island Arsenal was planned with that end in view, and was so built in the nineteenth century. Those buildings or parts of the island which were not part of the Rock Island Arsenal in the nineteenth century were generally excluded from the proposed historic district.

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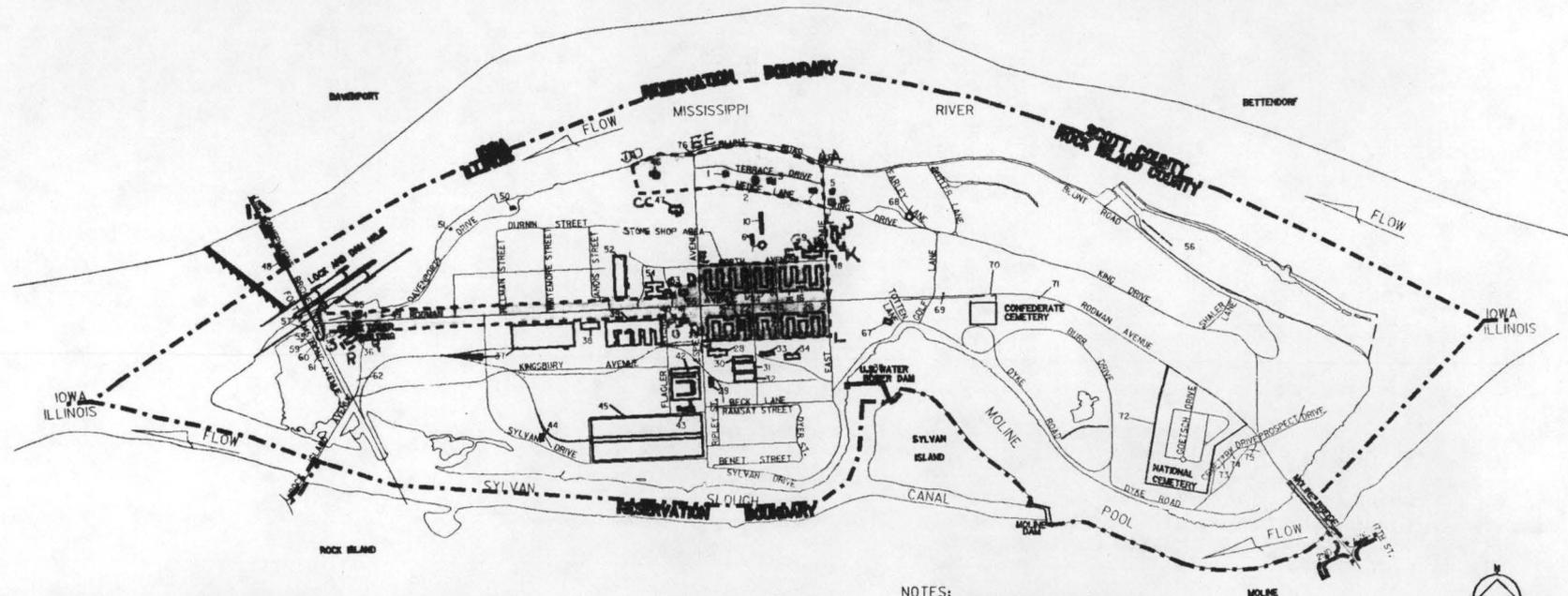
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Verbal Boundary Description

Stone Shops Landmark Area: Begin at a point due S. of the N.E. corner of bldg. 328; go due E on a line parallel Rodman Avenue, to include landscaped boulevard areas up to construction face line of Bldg. 350 (Map #52) and Bldg. 390 (Map #54). Due N after crossing East Pershing Circle Drive to public sidewalk behind Bldg. 360 (Map #53). Due E across Gillespie Avenue, then N to North Avenue. E along North Avenue to beginning of parking lot surrounding Bldg. 56 (Map #9). Due N to edge of parking lot, then E to East Avenue. Due N on East Avenue to first parking access N of Bldg. 90 (Map #19). Due E to far edge of parking lot, then due S to a point S of the south side, Bldg. 90 (Map #19), then W to East Avenue, Due S on East Avenue to line formed by backs of Bldgs. 102, 103, 104, 105, 106, 108, 109, 110 (Map#s 20, 21, 22, 24, 25, 26, 27) parallel to South Avenue. Due W along that line, to Gillespie's E. side. Then N to parking access behind Firehouse, Bldg. 225 (Map #41). W along parking area to W of Firehouse, then diagonally northward to the meeting of Flagler Ave. with a line parallel with Rodman Avenue to include landscaped boulevard areas up to construction face of Bldgs. 208, 210, 220 (Map#s 37, 38, 39). Due W along this line to crossing of Rock Island Avenue and then SW parallel to face of Clock Tower Building, Bldg. 205 (Map #36). Along face of Bldg. 205 to first parking access and then NW again parallel to SW side of Bldg. 205. At a point behind Bldg. 205 such that a NE line would run parallel to the rear of building inclusive of the clocktower, turn and proceed NE to continuation of line parallel to Rodman Avenue. Due W along this line to base of railroad embankment, then NW to close at the point of beginning.

Residential Quarters Landmark Area: Beginning at B.M. "Arsenal Sundial" (Map #76) proceed along southern edge of Blunt Road, generally E, to East Avenue. Due S along East Avenue to Hedge Lane. W along Hedge Lane crossing Gillespie and continuing due W to  $90^{\circ}33'00''$  (approximately 200 feet west of the rear of Quarters One, Bldg. 301 (Map #46). Due N to Mississippi River shoreline and then generally E to northern end of fence fronting Quarters One. E from end of fence to close at B.M. "Arsenal Sundial"



**NATIONAL REGISTER BLDGS/STRUCTURES**

- 1 QUARTERS NO 2, BLDG 2\*
- 2 QUARTERS NO 3, BLDG 3\*
- 3 QUARTERS NO 4, BLDG 4\*
- 4 QUARTERS NO 6, BLDG 6\*
- 5 QUARTERS NO 7, BLDG 7
- 6 MATERIAL STORES, BLDG 82
- 7 RESERVOIR, STRUCTURE 53
- 8 GENERAL INSTRUCTION, BLDG 56\*
- 9 STONE SHOP AREA, BLDG 56\*
- 10 STONE BRIDGE, STRUCTURE 57
- 11 STONE SHOP AREA, BLDG 60\*
- 12 STONE SHOP AREA, BLDG 61\*
- 13 STONE SHOP AREA, BLDG 62\*
- 14 STONE SHOP AREA, BLDG 64\*
- 15 STONE SHOP AREA, BLDG 66\*
- 16 STONE SHOP AREA, BLDG 67\*
- 17 STONE SHOP AREA, BLDG 68\*
- 18 QUARTERS 34, BLDG 81
- 19 STONE SHOP AREA, BLDG 80\*
- 20 STONE SHOP AREA, BLDG 802\*
- 21 STONE SHOP AREA, BLDG 803\*
- 22 STONE SHOP AREA, BLDG 804\*
- 23 REGENERATOR, BLDG 105\*
- 24 STONE SHOP AREA, BLDG 106\*
- 25 STONE SHOP AREA, BLDG 108\*
- 26 STONE SHOP AREA, BLDG 109\*
- 27 STONE SHOP AREA, BLDG 10\*
- 28 AMMUNITION, BLDG 131
- 29 ROADS & GROUNDS, BLDG 135
- 30 CLOSED LUMBER SHED, BLDG 138
- 31 NORTH DRY KILN, BLDG 139
- 32 SOUTH DRY KILN, BLDG 140
- 33 SALVAGE & SUPPLIES, BLDG 145
- 34 SALVAGE & SUPPLIES, BLDG 84
- 35 HYDRO-ELECTRIC PLANT, BLDG 180
- 36 CLOCK TOWER, BLDG 205 (SEE NOTE 31)
- 37 OVERHAUL & ASSEMBLY SHOP, BLDG 208
- 38 HEAVY MACHINE SHOP, BLDG 210
- 39 MACHINE SHOP, BLDG 220
- 40 STONE SHOP AREA, BLDG 225\*
- 41 BARRACK & FIRE HOUSE, BLDG 225\*
- 42 MACHINE SHOP, BLDG 250
- 43 MOTOR REPAIR SHOP, BLDG 251
- 44 WAREHOUSE, BLDG 280
- 45 WAREHOUSE, BLDG 290
- 46 QUARTERS NO 1, BLDG 301\*
- 47 GOLF CLUB HOUSE, BLDG 302
- 48 GOVERNMENT BRIDGE, STRUCTURE 320
- 49 POLICE STATION, BLDG 351\*
- 50 DAVENPORT HOUSE, BLDG 346
- 51 BRIDGE PIER MONUMENT, STRUCTURE 347
- 52 ADMINISTRATION BLDG 350
- 53 STONE SHOP AREA, BLDG 360
- 54 HEADQUARTERS, BLDG 380
- 56 QUARTERS 32,32A,33A,33B, BLDG 360\*
- 56 LOCK AREA

**HISTORICAL FEATURES**

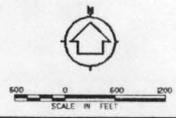
- 57 SERRAVALLO COMMITTEE HISTORICAL MARKER
- 58 DAR 180 FT. ARMSTRONG HISTORICAL MARKER
- 59 CENTENNIAL COMMITTEE HISTORICAL MARKER
- 60 FT. ARMSTRONG BLOCKHOUSE REPLICA, BLDG 200
- 61 ROCK ISLAND AMA HISTORICAL MARKER
- 62 FT. ARMSTRONG CEMETERY HISTORICAL MARKER
- 63 JOHN B. JONES ICR & P RAILROAD HISTORICAL MARKER
- 64 DAR FT. ARMSTRONG HISTORICAL MARKER
- 65 ROCK ISLAND COUNTY HISTORICAL SOCIETY MARKER
- 66 CONFEDERATE PRISON HISTORICAL MARKER
- 67 OFFICERS' WIVES CLUB HISTORICAL MARKER
- 68 INDIAN MOUND
- 69 UNION CEMETERY SITE HISTORICAL MARKER
- 70 CONFEDERATE CEMETERY
- 71 RAMSEY TEST TRACK MONUMENT, STRUCTURE 129
- 72 NATIONAL CEMETERY
- 73 GRAVE OF GENERAL THOMAS J. RODMAN
- 74 GRAVE OF COLONEL DAVID M. KING
- 75 OLD MOLINE BRIDGE HISTORICAL MARKER
- 76 ARSENAL BURIAL

**NOTES:**

1. THE ROCK ISLAND ARSENAL WAS ESTABLISHED AS A NATIONAL HISTORIC PLACE, ENTRY NUMBER 66,045,000 ON 15 SEPTEMBER 1969 UNDER THE NATIONAL HISTORIC PRESERVATION ACT OF 1966. NATIONAL REGISTER OF HISTORIC PLACES STATUS, AS A HISTORIC DISTRICT, WAS ACHIEVED ON 30 SEPTEMBER 1968.
2. THE BUILDINGS, STRUCTURES, OBJECTS AND SITES SHOWN ON THIS MAP CONTRIBUTE TO THE SIGNIFICANCE OF THE ROCK ISLAND ARSENAL AS A NATIONAL HISTORIC PLACE.
3. BUILDING 205, THE CLOCK TOWER, IS NOT AN ARSENAL BUILDING. IT IS THE PROPERTY OF THE ROCK ISLAND DISTRICT, CORPS OF ENGINEERS.
4. THE NATIONAL CEMETERY AND THE CONFEDERATE CEMETERY ARE ADMINISTERED BY THE VETERANS ADMINISTRATION.
5. DETAILED DOCUMENTATION ON SIGNIFICANT BUILDINGS AND STRUCTURES IS ON FILE AT THE LIBRARY OF CONGRESS UNDER HAER NO. IL-20
6. THE NATIONAL REGISTER BUILDING/STRUCTURES REPRESENT DEPARTMENT OF THE ARMY PRESERVATION CATEGORIES L 2, AND STM 5-80-1 AND AR 420-40
7. STRUCTURES DESIGNATED WITH AN ASTERISK ARE PROPOSED AS NATIONAL HISTORIC LANDMARKS.

**ABBREVIATIONS:**

- DAR= DAUGHTERS OF THE AMERICAN REVOLUTION
- AMA= AMERICAN MEDICAL ASSOCIATION
- CRP= CHICAGO, ROCK ISLAND & PACIFIC



	REVISIONS	DATE	APPROVED
STAR/NO.			
<b>ROCK ISLAND ARSENAL</b>			
ROCK ISLAND, ILLINOIS			
US ARMY ENGINEER DIVISION LOUISVILLE			
CORPS OF ENGINEERS LOUISVILLE, KENTUCKY			
MASTER PLAN			
BASIC INFORMATION MAPS			
<b>HISTORICAL INFORMATION MAP</b>			
RECOMMENDED BY INSTALLATION PLANNING BOARD FOR APPROVAL			
DATE		DATE	
REVIEWED & COMMENTED ON BY MAJOR COMMAND	DATE	DRAWING NO.	
FORWARDED TO THE CHIEF OF ENGINEERS		SHEET NO.	
DATE		HISTORIC	











← (C) Quarter Six  
looking west on  
Terrace Drive  
(RIA Commander  
Qtrs. today)  
(taken Nov 1987)



ROCK ISLAND ARSENAL (Terrace Drive)  
Officer's Quarters on left  
photo view looking east, November 1987

← (D) RIA OFFICER'S Row  
Looking EAST on  
Terrace Drive  
Qtrs. #2, #3 + #4,  
1872-74 ca.  
(taken Nov. 1987)



(E) → RIA - Terrace Drive  
looking EAST - along  
OFFICER'S Row - Note  
Mississippi River View











← (4) RIA

Rodman Ave looking  
west. RIA manu-  
facturing complex  
on left. Building  
in order from  
foreground back:  
Bldg 220 (WWI era);  
REARM complex (1956);  
Bldg. 210 (WWI era)  
and Bldg. 208 (WWII  
era).

Note: 1867 Clock Tower  
in background.



ONLY  
ONLY

RESERVED  
PARKING  
ONLY

ONE WAY

← (5) R1A

View of Rodman Ave.  
looking West.

Note: Old Headquarters  
1889-1922 on Right;  
Post Bldg. #225 still  
operating as police +  
fire station on Left.

(Intersection of Gillespie  
+ Rodman Ave.)

(taken Nov. 1987)



← (7)

View of Rodman Ave  
from Memorial Park  
area looking west,  
Bldg. 110 on left &  
Bldg. 68 situated  
on right.

L photo taken Nov 1987)



⑧ → RIA

View of Rodman  
Ave looking  
east from RIA

Manufacturing Complex  
built 1867-1894.  
(not in view)

RIA's memorial  
gun park to right.  
(near intersection of  
East Ave + Rodman Ave.



ROCK ISLAND ARSENAL (Rodman Avenue)  
foundry, blacksmith shop on left center  
photo view looking east, November 1987

(9)

RIA's 19<sup>th</sup> Century  
Manufacturing Complex

Note foundry + black-  
smith shop (Bldg #106,  
one story) on right, still  
in operation, originally  
built 1873.

View of Redman Ave.  
looking east.



(10) → RIA

19<sup>th</sup> Century Manufacturing  
Complex - looking east  
down Rodman Ave.

Note 1873 ca. police +  
fire station still in  
operation on right, on  
left hidden by trees  
Old RIA Hq. Bldg. (1889-  
1922)  
(taken Nov 1987)



11 → RIA

Rodman Ave. Looking East.  
Note: 1942 ca. Post  
Headquarters Bldg. #390  
on Left, WWI era Bldg.  
#220 to the Right.  
In background - General  
Rodman's 19<sup>th</sup> Century  
Manufacturing complex.  
(taken Nov. 1987)



UNITED STATES ARMY  
HEADQUARTERS  
U.S. ARMY ARMY ARMY  
MEDICAL AND DENTAL  
COMMAND  
ROCK ISLAND ARSENAL

(12) → RIA

Entrance View of  
Rodman Avenue  
Looking east.

Note: Old Stone Gate House,  
1875 ca., left foreground.  
RIA's present manufacturing  
complex to right in back-  
ground.

(taken Nov. 1987)

Clock Tower Bldg. situated  
out of view to the SW.

## Missing Core Documentation

**Property Name**

Rock Island Arsenal

**County, State**

Rock Island, Illinois

**Reference Number**

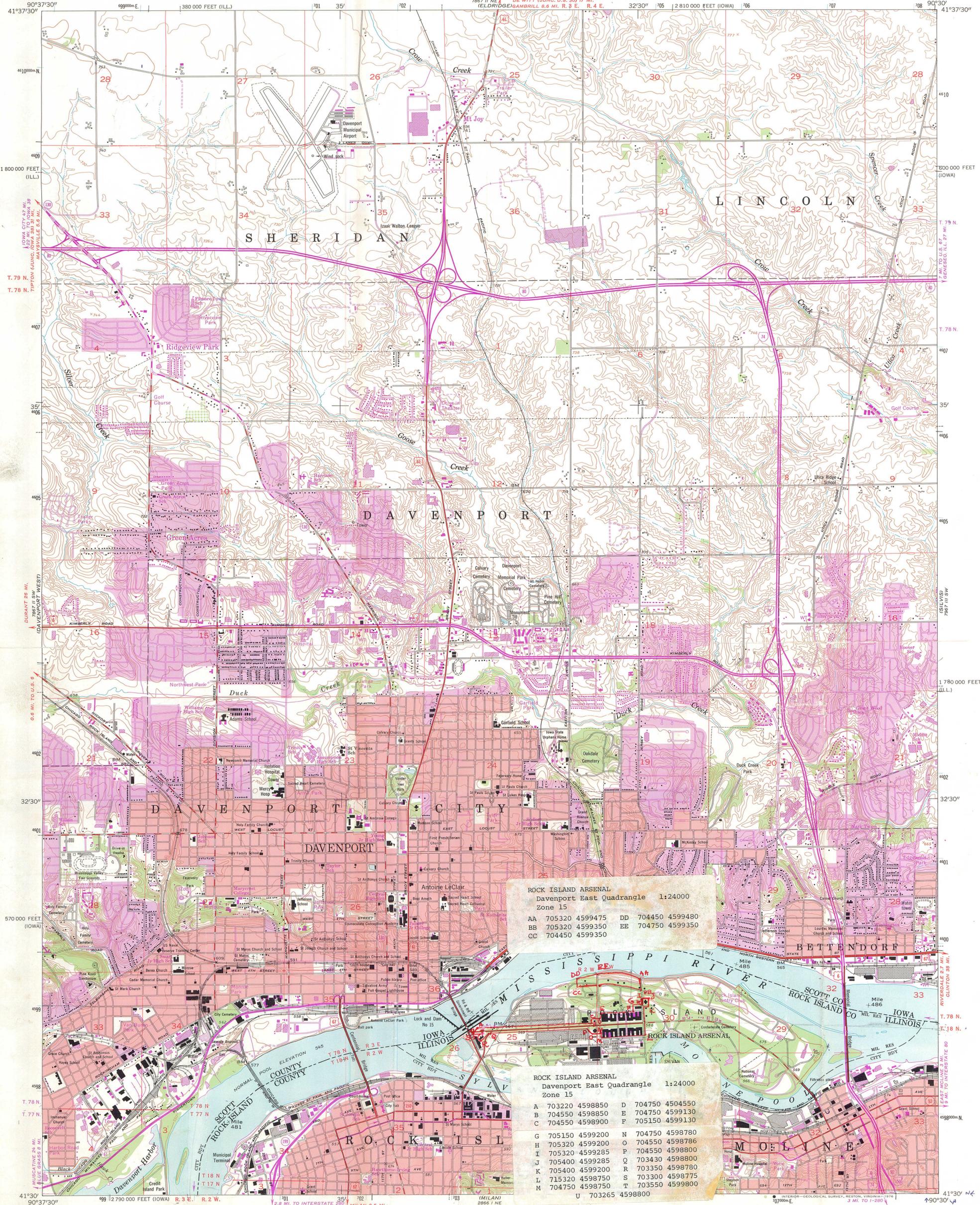
69000057\_NHL

The following Core Documentation is missing from this entry:

Nomination Form

Photographs (#1 and 6)

USGS Map



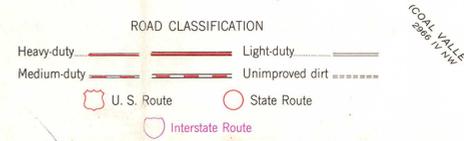
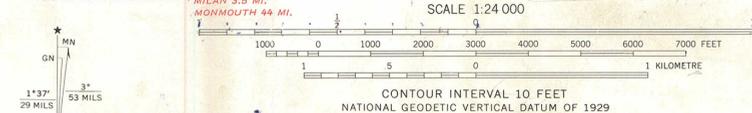
ROCK ISLAND ARSENAL  
Davenport East Quadrangle 1:24000  
Zone 15

AA	705320	4599475	DD	704450	4599480
BB	705320	4599350	EE	704750	4599350
CC	704450	4599350			

ROCK ISLAND ARSENAL  
Davenport East Quadrangle 1:24000  
Zone 15

A	703220	4598850	D	704750	4598780
B	704550	4598850	E	704750	4599130
C	704550	4598900	F	705150	4599130
G	705150	4599200	N	704750	4598780
H	705320	4599200	O	704550	4598780
I	705320	4599285	P	704550	4598800
J	705400	4599285	Q	703430	4598800
K	705400	4599200	R	703350	4598780
L	715320	4598750	S	703300	4598775
M	704750	4598750	T	703550	4598800
			U	703265	4598800

Illinois area mapped by the Geological Survey  
Iowa area mapped by the Army Map Service  
Edited and published by the Geological Survey  
Control by USGS, USC&GS, USCE, and  
Mississippi River Commission  
Topography from aerial photographs by photogrammetric methods  
Entire map revised and field checked by AMS 1953  
Polyconic projection - 1927 North American datum  
10,000-foot grids based on Iowa coordinate system,  
south zone, and Illinois coordinate system, west zone  
1000-metre Universal Transverse Mercator grid ticks,  
zone 15, shown in blue  
Red tint indicates areas in which only landmark buildings are shown  
Revisions shown in purple completed by the Geological Survey  
from aerial photographs taken 1970 and 1975. This information  
not field checked



THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS  
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092  
IOWA GEOLOGICAL SURVEY, IOWA CITY, IOWA 52240,  
AND STATE GEOLOGICAL SURVEY, URBANA, ILLINOIS 61801  
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

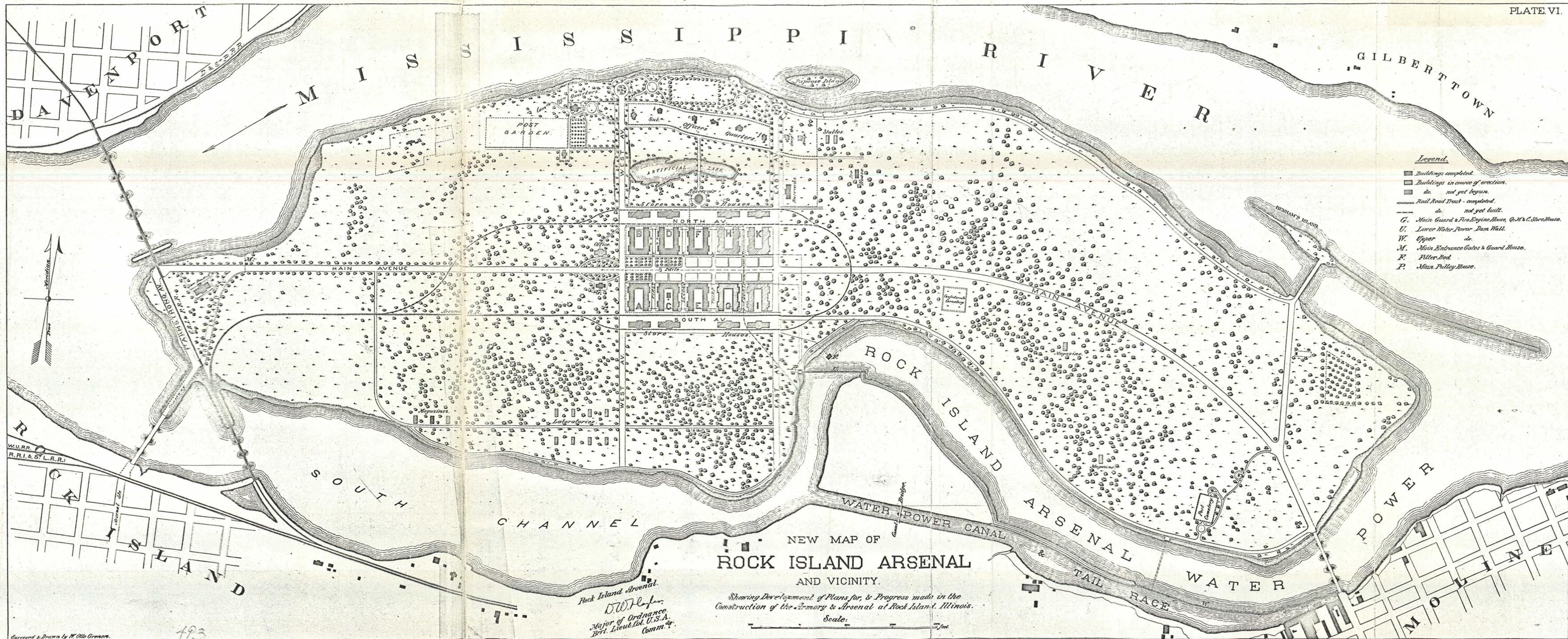


DAVENPORT EAST, IOWA-ILL.  
N4130-W9030/7.5

1953  
PHOTOREVISED 1970 AND 1975  
AMS 7867 II SE-SERIES V876



NEW MAP OF  
ROCK ISLAND ARSENAL  
OLD CITY  
CHANNING

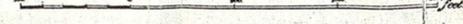


- Legend.*
- Buildings completed.
  - ▨ Buildings in course of erection.
  - ▩ do. not yet begun.
  - Rail Road Track - completed.
  - - - do. not yet built.
  - G. Main Guard & Fire Engine House, Q.M. & C. Store House.
  - U. Lower Water Power Dam Wall.
  - W. Upper do.
  - M. Main Entrance Gates & Guard House.
  - F. Filler Bed.
  - P. Main Pulley House.

NEW MAP OF  
**ROCK ISLAND ARSENAL**  
 AND VICINITY.

*Showing Development of Plans for, & Progress made in the  
 Construction of the Armory & Arsenal at Rock Island, Illinois.*

Scale:



*Rock Island Arsenal.*  
*D.W. Hofer,*  
*Major of Ordnance,*  
*Brit. Lieut. Col. U.S.A.,*  
*Comm. '90.*

*Corrected & Drawn by W. Old Grenson.*

493

493a

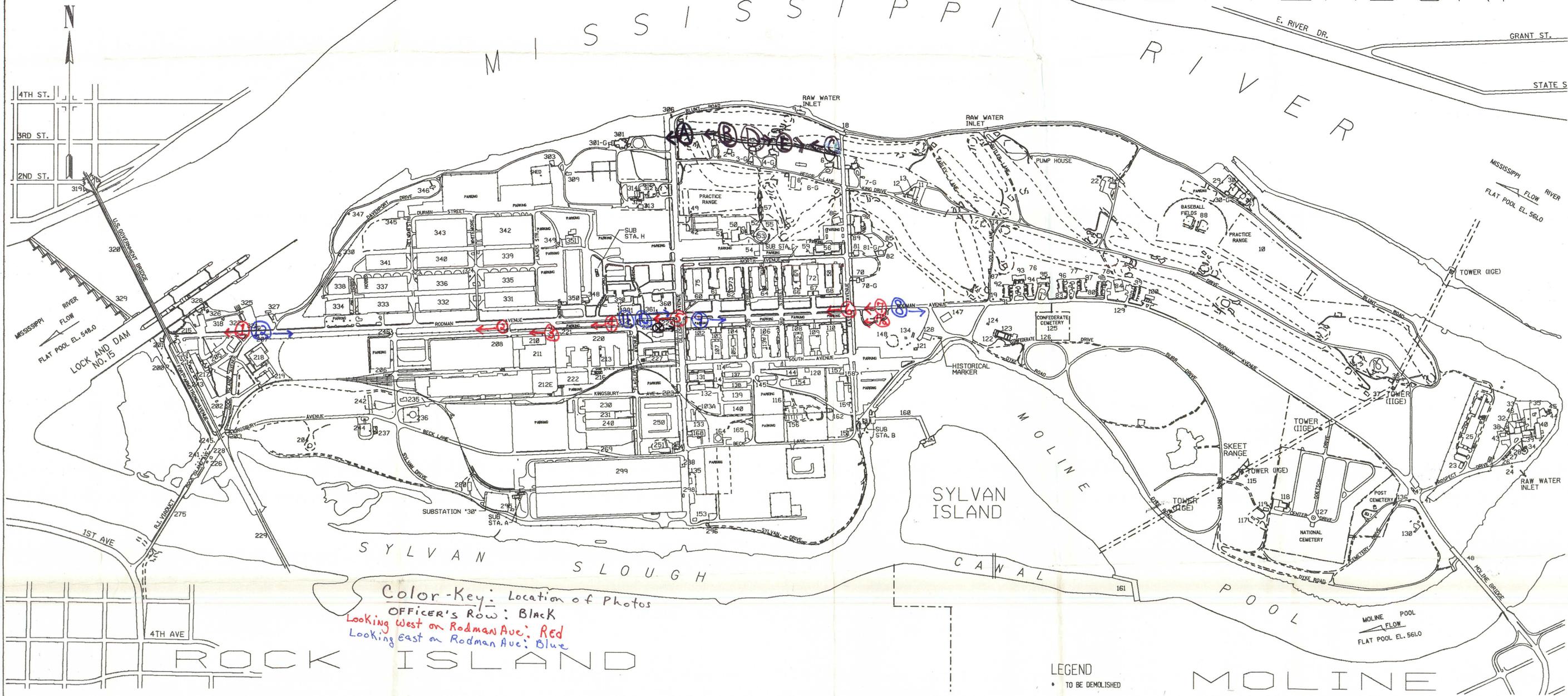
4936

DAVENPORT

BETTENDORF

MISSISSIPPI

RIVER



Color-Key: Location of Photos  
 Officer's Row: Black  
 Looking West on Rodman Ave.: Red  
 Looking East on Rodman Ave.: Blue

LEGEND  
 \* TO BE DEMOLISHED

INDEX TO BUILDINGS & MISCELLANEOUS STRUCTURES

1	25	53	81G	98G1	123	153	183	213	243	273	302	332	362	
2	F.H. - COLONEL	26	GEN.PURP.MAGAZINE	54	* DIESEL OIL STO.	82	* F.H. LT.COL. & M.J.	98G2	DET. STOR. BLDG	124	* PUBLIC TOILET	154	SALV. & SUR. BLDG.	184
2G	DET. GARAGE	27	GEN.PURP.MAGAZINE	55	WATER PUMP	83	WAITING SHELTER	99	F.H.N.C.O. ENLISTED	125	FLAGSTAFF	155	185	
3	F.H. - COLONEL	28	GEN.PURP.MAGAZINE	56	GEN. INSTR. BLDG.	84	TENNIS CT	99G1	DET. STOR. BLDG	126	FLAGSTAFF	156	186	
3G	DET. GARAGE	29	SEWAGE PUMP	57	STONE BRIDGE	85	* F.H. LT.COL. & M.J.	99G2	DET. STOR. BLDG	127	FLAGSTAFF	157	187	
4	F.H. - GENERAL	30	F.H. - COLONEL	58	* SMALL ARMS PLANT	86	* BACH. ENLISTED QT.	100	F.H.N.C.O. ENLISTED	128	RECREATION BLDG	158	188	
4G	DET. GARAGE	30G	DET. GARAGE	59	* SMALL ARMS PLANT	87	PUBLIC TOILET	100G1	DET. STOR. BLDG	129	MONUMENT	159	189	
5		31	F.H. - COLONEL	60	ADMIN. GEN. PURPOSE	88	SOFTBALL FIELD	100G2	DET. STOR. BLDG	130	TRAP RANGE	160	190	
5G		31G		61	ADMIN. GEN. PURPOSE	89	FACILITY SIGN	101	131	WEAPONS QUAL. ASSUR.	161	MOLINE DAM	191	
6	F.H. - COLONEL	32	HEAVY GUN PLANT	62	ADMIN. GEN. PURPOSE	90	GEN. INSTR. BLDG.	102	ADMIN. GEN. PURPOSE	132	* OPERATIONS BLDG	162	VEH. WASH FACILITY	192
6G	DET. GARAGE	33	HEAVY GUN PLANT	63	ADMIN. GEN. PURPOSE	91	GAS INSTR. BLDG.	103	ADMIN. GEN. PURPOSE	133	* F.E. MAINT. SHOP	163	193	
7	F.H. - COLONEL	34	GEN.PURP.MAGAZINE	64	SMALL ARMS PLANT	92	F.H. LT.COL. & M.J.	104	ADMIN. GEN. PURPOSE	134	PLAY GROUND	164	SALT STORAGE	194
7G	DET. GARAGE	35	LIGHT GUN PLANT	65	INDUST. WASTE TRMNT. PLT.	92G1	DET. STOR. BLDG	105	GEN. PURP. WHSE	135	* FLAM. MAT. STOR. HSE	165	* FLAM. MAT. STORAGE	195
8	TENNIS COURT	36	SNACK BAR	66	SMALL ARMS PLANT	92G2	DET. STOR. BLDG	106	FOUNDRY	136	MONUMENT	166	196	
9	PUMP STATION	37	PUBLIC TOILET	67	SMALL ARMS PLANT	93	F.H. LT.COL. & M.J.	107	SELF SERV SUPPLY CTR.	137	* SALV. & SUR. BLDG	167	197	
10	SOCCER FIELD	38	HEATING PLANT OIL	68	ADMIN. GEN. PURPOSE	93G1	DET. STOR. BLDG	108	ADMIN. GEN. PURPOSE	138	SALV. & SUR. BLDG.	168	198	
11	COMMUNITY CENTER	39	HEAVY GUN PLANT	69	* SMALL ARMS PLANT	93G2	DET. STOR. BLDG	109	ADMIN. GEN. PURPOSE	139	F.E. MAINT. SHOP	169	199	
12	PLAYGROUND	40	GYMNASTICATOR BLDG.	70	* F.H. LT.COL. & M.J.	94	F.H. LT.COL. & M.J.	110	ADMIN. GEN. PURPOSE	140	GEN. PURP. WHSE	170	200	
13	COMM. CNTR STORAGE BLDG	41	FACILITY SIGN	70G	* DET. GARAGE	94G1	DET. STOR. BLDG	111	FLAGPOLE	141	* TARGET STORAGE	171	201	
14	GOLF CLUB SHELTER	42	SLUDGE BED	71		94G2	DET. STOR. BLDG	112	APPL. INST. BLDG	142		172	202	
15		43	HEAVY GUN PLANT	72	SMALL ARMS PLANT	95	F.H. C.G. - W.O.	113	SAND BIN	143		173	203	
16		44	HEAVY GUN PLANT	73	A/C PLANT	95G1	DET. STOR. BLDG	114	A/C PLANT	144	FLAM. MAT. STOR. HSE	174	204	
17	FUTURE RESTROOM	45	HEAVY GUN PLANT	74		95G2	DET. STOR. BLDG	115	* ROD-GUN CLUB	145	SALV. & SUR. BLDG.	175	205	
18	MONUMENT	46	HEAVY GUN PLANT	75	RESTAURANT - KITCHEN	96	F.H. C.G. - W.O.	116	* SAL. & SUR. PROP.	146	TECH. TRAINING CENTER	176	206	
19	MONUMENT	47	SENTRY STATION - MOLINE	76	PLAYGROUND	96G1	DET. STOR. BLDG	117	CEMETERY STOR. BLDG.	147	BASKETBALL COURT	177	207	
20		48	MOLINE BRIDGE	77	PLAYGROUND	96G2	DET. STOR. BLDG	118	NAT. CEMETERY OFFICE	148	SOFTBALL FIELD	178	208	
21	GOLF CLUB MAINT. BLDG.	49	SEWAGE PUMP	78	PLAYGROUND	97	F.H. C.G. - W.O.	119	CEMETERY STOR. BLDG.	149		179	209	
22	GOLF CLUB MAINT. BLDG.	50	WATER TREATMENT PLT.	79	WAITING SHELTER	97G1	DET. STOR. BLDG	120	FLAM. MAT. STOR. HSE	150		180	210	
23	ADMIN. GEN. PURPOSE	51	DEEP WELL & PUMP STA.	80	WAITING SHELTER	97G2	DET. STOR. BLDG	121	PUBLIC TOILET	151	GAS DIST. STATION	181	211	
24	WATER PUMP	52	F.E. STOR. HOUSE	81	F.H. - COLONEL	98	F.H.N.C.O. ENLISTED	122	* TARGET STORAGE	152		182	212	

ROCK ISLAND ARSENAL  
 ROCK ISLAND, ILLINOIS 61299-5000  
 REV. JAN 1987

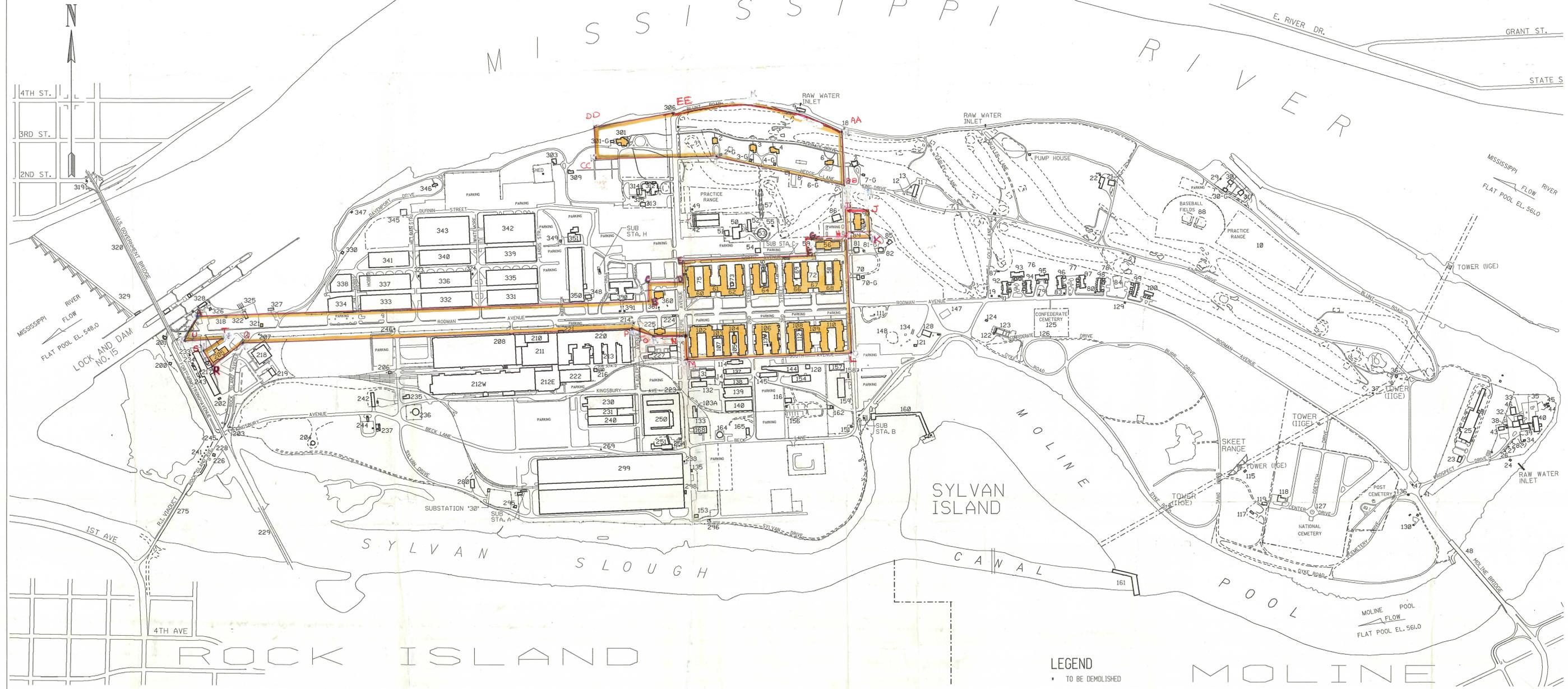


DAVENPORT

BETTENDORF

MISSISSIPPI

RIVER



ROCK ISLAND ARSENAL  
 ROCK ISLAND, ILLINOIS 61299-5000  
 REV. JAN 1987



INDEX TO BUILDINGS & MISCELLANEOUS STRUCTURES

1	F.H. - COLONEL	25	LIGHT GUN PLT.	53	GROUND STORGE TANK	816	DET. GARAGE	9861	DET. STOR. BLDG	123	* PISTOL RANGE	153	GEN. PURP. W/SE	183	213	DEEP WELL	243	FLAM. MAT. STORAGE C.O.E.	273	302	302	GEN. PURP. W/SE	362
2	F.H. - COLONEL	26	GEN. PURP. MAGAZINE	54	* DIESEL OIL STO.	82	* F.H. LT. COL. & M.J.	9862	DET. STOR. BLDG	124	* PUBLIC TOILET	154	SALV. & SUR. BLDG.	184	214	SENTRY STATION	244	GAS STATION	274	303	303	* F.H. C.G. - W.O.	363
2G	DET. GARAGE	27	GEN. PURP. MAGAZINE	55	WATER PUMP	83	WAITING SHELTER	99	F.H. N.C.O. ENLISTED	125	FLAGSTAFF	155		185	215	SENTRY STATION	245		275	304	304	EXCHANGE MAIN RETAIL	364
3	F.H. - COLONEL	28	GEN. PURP. MAGAZINE	56	GEN. INSTR. BLDG.	84	TENNIS CT	9961	DET. STOR. BLDG	126	FLAGSTAFF	156	* OPEN STORAGE	186	216	LIO. STORAGE NON-PROP.	246	SENTRY STATION	276	305	305	GEN. PURP. W/SE	365
3G	DET. GARAGE	29	SEWAGE PUMP	57	STONE BRIDGE	85	* F.H. LT. COL. & M.J.	9962	DET. STOR. BLDG	127	FLAGSTAFF	157	VEHICLE GARAGE	187	217	GARAGE C.O.E.	247		277	306	306	MON. - SUN DIAL	366
4	F.H. - GENERAL	30	F.H. - COLONEL	58	* SMALL ARMS PLANT	86	* BACH, ENLISTED QT.	100	F.H. N.C.O. ENLISTED	128	RECREATION BLDG	158	* FILLING STATION	188	218	NAVY/MC RESERVE CENTER	248		278	307	307	GEN. PURP. W/SE	367
4G	DET. GARAGE	30G	DET. GARAGE	59	* SMALL ARMS PLANT	87	PUBLIC TOILET	0001	DET. STOR. BLDG	129	MONUMENT	159	VCHL MAINT. SHOP	189	219	NAVY/MC GARAGE	249		279	308	308	GEN. PURP. W/SE	368
5		31	F.H. - COLONEL	60	ADMIN. GEN. PURPOSE	88	SOFTBALL FIELD	0002	DET. STOR. BLDG	130	TRAP RANGE	160	HYDRO-ELECTRIC PLANT	190	220	MACHINE SHOP	250	HEAVY GUN PLANT	280	309	309	* DET. GARAGE	369
5G		31G		61	ADMIN. GEN. PURPOSE	89	FACILITY SIGN	101		131	WEAPONS QUAL. ASSUR.	161	MOLINE DAM	191	221	PLATFORM SCALE	251	* VCHL MAINT. SHOP	281	310	310	GEN. PURP. W/SE	370
6	F.H. - COLONEL	32	HEAVY GUN PLANT	62	ADMIN. GEN. PURPOSE	90	GEN. INSTR. BLDG.	102	ADMIN. GEN. PURPOSE	132	* OPERATIONS BLDG	162	VEH. WASH FACILITY	192	222	FORGE SHOP	252		282	311	311	GEN. PURP. W/SE	371
6G	DET. GARAGE	33	HEAVY GUN PLANT	63	GEN. INSTR. BLDG.	91	GAS DIST. STATION	103	ADMIN. GEN. PURPOSE	133	* F.E. MAINT. SHOP	163		193	223	SENTRY STATION	253		283	312	312	GOLF CLUB HOUSE	372
7	F.H. - COLONEL	34	GEN. PURP. MAGAZINE	64	SMALL ARMS PLANT	92	F.H. LT. COL. & M.J.	104	ADMIN. GEN. PURPOSE	134	PLAY GROUND	164	SALT STORAGE	194	224	WAITING SHELTER	254	* OPEN STORAGE	284	313	313	GOLF CLUB MAINT. BLDG.	373
7G	DET. GARAGE	35	LIGHT GUN PLANT	65	INDUST. WASTE TRMNT PLT.	92G	DET. STOR. BLDG	105	GEN. PURP. W/SE	135	* FLAM. MAT. STOR. HSE	165	* FLAM. MAT. STORAGE	195	225	FIRE STATION	255		285	314	314	BATH HOUSE	374
8	TENNIS COURT	36	SNACK BAR	66	SMALL ARMS PLANT	92G2	DET. STOR. BLDG	106	FOUNDRY	136	MONUMENT	166		196	226	MONUMENT	256		286	315	315	GOLF CLUB MAINT. BLDG.	375
9	PUMP STATION	37	PUBLIC TOILET	67	SMALL ARMS PLANT	93	F.H. LT. COL. & M.J.	107	SELF SERV SUPPLY CTR.	137	* SALV. & SUR. BLDG	167		197	227	CENTRAL HEAT PLT. C.F.	257		287	316	316	DAVENPORT HOUSE	376
10	SOCCER FIELD	38	HEATING PLANT OIL	68	ADMIN. GEN. PURPOSE	93G1	DET. STOR. BLDG	108	ADMIN. GEN. PURPOSE	138	SALV. & SUR. BLDG.	168	CENTRAL HEAT PLT. C.F.	198	228	RAILROAD BRIDGE	258		288	317	317	BRIDGE MONUMENT	377
11	COMMUNITY CENTER	39	HEAVY GUN PLANT	69	* SMALL ARMS PLANT	93G2	DET. STOR. BLDG	109	ADMIN. GEN. PURPOSE	139	F.E. MAINT. SHOP	169		199	229	RAILROAD BRIDGE	259		289	318	318	AIR CONDITIONING PLT.	378
12	PLAYGROUND	40	GYMNASTICATOR BLDG.	70	* F.H. LT. COL. & M.J.	94	F.H. LT. COL. & M.J.	110	ADMIN. GEN. PURPOSE	140	GEN. PURP. W/SE	170		200	230	WELD SHOP	260		290	319	319	SENTRY STATION	379
13	COMM. CNTR STORAGE BLDG	41	FACILITY SIGN	70G	* DET. GARAGE	94G1	DET. STOR. BLDG	111	FLAGPOLE	141	* TARGET STORAGE	171		201	231	WELD SHOP	261		291	320	320	GOVERNMENT BRIDGE	380
14	GOLF CLUB SHELTER	42	SLUDGE BED	71		94G2	DET. STOR. BLDG	112	APPL. INST. BLDG	142		172		202	232	GAS STATION C.O.E.	262		292	321	321	POLICE STATION	381
15		43	HEAVY GUN PLANT	72	SMALL ARMS PLANT	95	F.H. C.G. - W.O.	113	SAND BIN	143		173		203	233	R.R. VIADUCT	263		293	322	322	MAINT. BLDG. C.O.E.	382
16		44	HEAVY GUN PLANT	73	A/C PLANT	95G1	DET. STOR. BLDG	114	A/C PLANT	144	FLAM. MAT. STOR. HSE	174		204	234	SEWAGE PUMP STA.	264		294	323	323	FLAM. MAT. STO. HSE	383
17	FUTURE RESTROOM	45	HEAVY GUN PLANT	74	RESTAURANT - KITCHEN	95G2	DET. STOR. BLDG	115	* ROD-GUN CLUB	145	SALV. & SUR. BLDG.	175		205	235	CLOCK TOWER BLDG. C.O.E.	265	* WASH. VEH. COVERED	295	324	324	PUMP HOUSE STA.	384
18	MONUMENT	46	HEAVY GUN PLANT	75	PLAYGROUND	96	F.H. C.G. - W.O.	116	* SAL. & SUR. PROP.	146	TECH. TRAINING CENTER	176		206	236	* SCALE HOUSE	266	ELEV. WATER STOR. TANK	296	325	325	SENTRY STATION	385
19	MONUMENT	47	SENTRY STATION - MOLINE	76	PLAYGROUND	96G1	DET. STOR. BLDG	117	CEMETERY STOR. BLDG.	147	BASKETBALL COURT	177		207	237	FACILITY SIGN	267	PROPANE STORAGE	297	326	326	BOAT HOUSE C.O.E.	386
20		48	MOLINE BRIDGE	77	PLAYGROUND	96G2	DET. STOR. BLDG	118	NAT. CEMETERY OFFICE	148	SOFTBALL FIELD	178		208	238	HEAVY GUN PLANT	268		298	327	327	CRAFT SHOP	387
21		49	SEWAGE PUMP	78	PLAYGROUND	97	F.H. C.G. - W.O.	119	CEMETERY STOR. BLDG.	149		179		209	239	SENTRY STATION	269	SCALE	299	328	328	VISITORS CENTER C.O.E.	388
22	GOLF CLUB MAINT. BLDG.	50	WATER TREATMENT PLT.	79	WAITING SHELTER	97G1	DET. STOR. BLDG	120	FLAM. MAT. STD. HSE	150		180		210	240	FABRICATION SHOP	270		300	329	329	LOCK & DAM 15	389
23	ADMIN. GEN. PURPOSE	51	DEEP WELL & PUMP STA.	80	WAITING SHELTER	97G2	DET. STOR. BLDG	121	PUBLIC TOILET	151	GAS DIST. STATION	181		211	241	MONUMENT	271		301	330	330	PUMP HOUSE STA.	390
24	WATER PUMP	52	F.E. STOR. HOUSE	81	F.H. - COLONEL	98	F.H. N.C.O. ENLISTED	122	* TARGET STORAGE	152		182		212	242	FOUNDRY WELD PLAT	272		301G	331	331	GEN. PURP. W/SE	391

LEGEND  
 \* TO BE DEMOLISHED

U.I.C. - OSIR-30 - 30 IISL MAP - DGN

Old Map of RIA - Plate I

A proposed plan - buildings,  
Main Avenue, and water power  
system all altered before  
construction.

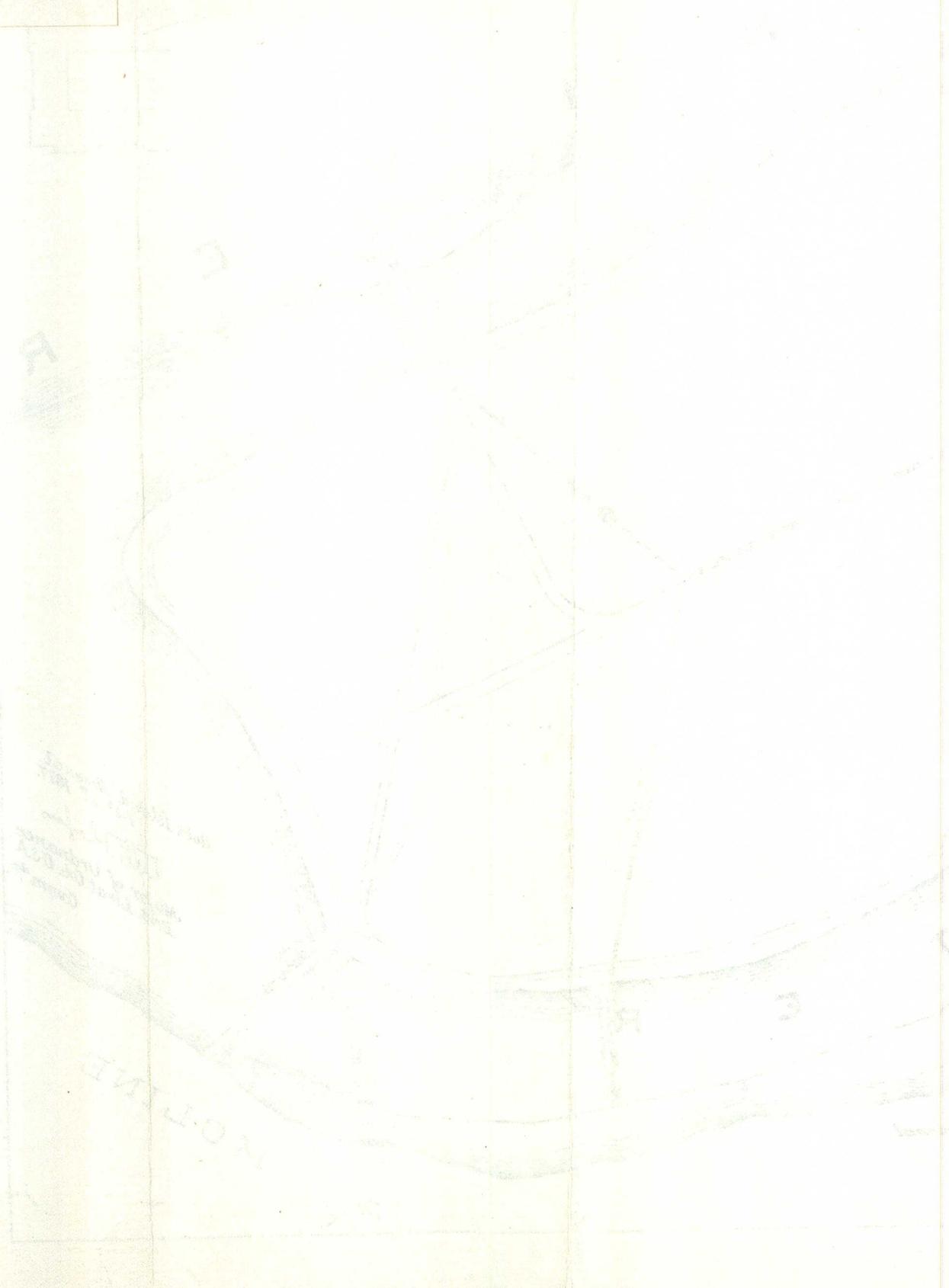
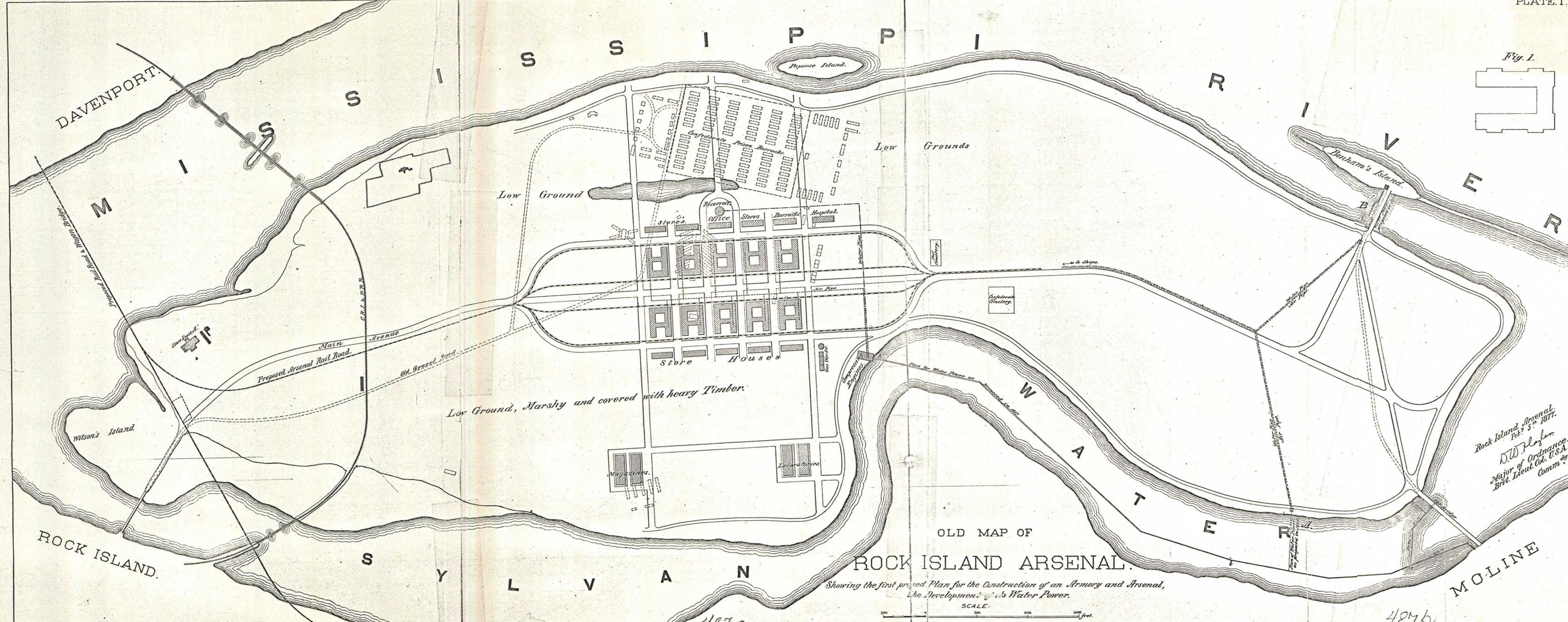
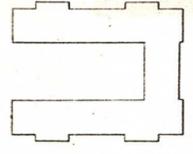


Fig. 1.



OLD MAP OF  
ROCK ISLAND ARSENAL.

Showing the first proposed Plan for the Construction of an Armory and Arsenal,  
the Development of the Water Power.

SCALE: 500 1000 1500 feet.

Rock Island Arsenal.  
Feb. 5<sup>th</sup> 1877.  
W.D. Planer  
Major of Ordnance.  
Brig. Lieut. Col. U.S.A.  
Comm. es.

Wm. Groner. Delt. 1876  
Outlines from a survey by W.D. Clarke. C.E. made in 1865.

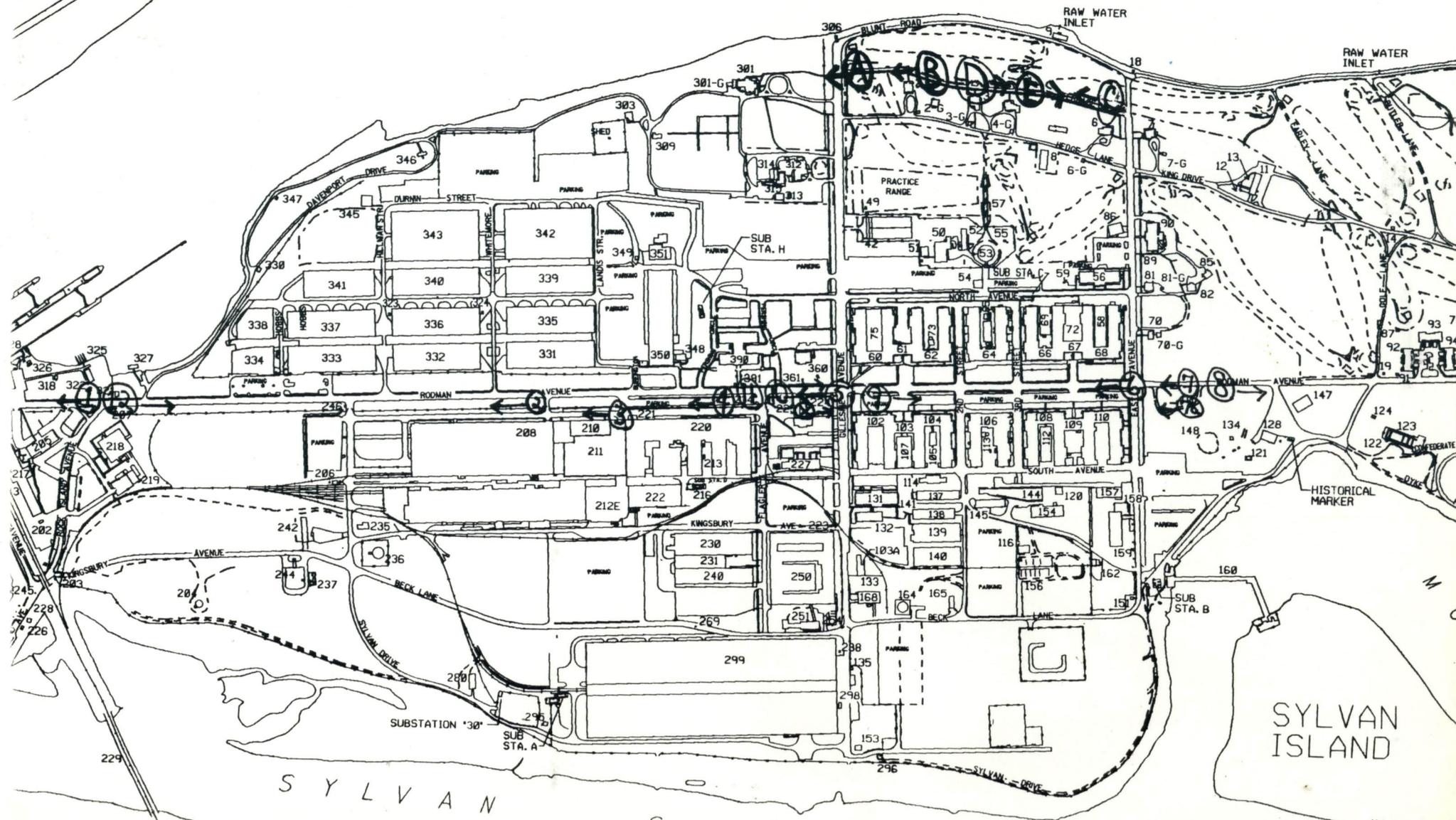
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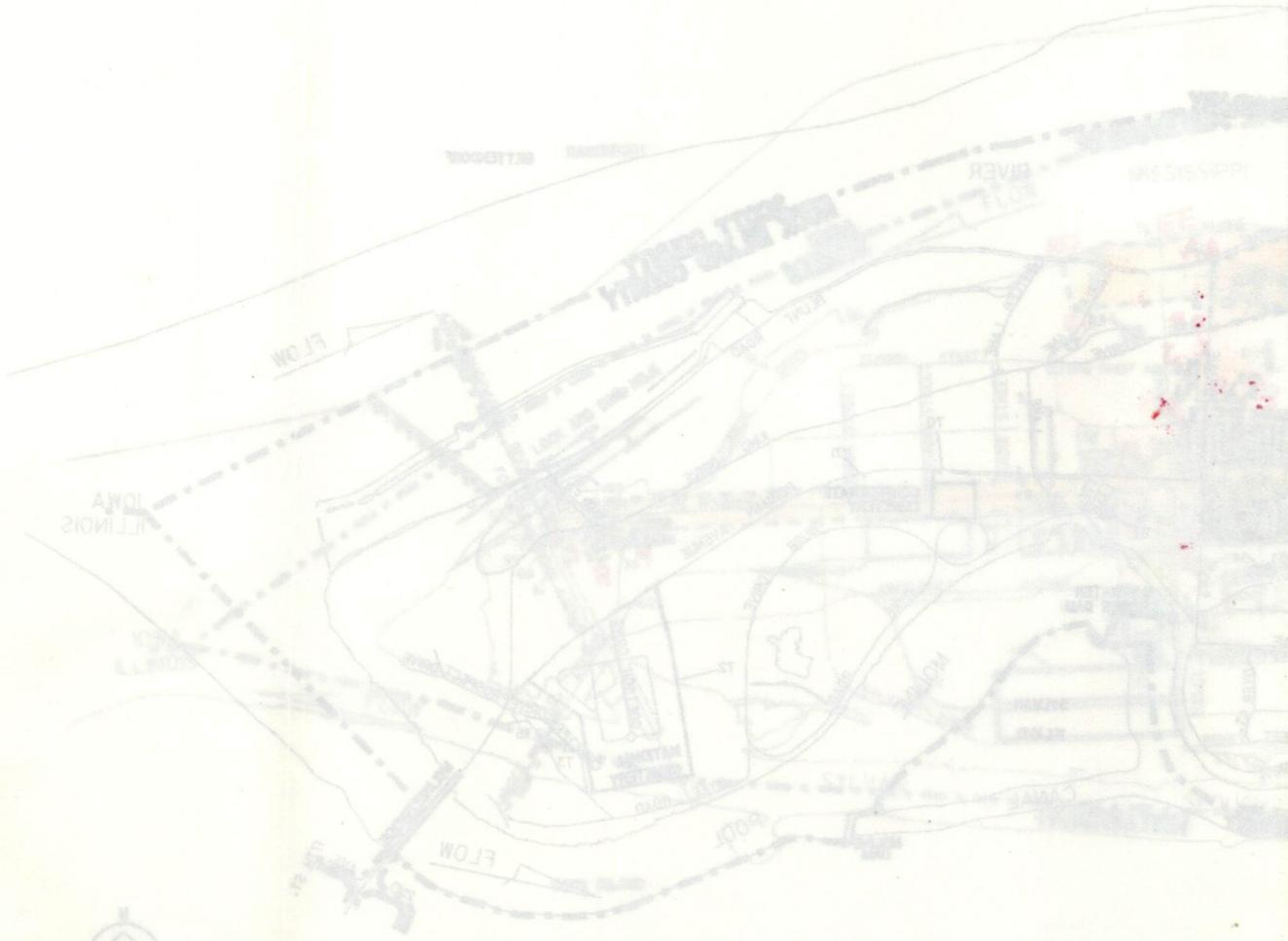
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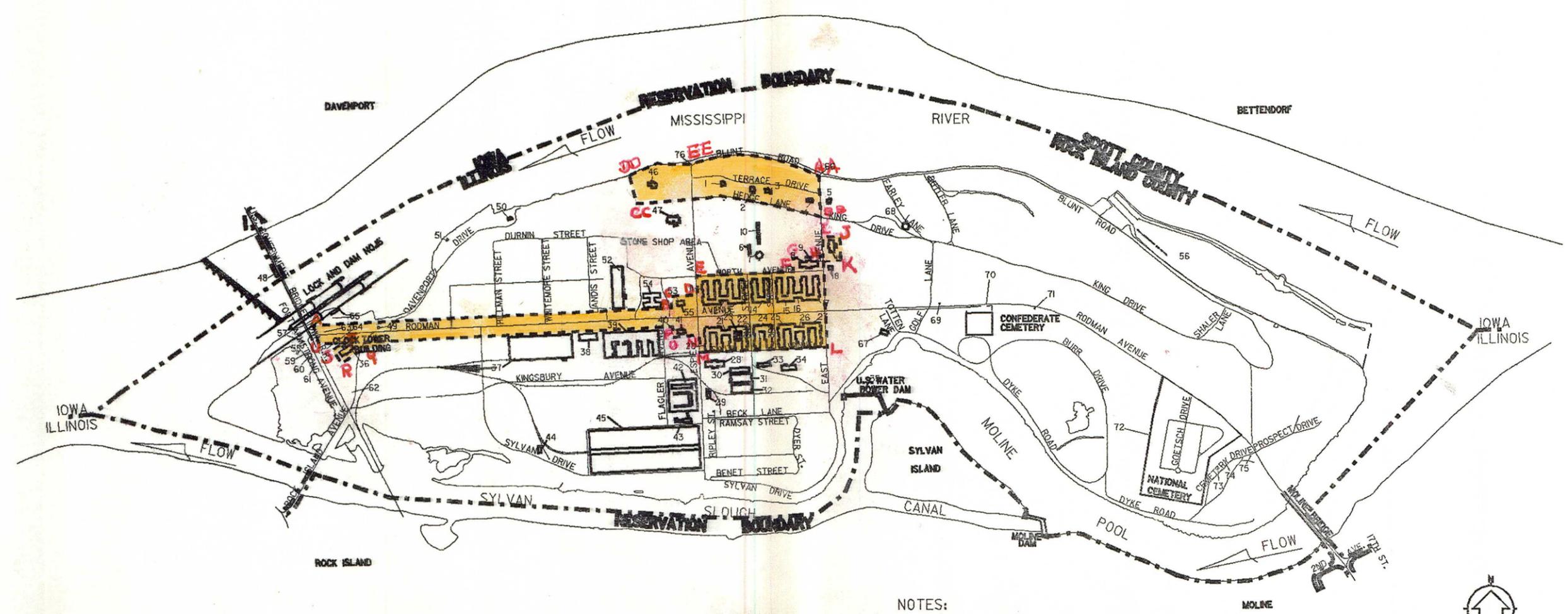


Proposed National Historic  
Landmark District



NOTES:  
1. THE DISTRICT BOUNDARY HAS BEEN ESTABLISHED AS SHOWN ON THIS MAP.

NO.	DESCRIPTION	DATE
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**NATIONAL REGISTER BLDGS/STRUCTURES**

- 1 QUARTERS NO 2, BLDG 2\*
- 2 QUARTERS NO 3, BLDG 3\*
- 3 QUARTERS NO 4, BLDG 4\*
- 4 QUARTERS NO 6, BLDG 6\*
- 5 QUARTERS NO 7, BLDG 7
- 6 MATERIAL STORES, BLDG 52
- 7 RESERVOIR, STRUCTURE 53
- 8 GENERAL INSTRUCTION, BLDG 56\*
- 9 STONE SHOP AREA, BLDG 56\*
- 10 STONE BRIDGE, STRUCTURE 57
- 11 STONE SHOP AREA, BLDG 60\*
- 12 STONE SHOP AREA, BLDG 61\*
- 13 STONE SHOP AREA, BLDG 62\*
- 14 STONE SHOP AREA, BLDG 64\*
- 15 STONE SHOP AREA, BLDG 66\*
- 16 STONE SHOP AREA, BLDG 67\*
- 17 STONE SHOP AREA, BLDG 68\*
- 18 QUARTERS 34, BLDG 81
- 19 STONE SHOP AREA, BLDG 90\*
- 20 STONE SHOP AREA, BLDG 102\*
- 21 STONE SHOP AREA, BLDG 103\*
- 22 STONE SHOP AREA, BLDG 104\*
- 23 INCINERATOR, BLDG 105\*
- 24 STONE SHOP AREA, BLDG 106\*
- 25 STONE SHOP AREA, BLDG 108\*
- 26 STONE SHOP AREA, BLDG 109\*
- 27 STONE SHOP AREA, BLDG 110\*
- 28 ADMIN. GEN. PURPOSE, BLDG 131
- 29 ROADS & GROUNDS, BLDG 133
- 30 CLOSED LUMBER SHED, BLDG 138
- 31 NORTH DRY KILN, BLDG 139
- 32 SOUTH DRY KILN, BLDG 140
- 33 SALVAGE & SURPLUS, BLDG 143
- 34 SALVAGE & SURPLUS, BLDG 154
- 35 HYDRO-ELECTRIC PLANT, BLDG 160
- 36 CLOCK TOWER, BLDG 205 [SEE NOTE 3]
- 37 OVERHAUL & ASSEMBLY SHOP, BLDG 208
- 38 HEAVY MACHINE SHOP, BLDG 210
- 39 MACHINE SHOP, BLDG 220
- 40 STONE SHOP AREA, BLDG 225\*
- 41 GUARD & FIRE HOUSE, BLDG 225\*
- 42 MACHINE SHOP, BLDG 250
- 43 MOTOR REPAIR SHOP, BLDG 251
- 44 MAGAZINE, BLDG 280
- 45 WAREHOUSE, BLDG 299
- 46 QUARTERS NO 1, BLDG 301\*
- 47 GOLF CLUB HOUSE, BLDG 302
- 48 GOVERNMENT BRIDGE, STRUCTURE 320
- 49 POLICE STATION, BLDG 321\*
- 50 DAVENPORT HOUSE, BLDG 346
- 51 BRIDGE PIER MONUMENT, STRUCTURE 347
- 52 ADMINISTRATION BLDG 350
- 53 STONE SHOP AREA, BLDG 360
- 54 HEADQUARTERS, BLDG 390
- 55 QUARTERS 32, 32A, 33A, 33B, BLDG 360\*
- 56 LOCK AREA

**HISTORICAL FEATURES**

- 57 SESQUICENTENNIAL COMMITTEE HISTORICAL MARKER
- 58 DAR 180 FT. ARMSTRONG HISTORICAL MARKER
- 59 CENTENNIAL COMMITTEE HISTORICAL MARKER
- 60 FT. ARMSTRONG BLOCKHOUSE REPLICA, BLDG 200
- 61 ROCK ISLAND AMA HISTORICAL MARKER
- 62 FT. ARMSTRONG CEMETERY HISTORICAL MARKER
- 63 JOHN B. JERVIS ICR & P RAILROAD HISTORICAL MARKER
- 64 DAR FT. ARMSTRONG HISTORICAL MARKER
- 65 ROCK ISLAND COUNTY HISTORICAL SOCIETY MARKER
- 66 CONFEDERATE PRISON HISTORICAL MARKER
- 67 OFFICER'S WIVES CLUB HISTORICAL MARKER
- 68 INDIAN MOUND
- 69 UNION CEMETERY SITE HISTORICAL MARKER
- 70 CONFEDERATE CEMETERY
- 71 RAMSEY TEST TRACK MONUMENT, STRUCTURE 129
- 72 NATIONAL CEMETERY
- 73 GRAVE OF GENERAL THOMAS J. RODMAN
- 74 GRAVE OF COLONEL DAVID M. KING
- 75 OLD MOLINE BRIDGE HISTORICAL MARKER
- 76 ARSENAL SUNDIAL

**NOTES:**

1. THE ROCK ISLAND ARSENAL WAS ESTABLISHED AS A NATIONAL HISTORIC PLACE, ENTRY NUMBER 65.09.15.000 ON 15 SEPTEMBER 1969 UNDER THE NATIONAL HISTORIC PRESERVATION ACT OF 1966. NATIONAL REGISTER OF HISTORIC PLACES STATUS, AS A HISTORIC DISTRICT, WAS ACHIEVED ON 30 SEPTEMBER 1969.
2. THE BUILDINGS, STRUCTURES, OBJECTS AND SITES SHOWN ON THIS MAP CONTRIBUTE TO THE SIGNIFICANCE OF THE ROCK ISLAND ARSENAL AS A NATIONAL HISTORIC PLACE.
3. BUILDING 205, THE CLOCK TOWER, IS NOT AN ARSENAL BUILDING. IT IS THE PROPERTY OF THE ROCK ISLAND DISTRICT, CORPS OF ENGINEERS.
4. THE NATIONAL CEMETERY AND THE CONFEDERATE CEMETERY ARE ADMINISTERED BY THE VETERANS ADMINISTRATION.
5. DETAILED DOCUMENTATION ON SIGNIFICANT BUILDINGS AND STRUCTURES IS ON FILE AT THE LIBRARY OF CONGRESS UNDER HAER NO. IL-20
6. THE NATIONAL REGISTER BUILDING/STRUCTURES REPRESENT DEPARTMENT OF THE ARMY PRESERVATION CATEGORIES L2, AND 31M 5-80-HAND AR 420-401
7. STRUCTURES DESIGNATED WITH AN ASTERISK ARE PROPOSED AS NATIONAL HISTORIC LANDMARKS.

**ABBREVIATIONS:**

- DAR= DAUGHTERS OF THE AMERICAN REVOLUTION
- AMA= AMERICAN MEDICAL ASSOCIATION
- CR&P= CHICAGO, ROCK ISLAND & PACIFIC



600 0 600 1200  
SCALE IN FEET

SYMBOL	REVISIONS	DATE	APPROVED
<b>ROCK ISLAND ARSENAL</b>			
ROCK ISLAND, ILLINOIS			
US ARMY ENGINEER DIVISION LOUISVILLE CORPS OF ENGINEERS LOUISVILLE, KENTUCKY			
MASTER PLAN BASIC INFORMATION MAPS <b>HISTORICAL INFORMATION MAP</b>			
RECOMMENDED BY INSTALLATION PLANNING BOARD FOR APPROVAL			
DATE	REVIEWED & COMMENTED ON BY MAJOR COMMAND & FORWARDED TO THE CHIEF OF ENGINEERS	DATE	DRAWING NO.
		1987	
DATE	SHEET NO.	FILE NO.	
	HISTORIC		

United States Department of the Interior  
National Park Service

For NPS use only

National Register of Historic Places  
Inventory—Nomination Form

received

date entered

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

1. Name

historic Rock Island Arsenal Rodman Plan - Old Stone Buildings

and or common Arsenal Island Historic Stone Buildings

2. Location

street & number NA not for publication

city, town NA  vicinity of Rock Island

state Illinois code IL county Rock Island code IL161

3. Classification

Category	Ownership	Status	Present Use	
<input checked="" type="checkbox"/> district	<input checked="" type="checkbox"/> public	<input checked="" type="checkbox"/> occupied	<input type="checkbox"/> agriculture	<input checked="" type="checkbox"/> museum
<input type="checkbox"/> building(s)	<input type="checkbox"/> private	<input type="checkbox"/> unoccupied	<input type="checkbox"/> commercial	<input type="checkbox"/> park
<input type="checkbox"/> structure	<input type="checkbox"/> both	<input type="checkbox"/> work in progress	<input type="checkbox"/> educational	<input type="checkbox"/> private residence
<input type="checkbox"/> site	<b>Public Acquisition</b>	<b>Accessible</b>	<input type="checkbox"/> entertainment	<input type="checkbox"/> religious
<input type="checkbox"/> object	<input type="checkbox"/> in process	<input checked="" type="checkbox"/> yes: restricted	<input type="checkbox"/> government	<input type="checkbox"/> scientific
	<input type="checkbox"/> being considered	<input type="checkbox"/> yes: unrestricted	<input checked="" type="checkbox"/> industrial	<input type="checkbox"/> transportation
		<input type="checkbox"/> no	<input checked="" type="checkbox"/> military	<input type="checkbox"/> other:

4. Owner of Property

name United States Department of the Army

street & number The Pentagon

city, town Arlington vicinity of state Virginia

5. Location of Legal Description

courthouse, registry of deeds, etc. Rock Island County Courthouse

street & number 1504 3rd Ave.

city, town Rock Island state Illinois

6. Representation in Existing Surveys

NR, & NHL Surveys  
title HABS/HAER Inventory has this property been determined eligible?  yes  no

date 1937; 1969; 1981, 1985  federal  state  county  local

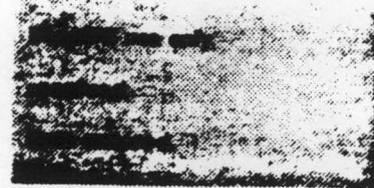
National Park Service  
depository for survey records Library of Congress/Division of Prints and Photographs

city, town Washington state D.C.



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National Park Service

# National Register of Historic Places Inventory—Nomination Form



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NATIONAL HISTORIC LANDMARK DISTRICT: The Rock Island Arsenal Rodman Plan - Old Stone Buildings

Brevet Brigadier General Thomas J. Rodman, known as the "Father of the Rock Island Arsenal," devised a master plan for an arsenal of grand design at Rock Island.<sup>3</sup> The plan called for the construction of 10 large manufacturing shops, built of stone, supplemented by a variety of administrative, residential, maintenance, storage, and utility buildings. General Rodman relocated the arsenal's main site from its original position at the western tip of the island to the high ground of the central interior. The move allowed for greater expansion and use of water power necessary for a grand arsenal.<sup>4</sup>

The boundary of the Arsenal's historic industrial zone of the proposed National Historic Landmark district begins at Zone A, at the western tip of the island, where the Clock Tower Building (Building 205) is situated. A descriptive synopsis and photograph of the Clock Tower and the other limestone structures, which comprised the Rock Island Arsenal in the late nineteenth century through the early days of the 1900s, has been included in this nomination. Also, a map depicting the boundary lines of Zones A and B that form the historic stone building district has been included with this documentation.

Zone A: Historic RIA Industrial Zone

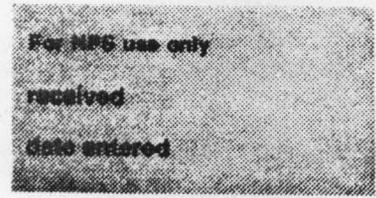
The Clock Tower Building is the principal feature of the western tip of the historic industrial zone. The original stone Gate House (Building 321), constructed in 1875 and not used since the last decade, is the other historic stone building at the west end of Zone A. The Clock Tower Building represents the beginning of the arsenal at Rock Island and is physically located at the western approach to the greater arsenal complex. It is the only building erected from the original arsenal plans. The initial plans called for the construction of a small arsenal for primarily depot activities and not manufacturing at Rock Island.

The Clock Tower Building

Begun under Rock Island Arsenal's first commanding officer, Major Charles P. Kingsbury, only the foundation and portions of the first floor of the Clock Tower Building were completed during his command. The majority of the building was completed under the supervision of General Thomas J. Rodman, Major Kingsbury's successor.<sup>5</sup> Since its completion in 1867, the Clock Tower Building has been in continuous possession of the federal government. In 1941 the U.S. Army Corps of Engineers received control of the structure and has maintained it to this date.<sup>5</sup> The Rock Island Arsenal Gate House still serves as the formal entry onto Rodman Avenue.

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flank the historic Rodman plan industrial core. The Barracks Building and the Storehouse for Shop K both are located on East Avenue. The old Headquarters Buildings and the Post Building are situated just west of the 10 stone shops at the intersection of Gillespie and Rodman Avenues. The Barracks (Building 90), completed in 1873, currently houses the US Army Management Engineering Training Activity (AMETA). The Post Building was completed in 1874. Building 360 functioned as the headquarters building for the Rock Island Arsenal from 1889 - 1922. Although this structure's exterior has remained as originally built, the interior has been renovated. During the 1930s the building was converted into officer's family housing.<sup>9</sup> In 1893, the final Rodman plan building was constructed at the rear of Shop K (Building 68). Constructed as a storehouse for Shop K, Building 56, as it is now designated, functions as classrooms for the original AMETA program. This structure is the Arsenal's only surviving storehouse from the original Rodman plan.<sup>10</sup> Only two such buildings were built. The other one, Storehouse A was destroyed by fire in 1903.<sup>11</sup>

The Rock Island Arsenal's 10 historic Stone Shop Buildings are bound east and west by the ancillary buildings situated on East and Gillespie Avenues, respectively. The structures on North and South Avenues between Gillespie and East form the northern and southern boundaries of the historic industrial zone. Today the 10 Rodman plan shops stand basically as they were constructed at their original locations, approximately a mile east of the Clock Tower Building, toward the central portion of the island.

Initially Rodman's 10 shops were designated by letters. They were known as shops A, B, C, D, E, F, G, H, I, and K. Under Rodman's plan, the shops were divided into Armory and Arsenal Rows.<sup>12</sup> Shops B, D, F, H, and K, aligning Rodman Avenue on the north, formed the installation's Armory Row. These structures are now designated as Buildings 60, 62, 64, 66, and 68, respectively.

A historic properties report, prepared by a private firm for the United States Army in 1985, contained the following general assessment regarding the Arsenal's old stone buildings.

Surviving in highly intact condition, the buildings make a cohesive statement that in terms of both their scale and style, has no counterpart among government installations in the Midwest.<sup>13</sup>

The report included the following description of the 10 Rodman Plan stone shops.

The ten Stone Shops (Buildings 60, 62, 66, 68, 102, 104, 106, 108, and 110), massive "U"-shaped structures, each with a central section 210 feet by 60 feet, flanked by wings measuring 300 feet by 60 feet . . . The shops' exteriors are constructed of pillowed limestone accented by pilasters, architraves and pedimented gable ends. The regularly spaced windows originally featured six-over-six,

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National Park ServiceNational Register of Historic Places  
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condition.<sup>20</sup>

The elegant residential area was intended to be clearly distinguishable from the industrial area. The symmetry and formal classical architecture of the shop buildings gave way to a picturesque though massive adaptation of the Italian villa form of Quarters One. The subaltern officers' quarters were constructed with a more restrained Italianate character.

The Commanding Officer's Quarters, Building 301, completed in 1871 and designed by General Rodman, still functions today as the family residence of the highest ranking officer on Arsenal Island. Building 301 is a massive structure containing over 19,000 square feet of floor space, two and one-half stories with a three and one-half story tower. A wide porch stairway, projecting bays, and porches conceal the buildings basically cube shape design.<sup>21</sup> Now known as Quarters One, the Commanding Officer's Quarters is currently the family residence of Major General Fred Hissong, Commanding General of the US Army Armament, Munitions, and Chemical Command. The High Victorian Italian Villa architectural style of Quarters One became the model for the scaled-down Italianate design of the Subaltern Officers' Quarters built to the east of Quarters One.<sup>22</sup> The Subaltern Officers' Quarters (Buildings 2, 3, and 4) are two story, hip roof, stone veneer structures that feature bracketed cornices and projecting two story bays instead of towers. The historic properties report of 1985 recommends that:

Provisions should be made for adequate protection of the buildings' settings i.e., spacious yards, vistas, landscaping, and original or early yard and street fixtures, including fountains, fences, and streetlamps.<sup>23</sup>

These General Rodman-designed and-inspired quarters, built in the period 1871-1874, are imposing stone mansions that are different in character but architecturally compatible to the design of the stone shops.

Major Daniel W. Flagler, Rodman's successor, supervised the construction of the original three Subaltern Officers' Quarters, designated as Quarters Two, Three, and Four. Subaltern Officer's Quarters Six, though not of the same design as the 1874 circa officers' quarters, should be included in this historic zone. It was constructed in 1905, to accommodate the officers who had accompanied the small arms mission to Rock Island from the east at the turn of the century.<sup>24</sup> General Rodman's plans for a combined armory and arsenal at Rock Island became a reality with the arrival of these officers.

Quarters Six, a large three-story, quoined Milwaukee brick building with flaired-eave gables and palladian windows, is today the family quarters of Colonel John S. Cowings, the commanding officer of the Rock Island Arsenal. It has been the arsenal commanding officer's quarters ever since the arrival of the command

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<sup>1</sup>A Historical Summary, 1 July through 31 December, 1954, (Rock Island: Rock Island Arsenal, 1955) p. 1-3

<sup>2</sup>Major Daniel W. Flagler, A History of the Rock Island Arsenal from its Establishment in 1863 to December 1876: and of the Island of Rock Island, the Site of the Arsenal, from 1804 to 1863, (Washington: Government Printing Office, 1877) pp. 152, 156, 250, 380-381. This is also known as Ordnance Memorandum #20. It is hereafter referred to as Flagler.

<sup>3</sup>Flagler, p. 261.

<sup>4</sup>Ibid, p. 123.

<sup>5</sup>MacDonald and Mack Partnership, Historic Properties Report, Rock Island Arsenal, Final Report, 1985, This document was prepared by the MacDonald and Mack Partnership, Minneapolis, Minnesota, under Contract CX-0001-2-0033 between Building Technology Incorporated, Silver Spring, Maryland, and the Historic American Buildings Survey/Historic American Engineering Record, National Park Service, U.S. Department of the Interior. It is hereafter referred to as MacDonald and Mack.

<sup>6</sup>On 11 September 1941, the US Army Ordnance Department permanently transferred ownership of the Clock Tower Building together with a surrounding triangle of 6.90 acres of land from the Rock Island Arsenal to the Corps of Engineers.

<sup>7</sup>Flagler, p. 272.

<sup>8</sup>Henry B. Moy and Titus M. Karlowitz, Cultural Resources Inventory and Evaluation of Rock Island Arsenal, Rock Island, Illinois, (Normal, Illinois, Midwestern Archeological Research Center, Department of Sociology, Anthropology and Social Work, Illinois State University, p. 58.

<sup>9</sup>Ibid., p. 78; Ira O. Nothstein, "Rock Island Arsenal Its History and Development," unpublished manuscript: Works Progress Administration Project, 1937.

<sup>10</sup>MacDonald and Mack, p. 99; Ira O. Nothstein, p. 169.

<sup>11</sup>Ibid., p. 86.

<sup>13</sup>MacDonald and Mack, p. 84.

<sup>14</sup>MacDonald and Mack, p. 85.

<sup>15</sup>Ibid., p. 86.

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Important aspects of the Rock Island Arsenal's Old Stone Buildings historic district are revealed in the following individual building historic descriptions.

Individual Building Descriptions (See HABS/HAER Inventory Cards)

The following list enumerates only those arsenal buildings within the boundaries of the proposed historic landmark district that contribute to the historic district. Buildings within areas of the arsenal excluded from the landmark district are not enumerated.

Subaltern Officer's Quarters - (Quarters 2, 3, and 4)

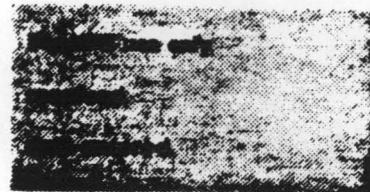
Army classified category I historic property. Italianate style architecture. Series of 3 subaltern officer's quarters constructed during Major D. W. Flagler's command (1871-1886). Presently used as officer's family quarters. Part of ensemble related to Commanding Officer's Quarters situated directly to the west. Picturesque 19th century landscape planning provided by total ensemble of residential quarters. Under Rodman's plan, north central shore of island set aside as staff residential area. These quarters continue to function in their original capacity.

Subaltern Officer's Quarters 2, Building 2

Army category I historic property. Italianate style architecture. Rectangular, 48' x 28' 2-story, square ground floor plan, cruciform on second floor, coursed rock faced ashlar limestone foundation and load bearing walls; low hip roof with flat deck; Completed in 1874  
Building faces north onto Terrace Drive and overlooks Mississippi River. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

Subaltern Officer's Quarters 3, Building 3

Army category I historic property. Italianate style architecture. 2-story, L-shaped, 53' x 40' Coursed rock faced ashlar limestone foundation and load bearing walls; low hip roof with flat deck. Bracketed cornice with panelled frieze; stone quoins; cast iron columns, brackets, and balustrade on north porch. Building faces north onto Terrace Drive and overlooks Mississippi River. Completed in 1872. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

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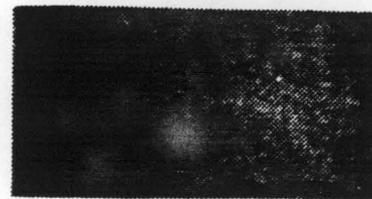
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Storehouse K, Building 56

Army category I historic property. Greek Revival Architecture. Massive coursed rock faced ashlar limestone foundation and load bearing walls. Walls approximately 4' thick in basement decreasing about 6" with each higher story. Rectangular in shape, 234' x 60', projecting north and south pavilions 60' by 15'. Cross gable roof, and wrought iron Fink trusses. 2 1/2 stories plus basement. Basically building has kept its original appearance despite modification and replacement of entrances. The only surviving storehouse from Rodman's original plan. Rodman planned for eight storehouses to be constructed for each of the eight shop buildings excluding the forge and foundry in shops E and F. However only two were constructed. Storehouse A was destroyed by fire in 1903. Walls lined with brick, floors supported by iron columns and carried on wood joists and girders. Completed in 1893, it currently functions as US Army Management Training Activity Annex. Storehouse K is located northwest of the intersection of Gillespie Avenue and North Avenue north of the stone shops. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

Ten Original Stone Shops

In 1865, General Thomas J. Rodman devised a master plan for RIA calling for the construction of ten large manufacture shops, five on each side of the island's major east-west thoroughfare. Historically, these shops have formed the manufacturing core of the Rock Island Arsenal. The Rodman plan stone buildings represented one of the largest military construction projects of the late 19th Century. Surviving in highly intact condition, the buildings have no counterpart in scale and size in the Midwest.

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Building's dimensions identical to Shop B and the other stone shops save Shops E and F. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology Inc., May 1984.)

Stone Shop F, Building 64

Army category I historic property, Greek Revival Architecture Massive rock faced ashlar limestone foundation and load bearing walls. U-shaped, 210' x 300', south wings 90' x 60'; 300' x 60' east and west wings; two projecting pavilions 60' x 15' on east and west sides. 1 1/2 stories, with seamed metal cross gable roof; metal frame; gabled monitor. Building 64 included in group of ten stone shops that formed the manufacturing core of Rodman's master plan. Originally used as Rolling Mill and Forging Shop. Presently used as Electroplating Shop. Initial construction began 1874 and building was completed in 1878. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology Inc., May 1984.)

Stone Shop H, Building 66

Army category I historic property. Greek Revival Architecture Surviving in highly intact condition, Building 66, as with the other nine original stone shops, form a cohesive architectural statement in terms of scale and style. They have no counter part among government installations in the midwest. Building 66 has identical dimensions with the other Rodman plan shops, with the exception of Buildings 64 and 106 (Shops F and E). Presently Shop H used as Small Arms Assembly building. The small arms mission production began in 1904. Initial construction of Shop H occurred in 1878 and building completed 1886. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology Inc., May 1984.)

Stone Annex Building, Building 67

Army category II historic property. Greek Revival Architecture Concrete foundation, reinforced concrete structure clad with course stone veneer. Rectangular, 90' x 60', 2 1/2 stories. Annex Building 67 connects buildings 66 and 68. One of four identical links constructed between eight of the stone shops. Annex buildings 61, 67, 103, and 109 provide evidence of early interest at Rock Island Arsenal in preserving the uniformity and regularity of the Stone Shops. Wartime needs were met without sacrificing the architectural integrity of the ensemble.

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Stone Shop A, Building 102

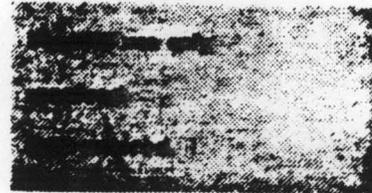
Army category I historic property. Greek Revival Architecture 2 1/2 stories plus basement. One of the ten U-shaped manufacturing shops that formed the industrial core of General Rodman's master plan for Rock Island Arsenal. Basically the same dimensions as the other stone shops with the exceptions of Shop E and F. Initial construction began in 1873. Completed in 1876. Constructed as part of Arsenal Row, the five shops that aligned Rodman Avenue on the south presently used for offices. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Ind., May 1984.)

Stone Shop Annex, Building 103

Army category II historic property. Greek Revival Architecture 2 1/2 stories plus basement. One of four identical links built between eight of the stone shops. Concrete foundation, reinforced concrete structure clad with coursed stone veneer. Rectangular 90' x 60'. Connects buildings 102 and 104. Designed by Stone and Webster Engineering Company to match the original stone shops. Completed in 1918. Originally used for material handling, presently used for office space. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

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Stone Shop G, Building 108

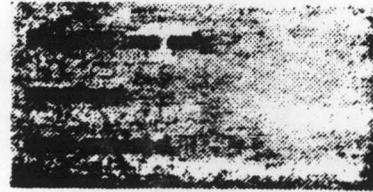
Army category I historic property. Greek Revival Architecture  
Massive rock faced ashlar limestone foundation and load bearing walls, 3' thick in the basement, decreasing about 6" with each succeeding story. U-shaped, 210 x 300', same dimensions as the other stone manufacturing building except for buildings 64 and 106 (Shops F and E). Shop G contains the same architectural features as the other stone shops. Presently AMCCOM command offices; print shop and photo laboratory; and prototype shop are housed in Building 108. Initial construction 1877. Completed 1882. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

Stone Shop Annex, Building 109

Army category II historic property. Greek Revival Architecture  
Concrete foundation, reinforced concrete structure clad with coursed stone veneer. Rectangular, 90' x 60'. 2 1/2 stories. Designed by Stone and Webster Engineering Company to match the original stone shops. Originally used for material handling, presently utilized as offices for AMCCOM. Built in 1918 as one of four identical links constructed between eight of the stone shops. Building 109 connects Buildings 108 and 110. It is an historically significant example of military-industrial design that augmented RIA's industrial efficiency while preserving its overall architectural integrity. Embodies an equal concern for utilitarian and aesthetic considerations that became increasingly rare during subsequent wartime construction programs. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

Stone Shop I, Building 110

Army category I historic property. Greek Revival Architecture  
Basically identical with the other stone manufacturing buildings in terms of dimensions, style, and material. Along with Buildings 102, 104, 106, 108, collectively formed Rodman's Arsenal Row, five large stone manufacturing shops that align Rodman Avenue. Initial construction began 1878, completed 1883. Presently used as offices for AMCCOM elements. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

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Commanding Officer's Quarters, Building 301

Army category I historic property. High Victorian Italian Villa style architecture. 2 1/2 stories plus full basement. Stone foundation. Smooth dressed coursed ashlar limestone load bearing walls. Basically L-shaped; main block is 74' x 52'; west wing is 31' x 44'; tower on east side is 19' x 14'. wraparound porch, approximately 73' x 9' on east and north sides. north side has 2 1/2 story rectangular bay with one story polygonal bay and 42' x 9' porch. South side has 19' x 18' porte cochere, 7' x 13' entrance porch, raised open terrace, and two one-story rectangular bays 7' x 13'. Tower is 3 1/2 stories. Truncated hip roof with copper deck main block; hip roof west wing; tower has parapeted hip roof; north bay gable roof. Three interior chimneys. Heavy rustic stone quoins; deep stone cornice with prominent scrolled brackets; pedimented gable end on north bay; dentiled cornices on one-story bays; decorative cast-iron detailing and paired columns on porte cochere and wraparound porch. Constructed in 1871, Building 301 is still functioning as the family quarters for the highest ranking officer on Arsenal Island. Building 301, also known as Quarters 1, faces east and is located on the north shore of the island, west of Gillespie Avenue. Numerous dignitaries from the United States and foreign countries have visited Quarters 1 in its 116 years. Possibly the largest single family dwelling owned by the US Army. Its style and scale complement that of the ten large stone manufacturing shops. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, Building Technology, Inc., May 1984).

Gate House, Sentry Station Building 321

Army category I historic property. Gothic Revival style architecture. Stone foundation. Coursed rock-faced ashlar limestone load-bearing walls. Rectangular, 19' x 24'. One story. Steeply pitched gable roof. One-over-one-light double hung sash; stone sills and stone pointed arch hoodmolds; oculus in the gable ends. Notable departure from the arsenal's predominant use of Greek revival detailing for its stone buildings. Originally erected in 1875 and used as the Gate House, presently building is used as a Sentry Station.

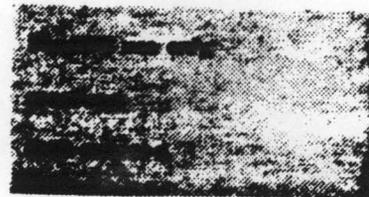
Table I

## List of Historically Significant Old Stone Buildings at the Rock Island Arsenal

Bldg. #	Date (s)	National Register Area of Significance	US Army T.M. 5-801-1	**Building Condition
2	1873-73	Architecture	1	good
3	1871-71	"	1	"
4	1871-72	"	1	"
6	1905	"	3	"
56	1893	"	1	"
60	1867-72	"	1	"
62	1871-76	"	1	"
64	1874-78	"	1	"
65	1876	"	1	"
66	1878-86	"	1	"
68	1881-93	"	1	"
90	1873-74	"	1	"
102	<del>1873-78</del>	"	1	"
104	1867-72	"	1	"
105	1871	"	1	"
106	1871-74	"	1	"
108	1877-82	"	1	"
110	1878-83	"	1	"
205	1863-67	"	1	"
225	1873-74	"	1	"
301	1870-71	Architecture & Military History	1	"
321	1875	Architecture	1	"
360	1889	Architecture	1	"
Annex Bldg. #				
103	1918			
61	1917-18	"	1	"
109	1918			
67	1917-18	"	1	"

\* Categories taken from MacDonald and Mack Partnership, Minneapolis, Minnesota, Historic Properties Report, Rock Island Arsenal, 1985, "Category I Historic Properties p. 79-93, Category II Historic Properties p. 94-104, and Category III Historic Properties p. 105-125"  
Historic Architectural Building Study/Historical Architectural Engineering Record Master Cards, Inventoried by Barbara Hightower, Building Technology, Inc. May 1984.

\*\* Ibid.

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perform these responsibilities. Since the 1960's the arsenal has become a production center for a variety of high-priority, small-lot ordnance items that private industry cannot economically manufacture.<sup>9</sup> In 1978 the Rock Island Arsenal began a mission of producing M45 recoil mechanisms for the US Army's new 155mm M198 Towed Howitzer that was scheduled to replace the World War II vintage M114/M114A1 Towed Howitzer. Furthermore, the Arsenal has had the added responsibility of integrating and assembling the four major components of the M198 Howitzer into a complete field artillery piece. In 1968 the Rock Island Arsenal had developed the X198 prototype Howitzer and manufactured the initial production, of 19 M198 15mm Howitzers, in house.<sup>10</sup> At the present, the Rock Island Arsenal comprises about 235 structures, with approximately two dozen dating from the nineteenth century.<sup>11</sup>

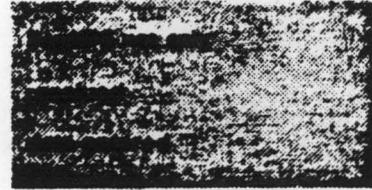
Rock Island is situated approximately halfway between St. Paul, Minnesota and St. Louis, Missouri at the point in which the Mississippi River bends away from its normal north-south course and flows westward. At this site the river divides into two main channels around a footprint-shaped isle known as Rock Island. This 948 acre island is located in the heart of four communities that are collectively called the Quad Cities. Individually these cities are Moline, and Rock Island, Illinois; and Bettendorf, and Davenport, Iowa. Approximately 100 of the island's total acres are within the Rock Island Arsenal's Old Stone Buildings - Historic District.<sup>12</sup> Rock Island is now the home for both the Rock Island Arsenal and the US Army Armament, Munitions and Chemical Command headquarters. Around 10,000 federal workers are employed on Arsenal Island. Of this figure, approximately 3,000 are Rock Island Arsenal employees, 6,000 are employed by AMCCOM headquarters, and the rest are personnel from other government tenant agencies. The US Army AMCCOM Command headquarters at Rock Island oversees over 30 other installations that include Army Ammunition Plants, Research and Development Centers, and the Army's only other active manufacturing arsenal, Watervliet Arsenal. The Rock Island Arsenal's peak employment figures occurred during World War II prior to the command's arrival in 1955. The Rock Island Arsenal reached its highest figure of 18,467 employees in June 1943.<sup>13</sup>

#### Architectural Significance

The inception and growth of the Rock Island Arsenal's Old Stone Buildings took place during the succeeding commands of Major Charles P. Kingsbury, July 1863-June 1865; Brevet Brigadier General Thomas J. Rodman, August 1865-June 1871; and Major Daniel W. Flagler, June 1871-April 1886. At the conclusion of Major Flagler's command, the direction of the development was firmly enough established to be carried on for an additional decade and without major deviation.<sup>14</sup> Although significant individually, it is collectively as the Arsenal of grand design that these buildings merit National Historic Landmark consideration. Constructed during peacetime and completed over a twenty-five year period, these old stone buildings reflect the feeling of manifest destiny that permeated Congress and the nation in the latter nineteenth century. The integrity of this grand plan remains intact.

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Having been ordered hence at his own request, Major Kingsbury transfers his duties to his successor with the hope that the latter, will not be tried with the numerous delays and vexations which have attended the period of his connection with the Rock Island Arsenal.<sup>22</sup>

The appointment of the famous General Thomas J. Rodman as the second Rock Island Commander was a good indication that the Ordnance Department was thinking more seriously about upgrading the arsenal plans at Rock Island. Brevet Colonel Daniel W. Flagler, a contemporary of General Rodman and a distinguished officer in his own right, wrote in his history of the Rock Island Arsenal, published in 1877 six years after Rodman's death, that:

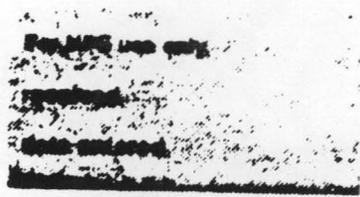
No better evidence could be desired that the Ordnance Department intended to construct a great armory and arsenal at Rock Island than the fact that an officer of such high standing as General Rodman, and one whose services were so valuable to the department in every way, was selected for the command.<sup>23</sup>

During General Thomas J. Rodman's tenure as Commanding Officer at the Rock Island Arsenal Storehouse A, the Clock Tower Building, was completed; the water reservoir built; two shop buildings, and the Commanding Officer's Quarters nearly completed; a wagon bridge to city of Rock Island erected; water power contracted; arsenal grounds cleared; roads laid out and built; plans for a combined armory and arsenal at Rock Island approved; the relocation of the Chicago, Rock Island and Pacific Railroad to the western edge of the island took place; the construction of a steel double deck bridge from Rock Island to Davenport; and the settlement of property claims held by private parties.

Though General Rodman had been commander of the Watertown Arsenal at the time of his appointment to Rock Island he was known chiefly as developer of the Rodman Gun. Rock Island Arsenal historians, beginning with Daniel W. Flagler, have claimed General Rodman as the "Father of the Rock Island Arsenal". After making a study of Rock Island, General Rodman recommended to the Chief of Ordnance a new location for the arsenal. Discussions regarding a new arsenal and armory at Rock Island transpired in meetings held in the east between Generals Rodman and Dyer, Chief of Ordnance. Colonel Flagler wrote that:

From the time of his return, in October, until the following February, (1866) General Rodman was busy preparing a map and plans for the arsenal.<sup>24</sup>

General Rodman presented his drawings, a map, and explanations of them to the Chief of Ordnance in early 1866. Colonel Flagler explained that:

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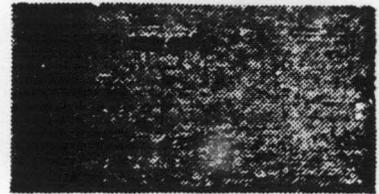
At the request of the Chief of Ordnance he [Thomas A. Rodman] was buried at the arsenal, on a lot of ground set apart for that purpose near the national cemetery at the east end of the island. He was so closely identified with the work of building the [Rock Island] arsenal,<sup>28</sup> and his labors form so important a part of its history. . . .

Over a century after his death, the Rodman plan - Old Stone Buildings remain standing and in active use. Shop E and F, Buildings 106 and 64 respectively, continue to function as part of the Arsenal's manufacturing operations. Shop E, the Rock Island Arsenal foundry building, began its operations in the early 1870s and today continues to function in that same capacity. Shop F, the Rock Island Arsenal's original rolling mill and forge shop, currently houses the Arsenal's plating shop. Shop H and K, Building 66- and 68 respectively, continue to have small arms activities within those structures. Shop I currently houses the printing plant which has produced Army skirmish targets within the Old Stone Buildings since 1881. All the Old Stone Buildings continue to be actively used by the US Government.

Throughout its history many visitors, foreign and domestic, have marveled at the symmetrical placement of the Rock Island Arsenal's Old Stone Shops. In 1905, Mr. F. A. Stanley authored a series of eight featured articles, totaling over 50 pages, which appeared weekly in the American Machinist Magazine issues, 2 February 1905 through 30 March 1905. One entire article was devoted to acquainting, his readers with the size of the western arsenal, at Rock Island. Mr. Stanley wrote:

In the preceding article an effort was made to give readers some idea of the immensity of the manufacturing establishment which our government maintains in the Mississippi Valley [at Rock Island] . . . of [the] U-shaped [shops], arranged in two rows which face each other with the legs of the U, or the wings, extending to the rear, the buildings present a decidedly imposing appearance. The two lines of shops are about 123 yards apart and are known as Armory Row and Arsenal Row, the one to the south of Main avenue - a broad macadam throughfare as hard and white as marble, which stretches away from Fort Armstrong avenue to a point well beyond the shops. . . . West of Armory Row is located the office building, and directly across Main avenue and in line with Arsenal Row is a guard and fire engine-house.<sup>29</sup>

After visiting the Rock Island Arsenal Stanley wrote of his surprise at the extent of the plant. He wrote:

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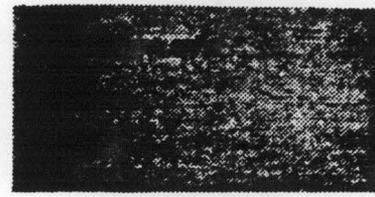
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A greater portion of the production effort, at the Rock Island Arsenal before the Spanish-American War, concentrated on the building of General Rodman's ambitious construction program. This program was largely implemented by his successor, Colonel Daniel W. Flagler.<sup>33</sup> The rolling mill [Shop F, Building 64] produced most of the roof trusses and machinery shafting from 1878 to 1900. The foundry [Shop E, Building 106] and machine shop [Shop C, Building 104] produced much of the machinery and building hardware such as locks and stairways. A majority of the iron and brass works used in the construction of the buildings were cast in Shop E, Building 106. The Arsenal produced brass castings, hinges, roof straps, window pulleys, and door knobs; and iron columns, beams, girders, gratings, and water and sewer pipes used in the Old Stone Buildings. The carpenter shop [Shop C] made the window frames. Contract labor did some of the work while civilian employees and soldiers did other portions of the job.<sup>34</sup>

Manufacturing of ordnance began slowly, although as early as 1869, the Rock Island Arsenal reported in the Report of the Chief of Ordnance, that it had cleaned and packed 55,361 pieces of infantry accoutrements, 36,340 pieces of horse equipment and 503 sets of artillery harnesses.<sup>35</sup> In May 1875, chief of ordnance, Stephen V. Benet, had visited Rock Island, and soon after instructed Major Flagler to begin the manufacture of infantry and cavalry equipment.<sup>36</sup> This initial manufacturing took place in the tin shop and harness shop in Shop C, Building 104. By 1879 280 men were employed on the island and working in the Old Stone Shops.<sup>37</sup>

The Rock Island Arsenal, by 1875 had begun to supply nearly all the ordnance stores required by the Army in the west.<sup>38</sup> During the winter of 1891 an Indian uprising occurred in South Dakota, Rock Island Arsenal Commander, Colonel James M. Whittemore, reported that within one hour after receiving an order for arms and ammunitions a railroad car had been loaded at the Storehouse (Clock Tower Building), and was on its way to troops in the field.<sup>39</sup> Another incident of the Rock Island Arsenal supporting military campaigns in the west occurred in 1916. Following Francisco "Pancho" Villa's repeated raids into New Mexico and Texas, the Rock Island Arsenal was notified by telegram that the militias of various states had been mobilized. In seven days the Arsenal had issued full war-time equipment to fourteen different national guard units.<sup>40</sup> However the Rock Island Arsenal's first major test to meet emergency war-time production had occurred earlier, in 1898, at the outbreak of the Spanish-American War. It performed admirably, although the arsenal's potential was hardly tapped. Only one and a half of the ten original industrial shops were used in the war effort. Not until World War I would all ten of the Arsenal stone shops be used as manufacturing buildings.<sup>41</sup> A small workforce of less than 500 men and boys had been employed in these shops at the beginning of the Spanish-American War. At the end of the war the Arsenal's manpower had increased to approximately six times its prewar figure. The Rock Island Arsenal turned out 6,000 complete outfits of infantry equipment daily during its peak war-time employment of August 1898.<sup>42</sup> In August of 1898 the Arsenal workforce comprised 2,900 employees.

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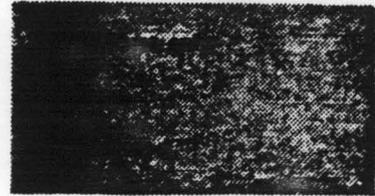
the Arsenal to develop the US Army's first twentieth-century-type military uniform webbed gear. The Army's Infantry Equipment Board, in session at Rock Island Arsenal from 1909 - 1910, adopted the new webbed infantry equipment, model 1910. The majority of the design and experimental work of this board was accomplished in the equipment shops located in Shop K, Building 68.<sup>46</sup>

The US Army Cavalry Equipment Board held a similar session at the Rock Island Arsenal in the years 1910-1912, the Arsenal performed the board's original investigation and experimentation.<sup>47</sup> Shop E, Building 106, cast the metal parts used in the production of the board's experimental items. The Infantry Equipment Board evaluated domestic and foreign items such as canteens, meat cans, tin cups, bayonet holders, issue knives, entrenching tools, tools for use in maintenance of weapons, individual load carrying equipment and beltware. The Cavalry Equipment Board evaluated domestic and foreign produced saddles, harnesses, pistol holsters, saber scabbards, and helmets. Equipment from European countries, and from far east nations such as Japan and Siam were examined, evaluated, and their best features combined in the experimental designs. Examples of the board's experimental equipment, that were designed and produced at the Rock Island Arsenal, have been maintained by the Rock Island Arsenal Museum. Established in 1907, the museum has a unique collection of personal soldier accoutrements which has proven to be a valuable resource for researchers of such historic equipment.

The United States Army's transformation from horse to auto drawn artillery occurred at the Rock Island Arsenal. The Rock Island Arsenal had begun to manufacture field and siege artillery carriages in 1892. By 1894 it was producing machine gun carriages; field gun carriages; limbers, caissons, battery wagons and carriages for siege guns.<sup>48</sup> These additional responsibilities for Rock Island Arsenal came in the 1890s as a result of a reorganization in the Army's manufacturing program. During the 1880s, the Ordnance Department had designated Watervliet Arsenal near Albany, New York, as the site of a new gun tube factory for heavy-caliber seacoast defense cannons. Watertown Arsenal near Boston, could not handle the production of both the new carriages and its old production schedules. To expedite work on the heavy carriages, the Army selected Rock Island Arsenal to manufacture some of the carriages formerly produced at Watertown Arsenal.<sup>49</sup>

Rock Island Arsenal's machine shop and field gun carriage shop were initially set up in Shop C and later in 1899 moved to Shop G. The last example of a US Army non-recoil field gun was produced in these shops in 1899. Captain Wheeler, Ordnance Department, designed and the Arsenal constructed his three inch non-recoil field gun.<sup>50</sup>

The Rock Island Arsenal's workforce more than doubled to 4,786 employees within 10 weeks after the United States entered World War I in 1917. Peak wartime employment occurred at the arsenal in June 1918 when more than 10,000 workers were on the Rock Island Arsenal's payroll.<sup>51</sup> During World War I, almost all of the manufacturing

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recuperators and carriages turned into the Rock Island Arsenal Depot after World War I. The Rock Island Arsenal had encountered and studied serious corrosion problems in regard to storage of weapons and equipment. The Rock Island Arsenal Laboratory pioneered the use of the synthetic rubber compound known as Duprene for packing recoil mechanisms scheduled for storage.<sup>60</sup> Other arsenals and depots, plus the US Army Corps of Engineers, sought Rock Island Arsenal's assistance in solving their corrosion problems.<sup>61</sup>

In World War II the Army moved its design work for self-propelled gun carriages from Washington, D.C., to Rock Island Arsenal.<sup>62</sup> The modern Army tank evolved from the Rock Island Arsenal's design section and artillery shop in the years 1919-1939.<sup>63</sup> In the spring of 1919 the Rock Island Arsenal received an order for the assembly of 100 Mark VIII Tanks which they completed in 286 days.<sup>64</sup> Portions of the tank parts had to be manufactured at the Rock Island Arsenal because the parts shipped from England were faulty. Later in the inter war period, considerable work, with the use of volute springs, was performed on the suspension system for tanks.<sup>65</sup> Furthermore, the Arsenal developed a successful technique of welding light armor plate for the experimental armored car T4. The T4, had an innovative armor plate hull and turret of all welded construction. In addition, it was the first attempt by the US Army to use rubber-jointed tracks on armored vehicles.<sup>66</sup>

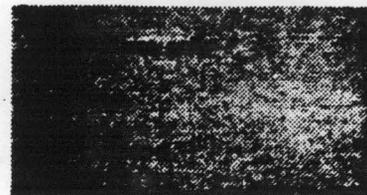
At the outbreak of World War II, the nation's government-owned arsenals, such as Rock Island Arsenal, were virtually the only manufacturing establishments in the country with experience in producing military hardware and ammunition.<sup>67</sup> To quicken private contractors with ordnance blueprints and specifications in their various areas of specialization. During the Second World War, Rock Island Arsenal initially provided extensive consulting work on the manufacture of artillery vehicles, but later in the war expanded its advisory role, and became the nation's main research-and-development center for gun carriages, gun mounts, recoil mechanisms, and rocket launchers.<sup>68</sup> In addition, the Arsenal also manufactured and reconditioned these items. Below is a listing, by building, of the Old Stone Shops manufacturing operations during the second world war.<sup>69</sup>

Shop B: The Engine Overhaul Division, engaged in the over-  
[Building 60] haul of tank engines and miscellaneous automotive  
equipment, occupied the east wing of Shop B until  
April, 1944. A proof-firing range and a cleaning  
section for small arms were located in the west wing  
of the basement.

Shop C: The Woodworking Division, producing all types of  
[Building 104] crates, boxes, parts for target frames, storage  
racks and miscellaneous items, occupied the entire  
west wing and the first floor, east wing, of Shop C.

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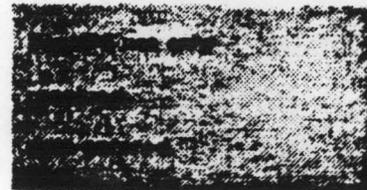
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After the Second World war, the Rock Island Arsenal substantially cutback its production and overhaul activities. In the later 1940s, Rock Island Arsenal produced limited quantities of machine guns, ammunition loaders for gun mounts, and metal shipping crates; experimental design work for mortars, rocket launchers, recoil mechanisms and machine guns, and overhaul of artillery, tanks, automotive equipment, and small arms were part of the Arsenal's work.

During the Korean War, the arsenal engaged principally in the activities of development and manufacture of rocket launchers and mortars, and the overhaul and rehabilitation of tanks, artillery, and small arms. In 1962, most of Rock Island Arsenal's rocket launcher mission was transferred to Watertown Arsenal. But shortly thereafter, the installation acquired increased responsibilities for small arms design and production, when Springfield Armory in Massachusetts, the government's previous center for such work, was closed by the Army in 1967. Rock Island Arsenal activities during the Vietnam War focused on the design and development of aircraft machine gun systems, artillery recoil mechanisms, and gun mounts, as well as the overhaul of small arms, artillery and combat vehicles. But after the removal of the arsenal's tank rebuild activity in 1972, its manufacturing program increasingly became a custom-order operation for "a great variety of small job lot components or assemblies which private industry could not supply at economical prices."

In the aftermath of the Vietnam War, Rock Island Arsenal continued its role as a custom-order shop for specialty ordnance items and concentrated its general research, manufacturing, and overhaul operations on artillery recoil mechanisms, gun mounts, and machine gun systems.

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Some details of Rodman's plans outlined in his letter to the Chief of Ordnance dated February 7, 1866 were changed as a result of their meetings. However, Rodman's plan basically remained intact. In addition, once in charge, General Rodman took it upon himself to revise the construction plans of the Clock Tower Building. Not begun under his command and already under construction when he arrived at Rock Island, the Clock Tower was not overlooked by Rodman. He immediately requested permission to raise the building's roof and increase the height of the tower to create a more imposing appearance. With this in mind, it is then reasonable to consider the Rock Island Arsenal Stone Buildings as the Thomas J. Rodman plan buildings.

<sup>2</sup>The ten stone shops that form the original manufacturing core of General Rodman's plan are U-shaped, the wing facing Rodman is 210' x 300'; the two wings projecting to the rear of the building are 300' x 60'; two projecting pavilions 60' x 15'. In addition the entire 948 acres of Rock Island were reserved for expansion of the Rock Island Arsenal.

<sup>3</sup>General Rodman's letter to General Dyer, Chief of Army Ordnance, dated 7 February 1866. Daniel W. Flagler, Major, U. S. Army Ordnance, A History of the Rock Island Arsenal from its Establishment in 1863 to December 1876; of the island of Rock Island, the site of the Arsenal, from 1804 to 1863, (Washington: Government Printing Office, 1877) pp. 118-126. This work is also known as Memorandum #20. It is hereafter referred to as Flagler.

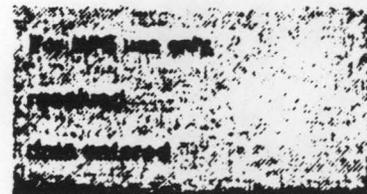
Thomas J. Rodman received his Brevet Brigadier General rank for faithful, meritorious, and distinguished services in the Ordnance Corps on 13 March 1865. He served in command of the Rock Island Arsenal from August 1865 to death on 7 June 1871. He died at the age of 53, four years after his promotion to Lieutenant Colonel.

<sup>4</sup>Ibid., p. 118.

<sup>5</sup>MacDonald and Mack Partnership, Historic Properties Report, Rock Island Arsenal, Final Report, 1985. This document was prepared by the MacDonald and Mack Partnership (Minneapolis, Minnesota, under contract CX-0001-2-0033 between Building Technology Incorporated, Silver Springs, Maryland, and the Historic American Buildings Survey/Historic American Engineering Record, National Park Service; U. S. Department of Interior, p. 84. It is hereafter referred to as MacDonald and Mack.

<sup>6</sup>Ibid., pp. 84-85.

<sup>7</sup>Ibid., Executive Summary, first page.

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The elegant residential area was intended to be clearly distinguishable from the industrial area. The symmetry and formal classical architecture of the Greek Revival designed shop buildings gave way to a picturesque, though massive, adaptation of the Italian villa form of Quarters One. The subaltern officers' quarters were constructed with a more restrained Italianate character.

<sup>17</sup>Flagler, p. 106.

<sup>18</sup>Ibid., p. 256.

<sup>19</sup>Ibid., p. 283.

<sup>20</sup>Ibid., p. 260.

<sup>21</sup>Ira O. Nothstein, "Rock Island Arsenal, its History and Development," (unpublished manuscript: Works Progress Administration Project, 1937,) p. 189. It is hereafter referred to as Nothstein.

<sup>22</sup>Ronald Tweet, The Rock Island Clock Tower, From Ordnance to Engineers, (No place of publication listed, Rock Island District U. S. Army Corps of Engineers, May 1977) p. 15. Flagler, p. 111.

<sup>23</sup>Flagler, p. 116.

<sup>24</sup>Ibid., p. 117.

<sup>25</sup>Ibid., p. 123.

<sup>26</sup>Ibid., p. 266.

<sup>27</sup>Ibid., pp. 261-262.

<sup>28</sup>Ibid., p. 262.

<sup>29</sup>F. A. Stanley, "The United States Arsenal at Rock Island, Parts I and II," American Machinist Magazine, 2 and 9 February 1905, np.

<sup>30</sup>Ibid., Part II, 9 February 1905, np.

<sup>31</sup>MacDonald and Mack, p. 84.

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<sup>43</sup>Ibid., pp. 78-79.

<sup>44</sup>Ibid., p. 78.

<sup>45</sup>MacDonald and Mack, p. 45.

<sup>46</sup>No author, "History of Rock Island Arsenal, 1862-1913", (unpublished manuscript, called for by O. O., 25301-D-195) p. 42.

<sup>47</sup>Ibid.

<sup>48</sup>Ibid., p. 16.

<sup>49</sup>MacDonald and Mack, p. 44.

<sup>50</sup>U. S. Army, Ordnance Department, Annual Report of the Chief of Ordnance to the Secretary of War for the Fiscal Year 1899, (Washington: GPO, 1899) Appendix 4, Arsenal Output and Working Force, p. 80.

<sup>51</sup>MacDonald and Mack, p. 49.

<sup>52</sup>Ira O. Nothstein and Clifford W. Stephens, A History of Rock Island from Earliest Times to 1954, Vol II, ed, Clifford W. Stephens, (Rock Island, U. S. Army, Rock Island Arsenal, 1965) p. 24. It is hereafter referred to as Nothstein and Stephens, p. 317.

<sup>53</sup>Albert Manucy, Artillery Through the Ages (Washington: GPO, reprint 1962) p. 22.

<sup>54</sup>Nothstein and Stephens, p. 318.

<sup>55</sup>Ibid., p. 327.

<sup>56</sup>Nothstein and Stephens, pp. 322 and 324.

<sup>57</sup>John W. Slattery, and Walter W. Ransom, "The Application of Welding to Armament, Rock Island Arsenal, A Center of Progress in the Art", Army Ordnance, Volume XVII, Number 69, November - December 1931, pp. 202-205.

<sup>58</sup>John W. Slattery, "Building a Great Weapon in Record Time, the Longest All-Welded Gun Carriage Ever Fabricated", Army Ordnance, Volume XII, Number 72, May-June 1932, p. 391.

# 9. Major Bibliographical References

See continuation sheet

# 10. Geographical Data

Acreeage of nominated property 101

Quadrangle name Rock Island, Illinois

Quadrangle scale 7.5 minute

UTM References

A 1 5 7 0 3 2 2 0 4 5 9 8 8 5 0  
Zone Easting Northing

B 1 1 5 7 0 1 4 5 1 5 0 4 1 5 9 1 8 8 5 0  
Zone Easting Northing

C 1 5 7 0 4 5 5 0 4 5 9 8 9 0 0

D 1 1 5 7 0 1 4 7 1 5 0 4 1 5 1 0 1 4 5 1 5 0

E 1 5 7 0 4 7 5 0 4 5 9 9 1 1 3 0

F 1 1 5 7 0 1 5 1 1 5 0 4 1 5 9 1 9 1 1 3 0

G 1 5 7 0 5 1 5 0 4 1 5 9 1 9 2 1 0 0

H 1 1 5 7 0 1 5 3 1 2 0 4 1 5 9 1 9 2 1 0 0

\*See Continuation Sheet

Verbal boundary description and justification

\*See Continuation Sheet

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

state NA code NA county NA code NA

state NA code NA county NA code NA

# 11. Form Prepared By

name/title Thomas J. Slattery, Historian

organization AMCCOM Historical Office

date June 1987

street & number NA

telephone (309) 782 - 1269

city or town Rock Island

state Illinois 61299-6000

# 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

title \_\_\_\_\_ date \_\_\_\_\_

For NPS use only

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

date \_\_\_\_\_

Keeper of the National Register

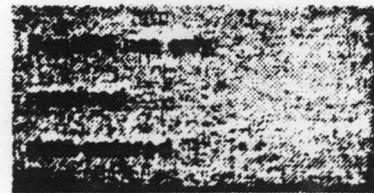
Attest:

date \_\_\_\_\_

Chief of Registration

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National Park Service

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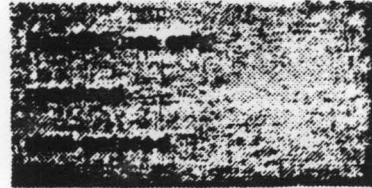
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Magazines

Slattery, John W., and Ransom, Walter W. "The Application of Welding to Armament, Rock Island Arsenal, A Center of Progress in the Art". Army Ordnance. Volume XVII Number 69. November - December, 1931.

Slattery, John W. "Building a Great Weapon in Record Time: The largest all-welded Gun Carriage Ever Fabricated". Army Ordnance. Volume XII, Number 72, pp. 391-394. May - June 1932.

Stanley, F. A. "The United States Arsenal at Rock Island". American Machinist. Articles I - VIII, issues 2 February - 30 March 1905.

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Verbal Boundary Description

Stone Shops Landmark Area: Begin at a point due S. of the N.E. corner of bldg. 328; go due E on a line parallel Rodman Avenue, to include landscaped boulevard areas up to construction face line of Bldg. 350 (Map #52) and Bldg. 390 (Map #54). Due N after crossing East Pershing Circle Drive to public sidewalk behind Bldg. 360 (Map #53). Due E across Gillespie Avenue, then N to North Avenue. E along North Avenue to beginning of parking lot surrounding Bldg. 56 (Map #9). Due N to edge of parking lot, then E to East Avenue. Due N on East Avenue to first parking access N of Bldg. 90 (Map #19). Due E to far edge of parking lot, then due S to a point S of the south side, Bldg. 90 (Map #19), then W to East Avenue, Due S on East Avenue to line formed by backs of Bldgs. 102, 103, 104, 105, 106, 108, 109, 110 (Map#s 20, 21, 22, 24, 25, 26, 27) parallel to South Avenue. Due W along that line, to Gillespie's E. side. Then N. to parking access behind Firehouse, Bldg. 225 (Map #41). W along parking area to W of Firehouse, then diagonally northward the meeting of Flagler Ave. with a line parallel with Rodman Avenue to include landscaped boulevard areas up to construction face of Bldgs. 208, 210, 220 (Map#s 37, 38, 39). Due W along this line to crossing of Rock Island Avenue and then SW parallel to face of Clock Tower Building, Bldg. 205 (Map #36). Along face of Bldg. 205 to first parking access and then NW again parallel to SW side of Bldg. 205. At a point behind Bldg. 205 such that a NE line would run parallel to the rear of building inclusive of the clocktower, turn and proceed NE to continuation of line parallel to Rodman Avenue. Due W along this line to base of railroad embankment, then NW to close at the point of beginning.

Residential Quarters Landmark Area: Beginning at B.M. "Arsenal Sundial" (Map #76) proceed along southern edge of Blunt Road, generally E, to East Avenue. Due S along East Avenue to Hedge Lane. W along Hedge Lane crossing Gillespie and continuing due W to 90°33'00" (approximately 200 feet west of the rear of Quarters One, Bldg. 301 (Map #46). Due N to Mississippi River shoreline and then generally E to northern end of fence fronting Quarters One. E from end of fence to close at B.M. "Arsenal Sundial"



# 7 DESCRIPTION

<b>CONDITION</b>		<b>CHECK ONE</b>	<b>CHECK ONE</b>
<input checked="" type="checkbox"/> _EXCELLENT	<input 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

This is a small building at the entrance into the Arsenal Compound. It is small (18'8" x 24'8"), rectangular in plan with a steep gable roof and pointed (Gothic) arches in the fenestration. The walls are a limestone ashlar veneer.

Appurtenant to the building are remaining stone gateposts and some gates on either side of the roadway.

DATE AND NATURE OF ALTERATIONS:      The slate roofing has been replaced by asphalt shingles.



PROPERTY NAME: Guard House and Entrance Gates (Building 321)  
LOCATION: Rock Island Arsenal      CITY/TOWN/VICINITY: Rock Island, IL  
CAMERA FACING: E      DATE: February 1981  
PHOTOGRAPHER: F.W. Lange  
LOCATION OF NEGATIVE: Illinois State University

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DATE ENTERED

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INVENTORY -- NOMINATION FORM

CONTINUATION SHEET	ITEM NUMBER	PAGE
Rock Island Arsenal	Bldg. 102	2



PROPERTY NAME: Stone Shop (Stone Shop A; now Building 102)  
LOCATION: Rock Island Arsenal      CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: SE      DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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INVENTORY -- NOMINATION FORM

CONTINUATION SHEET

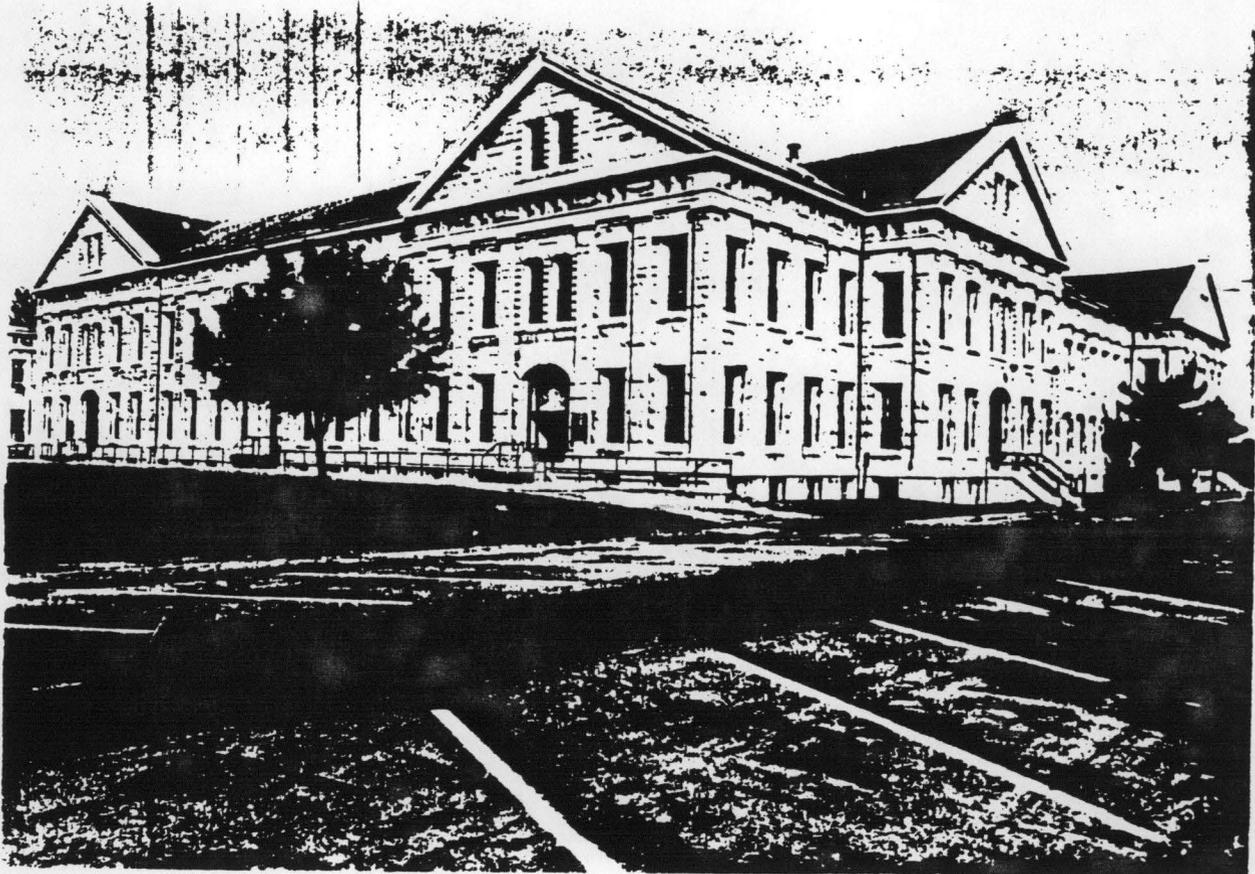
ITEM NUMBER

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Rock Island Arsenal

Bldg. 62

3



PROPERTY NAME: Stone Shop (Shop D; now Building 62)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
DIRECTION FACING: NW DATE: Fall 1980  
PHOTOGRAPHER: Titus M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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NATIONAL PARK SERVICE

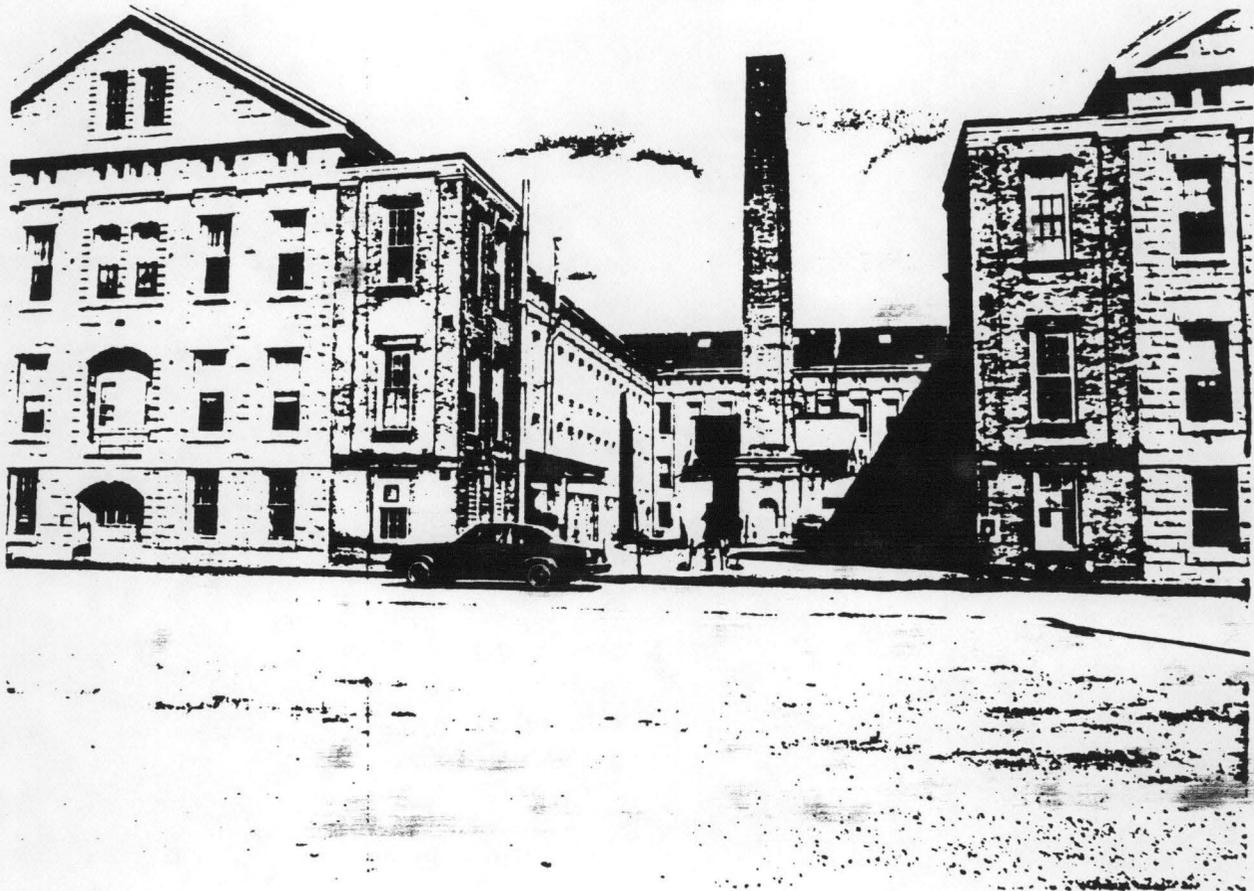
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INVENTORY -- NOMINATION FORM

CONTINUATION SHEET	ITEM NUMBER	PAGE
Rock Island Arsenal	Bldg. 104	5



PROPERTY NAME: Stone Shop (Stone Shop C; now Building 104)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
DIRECTION FACING: N DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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NATIONAL PARK SERVICE

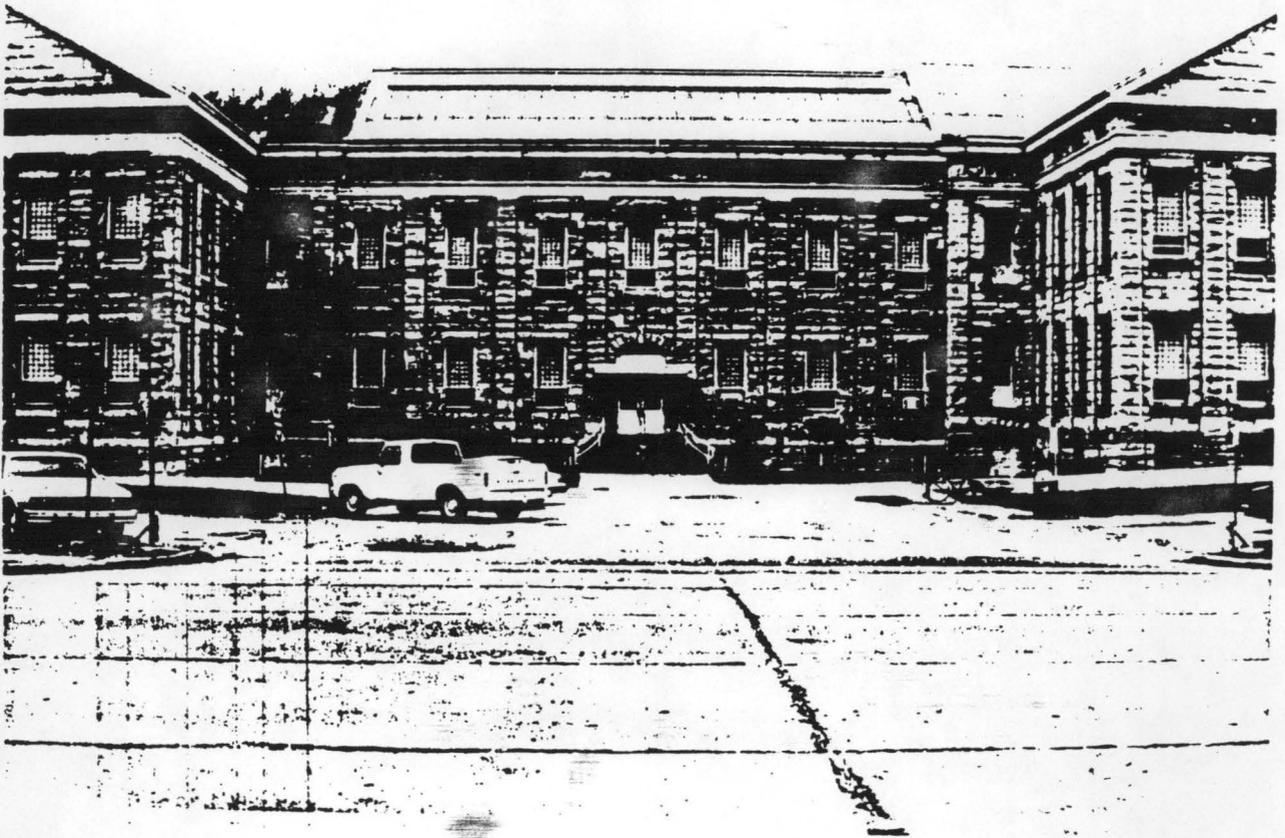
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INVENTORY -- NOMINATION FORM

CONTINUATION SHEET	ITEM NUMBER	PAGE
Rock Island Arsenal	Bldg. 109	1



PROPERTY NAME: Stone Shop Annex (Building 109)  
 LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Ill.  
 CAMERA FACING: S DATE: Fall 1980  
 PHOTOGRAPHER: T.M. Karlowicz  
 LOCATION OF NEGATIVE: Illinois State University

# 7 DESCRIPTION

<b>CONDITION</b>		<b>CHECK ONE</b>	<b>CHECK ONE</b>
<input checked="" type="checkbox"/> EXCELLENT	<input type="checkbox"/> DETERIORATED	<input checked="" type="checkbox"/> UNALTERED	<input checked="" type="checkbox"/> ORIGINAL SITE
<input type="checkbox"/> GOOD	<input type="checkbox"/> RUINS	<input 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

This is a three story (plus attic and basement) building which is rectangular in plan with a projecting pavillon on its southeast facade. In the center of the northwest facade is the Clock Tower which rises well above the main mass of the building. The exterior walls are of limestone. The floors are carried by wood joists and stringers supported by iron columns. Roof trusses are wood. The three main stories contain 35,000 square feet of floor space. The style is a variant of Greek Revival.



PROPERTY NAME: The Clock Tower-Storehouse A (Now The Clock Tower, Building 206)  
LOCATION: Rock Island Arsenal      CITY/TOWN/VICINITY: Rock Island, IL  
CAMERA FACING: NW      DATE: February 1981  
PHOTOGRAPHER: F.W. Lange  
LOCATION OF NEGATIVE: Illinois State University

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CONTINUATION SHEET	ITEM NUMBER	PAGE
Rock Island Arsenal	Bldg. 225	3



PROPERTY NAME: Post Building and Main Guard House (Building 225)  
 LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
 CAMERA FACING: NE DATE: Fall 1980  
 PHOTOGRAPHER: T.M. Karlowicz  
 LOCATION OF NEGATIVE: Illinois State University

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Rock Island Arsenal

Bldg. 2

2



PROPERTY NAME: Subaltern Officers Quarters B (Now Quarters 2, Building 2)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: SE DATE: Fall 1980  
PHOTOGRAPHER: Titus M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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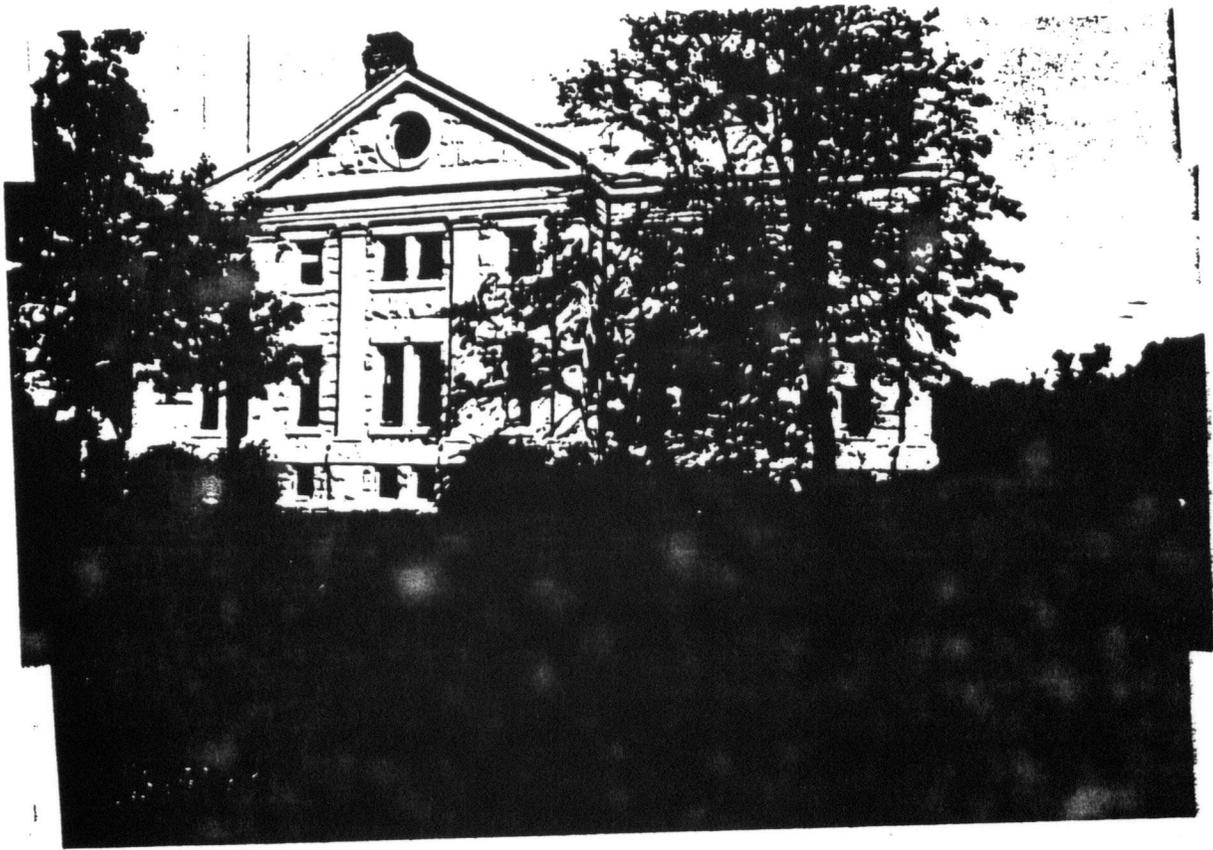
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INVENTORY -- NOMINATION FORM

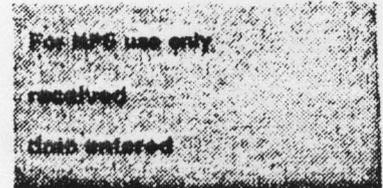
CONTINUATION SHEET	ITEM NUMBER	PAGE
Rock Island Arsenal	Bldg. 360	1



PROPERTY NAME: Quarters 32, 32A, 33, 33A, Building 360)  
LOCATION: Rock Island Arsenal      CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: N      DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karłowicz  
LOCATION OF NEGATIVE: Illinois State University

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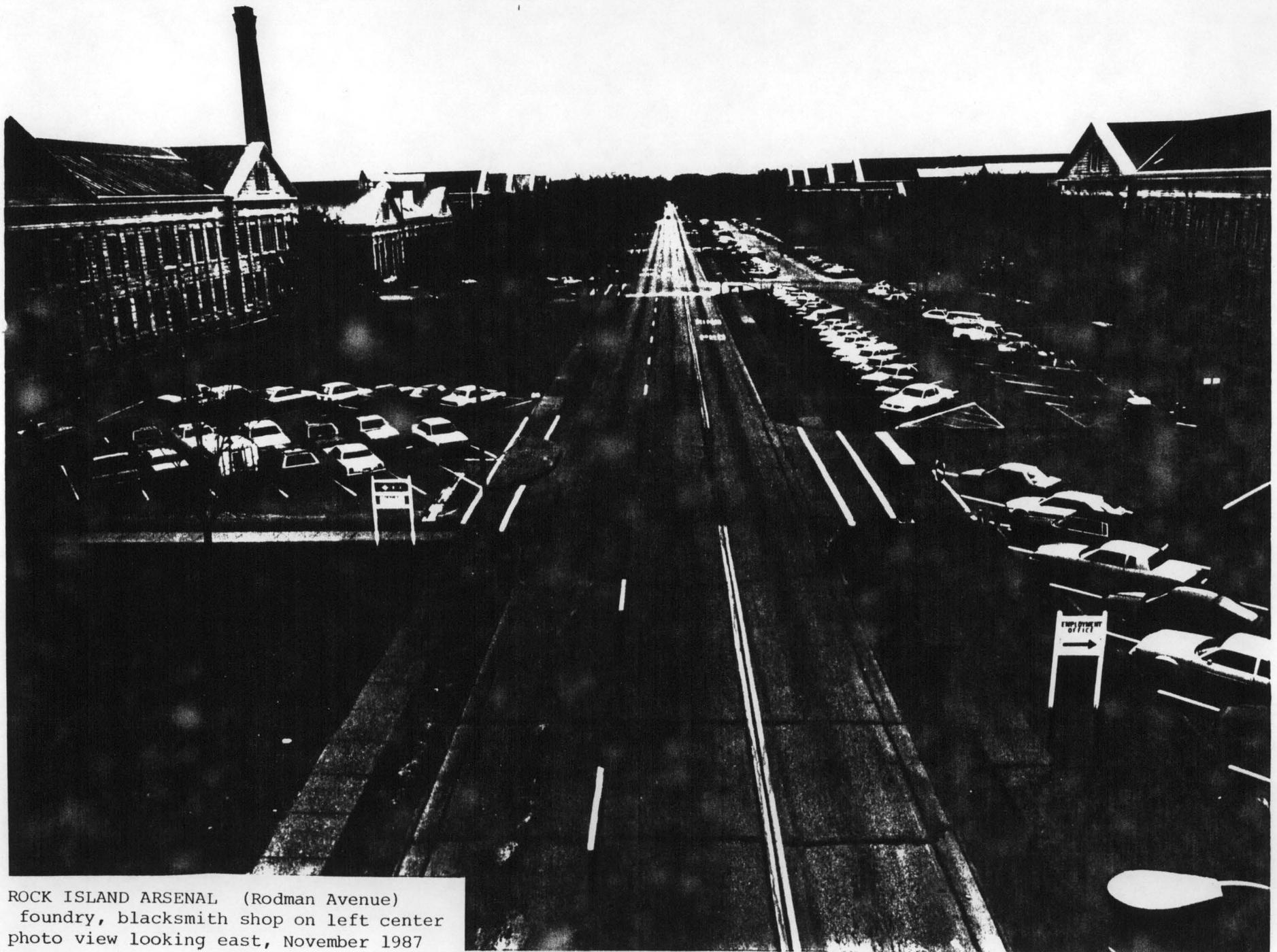
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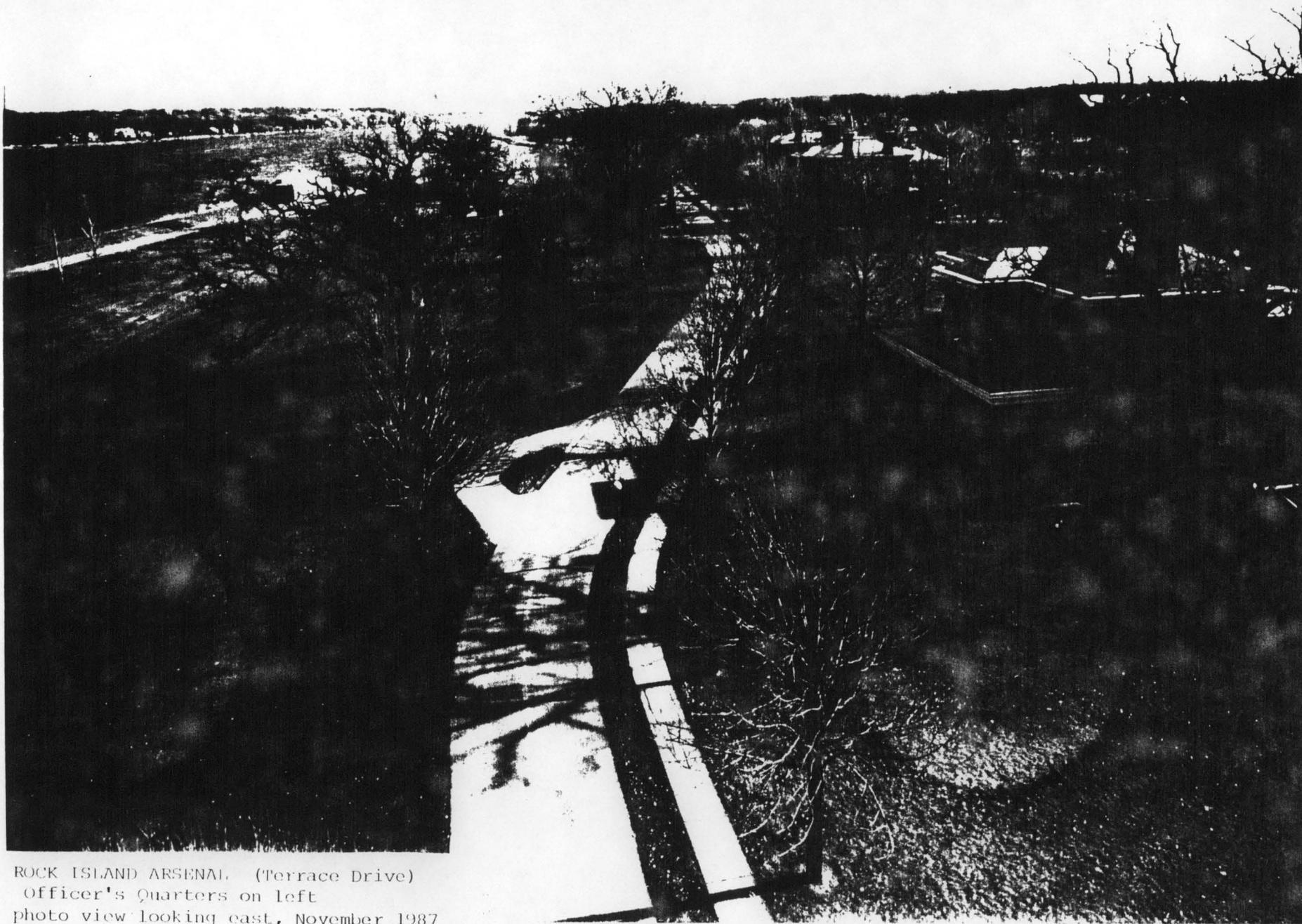
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Q. /15/ /7/03/430/ /45/98/800/	R. /15/ /7/03/350/ /45/98/780/
S. /15/ /7/03/300/ /45/98/775/	T. /15/ /7/03/550/ /45/99/800/
U. /15/ /7/03/265/ /45/98/800/	V. /15/ /7/04/450/ /45/99/480/
W. /15/ /7/04/750/ /45/99/350/	X. /15/ /7/03/320/ /45/99/475/
Y. /15/ /7/03/320/ /45/99/350/	Zone Easting      Northing
Zone Easting      Northing	

Note: The 1000 Meter Universal Transverse Mercator Grid references were desk extrapolated from existing polyconic projection.

The proposed National Historic Landmark district comprises 101 acres of the 948 total acres of Rock Island. Rock Island Arsenal Facilities Engineers Office provided these figures.



ROCK ISLAND ARSENAL (Rodman Avenue)  
foundry, blacksmith shop on left center  
photo view looking east, November 1987



ROCK ISLAND ARSENAL. (Terrace Drive)  
Officer's Quarters on left  
photo view looking east, November 1987

# 7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
<input checked="" type="checkbox"/> EXCELLENT	<input 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

Though it differs in details from Storehouse K (Building 56) and the shop buildings it conforms in the use of materials, massing or proportions, as well as in other stylistic features with the ambience of the Stone Shop Complex.

It is constructed of limestone in rough ashlar on the exterior lined with rubble, and the floors are supported on wood joists and girders which are supported by iron columns. The roof is of wood construction.

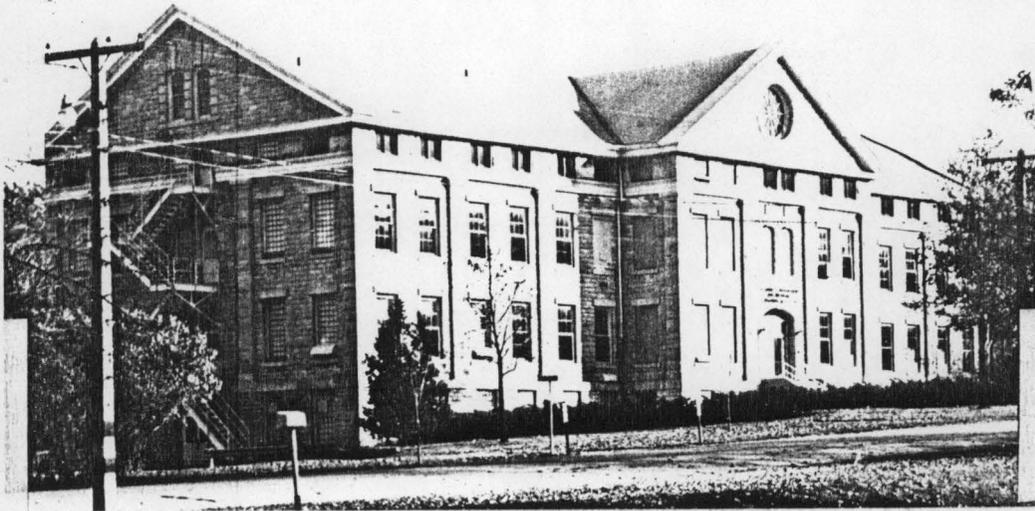
It was designed to house 180 men with laundry and mess facilities.

It is rectangular in plan with a projecting central pavilion covering 9,325 square feet.

DATE AND NATURE OF ALTERATIONS:

The slate roofing has been replaced by asphalt shingles. The main entrance doors have been replaced by metal framed glazed modern ones.

A two story annex (41' x 21') has been added to the rear (east side) of building (1917).



PROPERTY NAME: Originally Soldiers Barracks (now Building 90)  
LOCATION: Rock Island Arsenal      CITY/TOWN/VICINITY: Rock Island, IL  
CAMERA FACING: SE      DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

# 7 DESCRIPTION

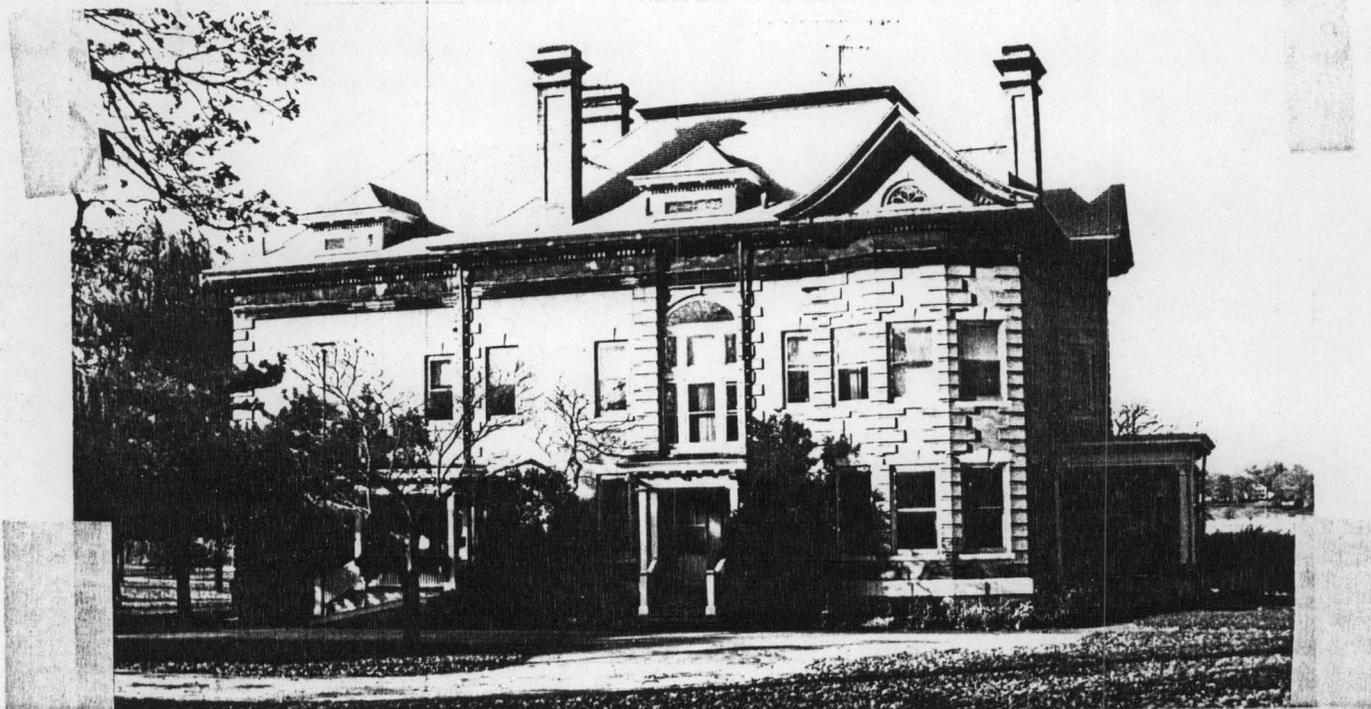
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<input checked="" type="checkbox"/> EXCELLENT	<input type="checkbox"/> DETERIORATED	<input checked="" type="checkbox"/> UNALTERED	<input checked="" type="checkbox"/> ORIGINAL SITE
<input type="checkbox"/> GOOD	<input type="checkbox"/> RUINS	<input 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

This is one of two residential buildings which distinguish themselves from the earlier subaltern Officers Quarters found to the west in the direction of Quarters 1. Both are different from the Italianate predecessors in style and materials. Quarters 6, situated apart from 4 so as to avoid contrast or conflict, is fancifully eclectic with a complex skyline of hipped roofs and gables with curving slopes and dark eaves to contrast with the light brick of the walls.

In general massing and uprightness of elevation it complements the earlier Italianate Quarters agreeably. Like the others, it has a screened porch which wraps around the northeast corner. Its roof is supported by slender ionic colonettes painted white.

The three story building contains 8,310 square feet of floor space.



PROPERTY NAME: Quarters 6 (Building 6)  
LOCATION: Rock Island Arsenal                      CITY/TOWN/VICINITY: Rock Island, IL  
CAMERA FACING: N                                      DATE: Fall 1980  
PHOTOGRAPHER: Titus M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

# 7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
<input checked="" type="checkbox"/> EXCELLENT	<input 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

This building is cruciform in plan with a cross gable roof (occupying approximately 4,200 square feet) and consists of two stories plus basement.\* A brick hose tower, three stories high is attached in the southwest angle of cross.

The exterior walls are limestone and the roof is carried by a wood frame. The style is a variant of Greek Revival consistent with the buildings of the Stone Shop Complex.

NATURE OF ALTERATIONS:      The three story hose tower was added in 1919.  
   A depression has been cut into the floor of the central section to accomodate modern firefighting equipment.

\*West wing only.



PROPERTY NAME: Post Building and Main Guard House (Building 225)  
LOCATION: Rock Island Arsenal      CITY/TOWN/VICINITY: Rock Island, IL  
CAMERA FACING: NW      DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

# 7 DESCRIPTION

<b>CONDITION</b>		<b>CHECK ONE</b>		<b>CHECK ONE</b>	
<input checked="" type="checkbox"/> EXCELLENT	<input type="checkbox"/> DETERIORATED	<input checked="" type="checkbox"/> UNALTERED	<input checked="" type="checkbox"/> ORIGINAL SITE		
<input type="checkbox"/> GOOD	<input type="checkbox"/> RUINS	<input 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

This is a three story (plus attic and basement) building which is rectangular in plan with a projecting pavillon on its southeast facade. In the center of the northwest facade is the Clock Tower which rises well above the main mass of the building. The exterior walls are of limestone. The floors are carried by wood joists and stringers supported by iron columns. Roof trusses are wood. The three main stories contain 35,000 square feet of floor space. The style is a variant of Greek Revival.



PROPERTY NAME: The Clock Tower-Storehouse A (Now The Clock Tower, Building 206)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, IL  
CAMERA FACING: NW DATE: February 1981  
PHOTOGRAPHER: F.W. Lange  
LOCATION OF NEGATIVE: Illinois State University



# 7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
<input checked="" type="checkbox"/> _EXCELLENT	<input 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

This is a small building at the entrance into the Arsenal Compound. It is small (18'8" x 24'8"), rectangular in plan with a steep gable roof and pointed (Gothic) arches in the fenestration. The walls are a limestone ashlar veneer.

Appurtenant to the building are remaining stone gateposts and some gates on either side of the roadway.

DATE AND NATURE OF ALTERATIONS:      The slate roofing has been replaced by asphalt shingles.



PROPERTY NAME: Guard House and Entrance Gates (Building 321)  
LOCATION: Rock Island Arsenal      CITY/TOWN/VICINITY: Rock Island, IL  
CAMERA FACING: E      DATE: February 1981  
PHOTOGRAPHER: F.W. Lange  
LOCATION OF NEGATIVE: Illinois State University

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INVENTORY -- NOMINATION FORM

CONTINUATION SHEET

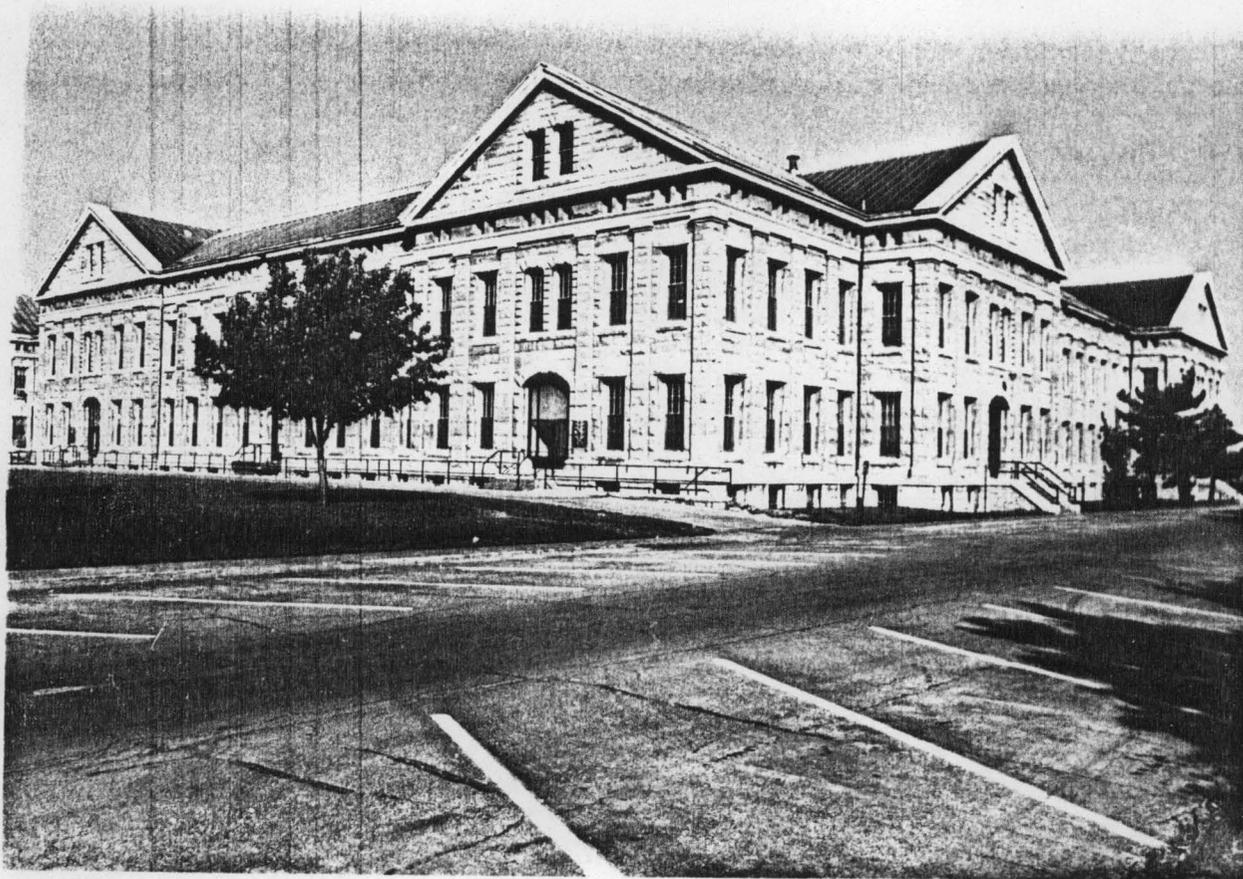
ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 62

3



PROPERTY NAME: Stone Shop (Shop D; now Building 62)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
DIRECTION FACING: NW DATE: Fall 1980  
PHOTOGRAPHER: Titus M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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NATIONAL PARK SERVICE

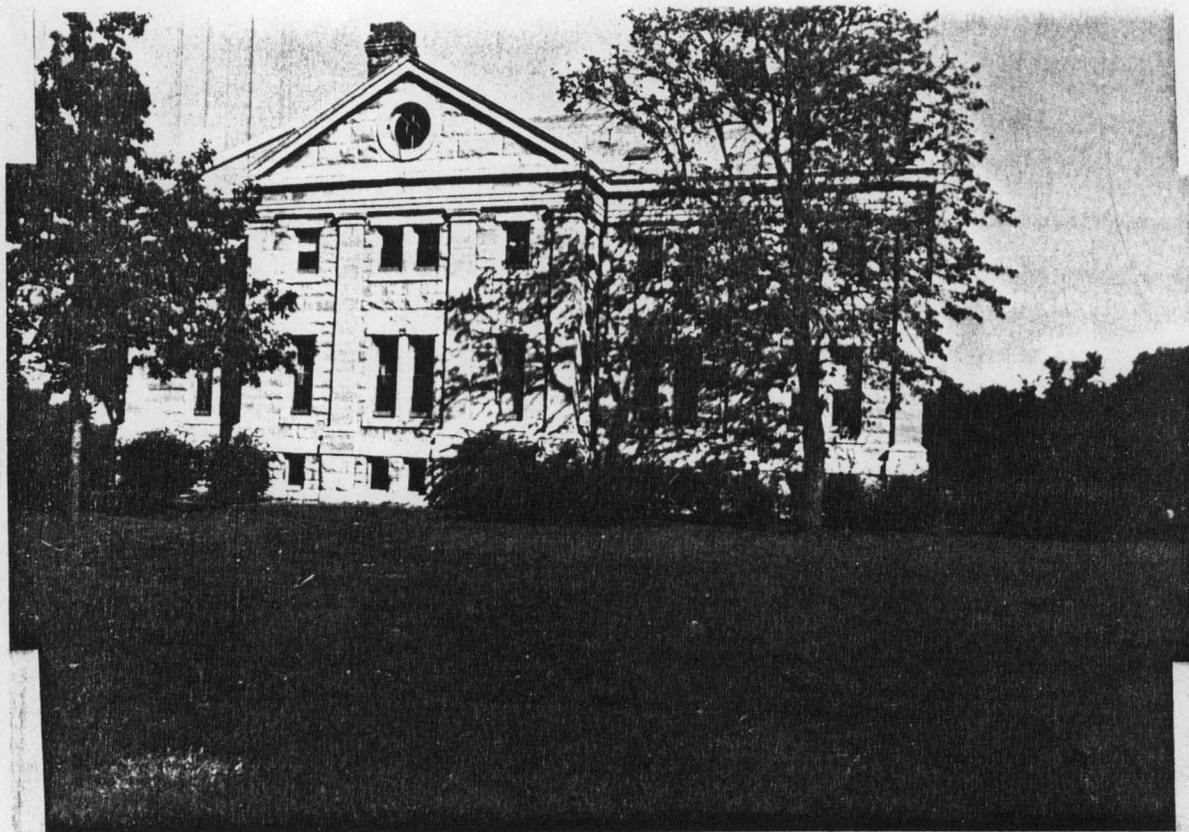
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INVENTORY -- NOMINATION FORM

CONTINUATION SHEET	ITEM NUMBER	PAGE
Rock Island Arsenal	Bldg. 360	1



PROPERTY NAME: Quarters 32, 32A, 33, 33A, Building 360)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: N DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karłowicz  
LOCATION OF NEGATIVE: Illinois State University

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CONTINUATION SHEET

ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 68

1



PROPERTY NAME: Stone Shop (Stone Shop K; now Building 68)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, IL  
CAMERA FACING: WSW DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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CONTINUATION SHEET

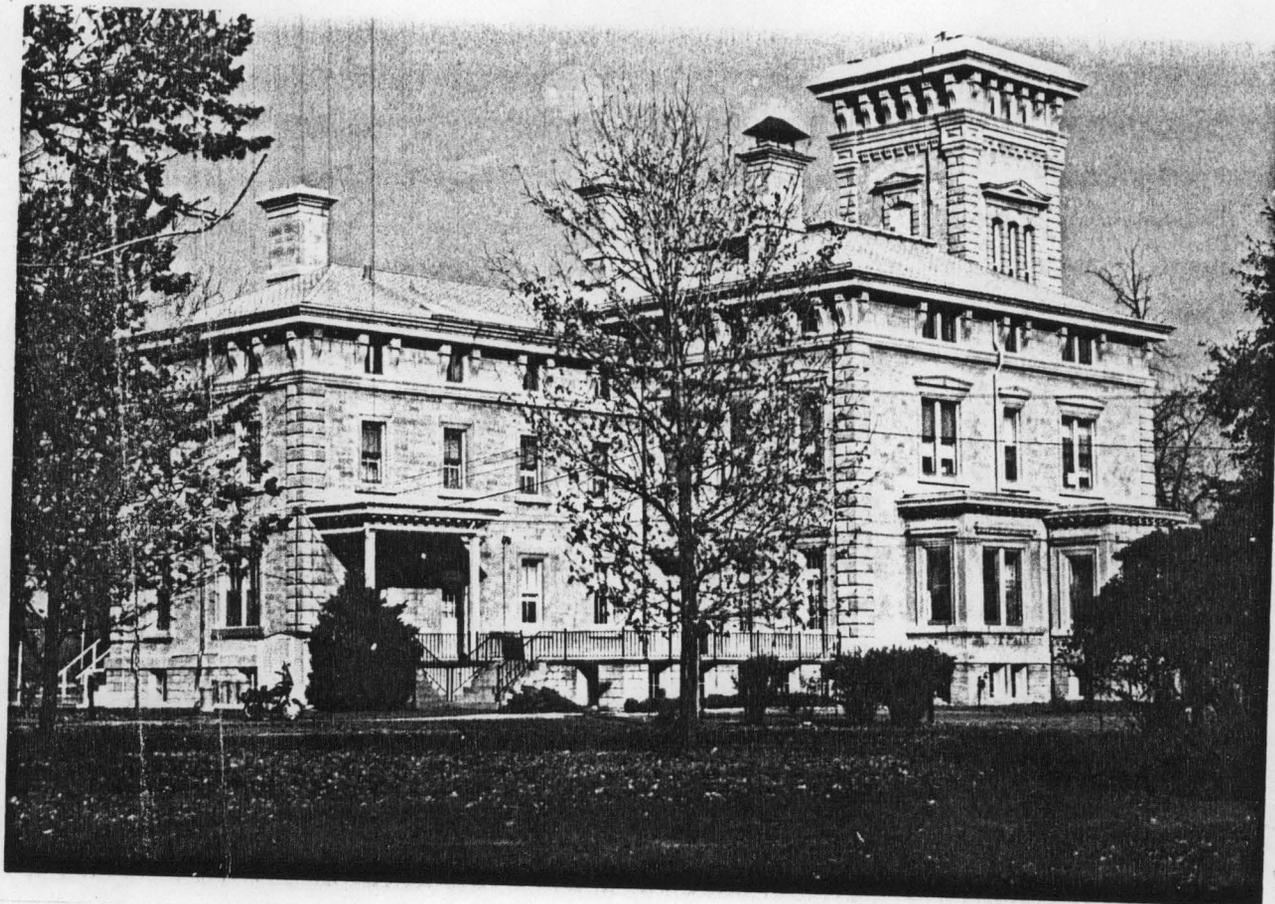
ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 301

1



PROPERTY NAME: Commanding Officer's Quarters (Now Quarters 1, Building 301)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, IL  
CAMERA FACING: NE DATE: Fall 1980  
PHOTOGRAPHER: Titus M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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CONTINUATION SHEET	ITEM NUMBER	PAGE
Rock Island Arsenal	Bldg. 109	1



PROPERTY NAME: Stone Shop Annex (Building 109)  
LOCATION: Rock Island Arsenal  
CAMERA FACING: S  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University  
CITY/TOWN/VICINITY: Rock Island, IL  
DATE: Fall 1980

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Rock Island Arsenal

Bldg. 102

2



PROPERTY NAME: Stone Shop (Stone Shop A; now Building 102)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: SE DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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Rock Island Arsenal	Bldg. 2	2



PROPERTY NAME: Subaltern Officers Quarters B (Now Quarters 2, Building 2)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: SE DATE: Fall 1980  
PHOTOGRAPHER: Titus M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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CONTINUATION SHEET	ITEM NUMBER	PAGE
Rock Island Arsenal	Bldg. 66	3



PROPERTY NAME: Stone Shop (Shop H; now Building 66)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: N DATE: Fall 1980  
PHOTOGRAPHER: Titus M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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CONTINUATION SHEET  
Rock Island Arsenal

ITEM NUMBER  
Bldg. 225

PAGE  
3



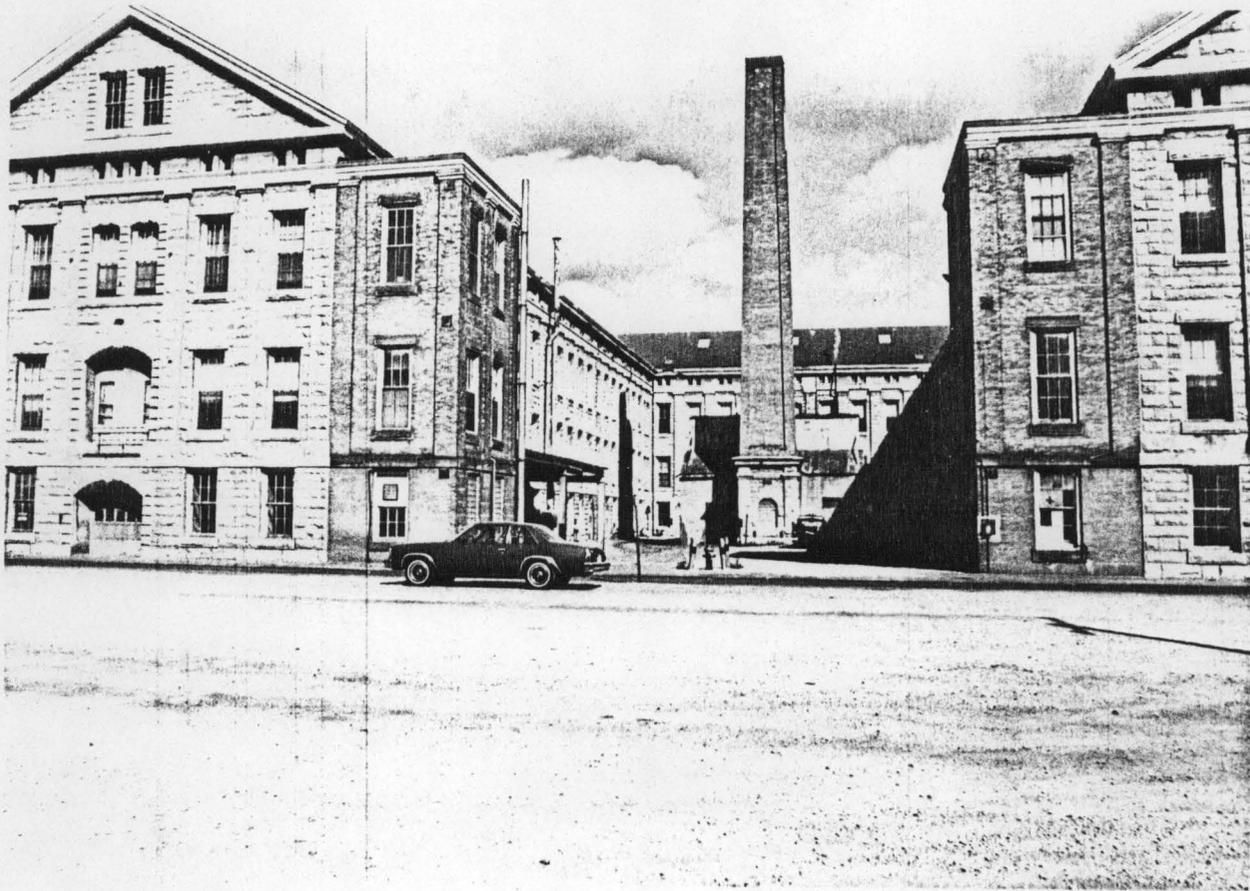
PROPERTY NAME: Post Building and Main Guard House (Building 225)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: NE DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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INVENTORY -- NOMINATION FORM

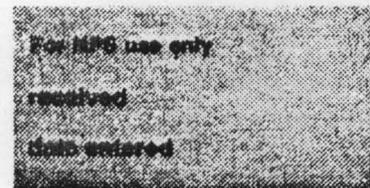
CONTINUATION SHEET	ITEM NUMBER	PAGE
Rock Island Arsenal	Bldg. 104	5



PROPERTY NAME: Stone Shop (Stone Shop C; now Building 104)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
DIRECTION FACING: N DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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Continuation sheet Explanation of Item number Page  
Old & New Maps of RIA 10 A

Colonel Daniel W. Flagler, General Rodman's successor as Rock Island Arsenal Commander, included the following two maps in his work, A History of the Rock Island Arsenal. published in 1877 by the Government Printing Office, Washington, D. C. The two maps, plate I and plate VI were designated as the Old Map of Rock Island Arsenal and the New Map of Rock Island Arsenal respectively. Colonel Flagler writes in his book that:

The ground plan shown on the map [plate I] is copied from the map sent to the Chief of Ordnance, February 7, 1866. This plan was subsequently changed, before any shop was begun, and the plans of the shops [were also changed] which have been built . . . .<sup>1</sup>

The plate I, Old Map of Rock Island Arsenal has the same scale key as the New Map. By using this scale key one can determine that except for the Clock Tower Building none of the Arsenal Buildings [Rodman-Plan Buildings] were under construction. The Old Map shows the "A"-shaped buildings aligning Main Avenue [now Rodman Avenue]. This plan was changed, projecting porticoes, two in front, and two on each side of the buildings were added for beautification purposes. The annex building crossing the court and connecting the two wings of the shops was probably abandoned to allow for greater room for horse drawn wagons to maneuver at the rear of the buildings.<sup>2</sup>

Flagler also states in his work that:

The map on plate I shows the plan first proposed for the development of the water power and location of the pipe to be laid from the water power to the shops to convey power by means of compressed air. This plan for the development was subsequently abandoned by General Rodman and another plan, as indicated on the map, was adopted.<sup>3</sup>

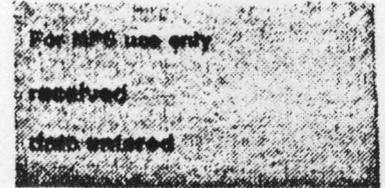
In regard to the prison barracks depicted close to the north-central shore of Rock Island, Colonel Flagler wrote that:

The temporary prison buildings shown on the map have nearly been removed, from time to time, as they have decayed, become worthless and the necessity for their use has passed away, or as they interfered with the construction of the arsenal buildings. By 1876 only the temporary stables, a few officers' quarters, and one of the [prison] hospital buildings now [1877] used as a post hospital remain.<sup>4</sup>

Note that the prison buildings were considered temporary structures and were never considered permanent buildings. The location of the dam, as proposed in 1866 on the map on plate I was subsequently changed in 1869. The 1869 plan was the one upon which the water power was subsequently constructed.<sup>5</sup>

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Continuation sheet Explanation of  
Old and New Maps of RIA

Item number 10

Page B

In regard to Main Avenue [now Rodman Avenue], the main east-west thorough fare across the island, Flagler states that:

I do not know [of] and do not think that any location for Main avenue or the Arsenal railroad had been definitely fixed upon prior to this time [1871]. I found at the arsenal several maps on which the avenue, or more generally, only the eastern part of it, was located in different places. The timber had been cut away and some work done on one of these routes, but when it became necessary to connect this route with plans for the railroad and avenues to the bridges to Rock Island and Davenport, it was in practicable.<sup>6</sup>

Colonel Flagler also stated that:

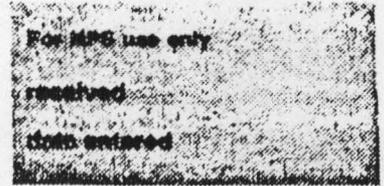
The following roads, avenues, and streets have been built during the years 1871-1876. Main avenue from the point where it is intersected by Second Street to the approach to the bridge to Davenport.<sup>7</sup>

When General Rodman became successful in securing the moving of the bridge from its original location near the Colonel Davenport Home to the extreme western tip of the island, Main Avenue was then drawn passed the Clock Tower to the bridge.

The New Map of Rock Island Arsenal shown on plate VI depicts six Rodman - Plan Stone Buildings completed; one building under construction; and three yet to be begun. Note the configuration of the buildings included the projecting porticoes and the removal of the annex building that connected the two wings in the rear court yard. These changes came about through discussions between General Rodman and General Dyer, Chief of Ordnance, no written record to show when the change occurred has been found. Map six also depicts the officers' subaltern quarters and the removal of the temporary prison barracks buildings. Rodman Avenue, then known as Main Avenue, is shown in its present location, especially the western portion of the avenue, and the water power canal is shown as completed.

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Continuation sheet Footnotes to Explanation of  
Old and New Maps of RIA Item number 10

Page C

Footnotes

<sup>1</sup> Major Daniel W. Flagler, A History of the Rock Island Arsenal from its Establishment in 1863 to December 1876: and of the Island of Rock Island the Site of the Arsenal, from 1804, to 1863. (Washington: Government Printing Office, 1877) p 123. This work is also known as Ordnance Memorandum #20. It is hereafter referred to as Flagler.

<sup>2</sup> Ibid.

<sup>3</sup> Ibid, p 126.

<sup>4</sup> Ibid.

<sup>5</sup> Ibid, p 202.

<sup>6</sup> Ibid, p. 284.

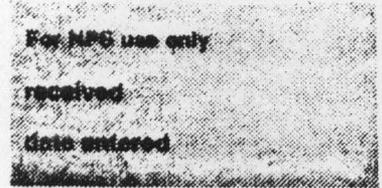
<sup>7</sup> Ibid, p. 272.

Directory for RIA Photographs Con't (taken in November 1987)

Map Color-Code	Letter	View	Note
Black	A	CG's (Originally RIA CO's) Qtrs. View from Terrace Dr. off Gillespie Ave. Bldg. 301 looking west.	CG's family qtrs. was constructed in 1871. Note: That the CG's qtrs. is aligned with Terrance Drive's Officer's Qtrs. Row
Black	B	Terrace Drive looking west, Officer's Quarters #2 in center.	Note: CG's Qtrs. in background.
Black	C	Terrace Drive looking west from Quarters Six.	Presently Qtrs. Six is the RIA Commander's family qtrs. Built in 1905.
Black	D	Terrace Drive looking east, Officer's Quarters #2, #3, & #4 are visible.	Roof of Quarters Six can be seen far in the distance
Black	E	Terrace Drive looking east along Officer's Row.	Note: Mississippi River to the north is on the right. (Mississippi River flows in an east/west direction at Rock Island.)

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Continuation sheet

Item number 7

Page 7

headquarters in 1955. Quarters Six is included in Zone B of the Historic Landmark district.

Quarters Seven, constructed in 1902, is a three story wooden frame building, located East of Quarters Six across East Avenue. Though not of the same style and material of earlier Rodman-influenced quarters, these turn-of-the-century quarters, especially Quarters Six, were constructed in a style and scale that compliments the earlier period architecture of the older Subaltern Officers' Quarters. The great interspace in landscape setting between Quarters Six and its earlier counterparts naturally avoids any sense of discord in their style.

The Rodman plan or inspired old stone buildings, including the 10 shops, officers' quarters, and ancillary buildings, are generally classified by the Army as Category I historic properties. Only Quarters Six and Seven currently possess lower classifications. For a complete listing of these historically significant buildings see Table 1 on the following page.

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date entered

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headquarters in 1955. Quarters Six is included in Zone B of the Historic Landmark district.

Quarters Seven, constructed in 1902, is a three story wooden frame building, located East of Quarters Six across East Avenue. Though not of the same style and material of earlier Rodman-influenced quarters, these turn-of-the-century quarters, especially Quarters Six, were constructed in a style and scale that complements the earlier period architecture of the older Subaltern Officers' Quarters. The great interspace in landscape setting between Quarters Six and its earlier counterparts naturally avoids any sense of discord in their style.

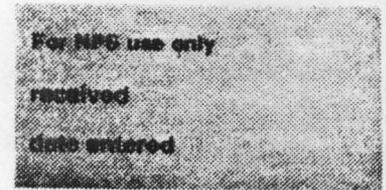
*Quarters 7, because of its differences*

The Rodman plan or <sup>Rodman-</sup>inspired old stone buildings, including the 10 shops, officers' quarters, and ancillary buildings, are generally classified by the Army as Category I historic properties. Only Quarters Six and Seven currently possess lower classifications. For a complete listing of these historically significant buildings see Table 1 ~~on~~ the following page.

*following " 21, item 7.*

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Stone Shop A, Building 102

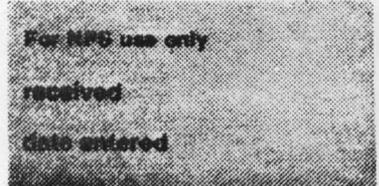
Army category I historic property. Greek Revival Architecture 2 1/2 stories plus basement. One of the ten U-shaped manufacturing shops that formed the industrial core of General Rodman's master plan for Rock Island Arsenal. Basically the same dimensions as the other stone shops with the exceptions of Shop E and F. Initial construction began in 1873. Completed in 1876. Constructed as part of Arsenal Row, the five shops that aligned Rodman Avenue on the south presently used for offices. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Ind., May 1984.)

Stone Shop Annex, Building 103

Army category II historic property. Greek Revival Architecture 2 1/2 stories plus basement. One of four identical links built between eight of the stone shops. Concrete foundation, reinforced concrete structure clad with course stone veneer. Rectangular 90' x 60'. Connects buildings 102 and 104. Designed by Stone and Webster Engineering Company to match the original stone shops. Completed in 1918. Originally used for material handling, presently used for office space.

Stone Shop Annex, Building 103

Army category II historic property. Greek Revival Architecture 2 1/2 stories plus basement. One of four identical links built between eight of the stone shops. Concrete foundation, reinforced concrete structure clad with coursed stone veneer. Rectangular 90' x 60'. Connects buildings 102 and 104. Designed by Stone and Webster Engineering Company to match the original stone shops. Completed in 1918. Originally used for material handling, presently used for office space. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

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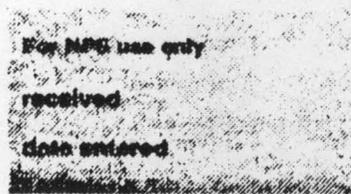
Continuation sheet

Item number 7

Page 21

Old Stone Headquarters Building, Building 360

Army category I historic property. Greek Revival Architecture 2 1/2 stories and basement. Coursed rock faced ashlar limestone foundation and load bearing walls. Rectangular, approximately 83' x 56' with projecting pavilion on south facade. Cross gable roof, panelled brick interior chimneys with corbelled caps. Main entrance, north side, arched opening with stone surround and keystone; one-over-one-light double hung sash with stone sills and flat lintels; arched windows with stone surround in east and west gable ends and entrance on north side. Pedimented gable ends; stone pilasters with egg and dart capitals stone raking and horizontal cornices and entablature; decorative cast iron balustrade at east entrance. From 1889 - 1922 Building 360 served as headquarters for the Rock Island Arsenal. Housed offices of post commander and his assisting officers. Eight commanding officers ran the arsenal from the Commander's Office in this building. They were: Colonel J.M. Whittemore, 1888-1891; Colonel A.R. Buffington, 1892-1897; Major Stanhope E. Blunt, 1897-1907; Lieutenant Colonel George W. Burr, 1911-1918; Colonel L.T. Hillman, 1918; Colonel Harry B. Jordan, 1919-1921; and Colonel David M. King, 1921-1931. Urgent orders for arms, ammunition, and equipment were received by these officers during the Indian uprising of 1891 in the West; the Spanish-American War of 1898; the Mexican Expeditionary search for Pancho Villa in 1916; and during World War I. Due to consolidation of activities and offices during the peacetime years after the Great War, the headquarters was moved to one of the industrial buildings, Building 210, Shop R. During the 1930's Building 360 was converted to family quarters for officers. Today it functions in this capacity. (See HABS/HAER Inventory Cards, inventoried by Barbara Hightower, affiliated with Building Technology, Inc., May 1984.)

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Item number 8

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The proposed Rock Island Arsenal historic landmark district comprises two zones, a manufacturing area labeled Zone A and a staff residential area, designated Zone B. The construction of the Arsenal's ten shops that formed the core of the Rock Island Arsenal's original manufacturing complex evolved without significant departure in design between October 1866 and the 1893 completion of the last stone shop, Shop K, Building 68. The austere simplicity of these mid-19th-century Greek Revival architectural style buildings enhances the collective uniformity of the buildings; their projecting porticoes, repeating pilasters, and unifying horizontal band delineating the top of the second story contribute to a sense of harmony and simplicity.<sup>15</sup>

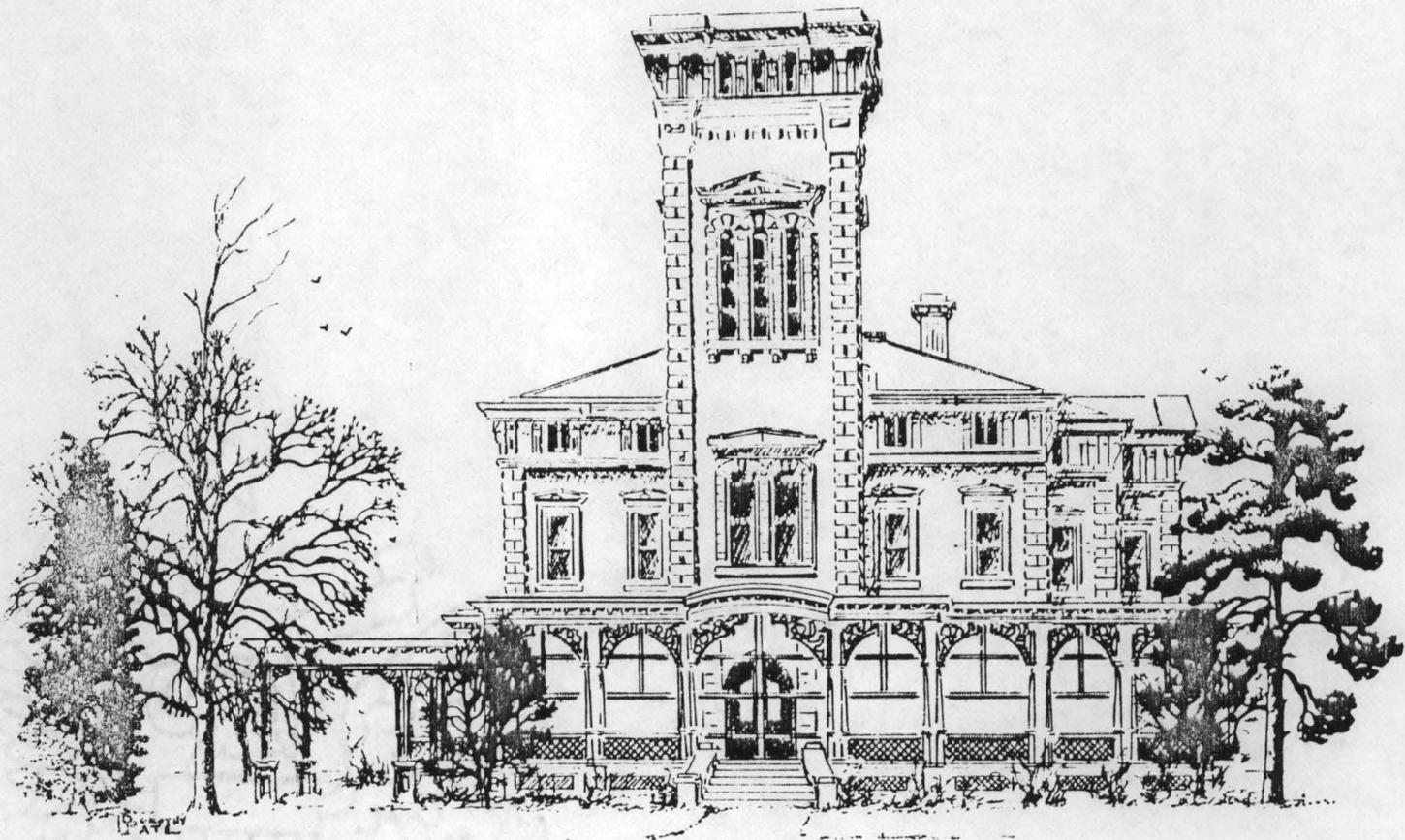
Although some minor differences in color, texture and even the cut of the stone exist from building to building, they are minor, and they do not distract from the uniformity of the ensembles.<sup>16</sup>

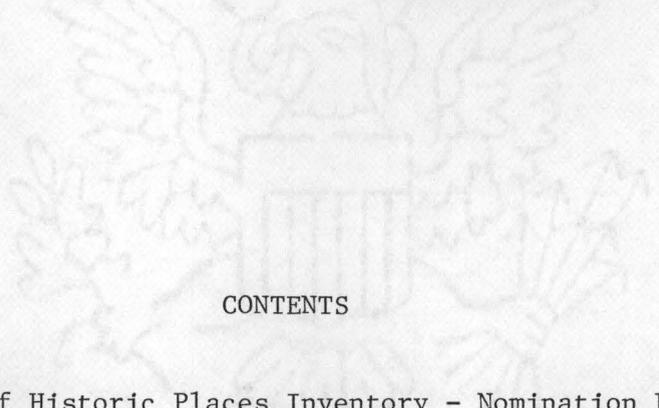
The minor variants in stone, though slight, are due to the different locations from which the stone was quarried. The limestone for the Clock Tower Building was furnished by Joseph Parkins and quarried at Le Claire, Iowa.<sup>17</sup> Stone for the various stone buildings constructed over a twenty-five year period came from several locations. Sangers and Steel of Joliet, Illinois provided a good deal of the limestone for the initial construction of the ten manufacturing shops, especially Shops B & C, Buildings 60 and 104.<sup>18</sup> Later buildings were constructed with stone quarried by prisoners from the Iowa State Prison at Anamosa, Iowa. A Mr. J. A. Green of Anamosa, Iowa was the contractor.<sup>19</sup> Mr. Edwin Walker, of Lamont, Illinois, provided some of the stone used in construction at Rock Island.<sup>20</sup> It would be extremely difficult to maintain the same contractor for over a quarter of a century. Due to delays in delivery, disputes over price, and quality of work the procurement of stone was a major headache for the Rock Island Arsenal Commanders. The Old Stone Buildings collectively form a unique and yet significant example of military planning, design, and construction. Remarkably the Arsenal's long-range planning and construction occurred during peacetime and with peacetime funds. Not until 1918 would the entire ten shops that comprised the original manufacturing core of the Rock Island be engaged in production.<sup>21</sup>

The Thomas J. Rodman Connection

Although the idea of constructing a great western armory and arsenal at Rock Island had appeared in Major Charles P. Kingsbury's correspondence to the Chief of the Army Ordnance his suggestions for upgrading the planning of the arsenal under construction at Rock Island, seemed to annoy and alienate his superiors who were pre-occupied with the greater Civil War picture. After two frustrating years (1863-1865) of delays and rejections Major Kingsbury requested to be relieved of command of the construction at Rock Island. Unfortunately, Major Kingsbury departed Rock Island without a building to show for his efforts. In taking leave of the Rock Island Arsenal, Major Kingsbury wrote to the Ordnance Department:

ROCK ISLAND ARSENAL OLD-STONE BUILDINGS  
NATIONAL HISTORIC LANDMARK  
NOMINATION





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1. National Register of Historic Places Inventory - Nomination Form (Items 1 - 12)
2. Item 7 Description Continuation Sheets . . . . . TAB A
3. Item 7 Individual Building Descriptions . . . . . TAB B
4. Item 8 Significance Continuation Sheets . . . . . TAB C
5. Item 9 Major Bibliographical References . . . . . TAB D
6. Item 10 Geographical Data Continuation Sheets . . . . . TAB E
7. Photostat Copies of Individual Building Photographs . . . . . TAB F

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NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES  
INVENTORY -- NOMINATION FORM

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CONTINUATION SHEET

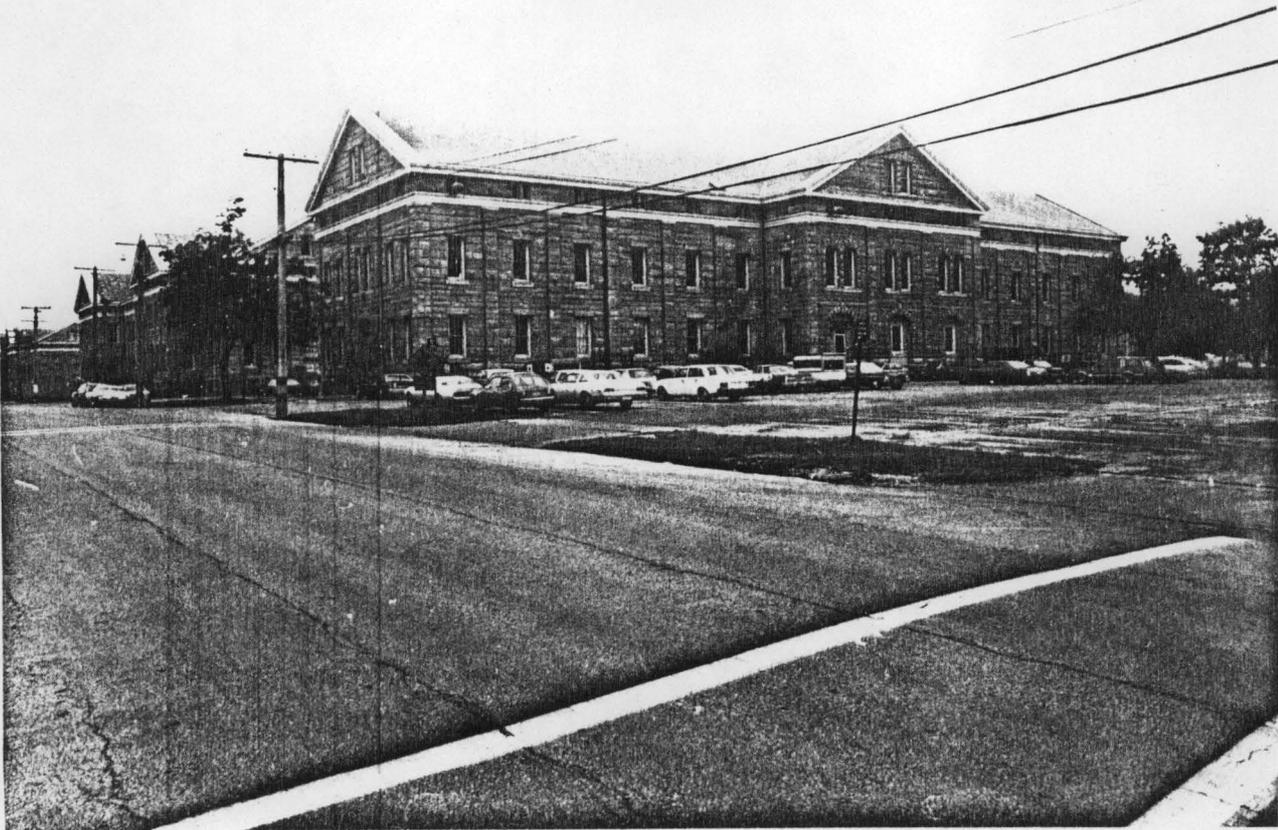
ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 56

1



PROPERTY NAME: Building 56 (originally Storehouse K)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
DIRECTION FACING: SW DATE: Fall 1980  
PHOTOGRAPHER: Titus M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

UNITED STATES DEPARTMENT OF THE INTERIOR  
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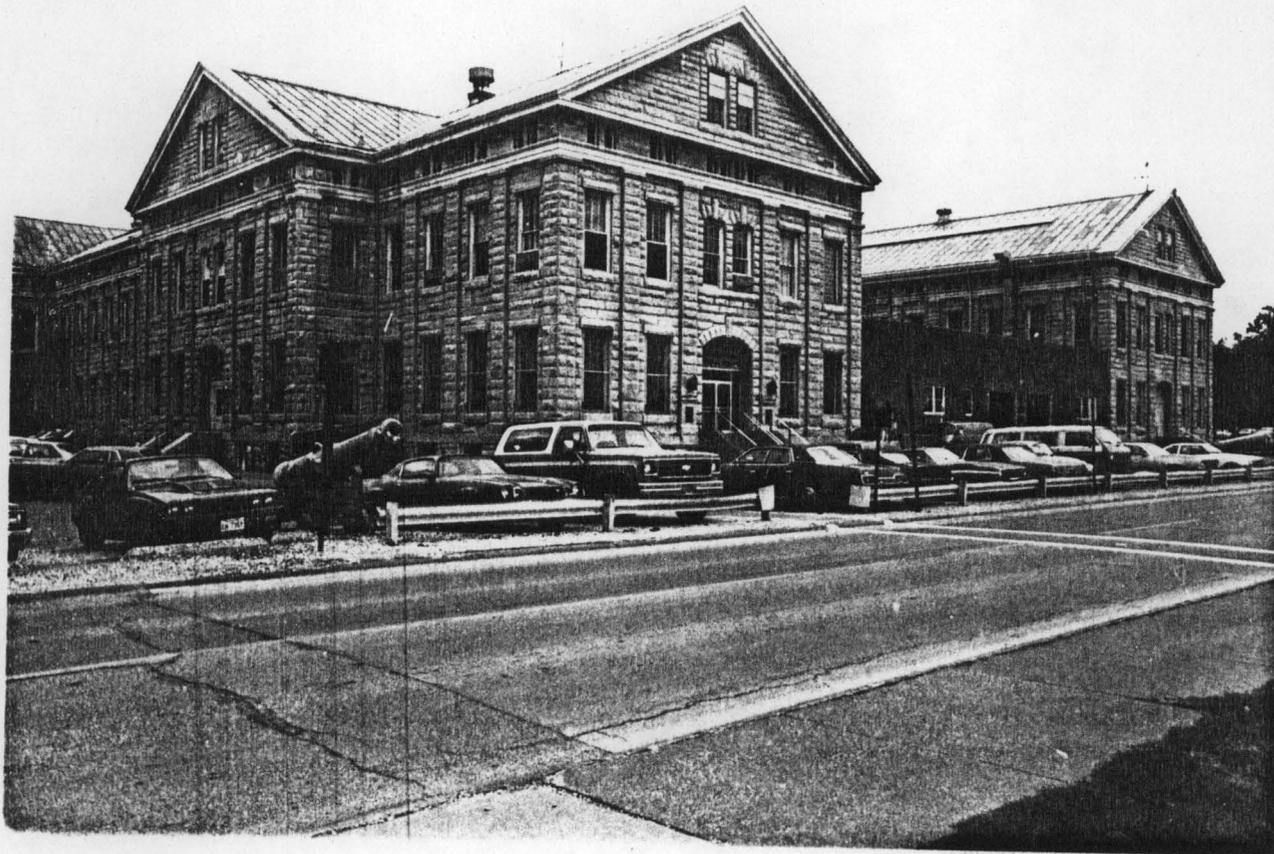
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CONTINUATION SHEET	ITEM NUMBER	PAGE
Rock Island Arsenal	Bldg. 60	1



PROPERTY NAME: Stone Shop (Shop B; now Building 60)  
LOCATION: Rock Island Arsenal  
CAMERA FACING: SW  
PHOTOGRAPHER: Titus M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University  
CITY/TOWN/VICINITY: Rock Island, IL  
DATE: Fall 1980

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Rock Island Arsenal	Bldg. 60	3



PROPERTY NAME: Stone Shop (Shop B; now Building 60)  
 LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
 DIRECTION OF VIEW: SE (facade of E wing) DATE: Fall 1980  
 PHOTOGRAPHER: Titus M. Karlowicz  
 LOCATION OF NEGATIVE: Illinois State University

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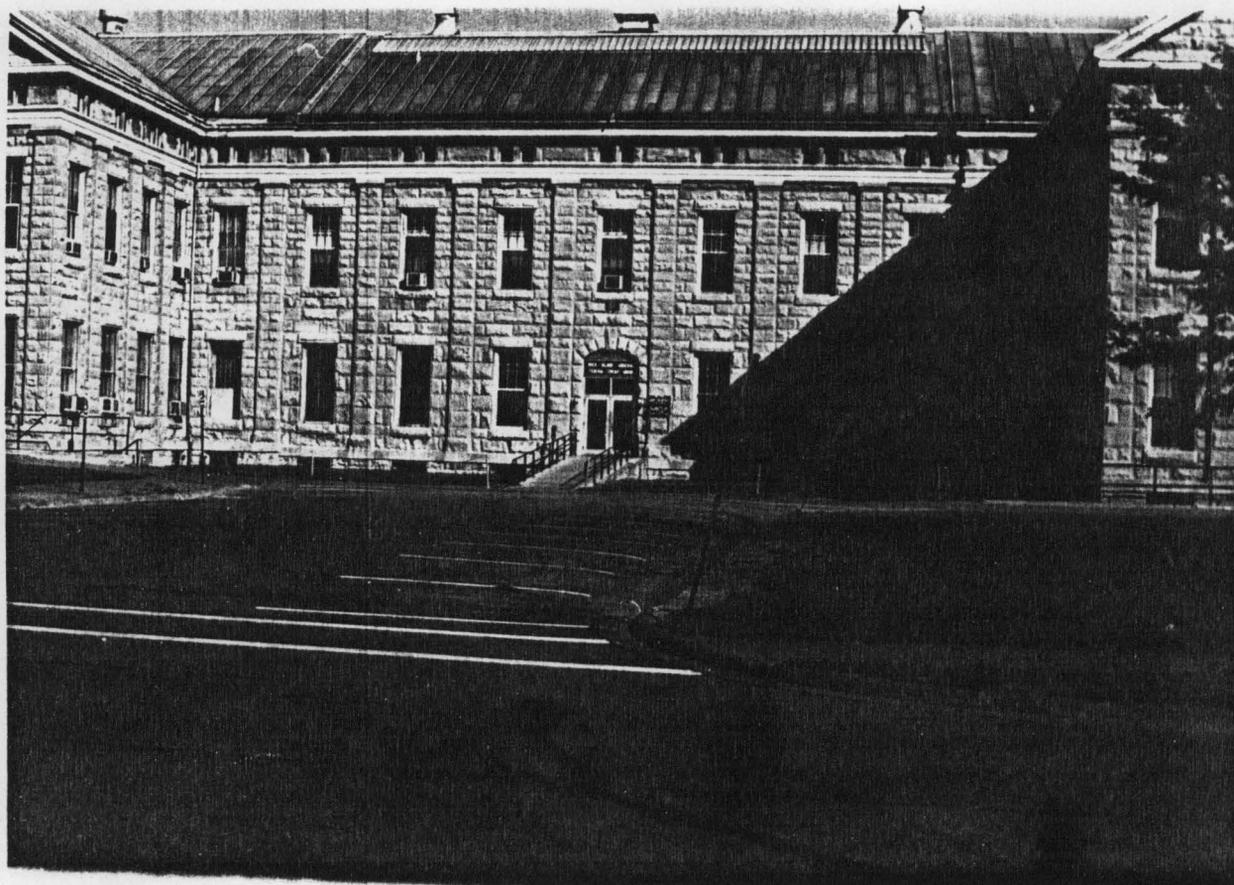
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Rock Island Arsenal

Bldg. 61

2



PROPERTY NAME: Stone Shop Annex (Building 61)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
DIRECTION FACING: N DATE: Fall 1980  
PHOTOGRAPHER: Titus M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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Rock Island Arsenal	Bldg. 62	1



PROPERTY NAME: Stone Shop (Shop D; now Building 62)  
LOCATION: Rock Island Arsenal      CITY/TOWN/VICINITY: Rock Island, IL  
CAMERA FACING: SW      DATE: Fall 1980  
PHOTOGRAPHER: Titus M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

UNITED STATES DEPARTMENT OF THE INTERIOR  
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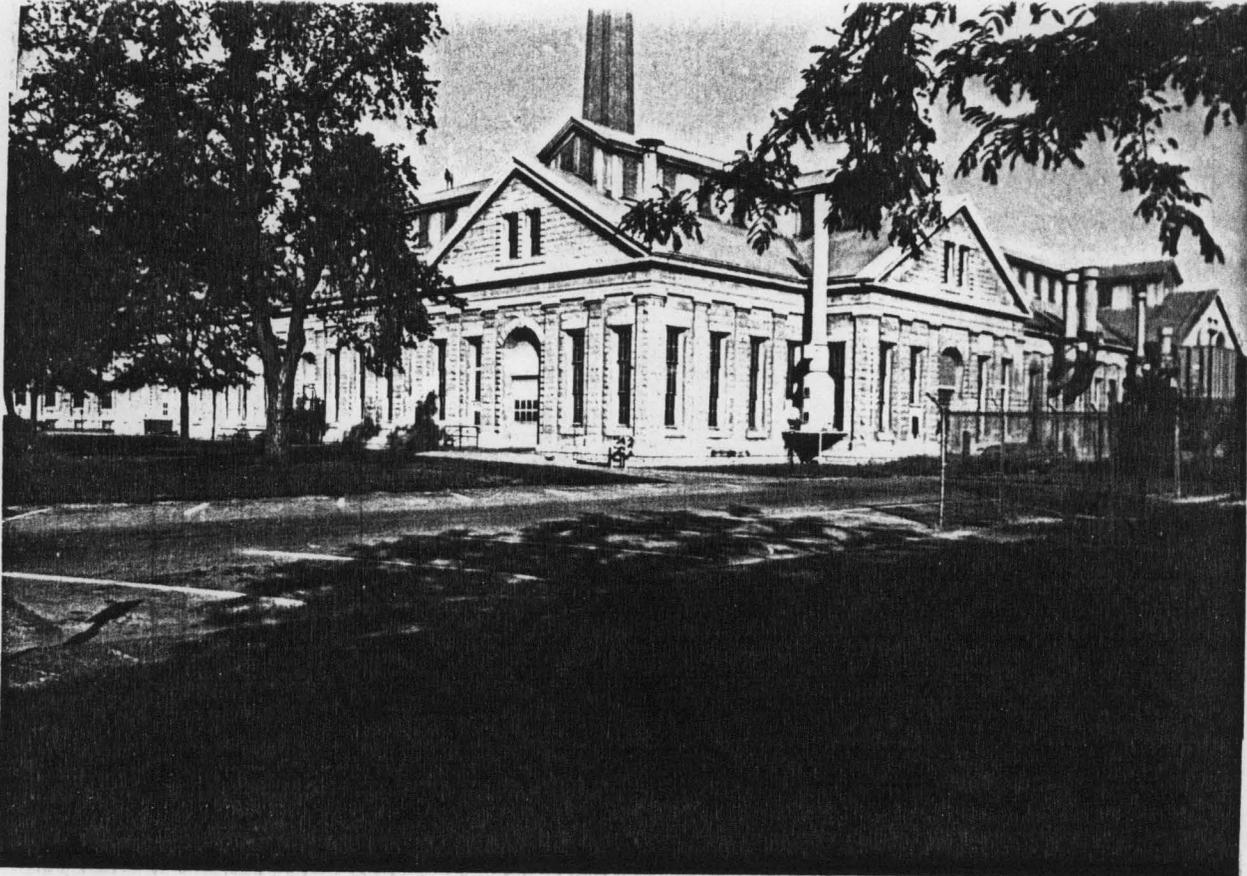
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Rock Island Arsenal	Bldg. 64	4



PROPERTY NAME: Stone Shop (Shop F; now Building 64)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
DIRECTION OF PHOTOGRAPHY: NW DATE: Fall 1980  
PHOTOGRAPHER: Titus M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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NATIONAL PARK SERVICE

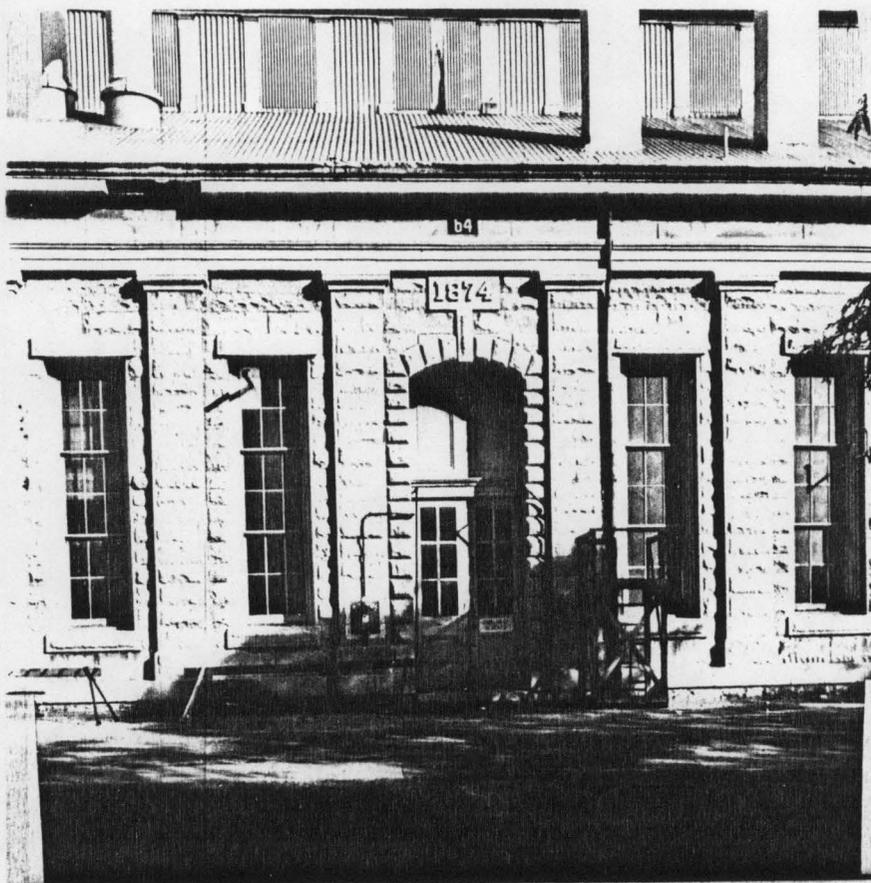
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Rock Island Arsenal	Bldg. 64	6



PROPERTY NAME: Stone Shop (Shop F; now Building 64)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
DIRECTION FACING: N (detail) DATE: Fall 1980  
PHOTOGRAPHER: Titus M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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Rock Island Arsenal	Bldg. 66	1



PROPERTY NAME: Stone Shop (Shop H; now Building 66)  
LOCATION: Rock Island Arsenal  
CAMERA FACING: SE  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University  
CITY/TOWN/VICINITY: Rock Island, IL  
DATE: Fall 1980

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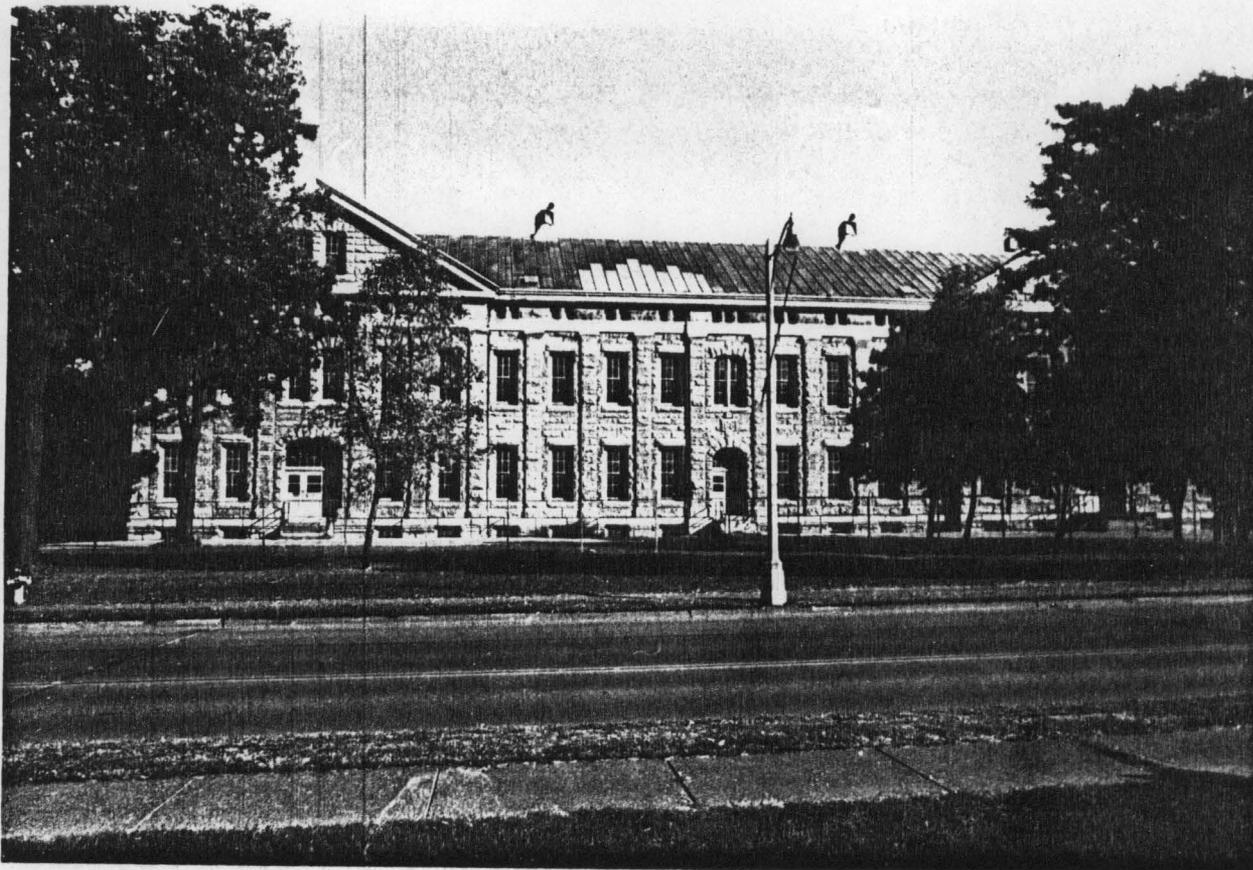
ITEM NUMBER

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Rock Island Arsenal

Bldg. 68

6



PROPERTY NAME: Stone Shop (Stone Shop K; now Building 68)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
DIRECTION OF CAMERA FACING: N DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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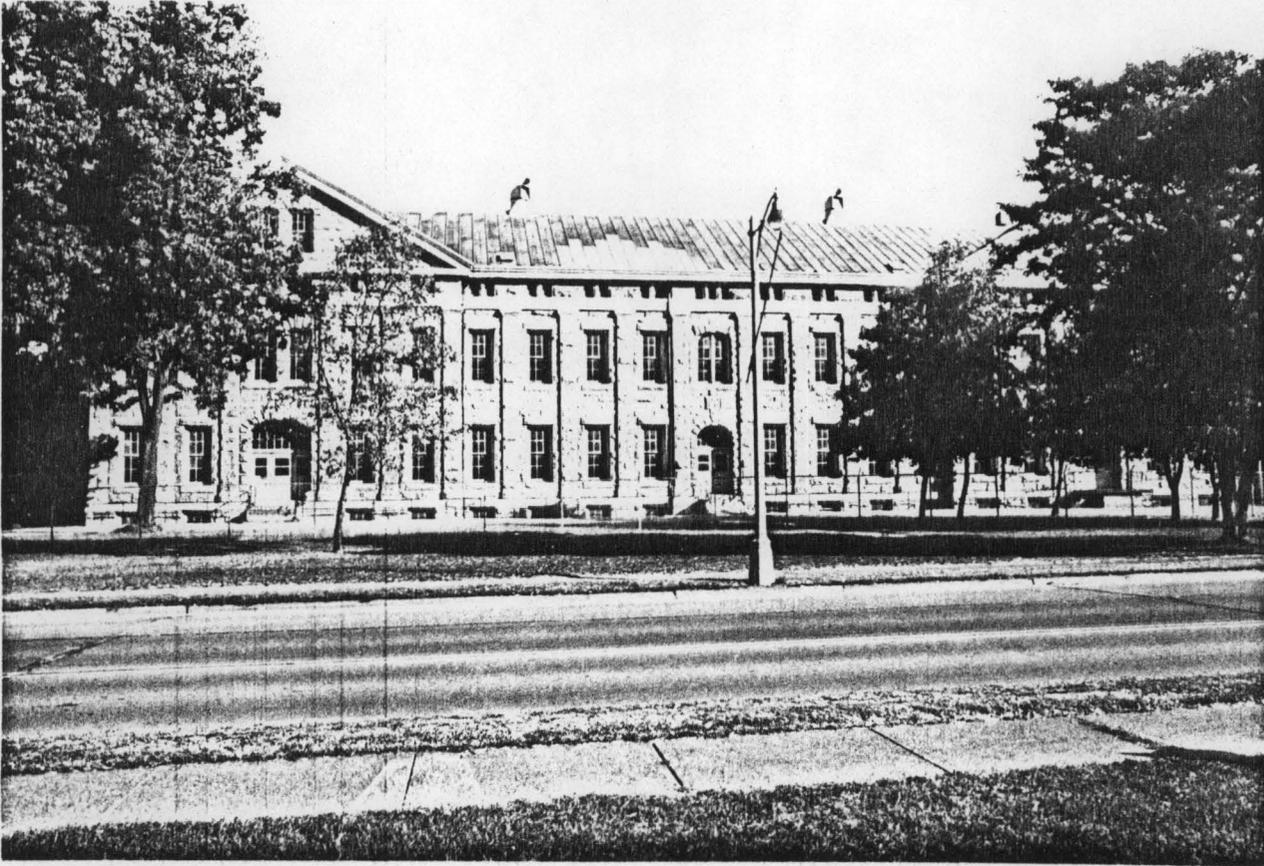
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Rock Island Arsenal

Bldg. 68

2



PROPERTY NAME: Stone Shop (Stone Shop K; now Building 68)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
DIRECTION FACING: SW DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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Rock Island Arsenal

Bldg. 68

3



PROPERTY NAME: Stone Shop (Stone Shop K; now Building 68)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: NW DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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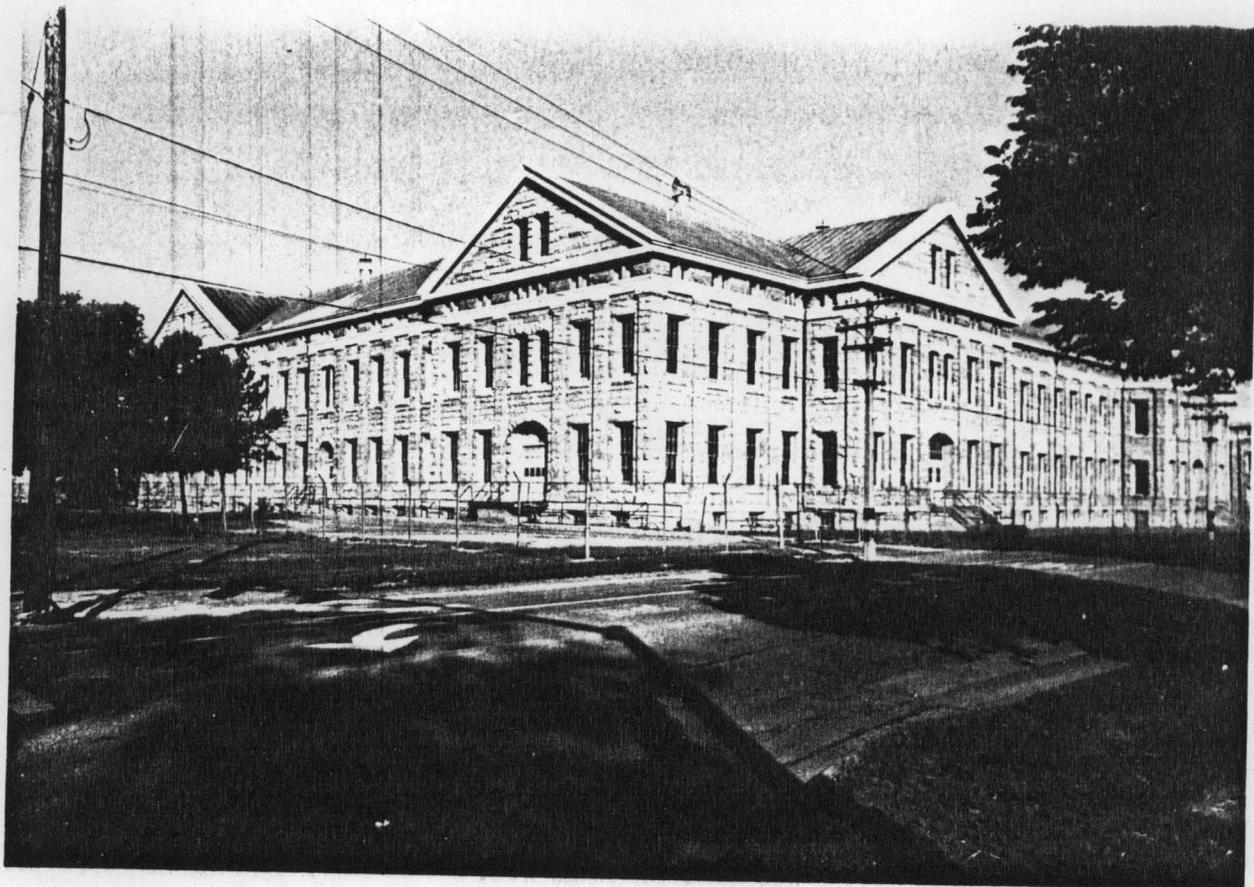
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Rock Island Arsenal	Bldg. 68	4



PROPERTY NAME: Stone Shop (Stone Shop K; now Building 68)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
DIRECTION OF VIEW: NW DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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Rock Island Arsenal

Bldg. 102

1



PROPERTY NAME: Stone Shop (Stone Shop A; now Building 102)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, IL  
CAMERA FACING: SSW DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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Rock Island Arsenal	Bldg. 102	3



PROPERTY NAME: Stone Shop (Stone Shop A; now Building 102)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
DIRECTION FACING: NW DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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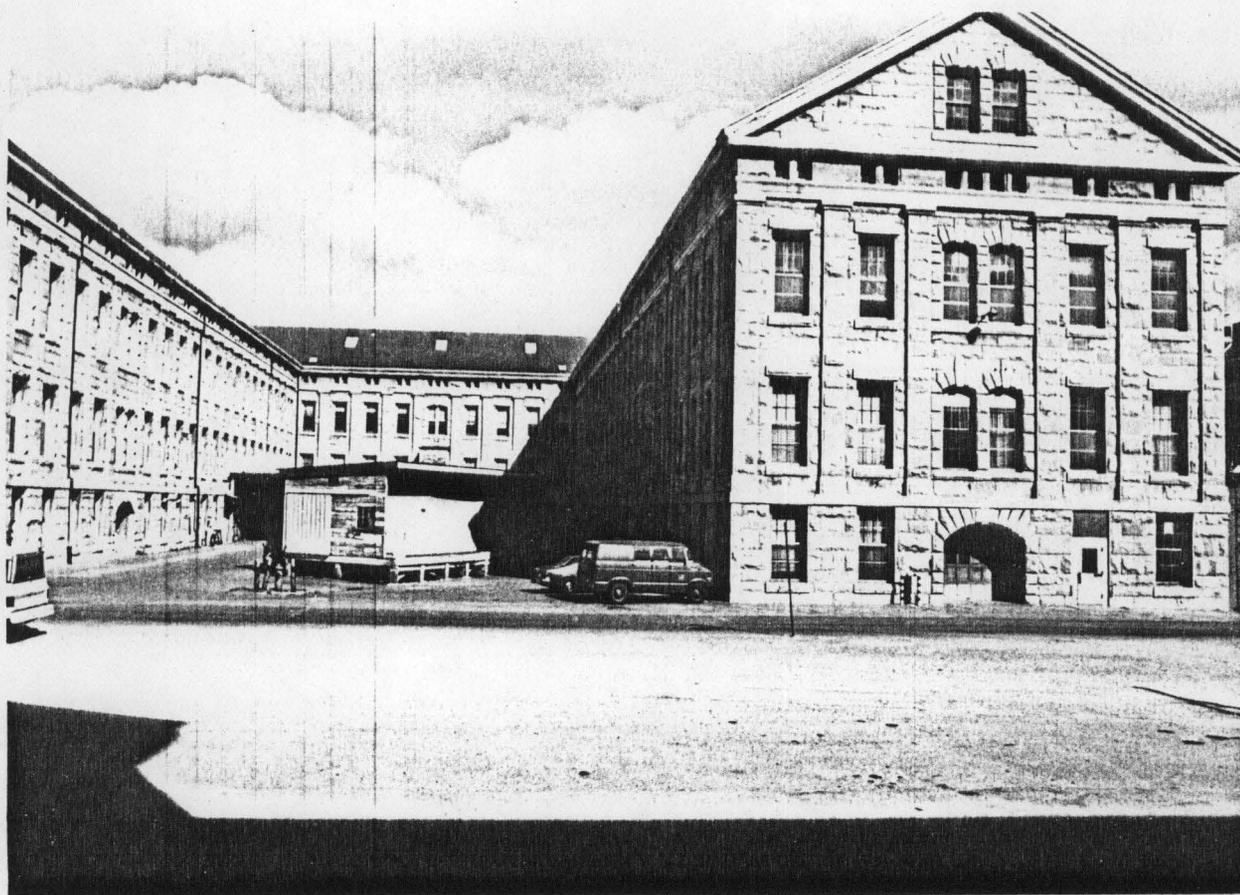
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Rock Island Arsenal

Bldg. 102

5



PROPERTY NAME: Stone Shop (Stone Shop A; now Building 102)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
DIRECTION FACING: N DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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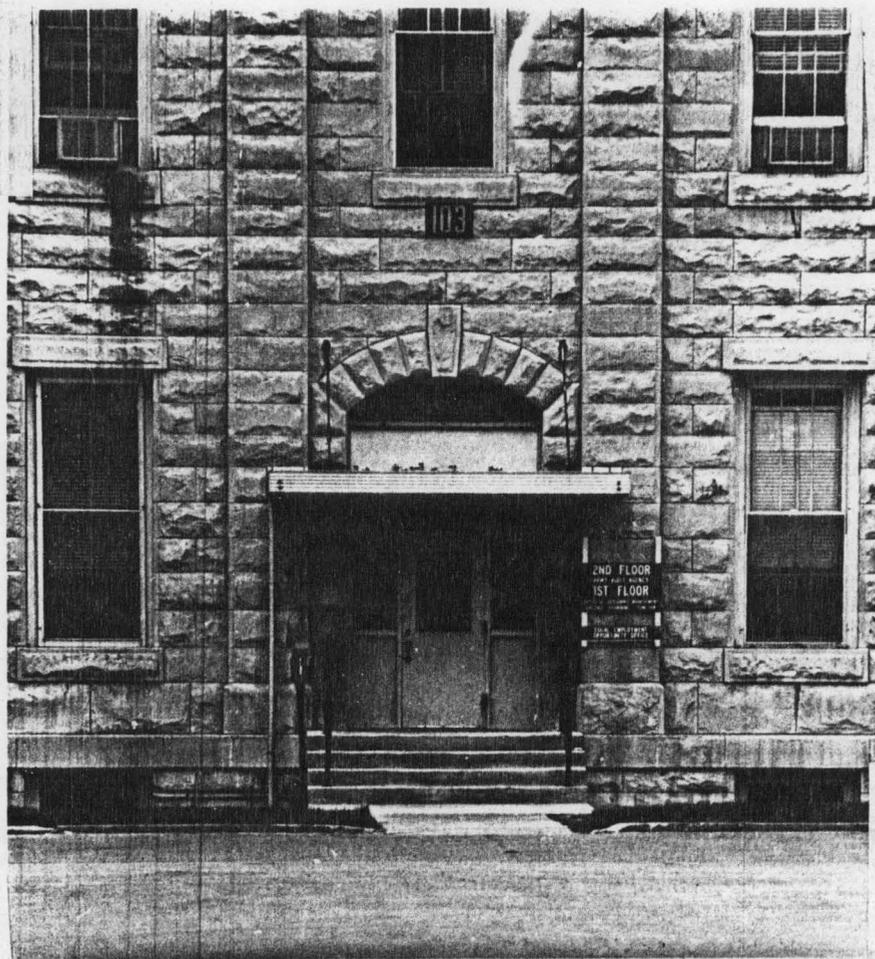
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Rock Island Arsenal

Bldg. 103

1



PROPERTY NAME: Stone Shop Annex (Building 103)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: S (detail of entrance) DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

# 7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
<input checked="" type="checkbox"/> _EXCELLENT	<input 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

This is one of four annexes built to connect previously existing shop buildings. All were treated similarly on the exterior to be consistent in style and proportions with their predecessors to give the appearance of continuous buildings in each of the blocks they occupy. These connections are set back four bays and placed on line where projecting porticoes were located on the original buildings. Building 103 connects between buildings 102 and 104, and provides access to them at all levels. The exterior stone is a veneer over a reinforced concrete structure, and the roof is supported by a steel frame.

Overall dimensions of ground plan are 60' x 90' in conformance with a module for the originals.

DATE AND NATURE OF ALTERATIONS:

Entry doors facing onto Rodman Avenue have been changed and a projecting canopy hung over the entrance.

The original slate roofing has been replaced by aluminum.

The court to the south created by Building 103 has been obliterated by an intrusion (Building 107).



PROPERTY NAME: Stone Shop Annex (Building 103)  
LOCATION: Rock Island Arsenal                      CITY/TOWN/VICINITY: Rock Island, IL  
CAMERA FACING: S                                      DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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Rock Island Arsenal	Bldg. 104	1



PROPERTY NAME: Stone Shop (Stone Shop C; now Building 104)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, IL  
CAMERA FACING: SE DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

UNITED STATES DEPARTMENT OF THE INTERIOR  
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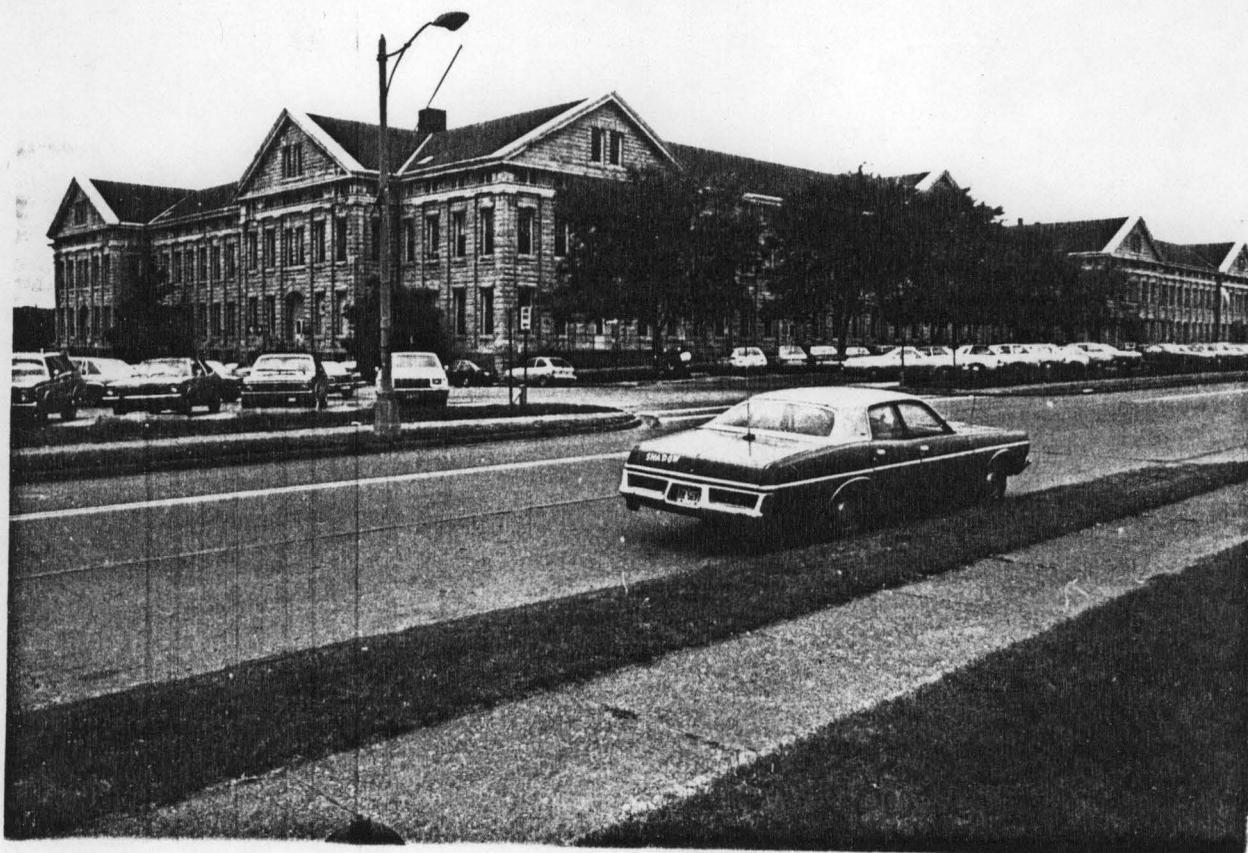
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Rock Island Arsenal	Bldg. 104	2



PROPERTY NAME: Stone Shop (Stone Shop C; now Building 104)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
DIRECTION FACING: SW DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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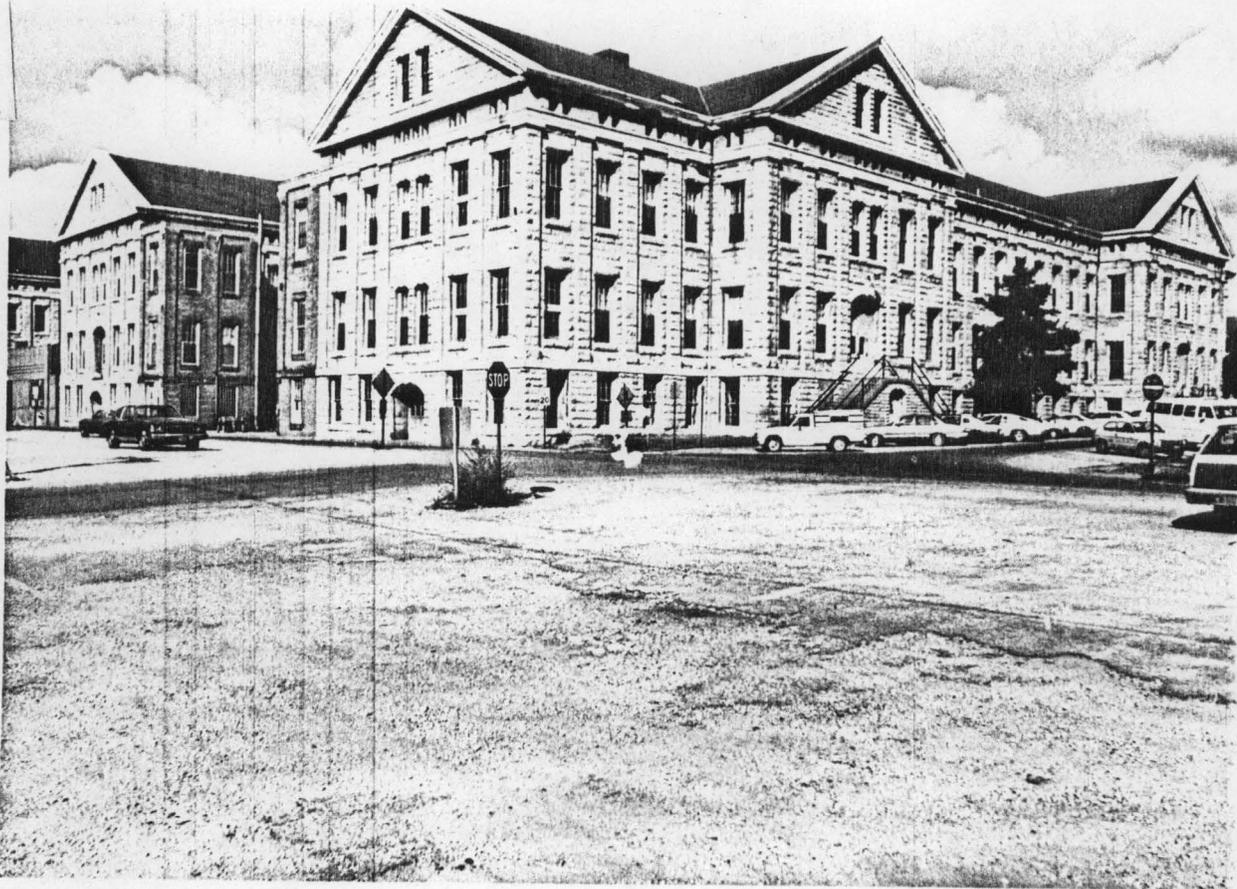
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Rock Island Arsenal	Bldg. 104	3



PROPERTY NAME: Stone Shop (Stone Shop C; now Building 104)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
DIRECTION OF VIEW: NW DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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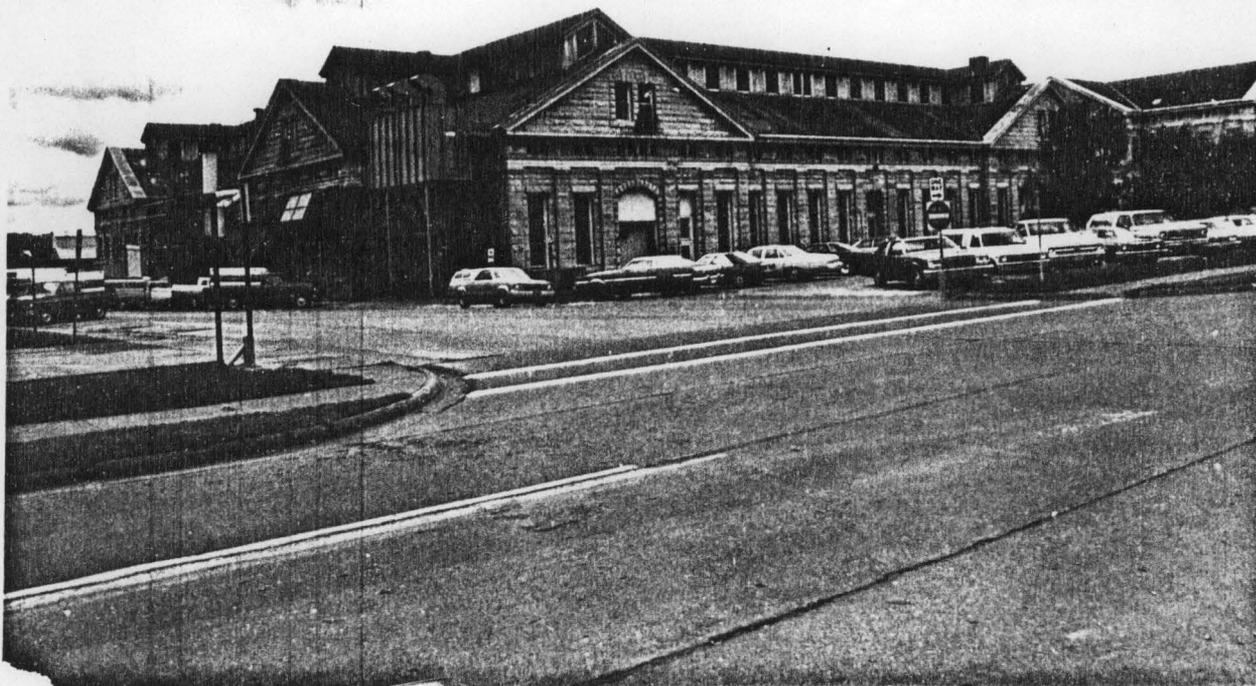
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Rock Island Arsenal

Bldg. 106

1



PROPERTY NAME: Stone Shop (Stone Shop E; now Building 106)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: ESE DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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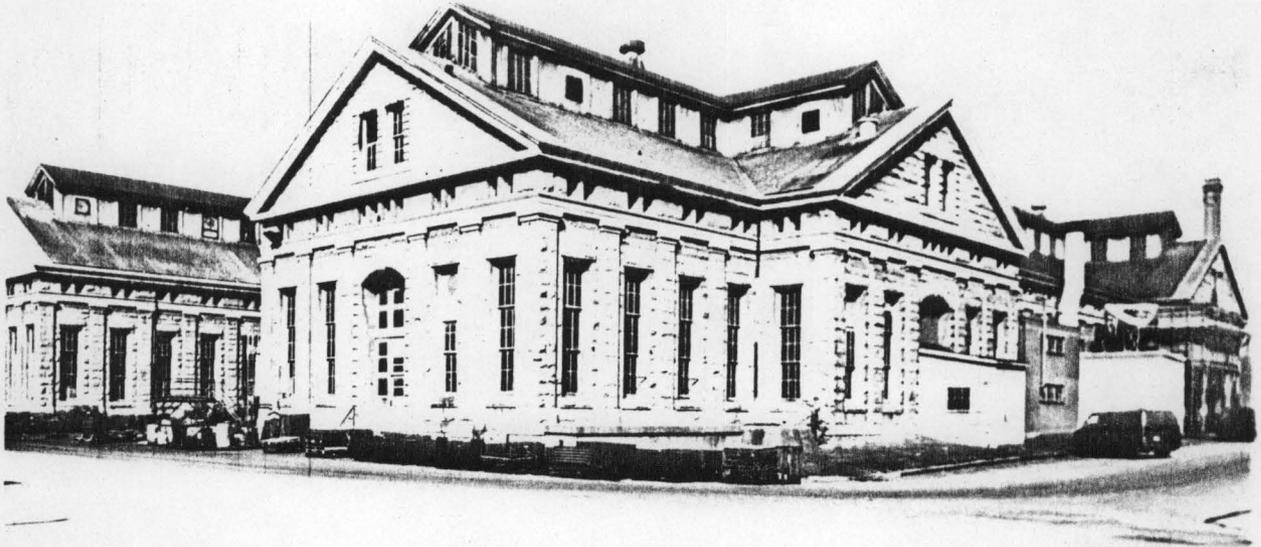
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Rock Island Arsenal

Bldg. 106

2



PROPERTY NAME: Stone Shop (Stone Shop E; now Building 106)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: NW DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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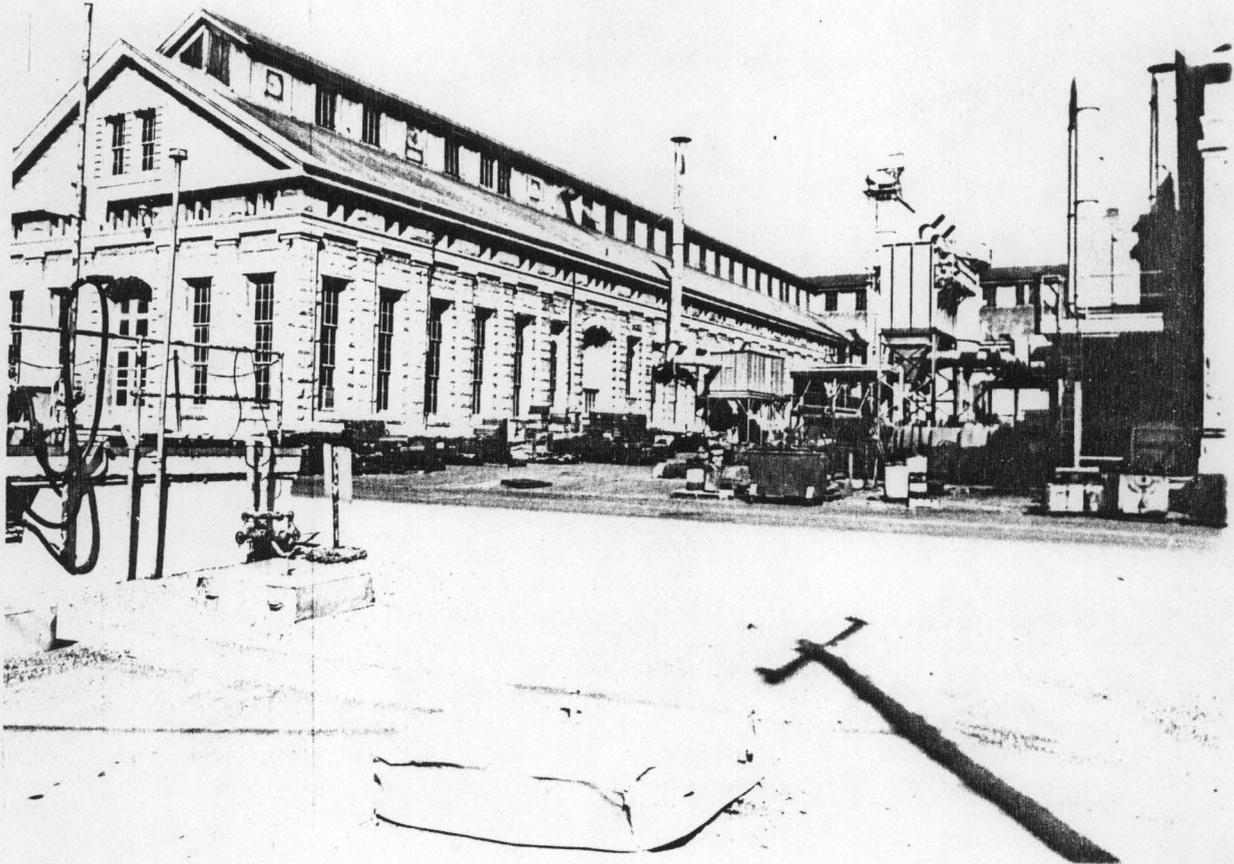
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Rock Island Arsenal

Bldg. 106

3



PROPERTY NAME: Stone Shop (Stone Shop E; now Building 106)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: NW DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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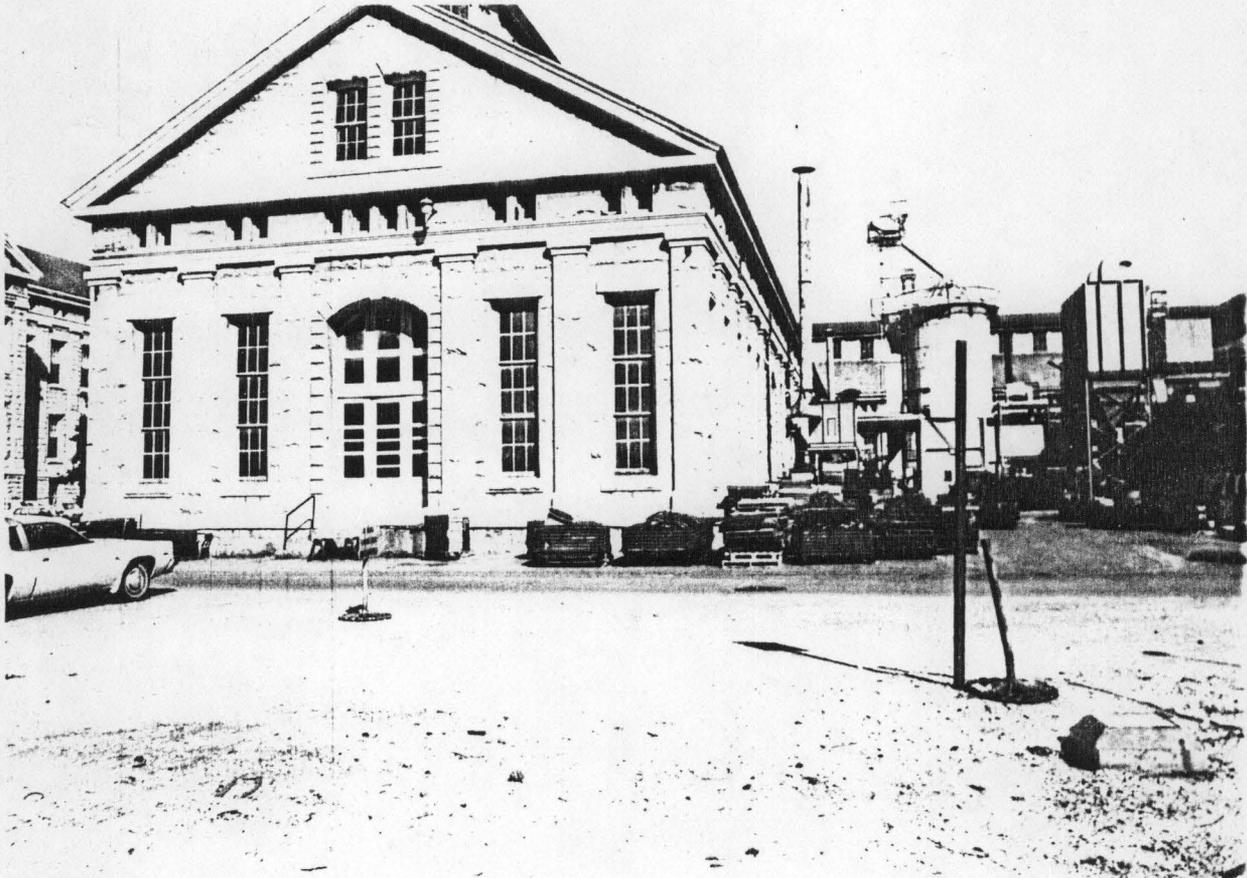
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Rock Island Arsenal

Bldg. 106

4



PROPERTY NAME: Stone Shop (Stone Shop E; now Building 106)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: N DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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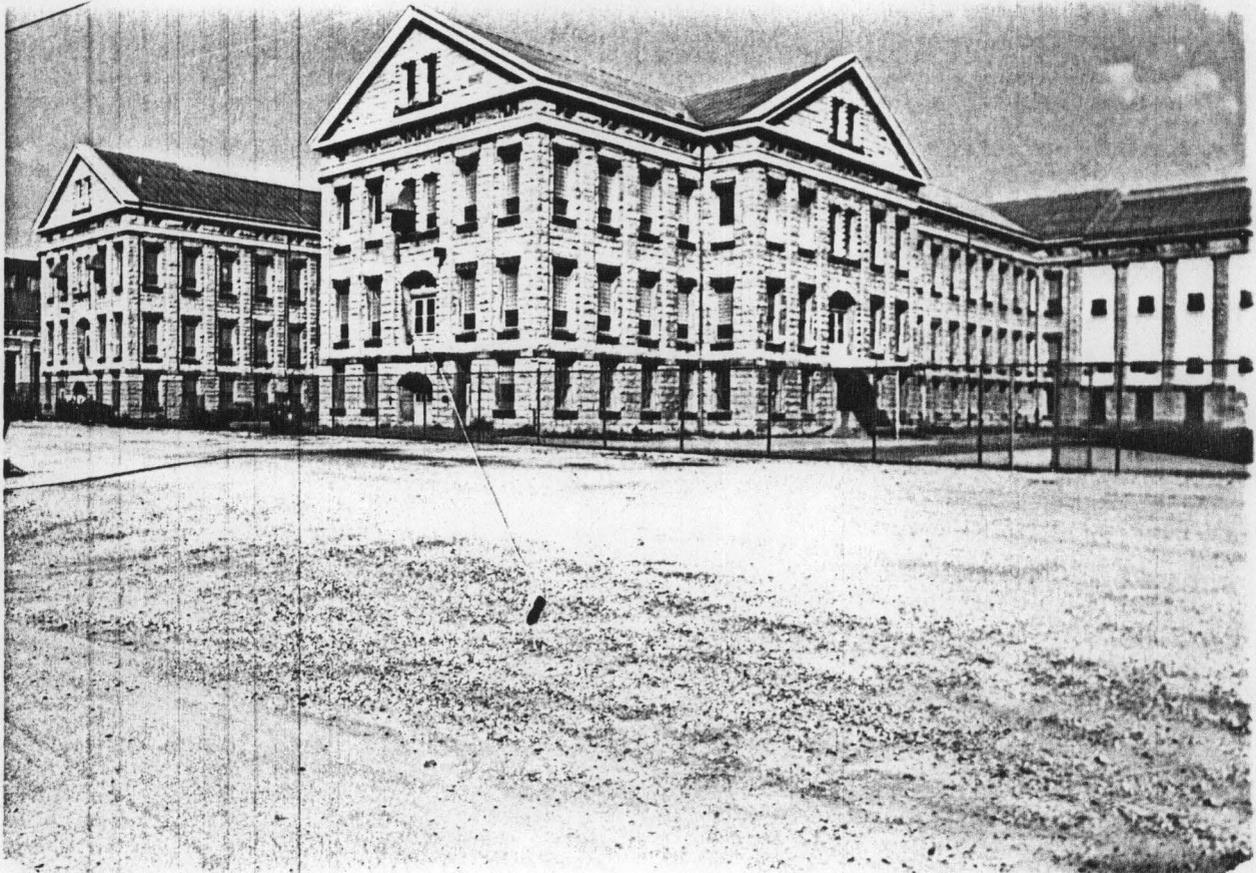
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Rock Island Arsenal

Bldg. 108

5



PROPERTY NAME: Stone Shop (Stone Shop G; now Building 108)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: NW DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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Rock Island Arsenal

Eldg. 108

2



PROPERTY NAME: Stone Shop (Stone Shop G; now Building 108)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: SE DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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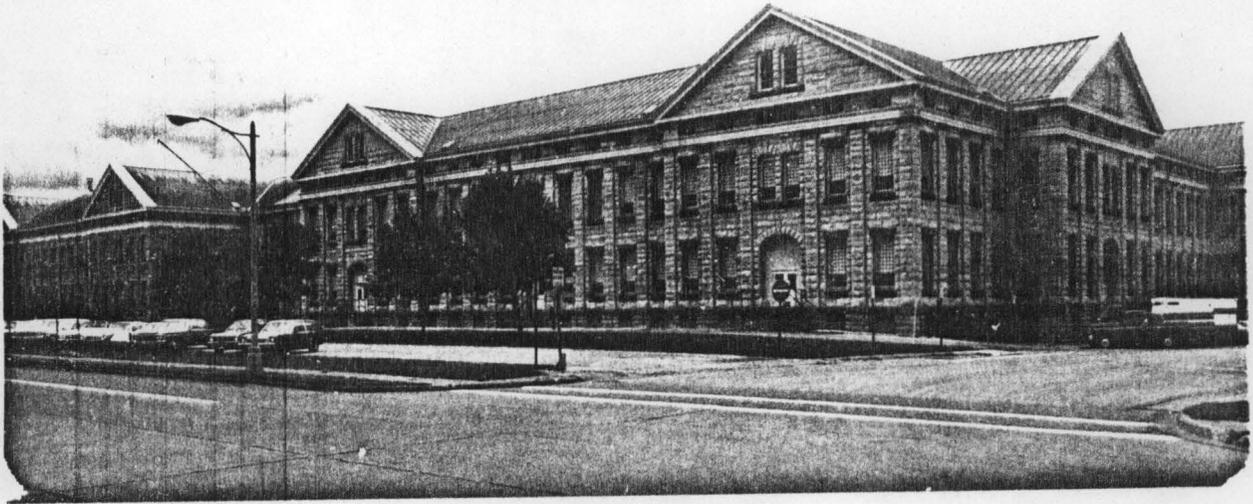
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Rock Island Arsenal

Bldg. 108

1



PROPERTY NAME: Stone Shop (Stone Shop G; now Building 108)  
LOCATION: Rock Island Arsenal  
CAMERA FACING: SE  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University  
CITY/TOWN/VICINITY: Rock Island, Ill.  
DATE: Fall 1980

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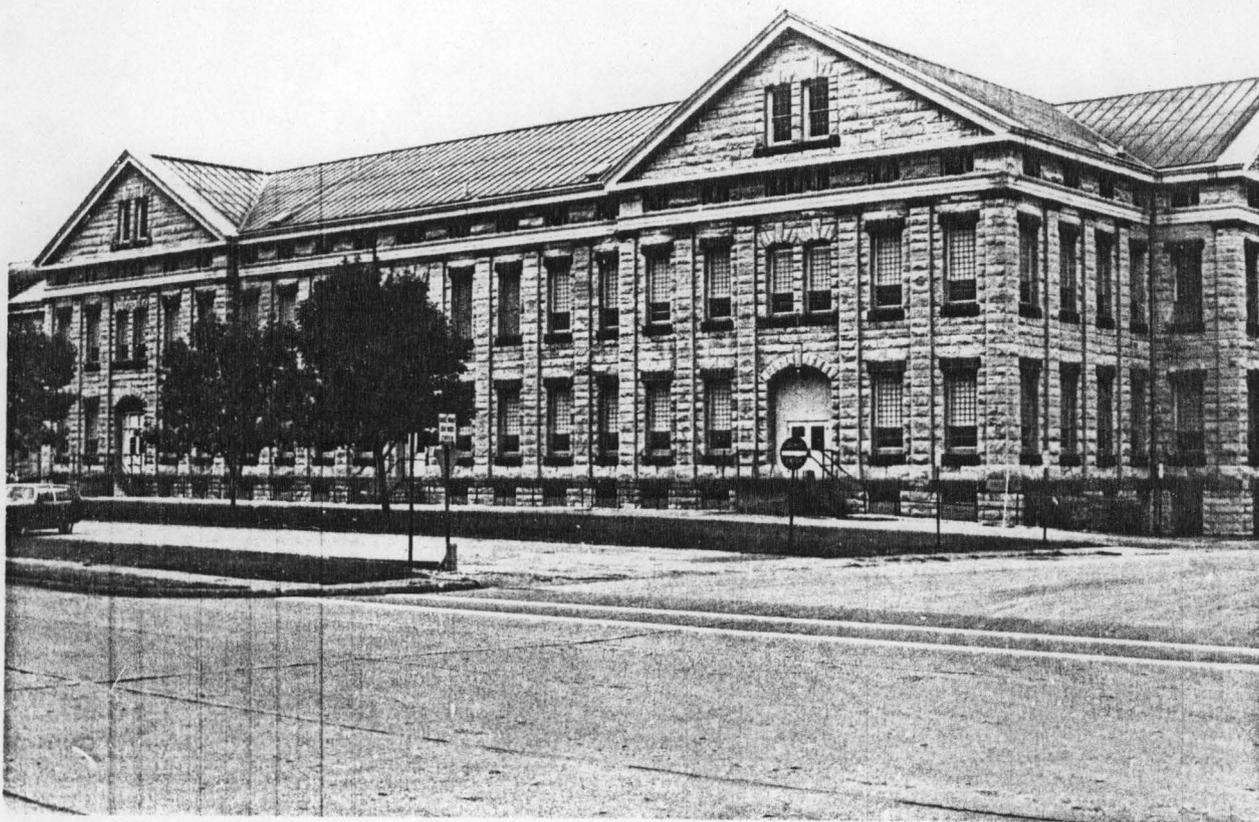
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Rock Island Arsenal

Bldg. 108

3



PROPERTY NAME: Stone Shop (Stone Shop G; now Building 108)  
LOCATION: Rock Island Arsenal      CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: SE      DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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Rock Island Arsenal

Bldg. 110

2



PROPERTY NAME: Stone Shop (Stone Shop I; now Building 110)  
LOCATION: Rock Island Arsenal      CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: SW      DATE: Fall, 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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INVENTORY -- NOMINATION FORM

CONTINUATION SHEET

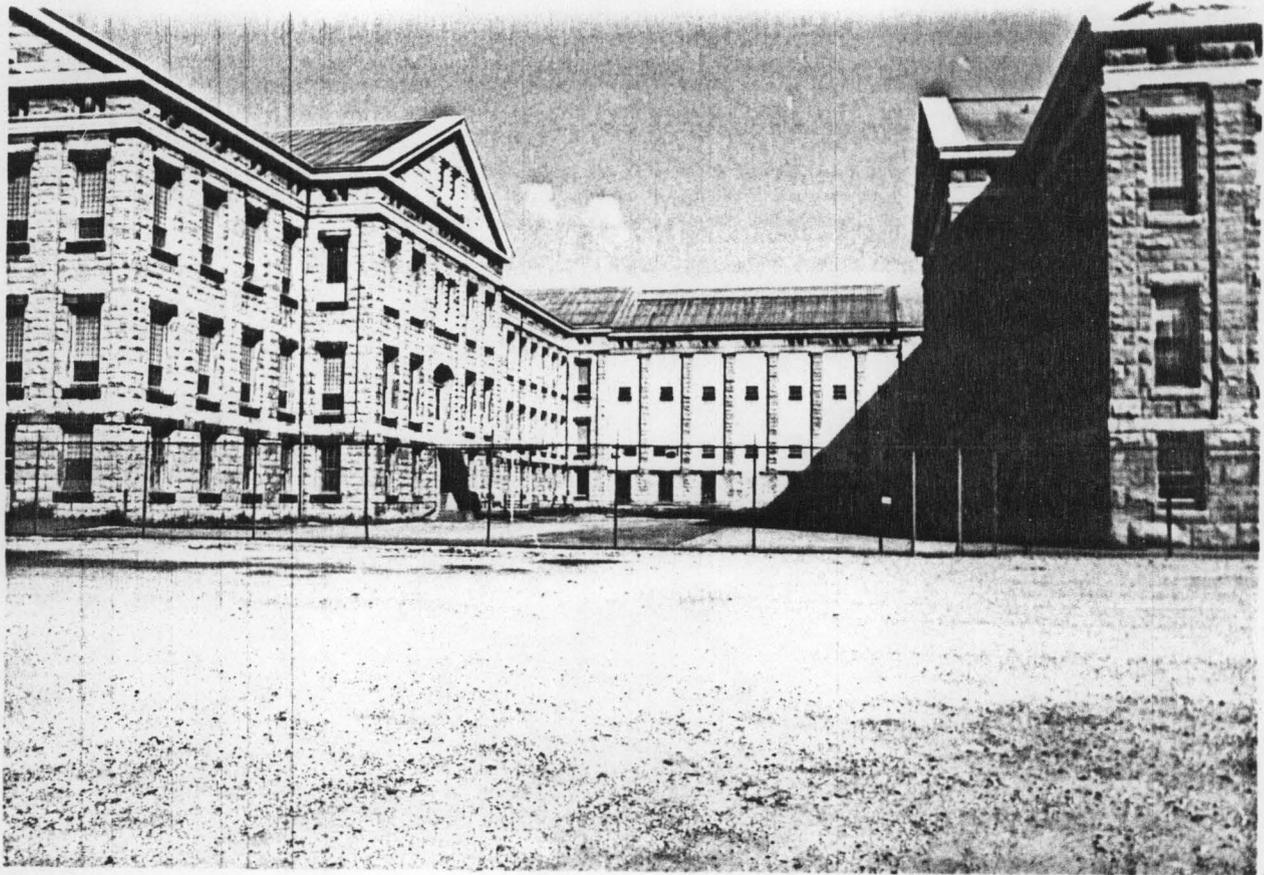
ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 109

2



PROPERTY NAME: Stone Shop Annex (Building 109)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: N DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

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DATE ENTERED

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

CONTINUATION SHEET

ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 110

3



PROPERTY NAME: Stone Shop (Stone Shop I; now Building 110)  
LOCATION: Rock Island Arsenal      CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: SE      DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

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DATE ENTERED

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

CONTINUATION SHEET

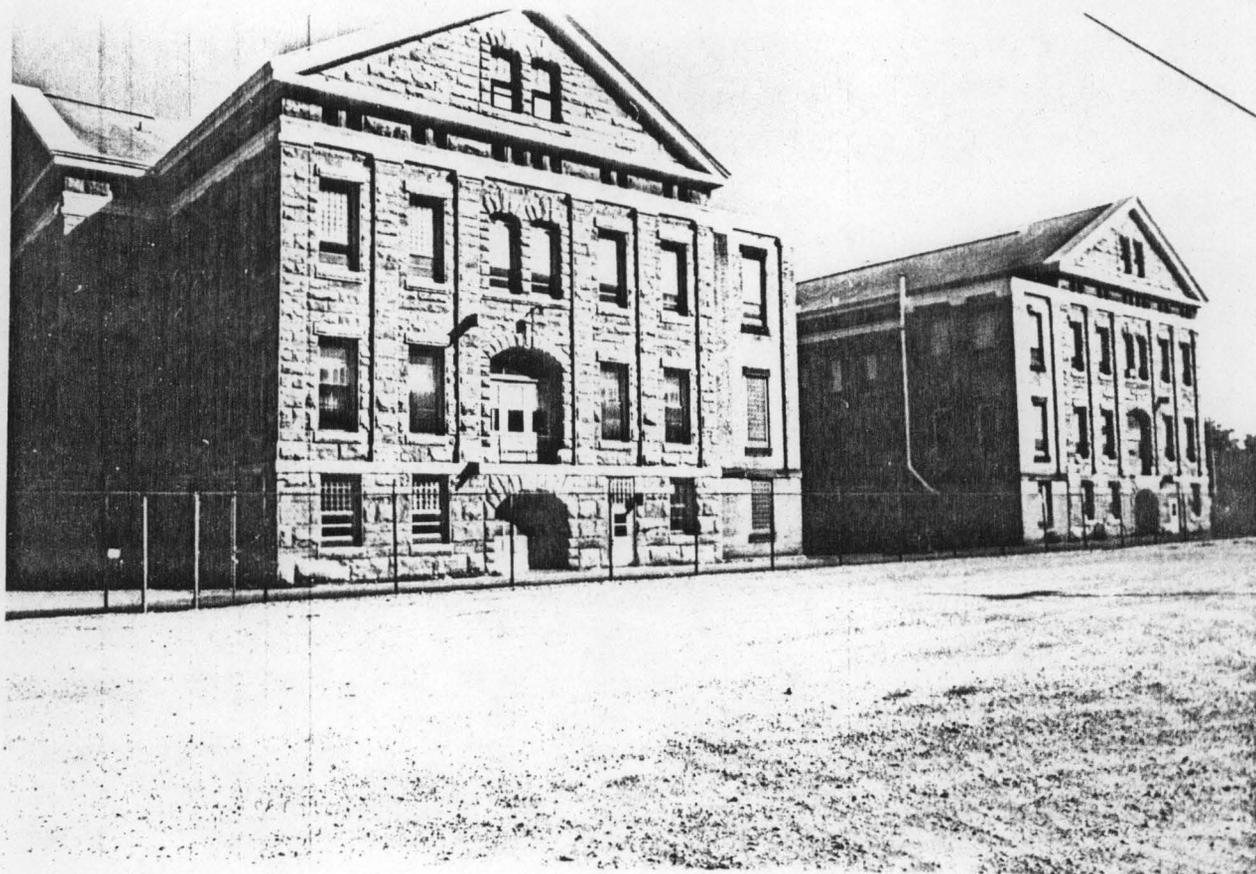
ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 110

1



PROPERTY NAME: Stone Shop (Stone Shop I; now Building 110)  
LOCATION: Rock Island Arsenal  
CAMERA FACING: SE  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University  
CITY/TOWN/VICINITY: Rock Island, IL  
DATE: Fall, 1980

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

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INVENTORY -- NOMINATION FORM**

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CONTINUATION SHEET

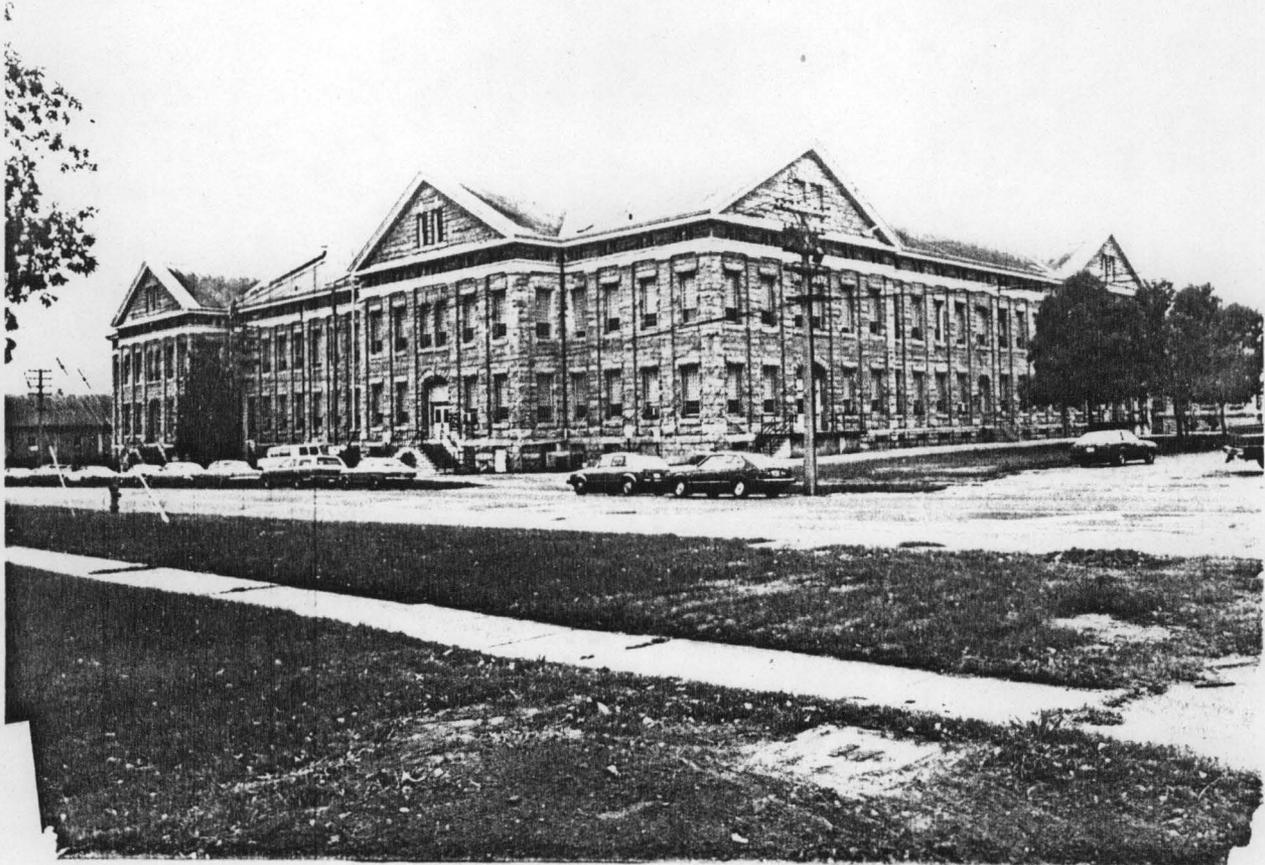
ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 110

4



PROPERTY NAME: Stone Shop (Stone Shop I; now Building 110)  
LOCATION: Rock Island Arsenal      CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: SE      DATE: Fall, 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES  
INVENTORY -- NOMINATION FORM

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CONTINUATION SHEET

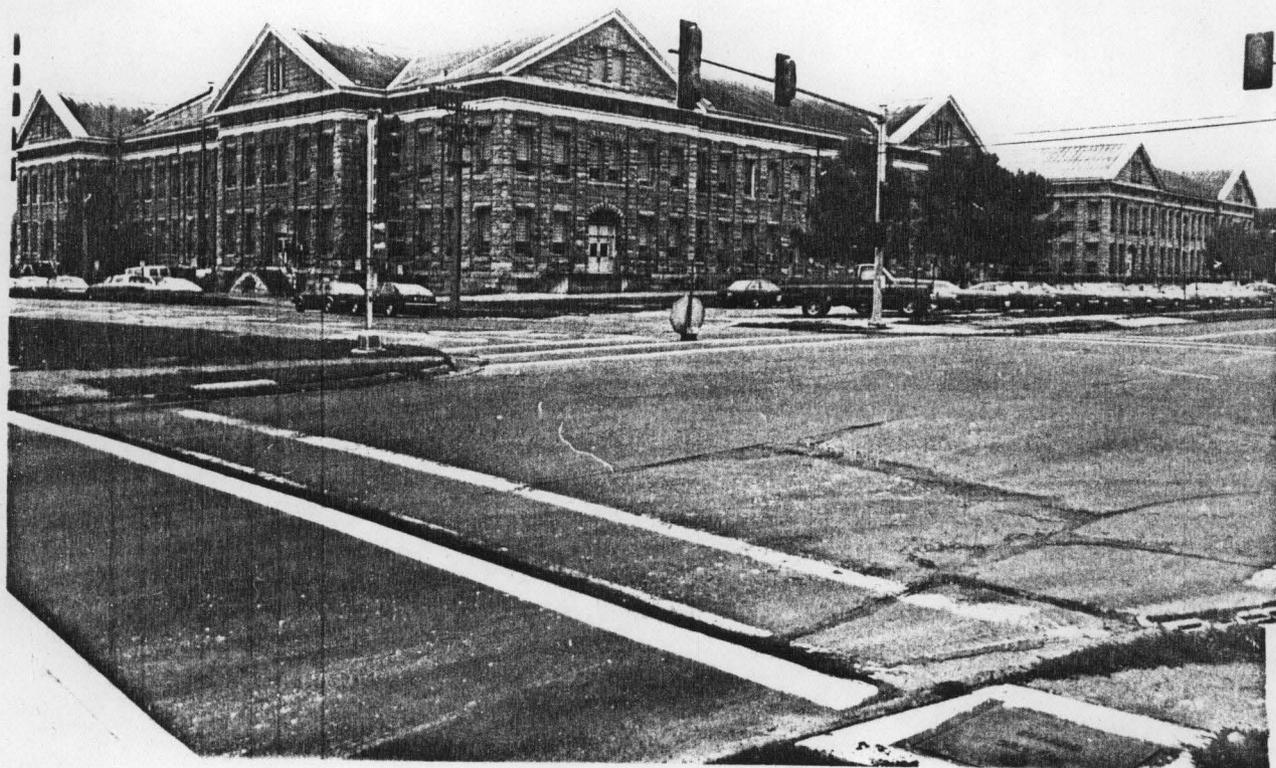
ITEM NUMBER

PAGE

Rock Island Arsenal

Blgd. 110

5



PROPERTY NAME: Stone Shop (Stone Shop I; now Building 110)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: SE DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

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

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DATE ENTERED

CONTINUATION SHEET

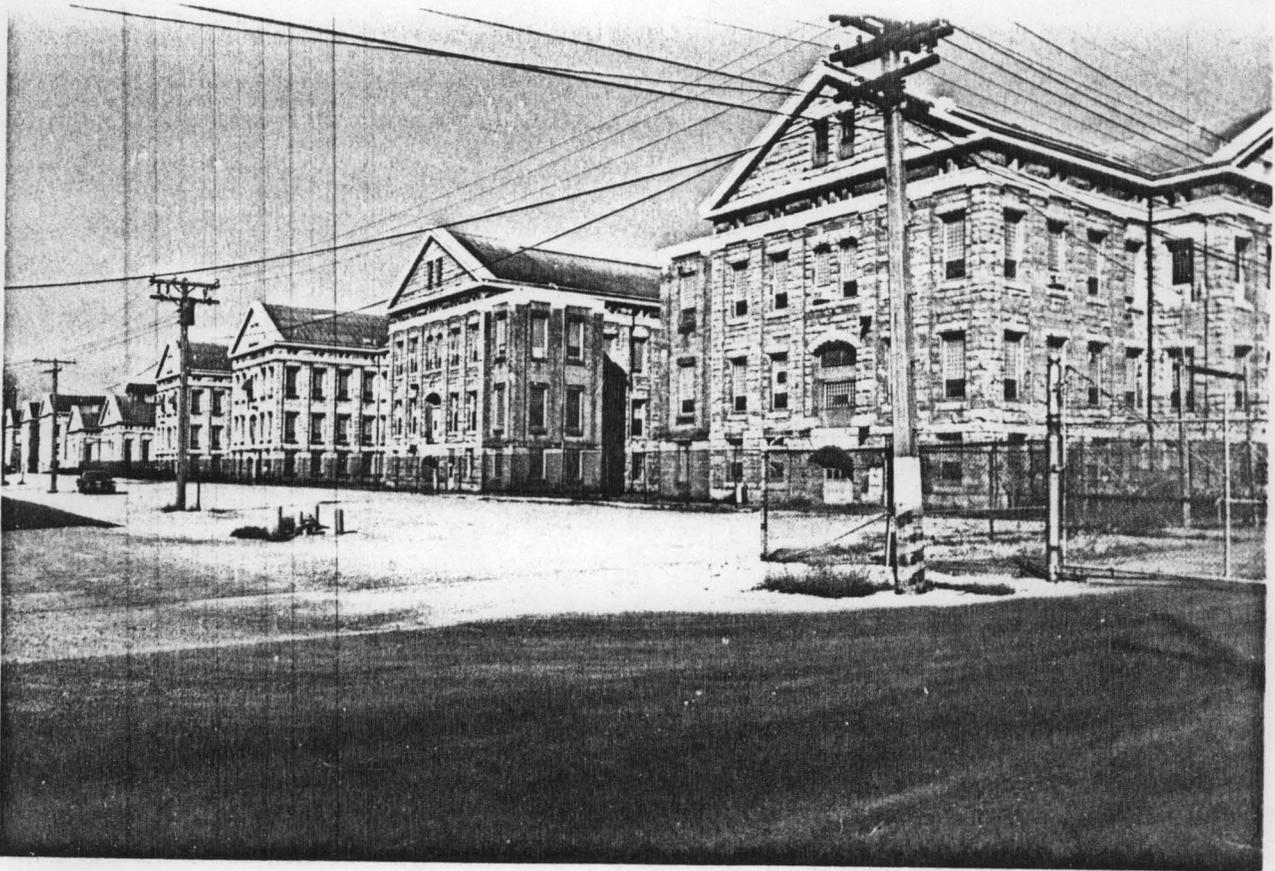
ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 110

6



PROPERTY NAME: Stone Shop (Stone Shop I; now Building 110)  
LOCATION: Rock Island Arsenal      CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: NW      DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

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

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DATE ENTERED

CONTINUATION SHEET

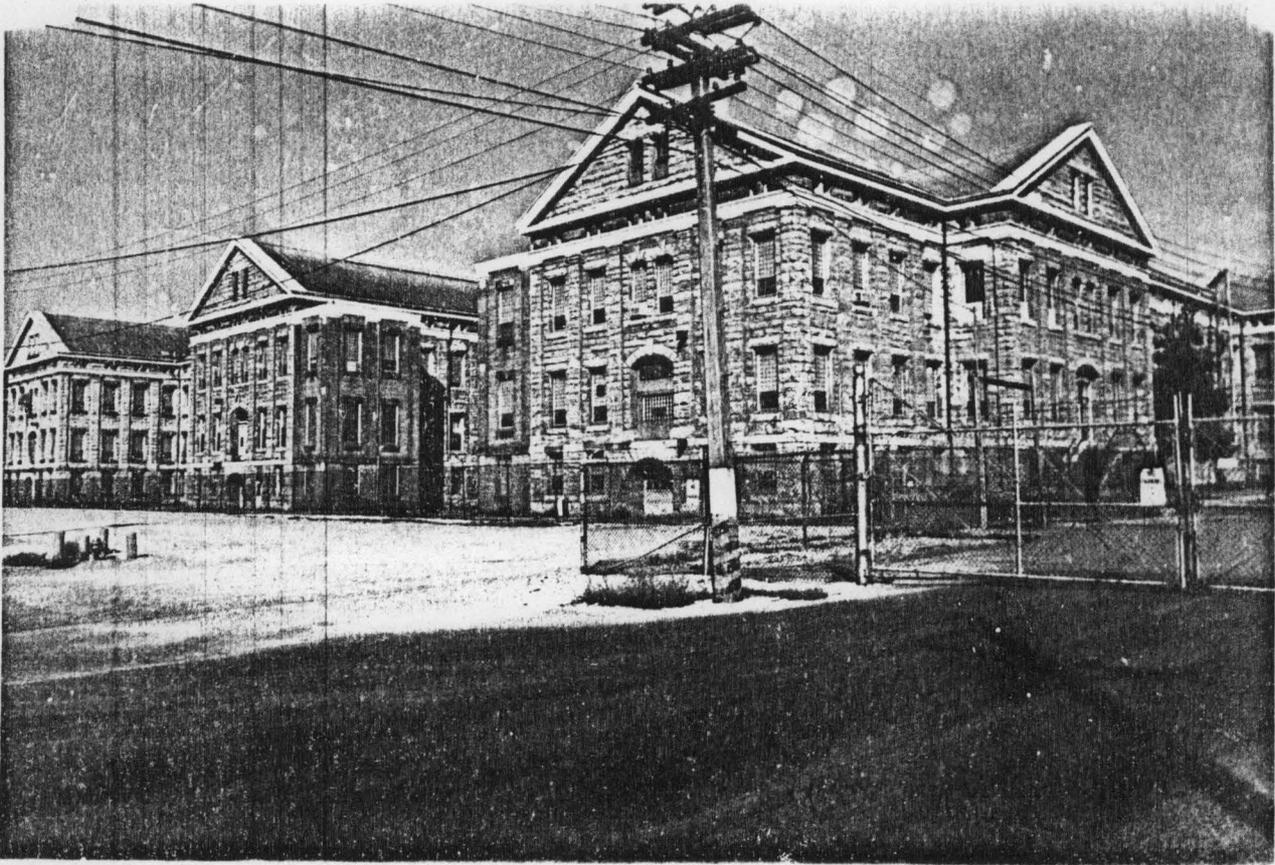
ITEM NUMBER

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Rock Island Arsenal

Bldr. 110

7



PROPERTY NAME: Stone Shop (Stone Shop 1; now Building 110)  
LOCATION: Rock Island Arsenal      CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: NW      DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

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

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CONTINUATION SHEET

ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 110

8



PROPERTY NAME: Stone Shop (Stone Shop I; now Building 110)  
LOCATION: Rock Island Arsenal      CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: N      DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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NATIONAL PARK SERVICE

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

CONTINUATION SHEET

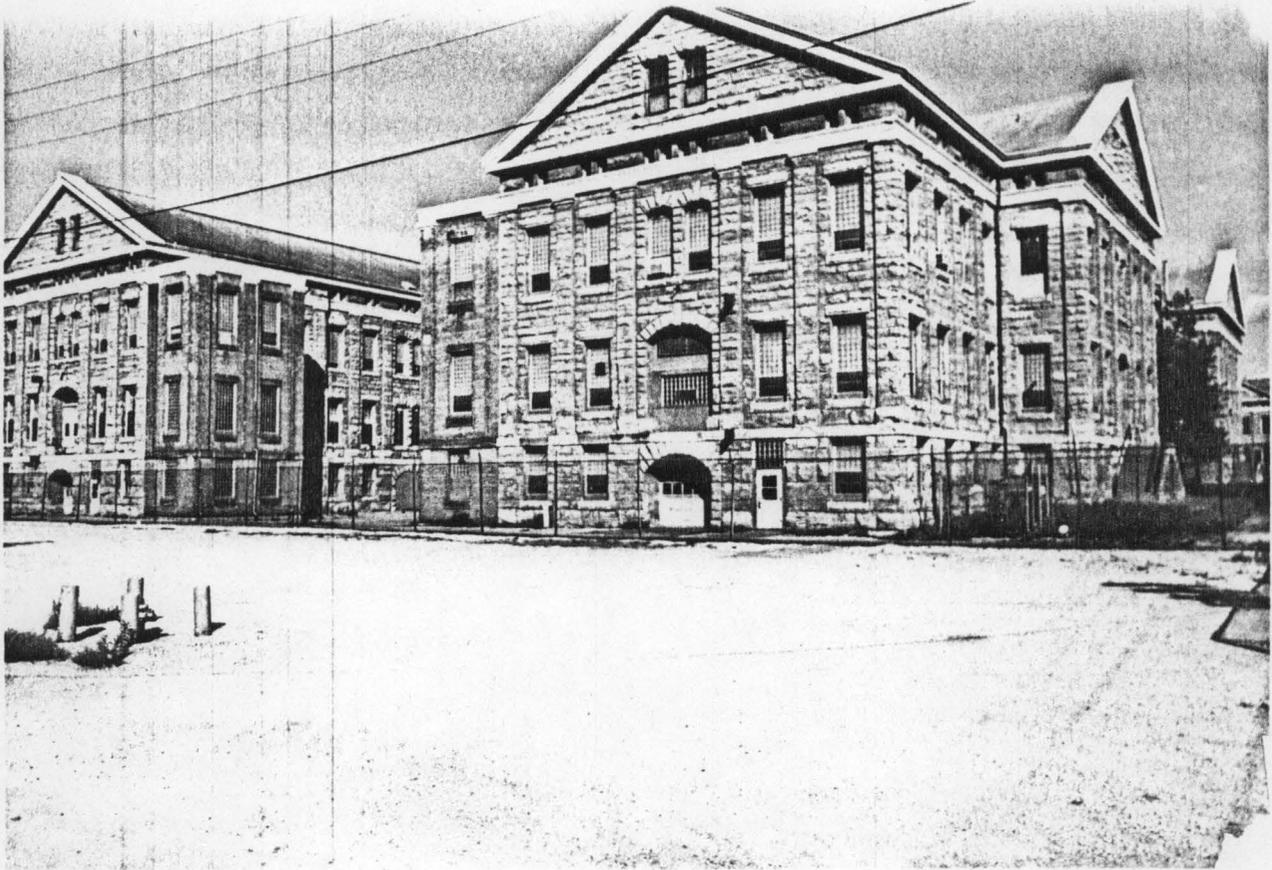
ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 110

9



PROPERTY NAME: Stone Shop (Stone Shop I; now Building 110)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: NW DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

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

CONTINUATION SHEET

ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 110

10



PROPERTY NAME: Stone Shop (Stone Shop I; now Building 110)  
LOCATION: Rock Island Arsenal      CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: NE      DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES  
INVENTORY -- NOMINATION FORM

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DATE ENTERED

CONTINUATION SHEET

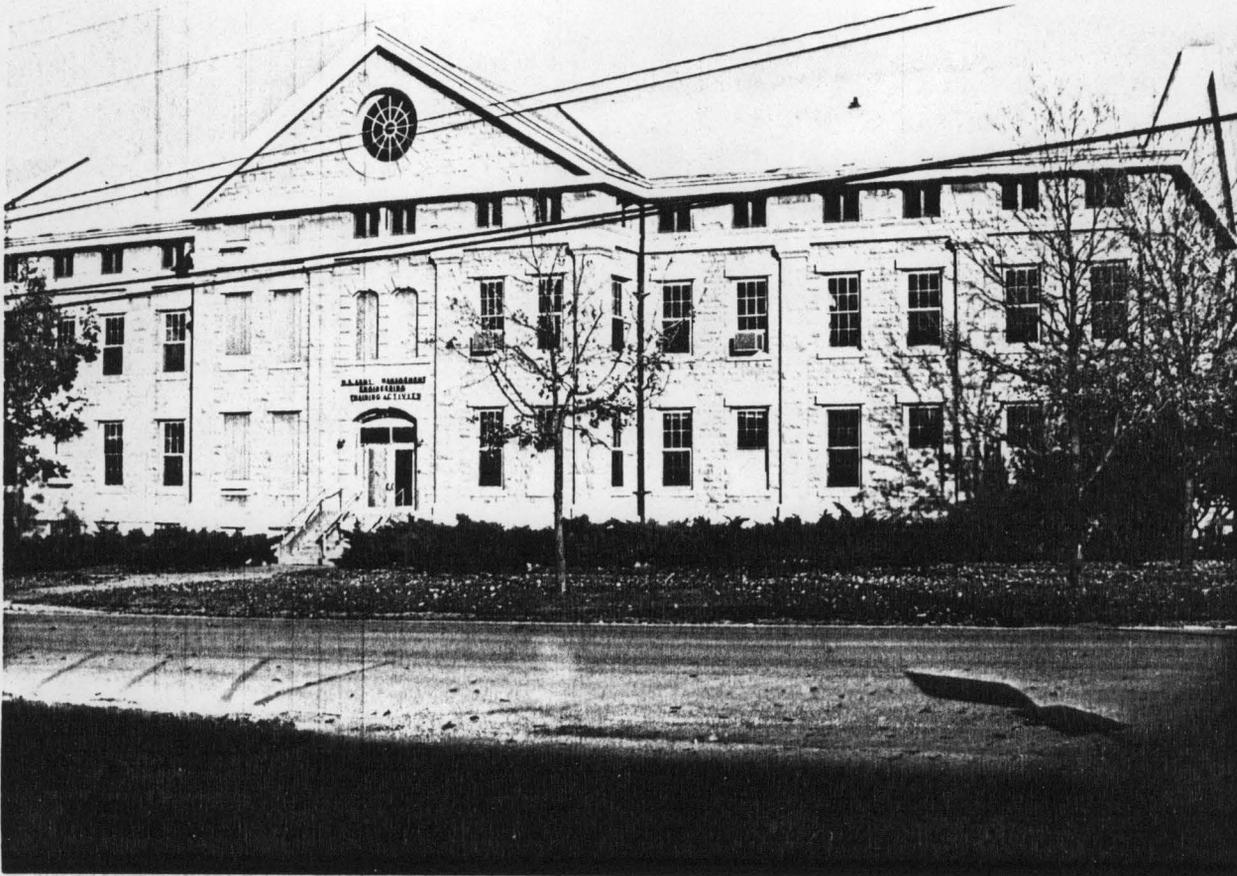
ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 90

1



PROPERTY NAME: Originally Soldiers Barracks (now Building 90)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
DIRECTION FACING: ENE DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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NATIONAL PARK SERVICE

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DATE ENTERED

NATIONAL REGISTER OF HISTORIC PLACES  
INVENTORY -- NOMINATION FORM

CONTINUATION SHEET	ITEM NUMBER	PAGE
Rock Island Arsenal	Bldg. 205	1



PROPERTY NAME: The Clock Tower-Storehouse A (Now The Clock Tower, Building 205)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: SE DATE: February 1981  
PHOTOGRAPHER: F.W. Lange  
LOCATION OF NEGATIVE: Illinois State University

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

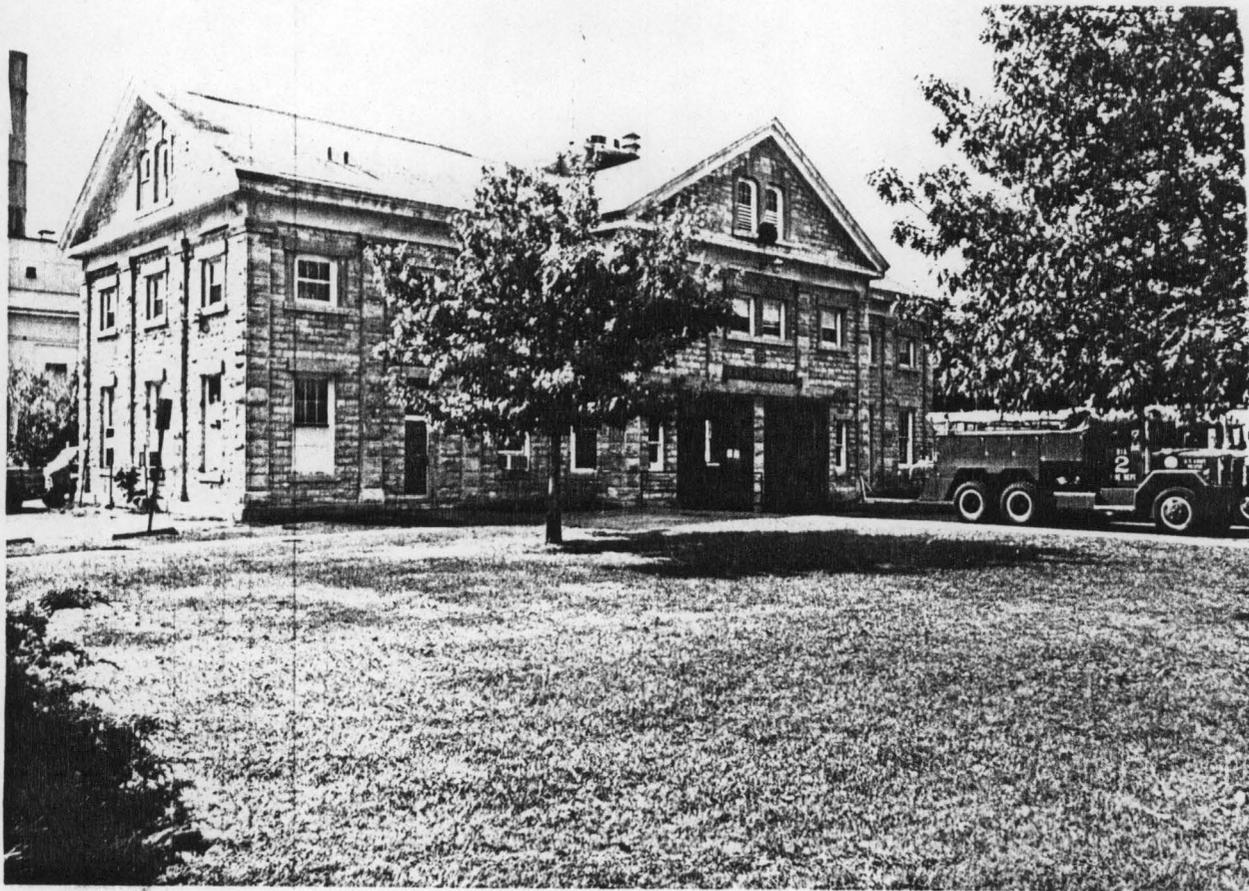
FOR NPS USE ONLY

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DATE ENTERED

NATIONAL REGISTER OF HISTORIC PLACES  
INVENTORY -- NOMINATION FORM

CONTINUATION SHEET	ITEM NUMBER	PAGE
Rock Island Arsenal	Bldg. 225	2



PROPERTY NAME: Post Building and Main Guard House (Building 225)  
LOCATION: Rock Island Arsenal      CITY/TOWN/VICINITY: Rock Island, IL  
CAMERA FACING: SSW      DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

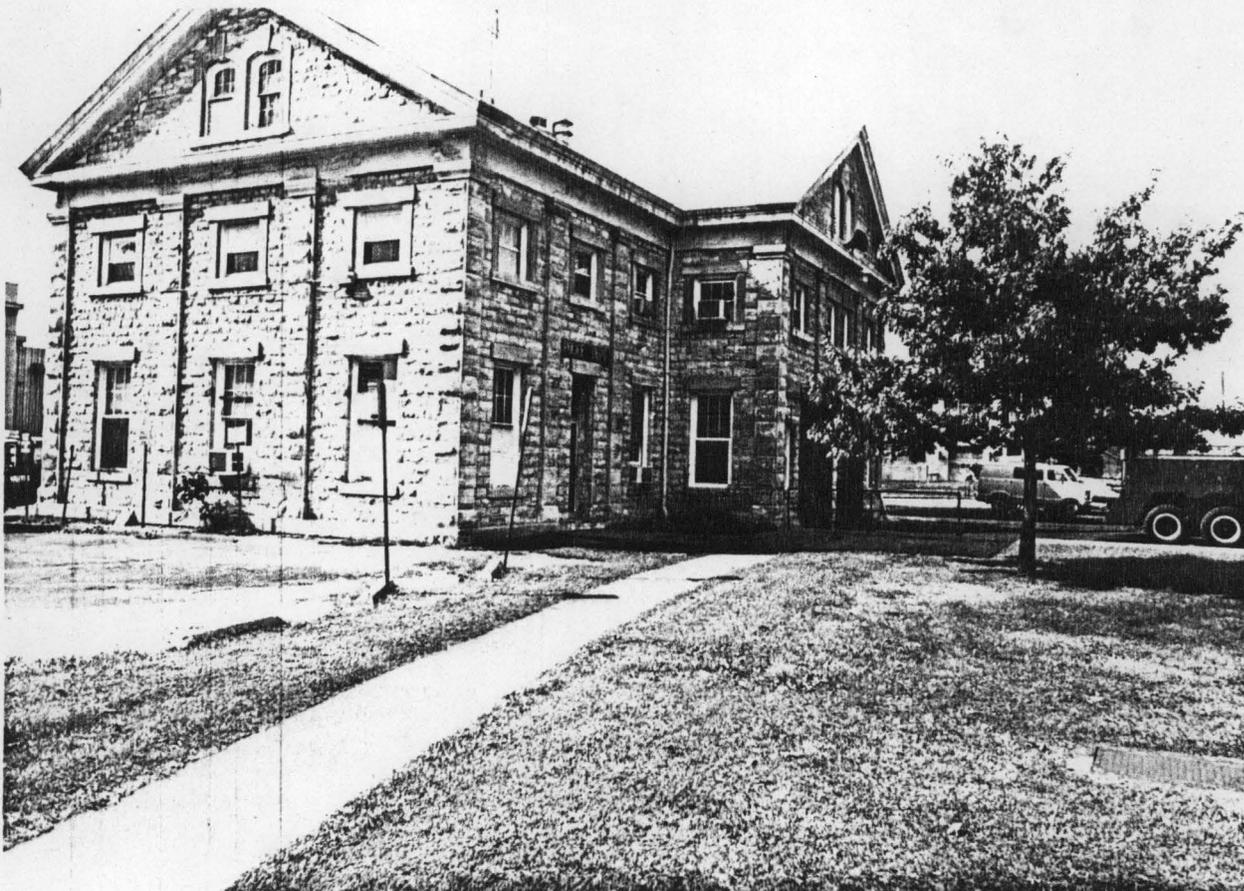
FOR NPS USE ONLY

RECEIVED

DATE ENTERED

NATIONAL REGISTER OF HISTORIC PLACES  
INVENTORY -- NOMINATION FORM

CONTINUATION SHEET	ITEM NUMBER	PAGE
Rock Island Arsenal	Bldg. 225	1



PROPERTY NAME: Post Building and Main Guard House (Building 225)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: WSW DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

# 7 DESCRIPTION

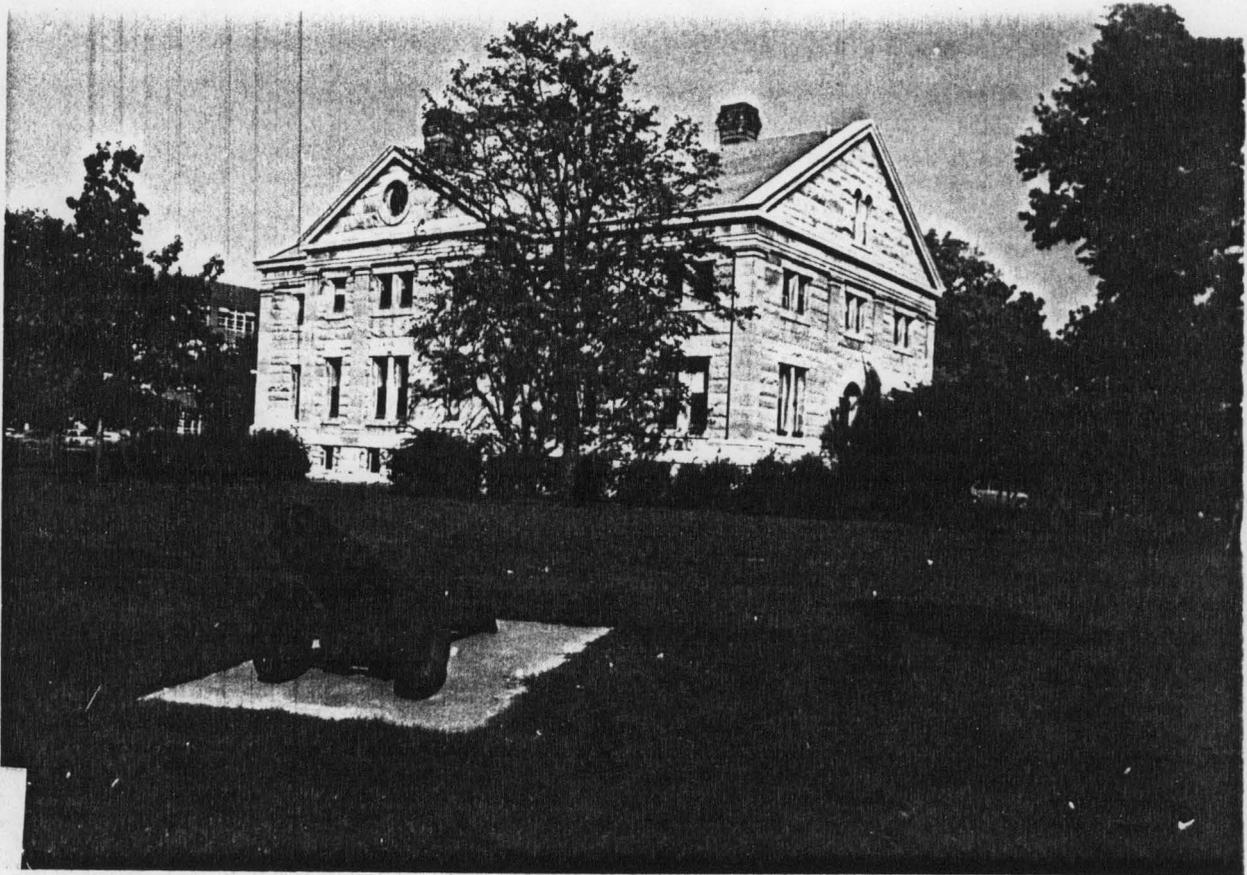
CONDITION		CHECK ONE	CHECK ONE
<input checked="" type="checkbox"/> EXCELLENT	<input type="checkbox"/> DETERIORATED	<input checked="" type="checkbox"/> UNALTERED	<input checked="" type="checkbox"/> ORIGINAL SITE
<input type="checkbox"/> GOOD	<input type="checkbox"/> RUINS	<input type="checkbox"/> ALTERED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

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

This building is asymmetrically cruciform in plan (containing 13,760 square feet of floor space), and consists of two stories plus basement.

The exterior walls are limestone and the roof is carried by a wood frame. The style is a variant of Greek Revival consistent with the buildings of the Stone Shop Complex.

DATE AND NATURE OF ALTERATIONS: The exterior shows no significant alterations.



PROPERTY NAME: Quarters 32, 32A, 33, 33A, Building 360  
LOCATION Rock Island Arsenal CITY/TOWN/VICINITY Rock Island, Illinois  
CAMERA FACING NW DATE Fall 1980  
PHOTOGRAPHER T.M. Karlowicz  
LOCATION OF NEGATIVE Illinois State University

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NATIONAL PARK SERVICE

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NATIONAL REGISTER OF HISTORIC PLACES  
INVENTORY -- NOMINATION FORM

CONTINUATION SHEET

ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 360

2



PROPERTY NAME: Quarters 32, 32A, 33, 33A, Building 360

LOCATION: Rock Island Arsenal

CITY/TOWN/VICINITY: Rock Island, Illinois

CAMERA FACING: NE

DATE: Fall 1980

PHOTOGRAPHER: T.M. Karlowicz

LOCATION OF NEGATIVE: Illinois State University

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES  
INVENTORY -- NOMINATION FORM

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DATE ENTERED

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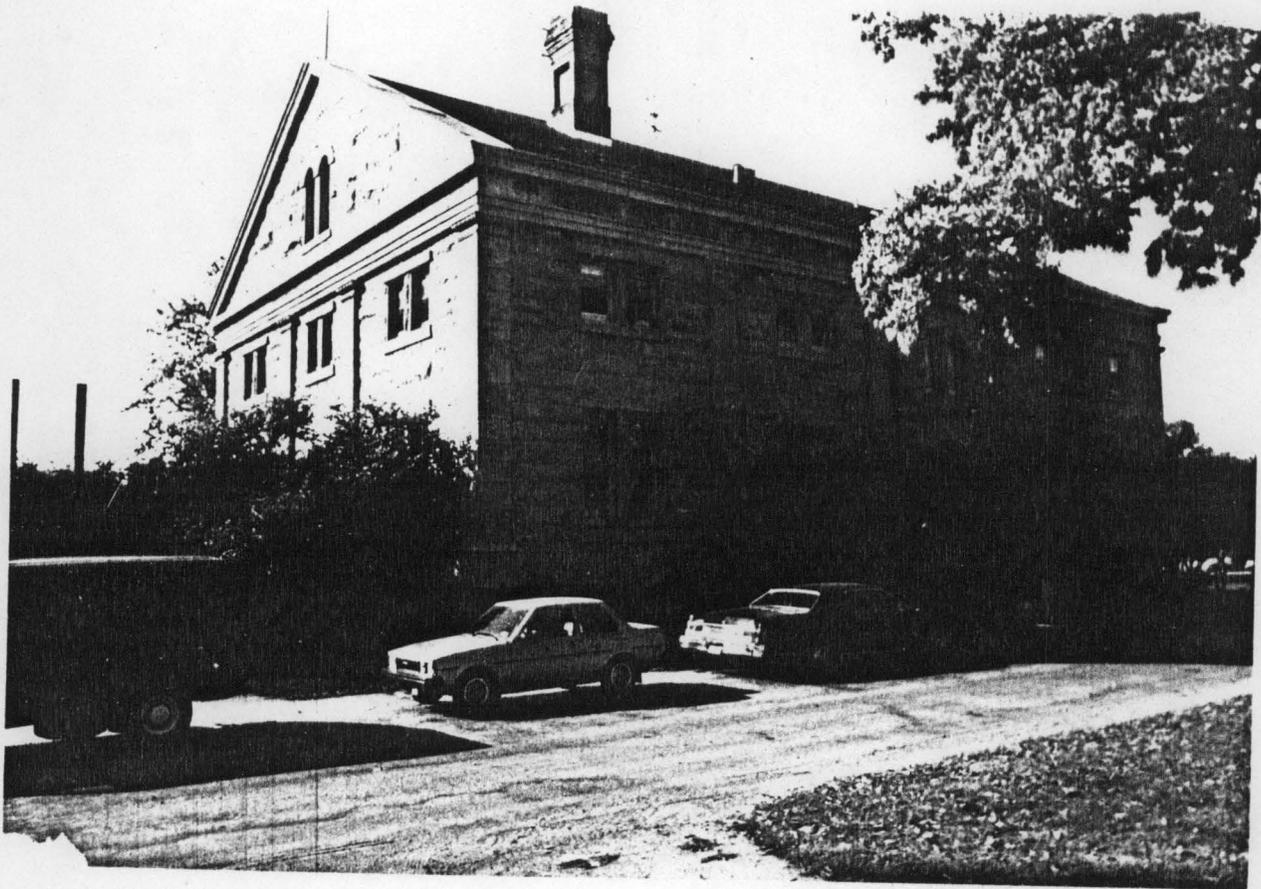
ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 360

3



PROPERTY NAME: Quarters 32, 32A, 33, 33A, Building 360)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: SW DATE: Fall 1980  
PHOTOGRAPHER: T.M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

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INVENTORY -- NOMINATION FORM**

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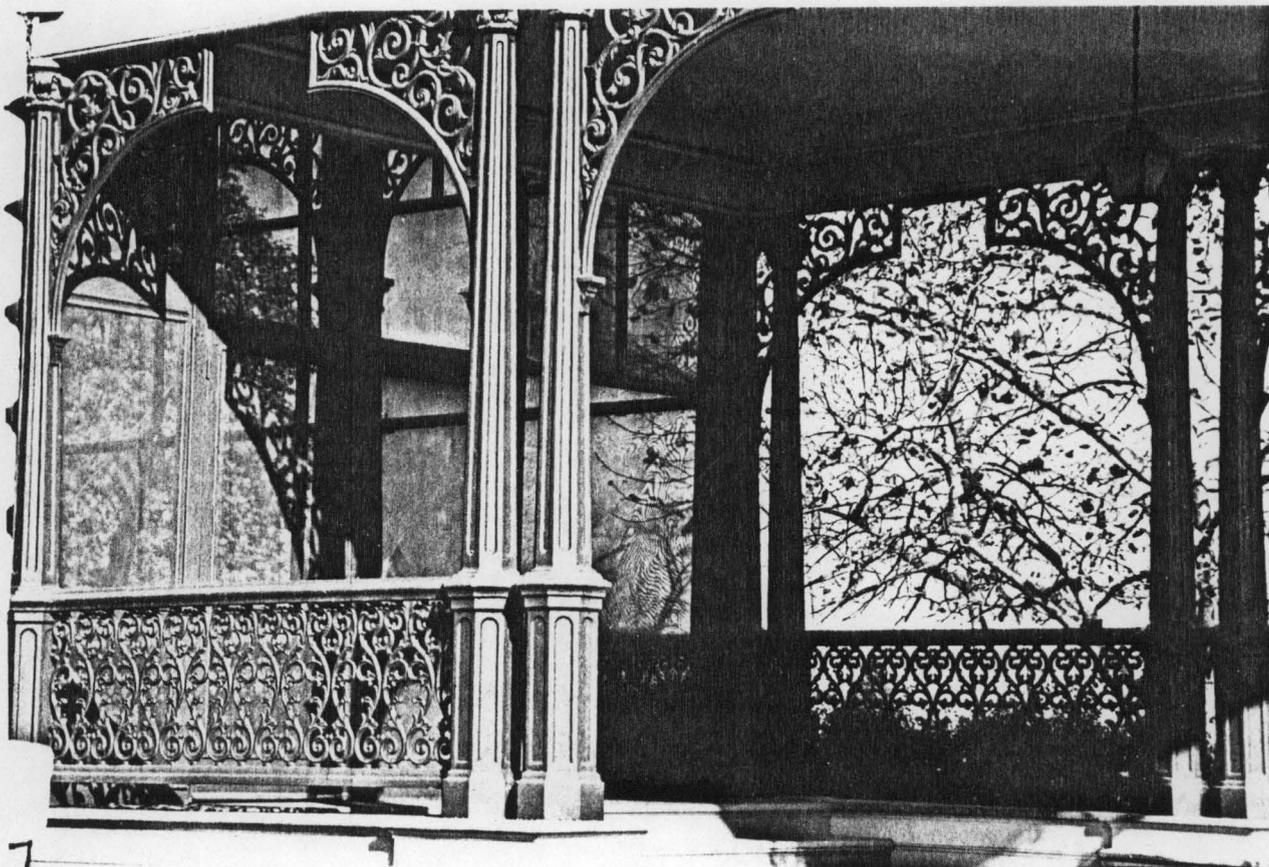
ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 301

2



PROPERTY NAME: Commanding Officer's Quarters (Now Quarters 1, Building 301)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
CAMERA FACING: NE detail of porch DATE: Fall 1980  
PHOTOGRAPHER: Titus M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

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INVENTORY -- NOMINATION FORM**

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DATE ENTERED

CONTINUATION SHEET

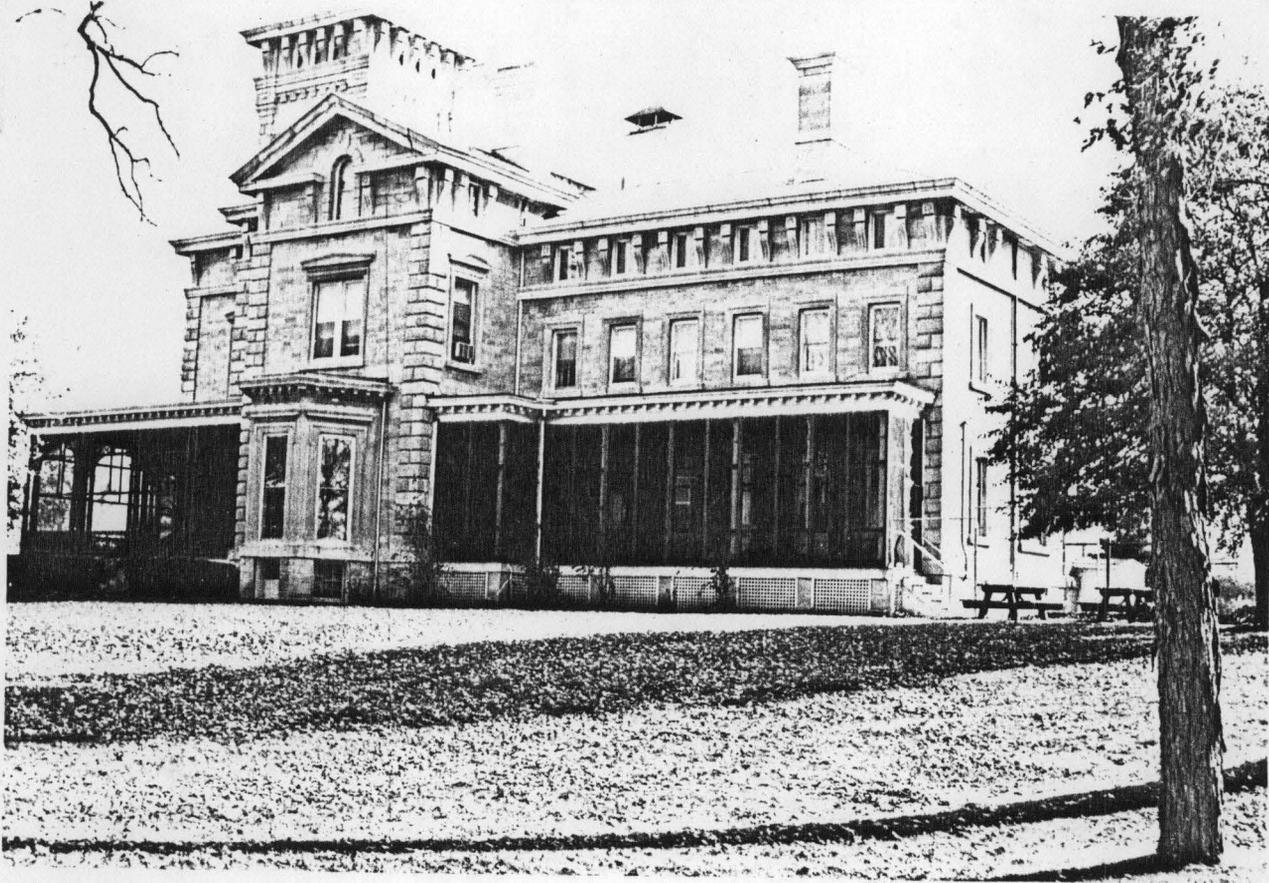
ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 301

3



PROPERTY NAME: Commanding Officer's Quarters (Now Quarters 1, Building 301)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
DIRECTION FACING: SE DATE: Fall 1980  
PHOTOGRAPHER: Titus M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

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INVENTORY -- NOMINATION FORM**

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DATE ENTERED

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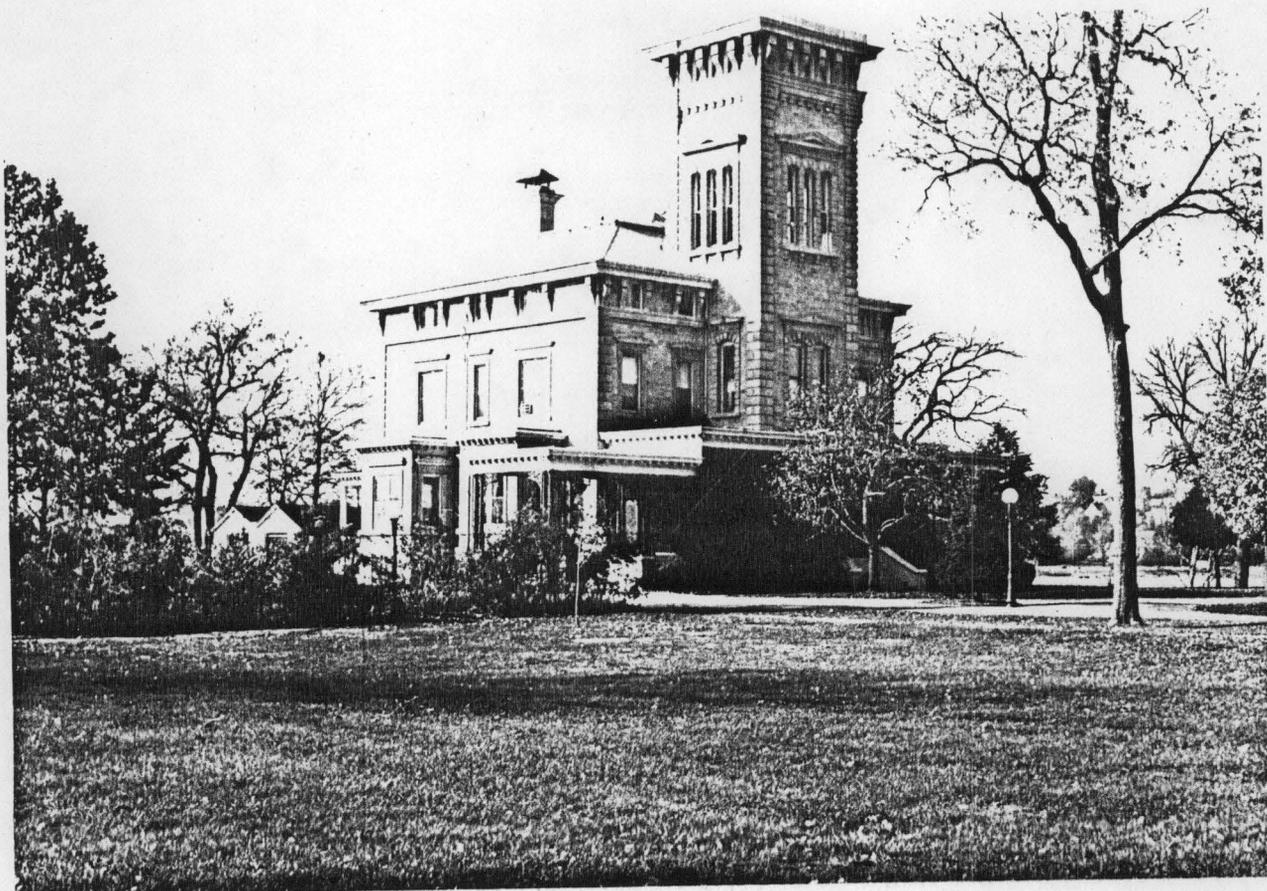
ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 301

4



PROPERTY NAME: Commanding Officer's Quarters (Now Quarters 1, Building 301)  
LOCATION: Rock Island Arsenal  
CAMERA FACING: NW  
PHOTOGRAPHER: Titus M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University  
CITY/TOWN/VICINITY: Rock Island, Illinois  
DATE: Fall 1980

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

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

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DATE ENTERED

CONTINUATION SHEET

ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 2

1



PROPERTY NAME: Subaltern Officers B (Now Quarters 2, Building 2)  
LOCATION: Rock Island Arsenal                      CITY/TOWN/VICINITY: Rock Island, IL  
CAMERA FACING: NE                                      DATE: Fall 1980  
PHOTOGRAPHER: Titus M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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NATIONAL PARK SERVICE

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INVENTORY -- NOMINATION FORM

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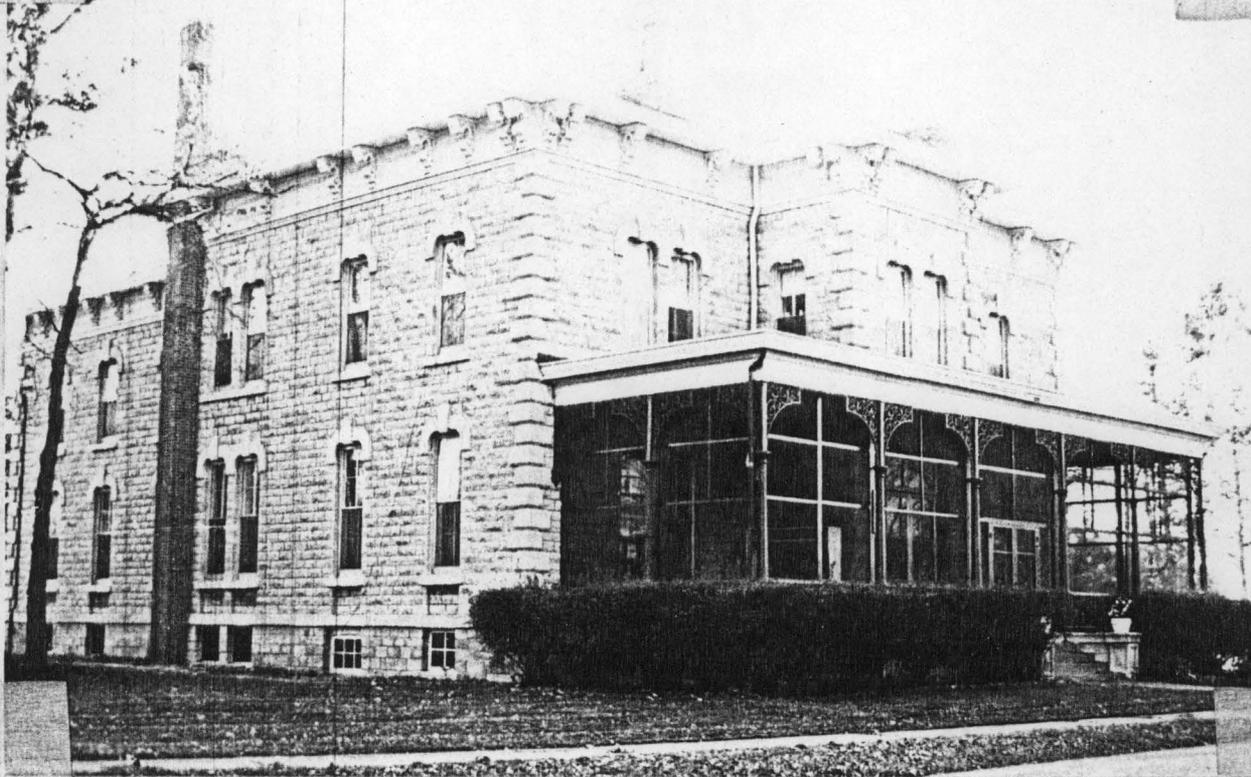
ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 3

1



PROPERTY NAME: Subaltern Officers Quarters C (Now Quarters C, Building 3)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, IL  
CAMERA FACING: SW DATE: Fall 1980  
PHOTOGRAPHER: Titus M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

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INVENTORY -- NOMINATION FORM

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ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 3

3



PROPERTY NAME: Subaltern Officers Quarters C (Now Quarters 3, Building 3)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, Illinois  
DIRECTION FACING: SE DATE: Fall 1980  
PHOTOGRAPHER: Titus M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University

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NATIONAL PARK SERVICE

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ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 4

1



PROPERTY NAME: Subaltern Officers Quarters D (Now Quarters 4, Building 4)  
LOCATION: Rock Island Arsenal CITY/TOWN/VICINITY: Rock Island, IL  
CAMERA FACING: NE DATE: Fall 1980  
PHOTOGRAPHER: Titus M. Karlowicz  
LOCATION OF NEGATIVE: Illinois State University



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NATIONAL PARK SERVICE

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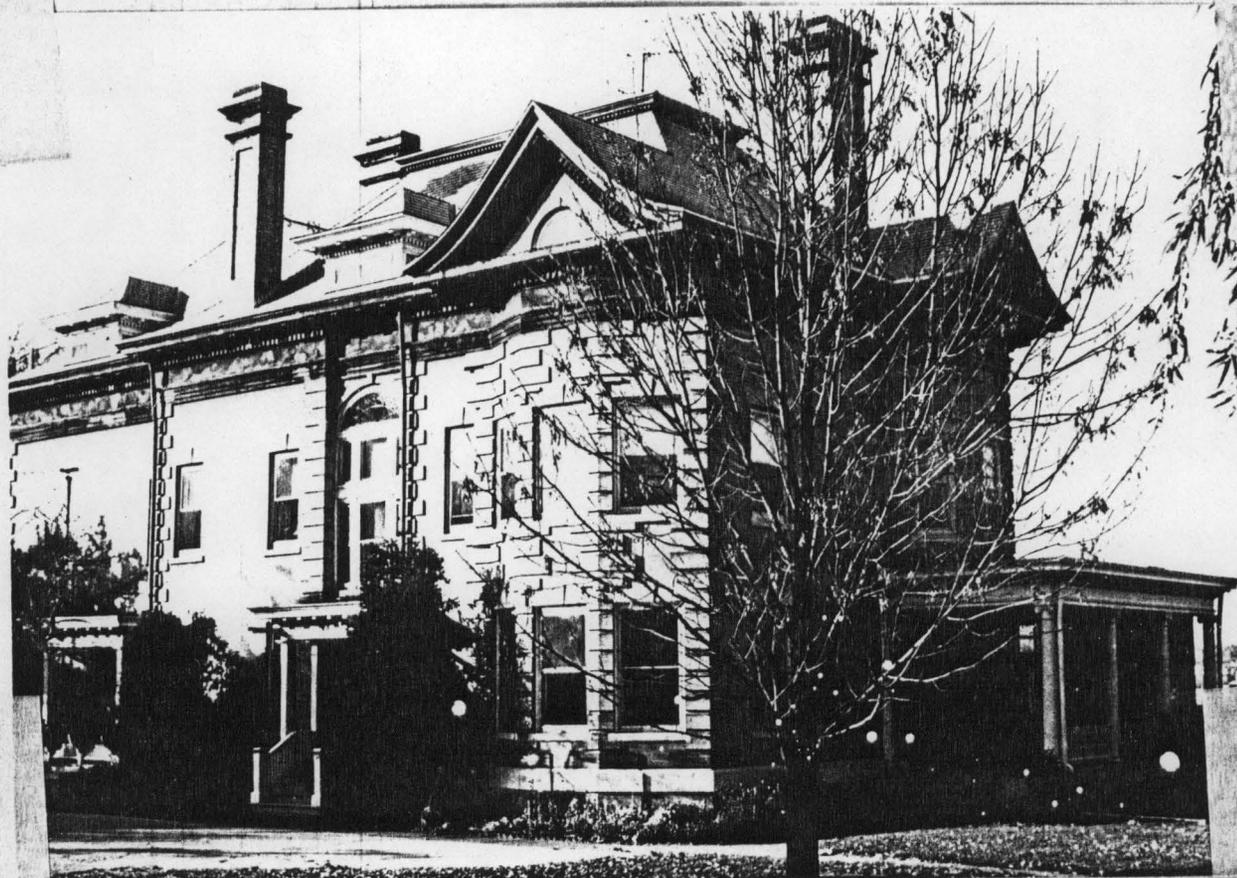
ITEM NUMBER

PAGE

Rock Island Arsenal

Bldg. 6

1



PROPERTY NAME: Quarters 6 (Building 6)

LOCATION: Rock Island Arsenal

CITY/TOWN/VICINITY: Rock Island, Illinois

DIRECTION FACING: NW

DATE: Fall, 1980

PHOTOGRAPHER: Titus M. Karlowicz

LOCATION OF NEGATIVE: Illinois State University



DEPARTMENT OF THE ARMY  
CHICAGO DISTRICT, CORPS OF ENGINEERS  
219 SOUTH DEARBORN STREET  
CHICAGO, ILLINOIS 60604

IN REPLY REFER TO:  
NCCRE

H-34

National Park Service  
Northeast Region  
143 South Third Street  
Philadelphia, Pennsylvania 19106

NORTHEAST REGION JUN 29 1967		Initial and Date
27 June 1967		
Asst. to RD (PA)		
Fed. & State Asst.		
Res. Engineer Adv.		MV
Asst. Dir. of Adm.		
Asst.		
Bridge		
Finance		
Gen. Inv.		
Personnel		
Programs		
Property		
Asst. RD, Operations		
Interp. & VS		
Maintenance		
Res. Manager & VP		
Job Corps		
Staff Archeologist		

Gentlemen:

A study of the "Criteria Used In The Selection Of National Historical Landmarks" inclosed for ready reference impels the conclusion that the Rock Island Arsenal and in fact the whole of Rock Island may well qualify as a Historical Landmark.

Specifically, Rock Island provided the foundation for Fort Armstrong, which commanded the entire width of the River at the western end of the Island, thus contributing to the opening of the West. The Fort was the temporary abode of Dred Scott and his master, and was visited or temporarily dwelled upon by such noted individuals as the future Presidents Zachary Taylor and Abraham Lincoln; General Winfield Scott, thrice a candidate for President; Jefferson Davis, later President of the Confederacy; two of his foremost Generals-Albert Sidney Johnston and Joseph E. Johnston; General Robert Anderson of Fort Sumpter fame; Generals William S. Harney, Edmond P. Gaines, Henry Atkinson, and Phillip Kerney. It appears that this would appropriately fall under the second sentence of paragraph 8 of the Inclosure. The Fort Armstrong park area remains as a memorial to the original structures, and is the site of a replica of one of the block houses that stood at the southern end of the Fort. Here the treaty ending the Black Hawk War was signed. It is also the site of a sesquicentennial monument that rests over a "time capsule" that contains many mementos of today for future generations.

Further, a pier from the first bridge to cross the Mississippi River has been left standing at the western end of Island. This certainly appears to be a candidate for qualification under paragraph 1 of the Inclosure, inasmuch as this represents the first great commercial gateway between East and West and the releasing of traffic to the confines of North and South as heretofore dictated by the Mississippi River. This

NCCRE  
National Park Service

27 June 1967

particular bridge was the subject of a court case in which Abraham Lincoln defended such structures against river boat interests and thus indicates further qualification under paragraph 8. A view of the bridge appears on page 169 of Inclosure 3.

It is also noted that the original Arsenal and Armory shops may very well qualify under paragraph 4 in view of their unaltered, for the most part, exterior condition and contribution to the defense of the United States.

Finally, Quarters Number 1 might very well qualify, under paragraphs 4, 6, and 8 because of its architectural structure--the genius of General Rodman, whose initial fame stemmed from his invention of the Rodman principle for the making of cannon. A Rodman gun stands before his grave at the eastern end of the Island.

It is requested that the noted areas, or preferably the whole of Rock Island be registered with your service as a Historical Landmark.

Sincerely yours,



B. A. FISHER  
Chief, Real Estate Division

- 4 Inclosure
1. Excerpt from Park Service Brochure
  2. Ft. Armstrong Brochure
  3. Excerpt from Missouri Historical Review
  4. Tour Guide, Rock Island Arsenal

Copies furnished w/o incl:  
CG, US Army Weapons Command  
Rock Island Arsenal  
ATTN: AMSWE-ADH  
Rock Island, Ill. 61201  
CG, US Army Materiel Command  
ATTN: AMCIS-T  
Washington, D. C. 20315

NCCRE-M

12 July 1967

National Park Service  
Department of the Interior  
Interior Building  
Washington, D. C. 20240

Re: Request for Registered National Historical  
Landmark status, Rock Island, Illinois

Gentlemen:

Supplementing subject request of this office dated 29 June 1967,  
inclosed is literature which has become available subsequent to such  
request.

Sincerely yours,

- 4 Incl
1. RIA Pamphlet 870-2
  2. RIA Pamphlet 870-3
  3. Bridge Micro Folio
  4. Time Capsule contents

B. A. FISHER  
Chief, Real Estate Division

## CONTENTS OF THE FORT ARMSTRONG TIME CAPSULE

### 1. Medallions and Coins

- Lyndon B. Johnson medallion (A gift from the White House to Congressman Schmidhauser of Iowa for the Sesquicentennial Celebration)
- John F. Kennedy Credo Memorial Medal (A gift of Forrest Blaine Stephens, Age 12)
- John F. Kennedy Half Dollar (A gift of Candice Ce Stephens, Age 9)
- Presidents of the United States (Plastic coins - Washington to Kennedy)
- Lincoln Head Cent, 1966, (A gift of Dorothy S. Swanberg)

### 2. Fountain Pen with Presidential Seal and Signature Thereon (Accompanied L. B. J. Medallion)

### 3. Books

- A History of Rock Island and Rock Island Arsenal from Earliest Times to 1954
- Volume I: Earliest Times to 1898
- Volume II: 1898 to 1940
- Volume III: 1940 to 1954
- A Synopsis of Events on Rock Island, 1954 through 1965  
(A supplement to the three volumes above)
- The American Nation - A History of the United States by John A. Garraty (A gift of Augustana College with an accompanying letter from Benedict K. Zobrist, Professor of History)
- The Quiet Crisis, by Stewart L. Udall (A gift of Black Hawk Junior College)
- "The Little Book" and "Institutional Profile and Basic Institutional Data" 1965-66, (A gift of Black Hawk College)

3. Books (con't)

Man's Knowledge of Reality - An Introduction to Thomistic Epistemology, by Frederick D. Wilhelmsen (A gift of St. Ambrose College with letter from Monsignor Menke, President)  
Blue Print (1964 yearbook. A gift of Marycrest College)  
1965 Oaks (yearbook. A gift of St. Ambrose College)

4. Sesquicentennial Scroll (A copy of that presented to Colonel Nilsson, May 14, 1966)

5. 1/16 - Scale Models

J. I. Case tractor

" farm wagon

" Spreader

" plow

" disc

John Deere tractor

" plow

" bulldozer

International Harvester farm elevator

6. Illinois Bell

Annual Report for 1965

Telephone Directory

7. Brochures

J. I. Case Annual Report, 1965

" Special Flood Report

" Eagle, Volume 4, No. 1, February 1966

" Welcome to Our Plant

" Buyers Guide for 1966

" Combines 1060

7. Brochures (con't)

- J. I. Case Windrawers 950 and 1150
- " Multi-Crop Combines 660
- " Baler 220
- " Tractors 1200
- " 3-4 Draft-O-Matic Models 430-530
- " Prairie State News, Vol. XXV, No. 1, January 1966
- Wapello Society, 1965-66
- Deere & Co. Annual Report, 1965
- " Challenge to an Architect
- " Reflections of an Era
- " Lawn and Garden Tractor
- " Earthmoving, Logging, Landscaping and  
Material Handling Equipment, 1965
- " The Long Green Line
- Folder: The Greater Quad-City Area
- Aluminum Company of America Annual Report, 1965
- Welcome to Rock Island Arsenal and Headquarters,  
U. S. Army Weapons Command
- The Quad Cities Salute Army Weapons Command and  
Rock Island Arsenal, 1965
- Same as above, 1966-67
- Fort Armstrong Sesquicentennial Anniversary
- A Century of Service, Corps of Engineers
- International Harvester, East Moline Works

8. Catalogs

- Sears: Everything for Spring, 1966
- Western Auto

9. Post Cards

Government Bridge, Indian Mound, Confederate Cemetery, Civil War Cannon, Artillery Team of 1902, Atomic Cannon, Main Gate, National Cemetery, Locks of Mississippi Dam No. 15, West Aisle of John M. Browning Museum, Roller Dam and Davenport Skyline, Site of Pier of First Mississippi Bridge, Block House at Fort Armstrong (with first day issue of Migratory Bird Treaty stamp)

10. 300 feet: Film of Rock Island Arsenal Flood of 1965

11. Aluminum from Alcoa

One piece of 1/4-inch aluminum plate

One piece of painted sheet

One piece of bright sheet

One piece of foil, 25/100,000 inches thick (Similar to that used in satellite Echo II that was launched in 1962)

One easy-open can top

12. Magazines

Life: Special Double Issue, December 24, 1965, "The U.S. City - Its Greatness is at Stake."

The Palimpsest, February 1962 and January 1963 (A gift of William J. Peterson - Editor)

13. Color Plates: The American Soldier

1781, 1786, 1794, 1805, 1812, 1814, 1827, 1836, 1847, 1855, 1863, 1880, 1898, 1903, 1918, 1941, 1945, 1951, 1960, 1963.

14. Newspapers

Arsenal Target, March 25, 1966 and April 8, 1966

Black Hawk Chieftain, March 31, 1966

15. Centennial Package

Souvenir booklet: 24 Arsenal and Black Hawk (Watch Tower)  
Views (A gift of the Public Relations Committee, Davenport  
Chamber of Commerce)

Three programs listing events, June 18 - 24, 1916

Five Quad-City Floral Parade photos.

16. Coffee Cup

Rock Island Arsenal Centennial and Ordnance Seal thereon  
(A gift of Frank Zecchini)



ARMY MODEL 1850 CAL. .44  
ARMY MODEL 1850 CAL. .44

POUCHES

ARMY MODEL 1850 CAL. .44  
ARMY MODEL 1850 CAL. .44  
ARMY MODEL 1850 CAL. .44

ARMY MODEL 1850 CAL. .44  
ARMY MODEL 1850 CAL. .44  
ARMY MODEL 1850 CAL. .44

ARMY MODEL 1850 CAL. .44  
WITH RARE TYPE DETACHABLE STOCK

MODEL 1850

MODEL 1845 CAL. .44  
BY MR. MOHR  
PART. 18.

ARMSTRONG

BLAKE HAVES COLLEGE  
1963-1968

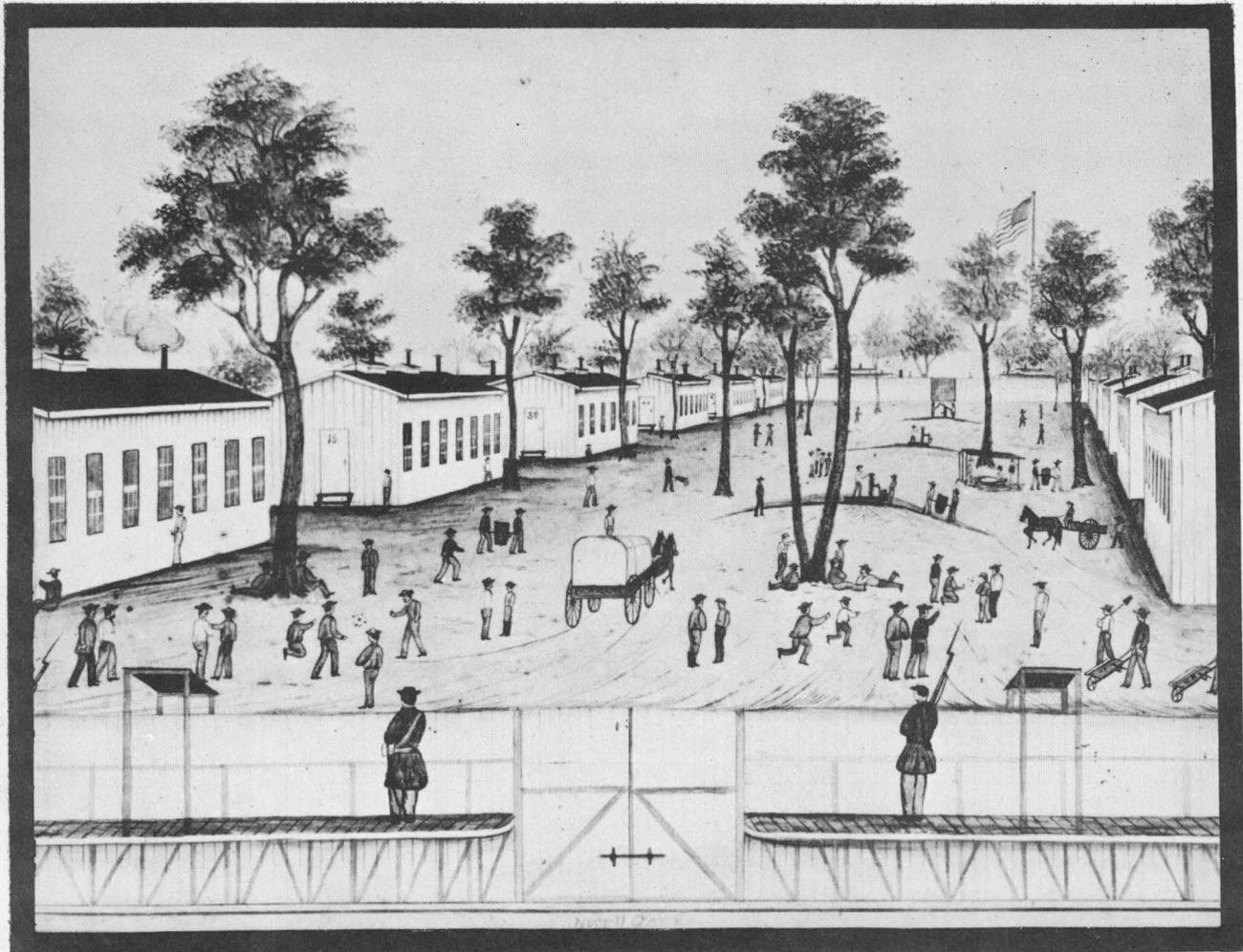
BLAKE HAVES COLLEGE  
1963-1968

The Carlet  
1963

Pictured on the reverse side is a partial display of the contents of the time capsule that was buried on the site of Fort Armstrong near the blockhouse that was placed there in 1916 (See cover of RIA Pamphlet 870-2).

The time capsule was placed in the ground in April 1966, and was noted by a memorial plaque that was unveiled during the Sesquicentennial anniversary in May 1966.

ROCK ISLAND PRISON BARRACKS  
1863 -- 1865



ROCK ISLAND ARSENAL

ROCK ISLAND, ILLINOIS

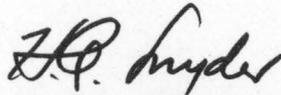
Incl 2

ROCK ISLAND ARSENAL  
Rock Island, Illinois 61201

RIA PAMPHLET  
NUMBER 870-3

20 March 1967

Rock Island Prison Barracks, 1863-1865, is published for the furthering of the knowledge of this geographical area and to show the true relationship of the Island to the Arsenal and the Prison.



H. A. SNYDER  
Colonel, OrdCorps  
Commanding

DISTRIBUTION: S  
1000 cys - AMSWE-ADH

## FOREWORD

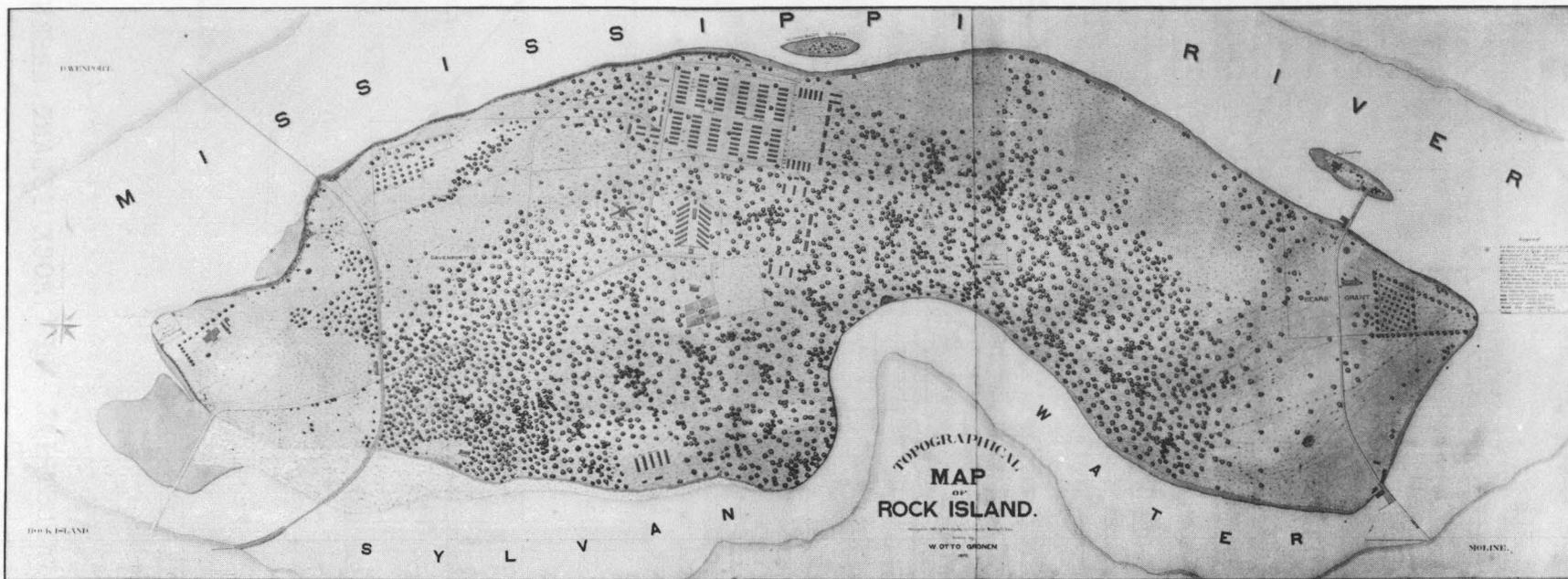
The basic ingredients of the transcript that follows are from papers prepared by Mr. Michael Walker, former Curator of the John M. Browning Museum. Only minor editorial changes have been made and some new information has been added for the sake of giving the serious student, military or civilian, additional working material.

One of the objectives in making this available is that of dispelling the often voiced notion that the Arsenal was a prison during the Civil War. Actually, there were three different Government authorities on the Island at one time -- the Government Agent who resided on the Island and who had a small farm there; Major Kingsbury, who was supposed to have charge of the Island and Arsenal property; and the prison Commandant, who naturally assumed charge of that part of the Island needed for prison purposes. That conflict ensued is well documented, but is left for telling in other papers and books.

*Clifford W. Stephens*

CLIFFORD W. STEPHENS  
Command Historian  
U.S. Army Weapons Command  
Rock Island Arsenal, Illinois  
March 1967

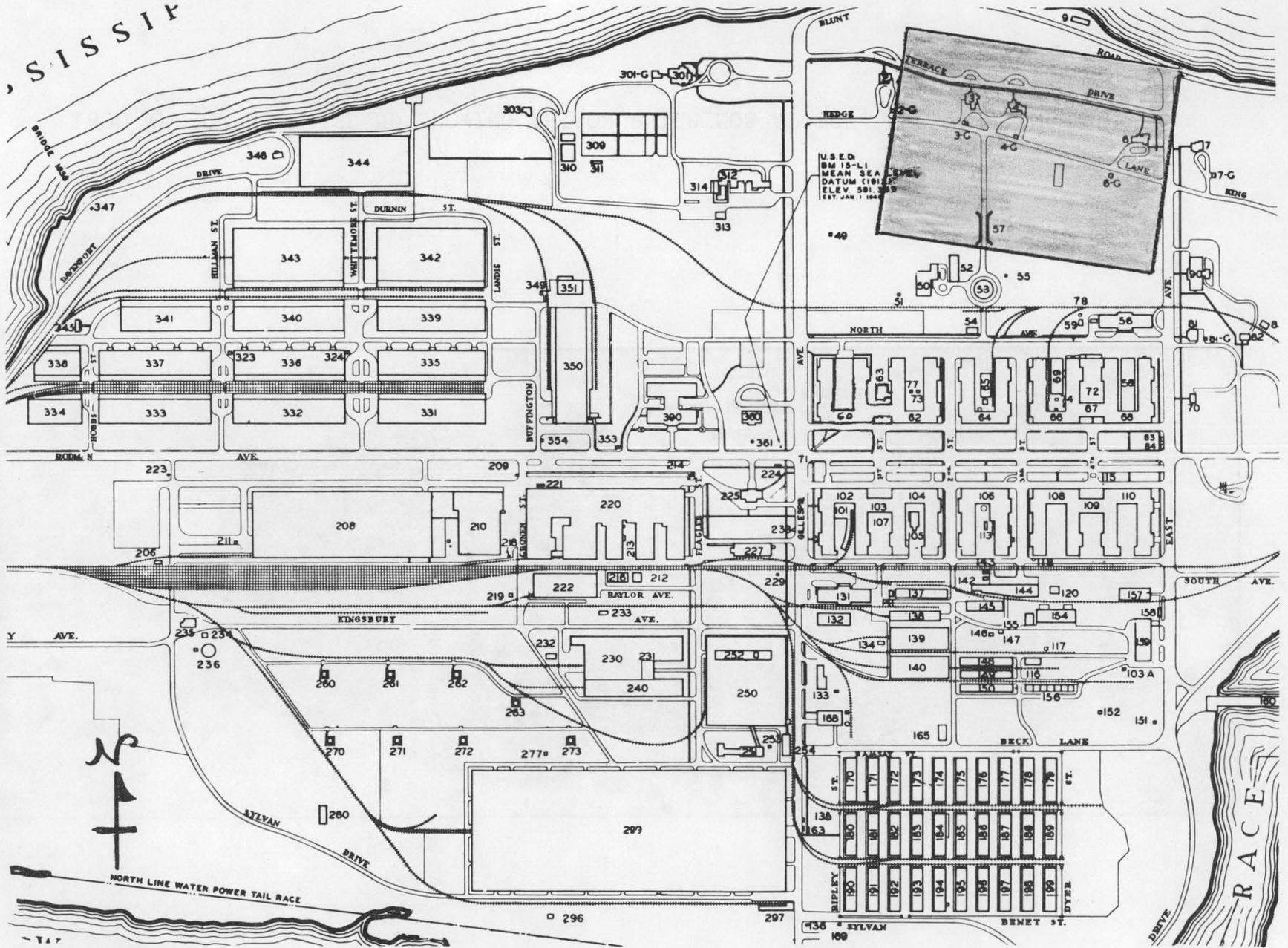
"All quiet today externally but the internal commo-  
tion is great. My heart aches for liberty to give my  
dear wife a full expose of what weighs on my mind and  
troubles the heart. Oh, that I could once more have  
her society and that of my precious boy and breath  
Southern air." From the Diary of Lafayette Rogan,  
C.S.A., Prisoner of War at Rock Island Prison Barracks.



1870 MAP OF ROCK ISLAND SHOWING PRISON BUILDINGS AT TOP, LEFT OF CENTER

Shaded area, upper left, shows extent of Main Stockade

MAIN INDUSTRIAL AREA ROCK ISLAND ARSENAL

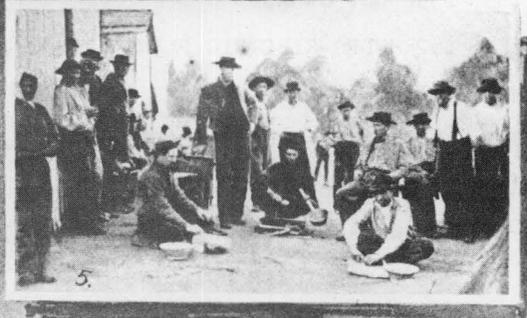


1965

PRINCIPAL BUILDINGS - ROCK ISLAND ARSENAL \*

2 QUARTERS 2	85 QUARTERS 10	208 ASSEMBLY SHOP
3 QUARTERS 3	90 TRAINING AGENCY	210 SHOP R
4 QUARTERS 4	102 SHOP A	220 SHOP M
6 QUARTERS 6	103 LABORATORY, A-C ANNEX	222 HEAT TREATING-FORGE SHOP
7 QUARTERS 7	104 SHOP C	225 GUARDS-FIRE HOUSE
9 PUMP HOUSE	105 BOILER HOUSE C	227 CENTRAL HEAT, PLANT NO. 1
11 POST STABLE-STORAGE	106 SHOP E	230 SHOP Q
30 QUARTERS 30	107 LABORATORY, A-C COURT	231 O-Q ANNEX
31 QUARTERS 31	108 SHOP G	235 TANK SERVICE STATION
47 GUARDHOUSE, MOLINE GATE	109 G-I ANNEX	240 SHOP O
50 WATER FILTRATION PLANT	110 SHOP I	250 SHOP L
56 STOREHOUSE K	131 STOREHOUSE A	251 SHOP L ANNEX
58 SHOP K-COURT	132 STOREHOUSE AA	293 OFFICE, STEEL YARD
60 SHOP B-RESTAURANT-MUSEUM	133 MAINT. SERVICE SHOP	299 STORAGE, RIO DEPOT
61 B-D ANNEX	139 NORTH DRY KILN	301 QUARTERS NO. 1
62 SHOP D	140 SOUTH DRY KILN	303 QUARTERS 24
63 PAINT SHOP-BD COURT	145 PAINT SHOP	312 GOLF CLUB
64 SHOP F	154 STOREHOUSE G	320 ROCK ISLAND BRIDGE
65 BOILERHOUSE F	157 STOREHOUSE I	321 MAIN GATE
66 SHOP H	159 POST GARAGE	322 GUARDHOUSE, MAIN GATE
67 H-K ANNEX	160 HYDRO-ELECTRIC PLANT	331-350 V-AREA STOREHOUSES
68 SHOP K	161 MOLINE DAM	350 STOREHOUSE W-1
69 PLATING-TINNING, H-COURT	168 CENTRAL HEAT. PLANT NO. 2	351 TRAINING (MOPS SHOP)
70 QUARTERS 23	170-199 X-Y-Z AREA STOREHOUSES	360 QUARTERS 32, 32A, 33, 33A
72 H-K COURT	204 SEWAGE DISPOSAL PLANT	390 ADMINISTRATION BUILDING
81 QUARTERS 34, 34A	205 CLOCK TOWER BUILDING	
82 QUARTERS 11, 12	206 YARD OFFICE-TRAFFIC BR.	

\* See map opposite this page for locations



ROCK ISLAND MILITARY PRISON SCENES.

- 1. Bell Tower, Outside Entrance.
- 2. Prisoners Suffering Punishment Inflicted by Their Own Courts.
- 3. Administering the Oath of Allegiance.
- 4. View within the Stockade.
- 5. Prisoners Making Clam-Shell Trinkets.

## ROCK ISLAND PRISON BARRACKS

No history of the Mississippi Valley could be considered complete without some detailed reference to the important part the Island of Rock Island played as a military prison barracks during the Civil War. This use was never intended by those who designated it for an arsenal, but dire circumstances dictated that it be used as such.

During the war between the States, 1861-1865, the Island became the site of one of the largest military prisons in the North, since policy dictated that prisoners be removed as far as possible from the scenes of hostility. This policy was ideal for Rock Island, for it was owned by the Government, it was hardly used, and it was secure.

When Major Kingsbury, first Commandant of what was to be Rock Island Arsenal, arrived on the Island for his first inspection, he found a state of affairs that he had not anticipated, for there were hundreds of workmen busy laying out and constructing the prison for Confederate prisoners of war. The Island, by an Act of Congress July 11, 1862, had been chosen as a site to construct an Arsenal and construction of the first building had begun in November 1863, the same year the prison construction began. Evidently, little consideration had been given to the dual role the Island was to play.

The Quartermaster General had directed a Captain Charles Ambrose Reynolds to supervise the construction of the prison and work was started in July 1863. As a site for the prison, Captain Reynolds selected an area about middle distant of the Island's length, which is about three miles east and west, along it's north shore. Upon this site Captain Reynolds built the prison stockade, with it's fences 12 feet high and about 1,320 feet long east and west. It's width north and south was approximately 1,120 feet. About four feet from the top of the fence and on it's exterior sides, a board walk, interrupted every 100 feet by a sentry box, was built. The gates or sally ports were at the east and west end of the prison fence at the center of it's width. A guard house was constructed at either gate outside the walls.

The site of this stockade today encompasses officer's quarters Numbers 3, 4, and 6, all of which were erected

some years later. Also within the site of this old stockade today are all the grounds of fairway Number 1, fairway 2, west of East Avenue, and part of fairway 16, 17, and 18. This site is located between Gillespie and East Avenues on the west and east, excepting the head of East Avenue which runs across the extreme northeast angle of the stockade site. Near Blunt Road at a point directly north of Shop "D" or Building 62, the northwest angle of the prison wall was located. The southwest angle was at the southern edge of fairway 19, which is about 500 feet east of the Arsenal Golf Club House and about 850 feet due north of the east wing of Shop "B" (Building 60). The northeast angle of the prison fence was located about 50 feet east of the head of East Avenue at Blunt Road. The southeast angle was due north of the east end of Storehouse "K" (Building 56), about 150 feet and the same distance due west of the main entrance of Building 90. The site of the east gate of the stockade is the present intersection of East Avenue and King Drive. The west gate was at the east wall of officer's quarter Number 2.

Within the prison fence 84 wooden barracks were erected, in six rows of 14 barracks each. These barracks were divided evenly by a main street 130 feet wide running from the east to the west gate of the stockade, each row having seven barracks north and seven barracks south of this street. Another 130-foot street ran north and south through the stockade between barracks rows Number 3 and 4. The length of each barracks was 100 feet east and west, 22 feet wide, and 12 feet high. The streets between the rows were 100 feet wide, and the distance between barracks was 40 feet. All barracks north of the main street were numbered in odd numbers, those on the south in even numbers. The first row of barracks was located at the east end of the stockade. Since the barracks were numbered from the main street, the first barracks in the first row north were numbered 1, 3, 5, 7, 9, 11, and 13. South of this main street were 2, 4, 6, 8, 10, 12, and 14. The smallest numbered barracks in each row was that barracks adjacent to this east west main street.

The north section of the prison, Row 1, Barracks 1 and 2, is now the site of officer's quarters 6. Extending northward, Barracks 9, 11, and 13 extended across the present head of East Avenue. Row 3, Barracks 29 and 31 is the present site of officer's quarters 4. The remainder of this row extended across the present fairway Number 2, just east of the driving tee. Barracks

45 and 47 in Row 4, is now the site of officer's quarters 3. On the south sections of these rows, Row 4, Barracks 56 was due north of the present stone reservoir or at approximately the north approach of the ornamental stone bridge.

The prison command headquarters was located west of the prison fence, due west from Barracks 73, and a distance of 850 feet from the west fence. This would locate it approximately on the site of the Ordnance Weapons Command, Commanding General's quarters.

The Union officer's quarters were at different locations about the area surrounding the prison. Those located west of the prison consisted of eight sets of quarters in a row, extending north and south, the southern most quarters on present Gillespie Avenue in front of the Arsenal Golf Club. Officer's row east of the stockade was located in the rear of the present Building 90, and extended northward across what is now fairway 15 with the southern most quarters at the northeast angle of Building 90. Another group of officer's quarters was located southeast of the southeast angle of the prison fence. On this site are the present Building 70 (quarters 23) across East Avenue from Shop "K" (Building 68). The most southern quarters in this row was at the present northeast corner of East and Rodman Avenue. The site of a row of three sets of quarters in this area is now the site of the northern front of Shop "I" (Building 110). The western most building in this row was the site of the annex constructed in 1918 closing off 4th Street and joining Shops "G" and "I".

The enlisted men's barracks were also located in different points in the area around the stockade. Two barracks were located at the northwest angle of the stockade. This site is a part of fairway 1, just east of Number 1 driving tee. Four barracks at the southwest angle were at what is now a part of fairway 18, south of Hedge Lane and east of the golf club house. The enlisted men's barracks at the southeast angle, five in number and in a row extending east from it, is now the site of Building 90. Those on the northeast angle were at what is now a part of fairway 2, east of East Avenue. The other buildings located in and adjacent to the stockade were warehouses and commissary buildings.

There were three hospitals connected with the prison, one, the Union hospital for non-contagious diseases, was erected in 1864. The central building, consisting of medical offices, was located southwest from the stockade

on what is now the parking lot for the cars of Arsenal employees working in the Administration Building. This central building, located at what is now the east end of the parking lot, had it's southern extreme resting on what is now North Avenue. From the four corners of this central building were four ward buildings extending outward at an angle. The ward at the northeast angle ended on the present Gillespie Avenue north of its intersection with North Avenue. The ward at the southeast angle extended in that direction across the present North Avenue, just west of it's intersection with Gillespie Avenue.

The non-contagious disease hospital for the prisoners was much larger than the Union hospital, and of necessity was inclosed by the same type fence as were the prison barracks. This hospital was located south of the stockade and consisted of 14 ward buildings built in two rows of seven wards each. A guard house was at each entrance located on the north and south end of the fence surrounding the wards and two office buildings between the two rows of wards. The wards in the east row were about 40 feet apart and on an angle northwest by southeast. The seven wards in the west row were separated from the east row by a street 130 feet wide. The buildings in this row were on an angle northeast by southwest. In relation to the present Arsenal buildings, the guard house at the north gate of this hospital's fence is the present east end of the parking area and Building 54 which is north of North Avenue and west of Gillespie Avenue. The site of the guard house at the south gate is now the front, or south face, of Shop "D" (Building 62) nearer it's east wing. The most northern ward in each row was located partly across the present North Avenue, south of the Filter Plant. The site of the west row is now the entire west wing of Shop "D". The site of the east row is the present Second Street between Shops "D" and "F" and touching the west wing of the latter shop. Directly south of this group of hospital wards were the bakery building and gardens. The site of the bakery is the present court of Shop "O" at it's northern section. The site of the garden is presently covered by a section of the Arsenal railroad tracks, oil house, paint shop and dry kilns.

The third hospital erected in 1864 consisted of five wards, a receiving building, a laundry, etc. This was the contagious disease hospital for both prisoners and Union guards unlucky enough to contract a contagious disease. These buildings were erected on what is now the site of Building 299, across Gillespie Avenue into the area of the XYZ storehouses. This hospital was then called "The Pest House."

A water reservoir was constructed in 1864 to furnish water to the prison, hospitals and quarters. This reservoir, according to a survey of 1865, was located north of the present old stone reservoir on the brow of the bluff which is now the driving tee for Number 17 green. This reservoir was square in form and was made of lumber. It's site on the bluff was of such height that it gave the water enough fall to flush a large open ditch which was masonry lined and ran through the prison between the third and fourth row of barracks. Over this ditch were built the prisons latrines and wash houses. The continual flow of three or four inches of water was sufficient to carry waste through an iron grill opening under the north fence of the prison and into the river. The pump to fill the reservoir was located on the shoreline a good distance upstream from this sewer opening.

The road leading to the prison from the Rock Island city bridge followed the same direction from the bridge as it does at the present, but only to the point where Rock Island Avenue passes under the railroad viaduct and turns northeastward toward the Main Gate to the Arsenal. From this point, the old road turned more eastward across what is now the open field south of the Arsenal railroad tracks, which is now an open storage area for tanks, artillery, etc. The old road passed across the then located railroad tracks at what is now the present high water tank of the Arsenal. This old road continued running east by northeast, crossing the present site of Building 208, Shop "R" and Shop "M", and crossing the present Rodman Avenue in front of the Administration building and across Gillespie Avenue at the southwest angle of Shop "B" (Building 60). Here the old road turned northward to run along the west fence of the prison. Shortly after turning northward, it passed through what is now the extreme northwest angle of the west wing of Shop "B".

Though not accurately located, the original burial ground was listed in the report of the Assistant Surgeon General as being south of the stockade. This locates the cemetery in the area of the shop buildings north of Rodman Avenue, probably the sites of Shops "F" and "H". It is known the dead prisoners were interred in this location until March of 1864, when the site was relocated to where the present Confederate Cemetery is. The site first chosen to relocate the burial ground for the dead was on the southern side of the Island now occupied by the XYZ storehouse group. However, the top soil in this area was not deep enough for the purpose intended, and the present site was then chosen.

The burial ground for the Union dead was located at the edge of the present Arsenal golf course, fairway 14, just north of the green along Golf Lane. These bodies were later, after 1865, moved to the present Rock Island National Cemetery at the southeast end of the Island.

At the close of the war and after all prisoners were discharged, all prison buildings were turned over to the Ordnance Department by the Quartermaster Department. The buildings were used as warehouses by the Ordnance Department for surplus and captured ordnance material until they rotted and decayed away. One building once used as a post hospital was used until 1907 when a new hospital building was erected. It was the last of the old prison buildings to be torn down.

Although not completed as it was to be by 1865, the stockade and 84 barracks were ready to receive the first prisoners that arrived December 3, 1863. This group of prisoners, 5,594 in all, were a part of the prisoners captured by General Grant's Armies in the battles of Lookout Mountain and Missionary Ridge. From the battlefield, these prisoners were sent to a large holding prison at Louisville, Kentucky, and from this prison Rock Island Prison Barracks received the first group.

Colonel Richard H. Rush of the U.S. Volunteers was in command during the early period of the prison. He was succeeded by Colonel A. J. Johnson, U.S. Volunteers, who remained in command until the prison was closed in July of 1865.

Dr. Watson of Dubuque, Iowa was the Surgeon in charge, and was assisted in his duties by Dr. Patrick Gregg, of the city of Rock Island, as well as many other physicians.

\*\*\*\*

There is a story told of these times, and one that is supposed to be true, which is as exciting as anyone sees on the television sets of today. We cannot vouch for the authenticity of this account however.

During the Civil War, Morgan's raiders were a small army of southern men on horseback who dashed across Kentucky and Ohio and into Tennessee and Indiana, destroying northern arms and supplies. Thomas F. Berry, one of the raiders, was

captured in Kentucky and was one of the first Confederate prisoners brought to the Island of Rock Island in 1863. Raider berry had not been on the island long before he escaped.

"I formed a plan with several of my fellow prisoners to escape through a sewer," he wrote many years later. "The sewer was under construction, and three of us chipped in and bribed one of the masons on the work to place the rocks at one part of the sewer wall so they could be easily removed. This was done and he received his pay."

Four Kentuckians and a Texan escaped through the sewer. They parted in Chicago and headed south separately. Tom Berry was captured near Louisville and sent to a war prison at Columbus, Ohio. He escaped. Caught near Cincinnati, he was sent to Camp Douglas, Chicago, and again he escaped.

"I could not again make my escape through the sewer, as that passage had been discovered and barred," Berry wrote. "I finally met a Negro boy, a Union army guard, I had known at home. After several failures, I induced him to accept an offer of \$127 in gold as the price of liberty for seven of us .....

"We tore up our blankets and plaited them into ropes. We took the stove poker and heated the bent ends until we could bend them into hooks. Then we securely fastened these iron hooks to the ends of our ropes. We practiced daily throwing these hooks over our bunks, which were the same height as the parapet walls."

At 2 a.m. on the cold night of Dec. 14, 1864, the seven prisoners moved stealthily toward the parapet wall. A new moon seemed to accentuate rather than relieve the darkness. Soon they were clambering over the wall.

"There were three standing near me on the parapet, two more coming from the top of the wall, and one head appearing at the top," Berry wrote. "I handed the sentinel his \$127 and glanced down to the ground and along the fence eastward. The moon shining through the clouds glinted on 40 or 50 muskets pointed at us. I had time only to whisper to the man next behind me: 'We are betrayed.'"

"At that instant the muskets roared. I fell flat upon the parapet pulling my comrade down with me. Three of the boys fell, two of them dead and one grievously wounded. Two more were hit and fell back inside the wall....

"Leak Arnett and myself jumped to the ground and, under cover of the dense smoke following the first volley, ran to the Mississippi river about 100 feet away."

They intended to walk on the ice as far as it reached and then swim to Davenport. But the ice gave way and they found themselves floating downstream on a natural raft. The cake of ice sank at times until they were waist-deep in the cold water.

About three miles downstream, they were stopped by a covering of ice on which they could walk ashore to the Iowa side. They followed a ditch inland until it ended in a natural excavation. There they covered themselves with weeds and leaves, hiding until darkness came the next day. At one time a party of soldiers, scouring the river bank for them, came close and even fired into the deep ditch, but the hiding men were not discovered.

"When we ventured forth," Berry continued, "we followed the river bank until we were near the city limits of Davenport. In this city lived our good angel of mercy. This noble Samaritan was none other than Mrs. Culbertson and her lovely daughter, who had been apprised of our escape. We had been reported killed. It was understood that if we didn't show up the second night, we had been lost.

"This lady, southern by birth and sympathy, was on the lookout for us. We followed Main Street and soon found the house which had been described to us. I left Comrade Arnett at the front gate and pounded the knocker. It sounded like my death knell.

"The lady herself answered by opening the door a crack and peeping out. Recognizing me, she was startled and had time to say only: 'Stable. Twenty minutes.'

"We had run into the prison officers in her house. They were, at this very time, talking about us. Through the small opening in the door, I saw several officers of the prison sitting around a blazing fire in her parlor. We hurried to the stable.

"Mrs. Culbertson soon came out and guided us up the back stairway to the attic in her house, and in this secure retreat we remained for five weeks, treating our badly frozen feet. We sent home for more money, which soon came to us through our patron saint. We offered our good Samaritan to pay for her trouble, expense and kindness. She seemed surprised and almost angry. She would receive nothing for all she had done for us. So we bade her and her beautiful daughter farewell with many thanks."

Kate E. Perry, a southern belle who visited relatives in Rock Island during the Civil War, told a story about operating an underground station at a house at Fifth Avenue and Twenty-sixth street. She also told how she plotted and aided the escape of many.

In Rock Island and Davenport were a large number of families of southern origin. The sympathies of some others were appealed to by the fact that rumors were circulating about bad conditions and suffering in the prison barracks on the island. Most of the help to prisoners was given by women of the households.

The late S. B. Hendron of Rock Island, who was a guard at the war prison, related this incident after the war:

Three of the guards, masquerading as rebel prisoners, presented themselves one dark night at the rear door of a house of suspected southern sympathizers in Davenport. Their appeal for help was promptly met. They were taken in, fed, and hidden until the next night. Fitted out with food enough for several days and with warm clothes, they were sent on their way south.

But the "rebels," who were really counterspies, went immediately to prison headquarters on the island and reported the evidence they had obtained. No action was taken against the family.

In both the stories told by Kate Perry and the one related by Thomas Berry, northern officers were in a house looking for escaped prisoners at the very time that the fugitives were hiding in the attic. But the officers were too gallant to insist upon a search.

On Hand	Joined	Total	Trans to Other Stations	Delivery or Exchan.	Died	Escaped	Released	Total Loss	Sick	Citizen Prisoner	
Nov 30 None	Dec 1863 5,592	5,592	None	None	94	None	None	94	245	6	Dec 1
Dec 31 5,498	Jan 1864 2,418	7,916	672	None	231	1	3	907	635	15	Jan 2
Jan 31 7,009	Feb 591	7,600	8	None	346	2	11	367	708	19	3
7,233	March None	7,233	1	None	283	None	3	287	843	17	4
6,946	April None	6,946	None	None	141	None	126	267	649	17	5
6,679	May 511	7,190	None	147	78	None	18	243	441	16	6
6,947	June 1,660	8,607	5	None	102	3	210	320	383	27	7
8,287	July 296	8,583	37	None	71	2	75	185	421	90	8
8,398	Aug None	8,398	1	None	114	1	9	125	506	24	9
8,273	Sept None	8,273	None	None	70	10	12	92	449	24	10
8,181	Oct None	8,181	None	None	52	9	2,294	2,355	612	23	11
5,826	Nov 568	6,394	4	None	41	1	69	115	575	26	12
*6,279	Dec *481	*6,760			*108			*127			13

On Hand	Joined	Total	Trans to Other Stations	Delivery or Exchan.	Died	Escaped	Released	Total Loss	Sick	Citizen Prisoner	
6,633	Jan 1865 1	6,634	None	279	108	3	57	447	611	24	14
6,187	Feb 94	6,281	1	1,005	56	1	129	1,192	479	26	15
5,089	March 1	5,080	1	2,021	34	None	262	2,318	240	25	16
2,772	April None	2,772	None	None	20	None	88	108	242	20	17
2,664	May None	2,664	None	424	7	None	1,123	1,554	106	20	18
1,110	June 2	1,112	None	None	12	8	1,090	1,110	2	12	19
2	None	2	None	None	None	None	2	2	None	None	20
TOTAL	12,215		730	3,876	1,968	41	5,581	12,215			

\*Official records not on file for this month.



Roll Call, Rock Island Prison Barracks 1864-1865.

From Rock Island Arsenal In Peace and War, 1898

RIA SPANISH - AMERICAN WAR ERA PRODUCTION

THE ARSENAL'S OUTPUT.

The principal articles of ordnance stores, either made at Rock Island Arsenal altogether or in part, and received from contractors between April 15 and August 15, may be tabulated as follows:

ARTICLES.	TOTAL PROVIDED.	ARTICLES.	TOTAL PROVIDED.
3.2-inch breech-loading rifles and other field guns, . . . . .	25	Bayonet scabbards, hook attachment, . . . . .	194,432
Carriages, 3-inch and 3.2-inch breech-loading rifle, . . . . .	53	Blanket bags, . . . . .	68,798
Limbers, 3.2-inch and 3.6-inch breech-loading rifle, . . . . .	210	Blanket-bag shoulder straps, pairs, . . . . .	88,560
Caissons, 3.2-inch and 3.6-inch breech-loading rifle, . . . . .	120	Blanket-bag coat straps, pairs, . . . . .	71,767
Combined forge and battery wagon, . . . . .	1	Canteens, . . . . .	259,505
Carriages, 7-inch siege howitzer, . . . . .	11	Canteen straps, infantry, . . . . .	202,162
Various implements and equipments for 3.2-inch and 3.6-inch batteries, . . . . .	1,390	Canteen straps, cavalry, . . . . .	27,207
Various implements and equipments for 5-inch and 7-inch batteries, . . . . .	705	Gun slings, . . . . .	155,885
Miscellaneous artillery implements and equipments, . . . . .	914	Haversacks, . . . . .	143,932
Artillery harness, led-horse, sets, . . . . .	479	Haversack straps, . . . . .	152,495
Artillery harness, wheel-horse, sets, . . . . .	148	Meat cans, . . . . .	241,599
Artillery harness, extra parts, . . . . .	2,440	Tin cups, . . . . .	260,248
Springfield carbines, caliber .45, . . . . .	17,500	Knives, . . . . .	210,211
Springfield rifles, caliber .45, . . . . .	24,300	Forks, . . . . .	184,029
Colt's revolvers, caliber .38, . . . . .	23	Spoons, . . . . .	287,923
Sabers and swords, . . . . .	2,447	Waist-belt plates, . . . . .	21,223
Carbine slings, . . . . .	8,085	Curb bridles, . . . . .	1,051
Carbine-sling swivels, . . . . .	4,626	Bridles, watering, . . . . .	20,973
Cartridge belts, calibers .30 and .45, . . . . .	37,325	Curb bits, . . . . .	4,546
Cartridge-belt plates, . . . . .	50,444	Carbine boots, . . . . .	7,041
Cartridge boxes, calibers .38 and .45, . . . . .	7,069	Carbine scabbards, . . . . .	20,520
Pistol holsters, calibers .38 and .45, . . . . .	16,151	Currycombs, . . . . .	29,769
Knapsacks, light artillery, . . . . .	150	Halter headstalls, . . . . .	18,333
Saber belts, cavalry, . . . . .	18,880	Halter straps, . . . . .	25,087
Saber attachments, . . . . .	16,129	Horse brushes, . . . . .	20,641
Saber knots, . . . . .	2,377	Lariats, . . . . .	11,588
Spurs, . . . . .	43,307	Lariat straps, . . . . .	30,445
Spur straps, . . . . .	52,324	Links, . . . . .	5,836
Waist belts, . . . . .	11,317	Nose bags, . . . . .	17,031
		Picket pins, . . . . .	27,335
		Saber straps, . . . . .	14,674
		Saddles, . . . . .	13,801
		Saddlebags, pairs, . . . . .	20,262
		Side lines, . . . . .	2,848
		Saddle blankets, cavalry and artillery, . . . . .	30,732

STORES RECEIVED AND ISSUED.

During the first nine months of the fiscal year (beginning July 1, 1897), the usual amount of infantry equipments, cavalry accouterments, horse equipments, materials for target practice, artillery harness, carriages, caissons, projectiles and powder, small-arm ammunition and many other articles of ordnance stores were issued to the regular army, to colleges and to the militia, and a great quantity of similar articles in an unserviceable condition were turned in here for the repairs necessary to make them again fit for issue.

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familiar with the ) grew with the m their ranks a ved capable and ith entire willing- the entire force, d regulations to nt in the existing

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World War I Statistics  
ROCK ISLAND ARSENAL

Expenditures made at Rock Island Arsenal and the work done during the war may be summarized as follows:

Appropriated for Arsenal . . . . .	\$108,955,974.07
Revoked . . . . .	19,612,133.48
Spent at Arsenal during war . . . . .	89,343,840.59
Purchases and making war materials . . . . .	66,526,540.31
Paid to labor . . . . .	17,120,515.51
New buildings, machinery, etc. . . . .	17,341,487.69
Spent on Savanna Proving Grounds . . . . .	1,560,000.00
Average monthly expenditure . . . . .	3,077,861.05
Number of employees August, 1914 . . . . .	1,975
Number of employees, July, 1916 . . . . .	2,100
Number of employees November, 1918 . . . . .	14,778
Number of French 75mm, gun carriages made . . . . .	159
Other gun carriages made . . . . .	202
Forge limbers made . . . . .	446
Battery and store wagons made . . . . .	225
4.7 recoil cylinders completed . . . . .	264
Artillery wheels made . . . . .	9,718
Spoke shoes and spoke shoe plates . . . . .	218,650
Sets artillery harness made . . . . .	24,212
Sets artillery harness assembled . . . . .	74,207
Arm repair chests . . . . .	13,241
Rifles, Model 1905, made . . . . .	113,670
155mm. howitzer shells loaded . . . . .	167,195
Bacon cans made . . . . .	1,512,190
Knives made . . . . .	354,770
Canteen covers made . . . . .	649,457
Haversacks made . . . . .	858,344
Pack carriers made . . . . .	400,256
Subscribed for bonds and war charities . . . . .	\$4,000,000.00

# Production Divisions

The close of World War II brought to an end a period of war production unsurpassed in the history of Rock Island Arsenal. During the four years of the emergency, immense quantities of all types of artillery and small arms equipment, loading machines for the Navy and enormous quantities of spare parts for all types of military equipment were produced by the Manufacturing Department. In addition, large quantities of various kinds of artillery, automotive equipment, small arms, sighting, and fire control instruments and many miscellaneous items were overhauled or modified.

## Major Items of New Manufacture Produced During World War II

- 6,889—Carriages, Artillery (various types)
- 24,539—Mechanisms, Recoil (various types)
- 1,150—Mechanisms, Breech, 155 mm. Gun
- 7,369—Equilibrators, 155 mm. Gun and 8" Howitzer
- 22,520—Mounts, Gun (various models)
- 84,945—Guns, Machine (various models)
- 715,000—Barrels, Machine Gun, Cal. .30
  - 26—Tanks, Medium, M2A1
  - 642—Machines, Loading, 5"/38 Cal. Twin Mount
  - 65—Mechanisms, Twin Sight 5"/38 Cal.
  - 100—Hoists, Powder, 5"/38 Cal. Twin Mount
  - 100—Hoists, Projectile, 5"/38 Cal. Twin Mount
  - 27—Hoists, Projectile, 16"/45 Cal.
  - 48—Hoists, Projectile, 16"/50 Cal.
  - 48—Hoists, Powder, 16"/50 Cal.
- 9,540—Cradles, Sub-caliber Gun Mounts
- 8,047—Carts, Hand
- 3,338—Paracrates
- 1,433—Parachests
- 1,400—Paracaissons
- 196,349—Plates, Bundle Packing for Miscellaneous Ammunition
  - 107—Sleds, Mud
- 14,843—Cases, Cartridge, 14" and 16"
- 192,961,650—Metallic Belt Links, Cal. .30 and .50

## Major Items Overhauled or Modified During World War II

- 935—Carriages, Artillery (various types)
- 351—Howitzers (various types)
- 2,781—Guns (various types)
- 358—Mortars, 81mm.

- 5,441—Mechanisms, Recoil (various types)
- 723—Equilibrators, 8" Howitzer and 155 mm. Gun
- 149—Trailers, Ammunition
- 9,722—Mounts, Tripod
- 404—Mounts, Telescope
- 1,570—Mounts, Gun (various types)
- 768—Mounts, Mortar
- 1,822—Launchers, Rocket
- 109,073—Guns, Machine (various types)
  - 47—Guns, Automatic, 37 mm.
  - 26—Guns, Automatic, 20 mm.
- 6,195—Rifles, Cal. .22 (various types)
- 133,435—Rifles, Cal. .30 (various types)
- 9,281—Carbines, Cal. .30
- 29,210—Pistols, Automatic, Cal. .45
- 11,137—Pistols, Pyrotechnic
- 1,254—Revolvers (various types)
- 32,741—Bayonets
- 7,338—Knives, Trench
- 1,146—Tanks and Other Motor Vehicles
- 5,297—Engines, Tank
- 2,950—Transmissions and Differentials
- 2,727—Generators, Auxiliary
- 170,000—Sighting and Fire Control Instruments
- 60,000—Miscellaneous Items of Leather

## Research and Development Projects During World War II

- Carriages, Artillery
- Carriages, Motor
- Carriages, Gun, 105 mm., Recoilless
- Wagons, Halftrack
- Wagons, Transport
- Trailers, Ammunition
- Tanks, Light
- Tanks, Medium
- Tanks, Flame Throwing
- Turrets, Armored Cars
- Mechanisms, Recoil, Hydro-Pneumatic
- Mounts, Gun (Airplane)
- Mounts, Mortar, 60 mm.
- Mortar, Breech Loading, 81 mm.
- Launchers, Rocket (various types)
- Gun, Machine, Caliber .60
- Paracrates
- Parachests
- Paracaissons

WORLD WAR II PRODUCTION DEPARTMENTS

- Shop B:  
[Building 60] The Engine Overhaul Division, engaged in the overhaul of tank engines and miscellaneous automotive equipment, occupied the east wing of Shop B until April, 1944. A proof-firing range and a cleaning section for small arms were located in the west wing of the basement.
- Shop C:  
[Building 104] The Woodworking Division, producing all types of crates, boxes, parts for target frames, storage racks and miscellaneous items, occupied the entire west wing and the first floor, east wing, of Shop C. The Cloth and Leather Division, turning out a wide variety of cloth and leather items occupied the second floor, east wing. The front bay of the second floor and the northeast corner of the basement were devoted to the Printing Division, which produced targets and various printed forms.
- Shop D:  
[Building 62] In April, 1944, the Engine Overhaul Division took over the entire west wing of Shop D. A section for the overhaul and modification of .50 caliber machine guns was established on the second floor, east wing, in April, 1943. The Tripod Division, engaged in the repair, modification and overhaul of machine gun tripods, mounts and miscellaneous small metal parts, occupied the first floor, east wing.
- Shop E:  
[Building 106] The Foundry Division, producing all manner of iron, bronze and aluminum castings, was housed in the east wing of Shop E. The Pattern Division, manufacturing patterns for all types of castings, occupied the west wing and front bay of Shop E.
- Shop F:  
[Building 64] Shop F was partially devoted to the Heat Treating Section, which handled heavy forgings, castings and other large items.
- Shop G:  
[Building 108] Shop G was devoted to a machine division manufacturing Belleville springs, parts for recoil mechanisms, artillery carriages and experimental projects.
- Shop H:  
[Building 66] The Small Arms Division, manufacturing metallic belt links and parts for .30 cal[iber] machine guns and overhauling and heat treating small arms material, was located in Shop H.
- Shop I:  
[Building 110] Shop I was occupied by the Assembly Division which overhauled and assembled various types of artillery

carriages and recoil mechanisms.

- Shop K:  
[Building 68] The Small Arms Division, devoted to the manufacture, assembly and proof firing of .30 cal[iber] machine guns, occupied Shop K.
- Shop L:  
[Building 250] A machine division for the manufacture of parts for artillery vehicles and miscellaneous equipment was housed in Shop L.
- Shop M:  
[Building 220] The chief manufacturing shop in the Manufacturing Department, Shop M, produced recoil mechanisms, parts for artillery carriages, automotive vehicles, tools and miscellaneous items.
- Shop O:  
[Building 240] The Hydraulic Press Division, located in Shop O, produced forgings and all heavy press work.
- Shop Q:  
[Building 230] Located in Shop Q, the Welding Division handled all production welding and the fabrication of all weldments.
- Shop R:  
[Building 210] Shop R was occupied by a machine division devoted to the manufacture of various types of ordnance material, tools and gages.
- Building 208: A new shop, Building 208 was occupied by an assembly division for the overhaul and assembly of heavy artillery carriages, tanks and other automotive vehicles.
- Building 222: Completed in 1942, Building 222 was occupied by the Forge and Heat Treat Division the same year.<sup>69</sup>

Note: Photographs of all buildings mentioned in this body of information are available on HABS/HAER Inventory cards at the Library of Congress.

The following photo copies are from MacDonald and Mack's HISTORIC PROPERTIES REPORT, ROCK ISLAND ARSENAL, 1985.

machine guns, and rocket launchers. Except for the rocket launcher program, which was terminated in 1962, RIA continues to discharge these responsibilities. Since the 1960's, the arsenal has become a production center for a variety of high-priority, small lot ordnance items that private industry cannot economically manufacture. At present RIA comprises about 235 structures, with approximately two dozen dating from the nineteenth century.



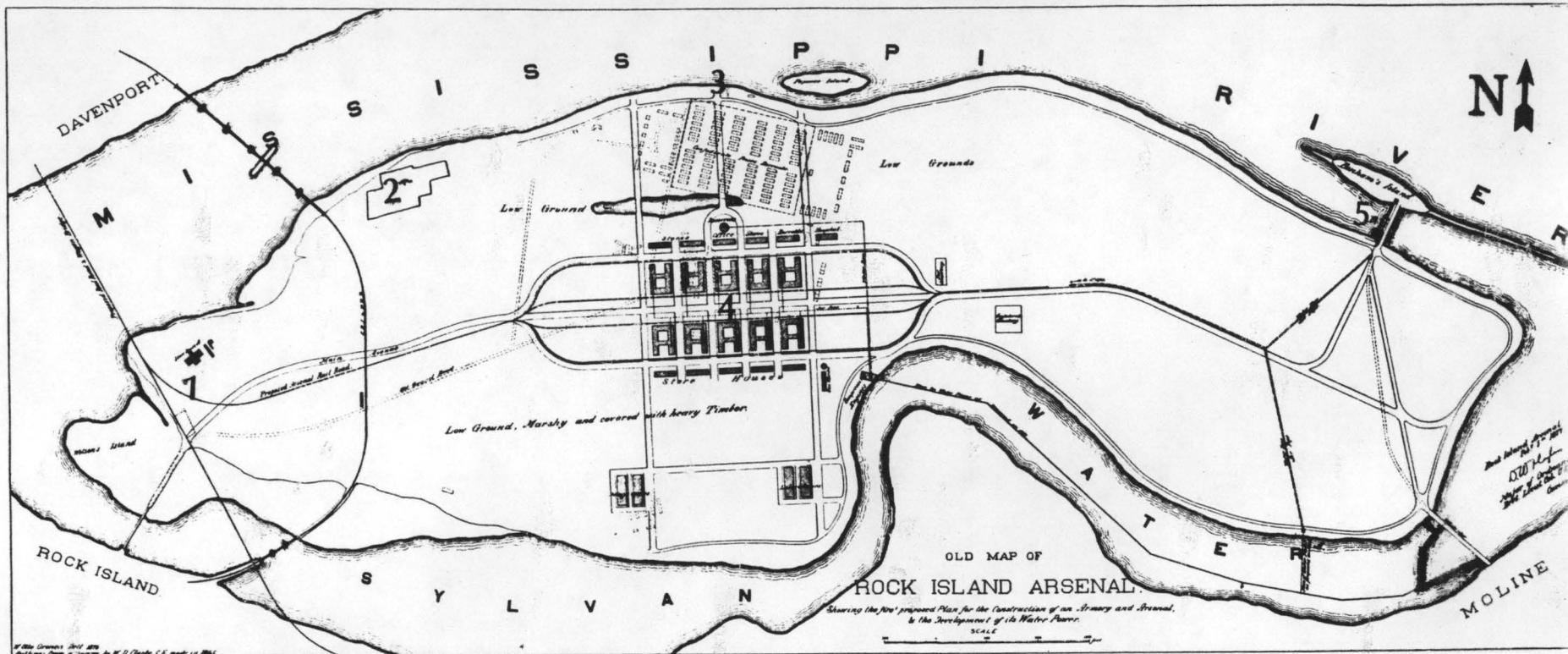
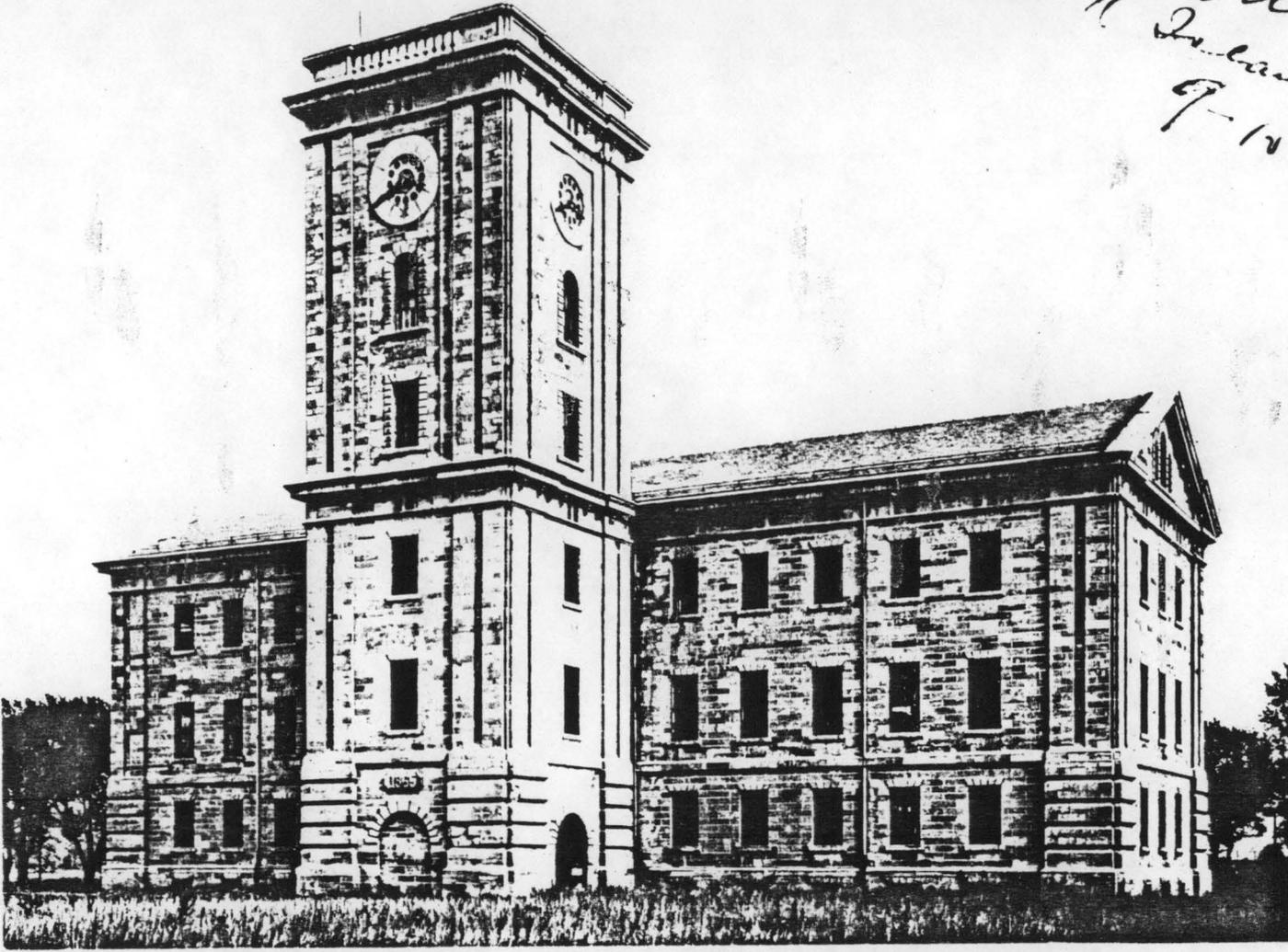


Figure 5: This map of Rock Island was prepared by Colonel D. W. Flagler, the arsenal's third commandant, in 1877. It shows both completed and proposed construction. (Source: Flagler, A History of the Rock Island Arsenal from Its Establishment in 1863 to December, 1876 [Washington, D.C.: Government Printing Office, 1877], Plate 1.)

- |                                   |   |
|-----------------------------------|---|
| 1. Clock Tower Building           | 4. Stone shops, only four completed by 1877 |
| 2. Davenport House (Building 346) | 5. Waterpower installation                  |
| 3. Confederate Prison Camp        |   |

Plan A  
Nov 11, 1900  
9-12



25

Figure 4: Originally designed as a storehouse for RIA, the Clock Tower Building now serves as the administrative headquarters of the Rock Island District Corps of Engineers. (Source: Photograph, dated 1925, RIA Historical Office.)

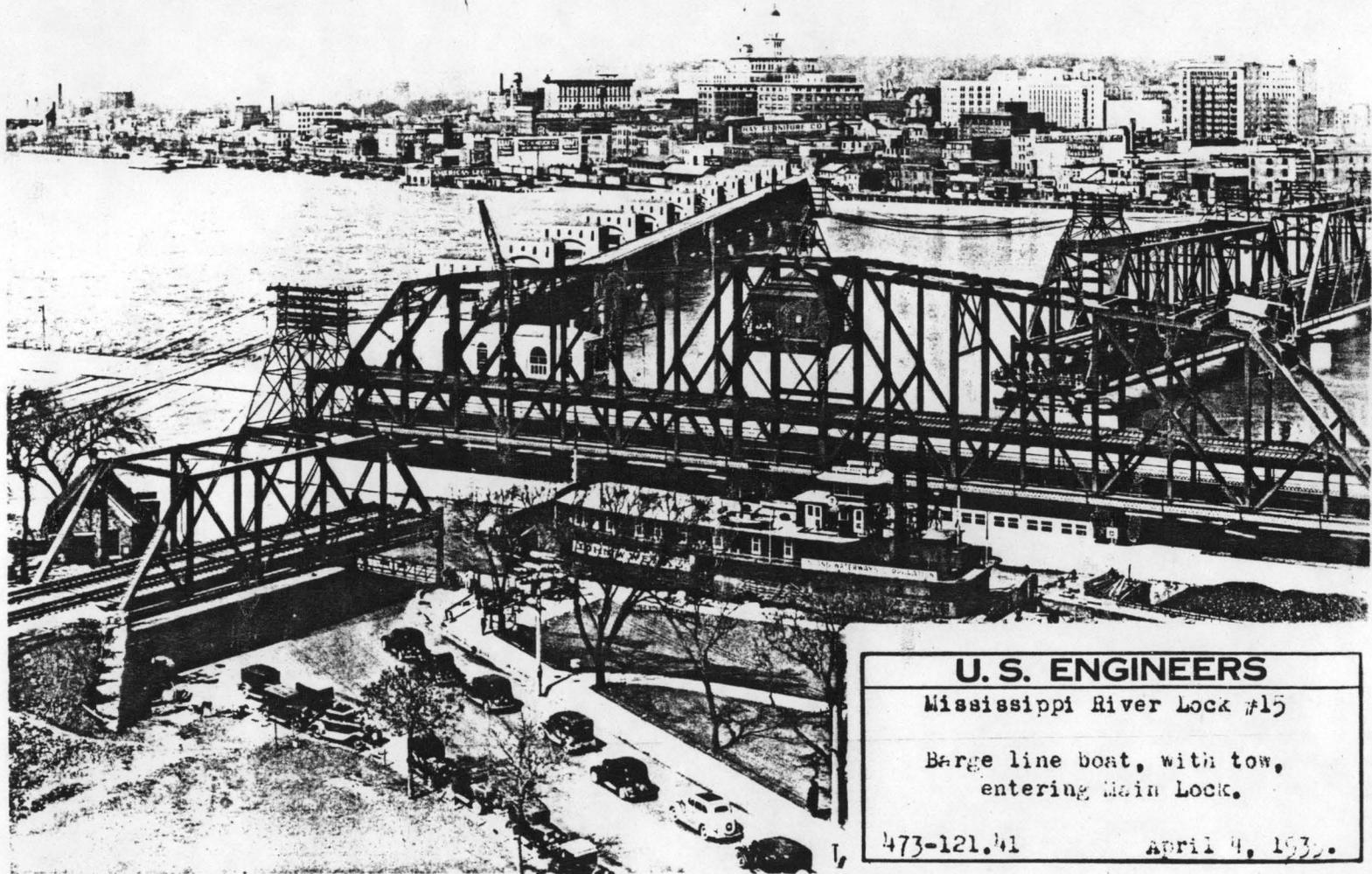


Figure 6: The Government Bridge (Facility 320), with the swing span rotated ninety degrees.  
(Source: RIA Historical Office, photograph dated 1935.)



Figure 16: Completed in 1875, the Guard House is currently used for storage. It is unique among the arsenal's early structures for its Gothic revival detailing. (Source: Field inventory photograph, 1984, Robert C. Mack, MacDonald and Mack Partnership.)

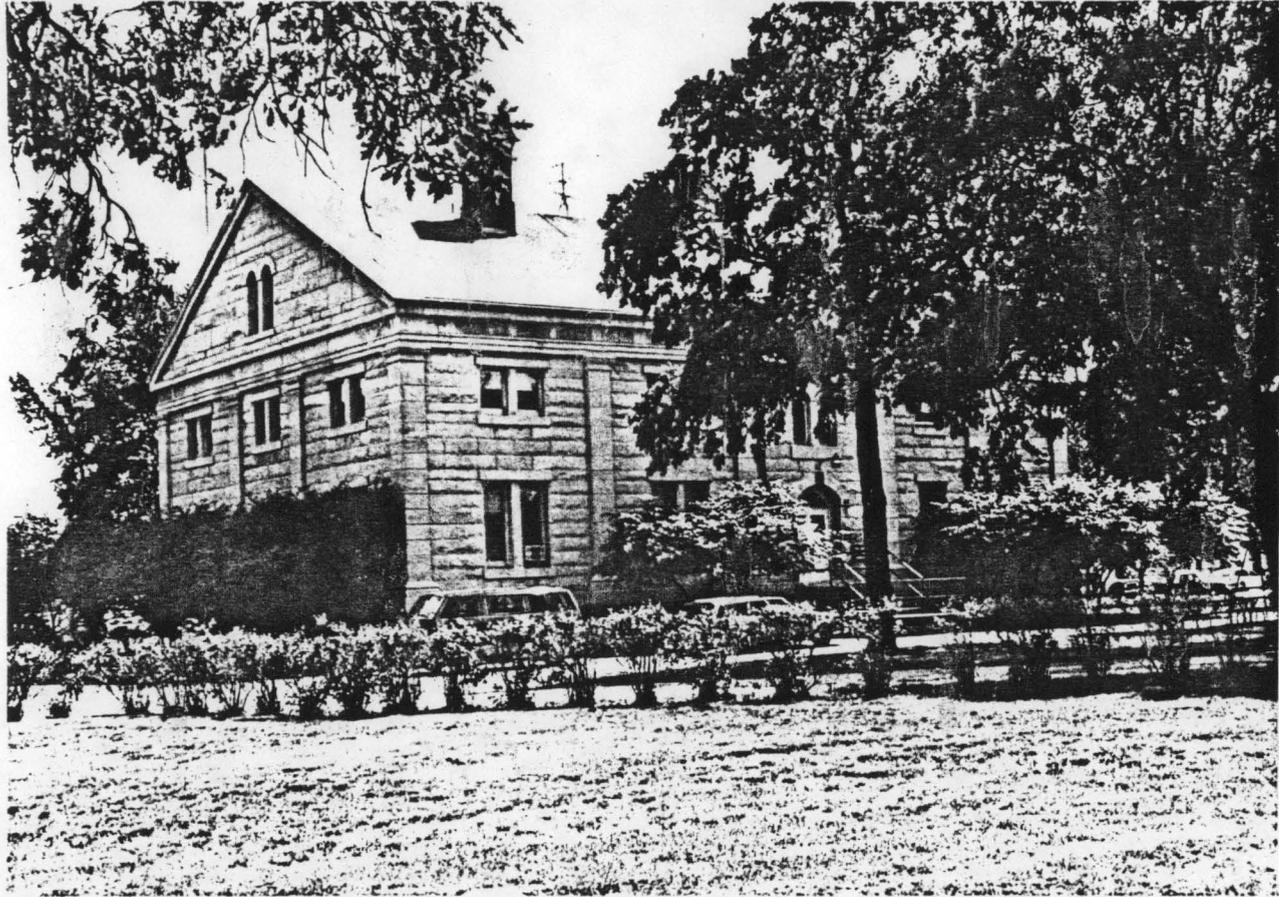


Figure 30: The Old Headquarters (Building 360) was constructed in 1888 in the same classical design style as the Stone Shops. It now contains four family residences. (Source: Field inventory photograph, 1984, Robert Mack, MacDonald and Mack Partnership.)



Figure 9: Shop C (Building 104) nearing completion in the summer of 1871. (Source: RIA Historical Office.)



Figure 12: Originally designated Shop E, Building 106 is the middle structure in a row of five shop buildings on the south side of Rodman Avenue. Currently operating as a foundry, it is virtually identical in design to Shop F (Building 64), which faces it on the opposite side of the avenue. (Source: Field inventory photograph, 1984, Barbara Hightower, Building Technology Inc.)

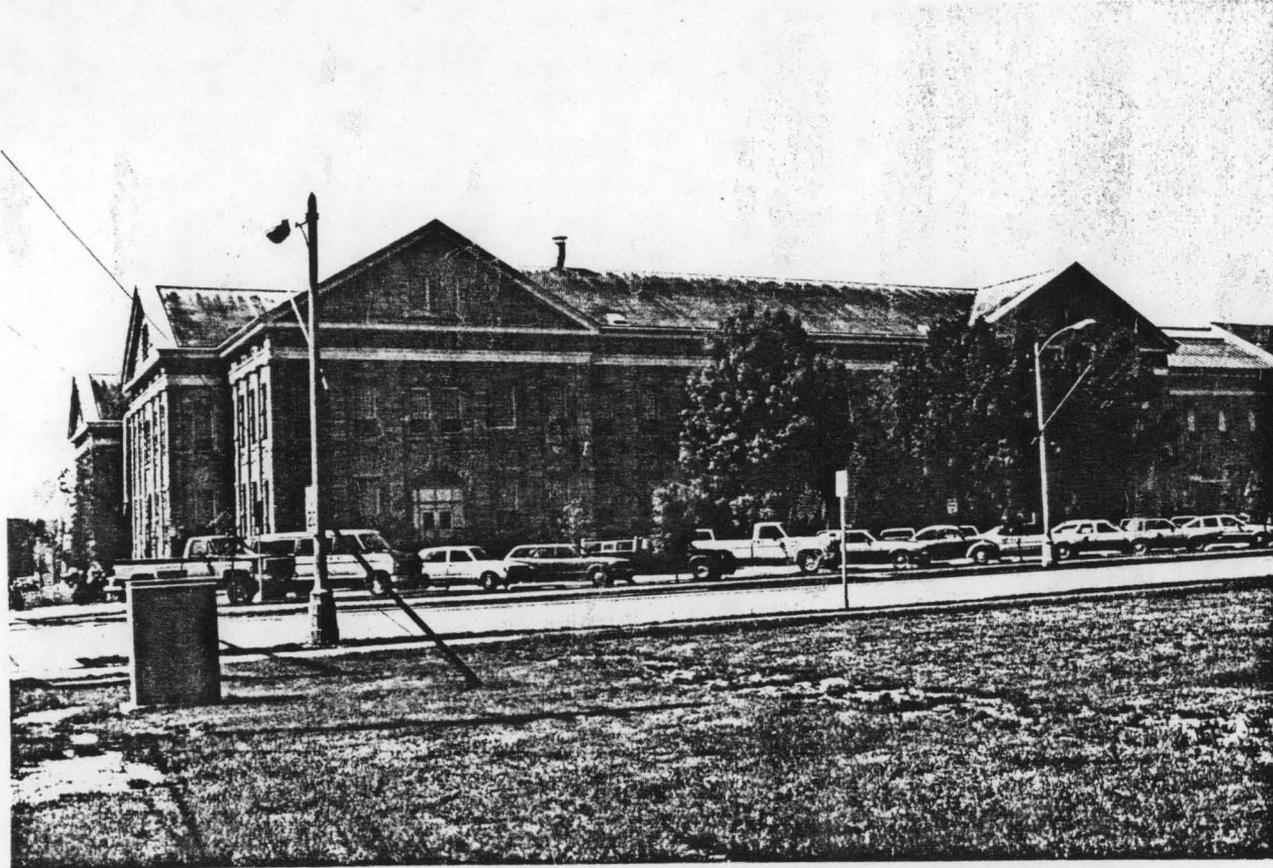


Figure 13: Although Shop I (Building 110) was completed in 1883, almost a quarter of a century after General Rodman's death, it perpetuates the Greek revival design he selected for the arsenal's first manufacturing facilities. (Source: Field inventory photograph, 1983, Barbara Hightower, Building Technology Inc.)

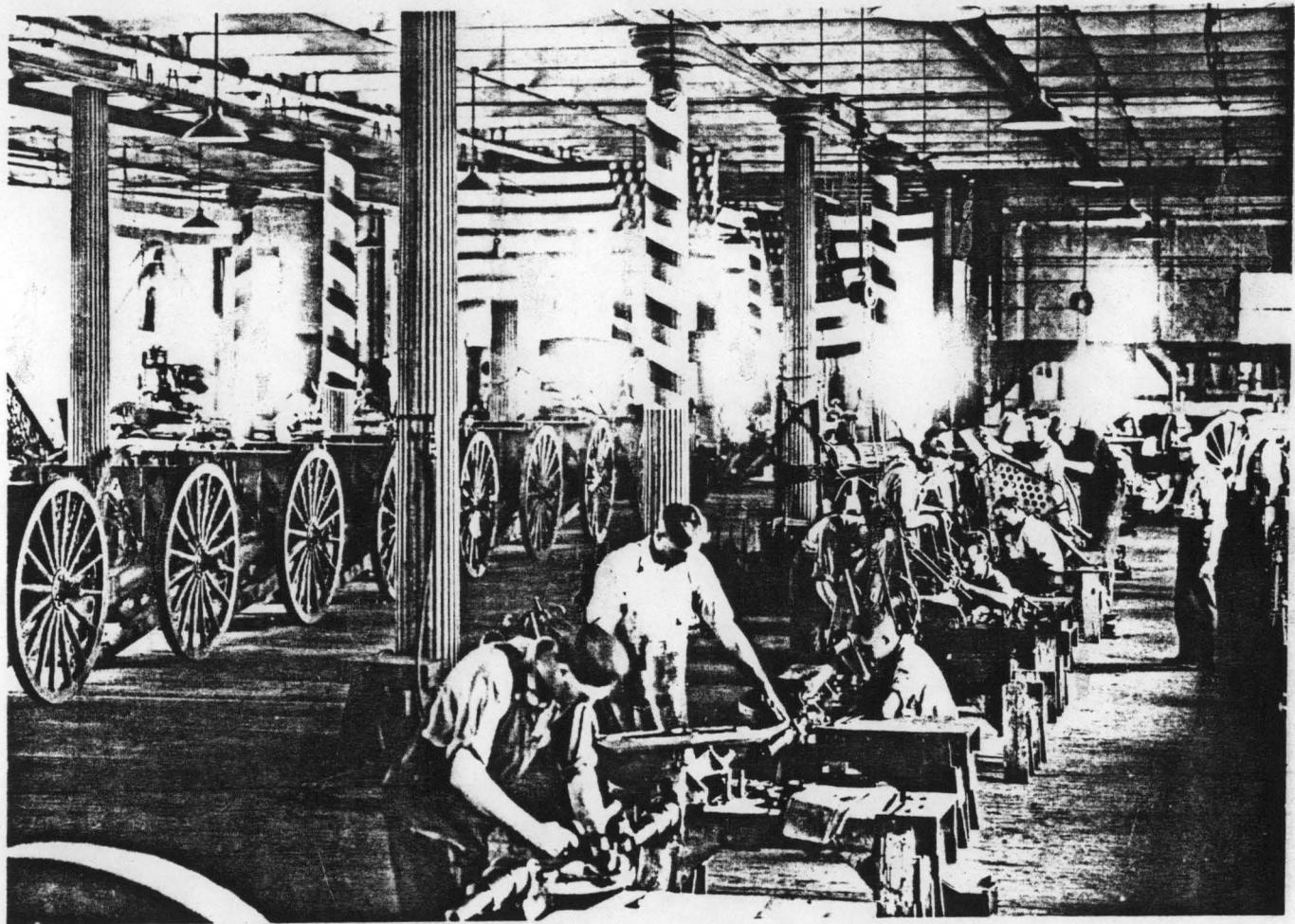


Figure 21: Arsenal employees assembling 75mm gun carriages in Shop I (Building 110) in 1918. (Source: RIA Historical Office.)

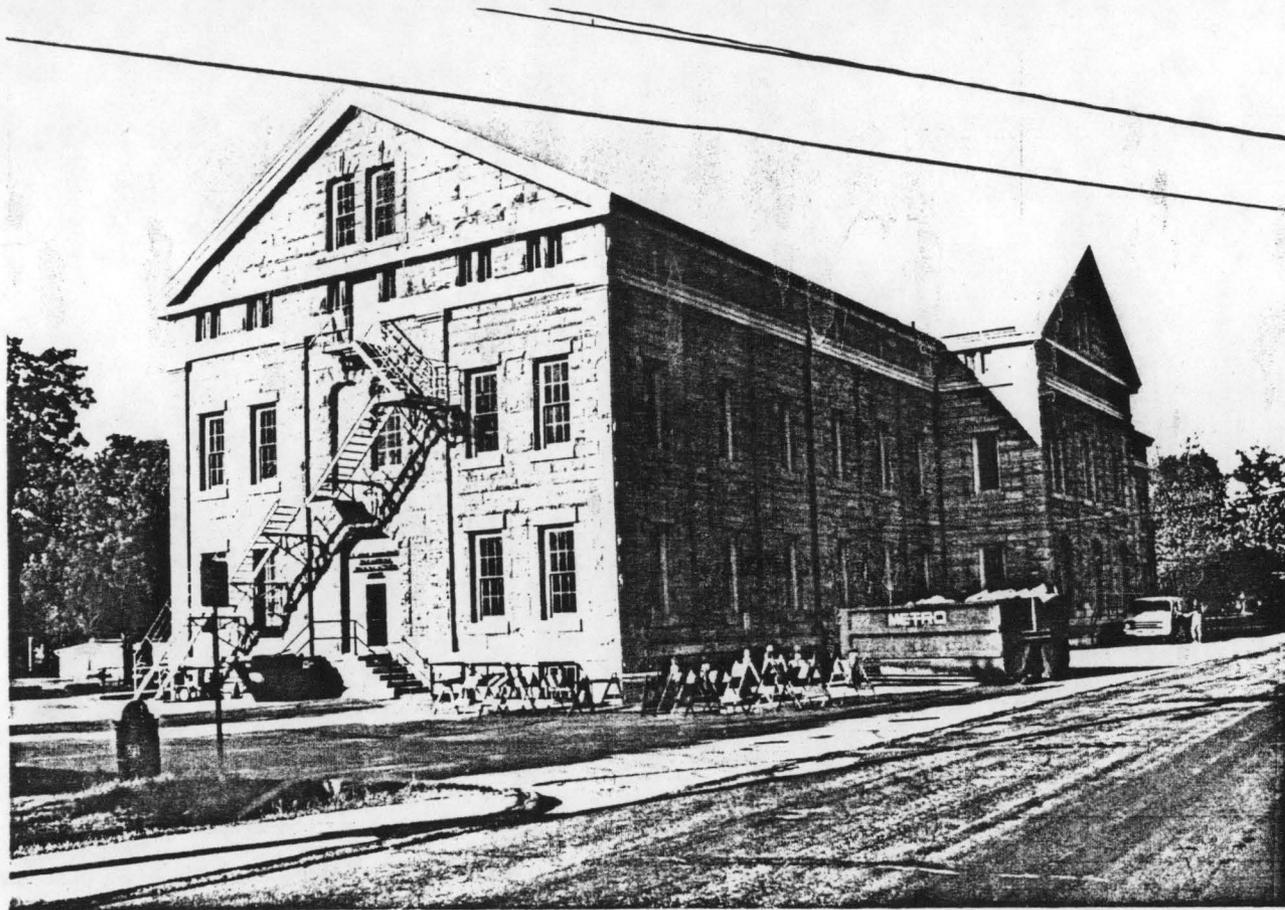


Figure 29: Completed in 1893, Storehouse K (Building 56) has all the classical design elements of the stone buildings completed twenty years earlier. The building now serves as a training facility. (Source: Field inventory photograph, 1984, Barbara Hightower, Building Technology Inc.)

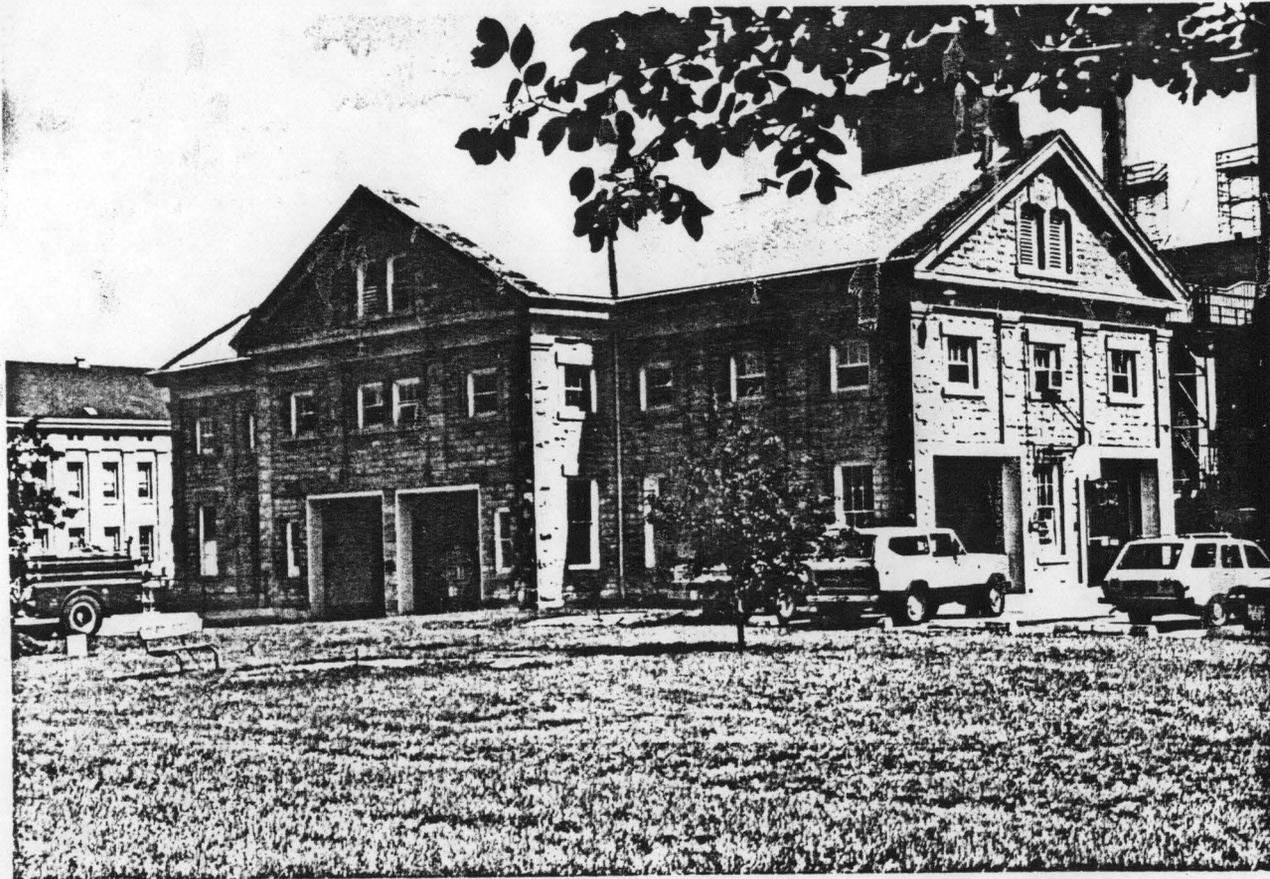


Figure 15: The Post Building (Building 225) was originally designed as a combined guard house, fire station, and storehouse. It still functions in the first two capacities. (Source: Field inventory photograph, 1984, Robert C. Mack, MacDonald and Mack Partnership.)

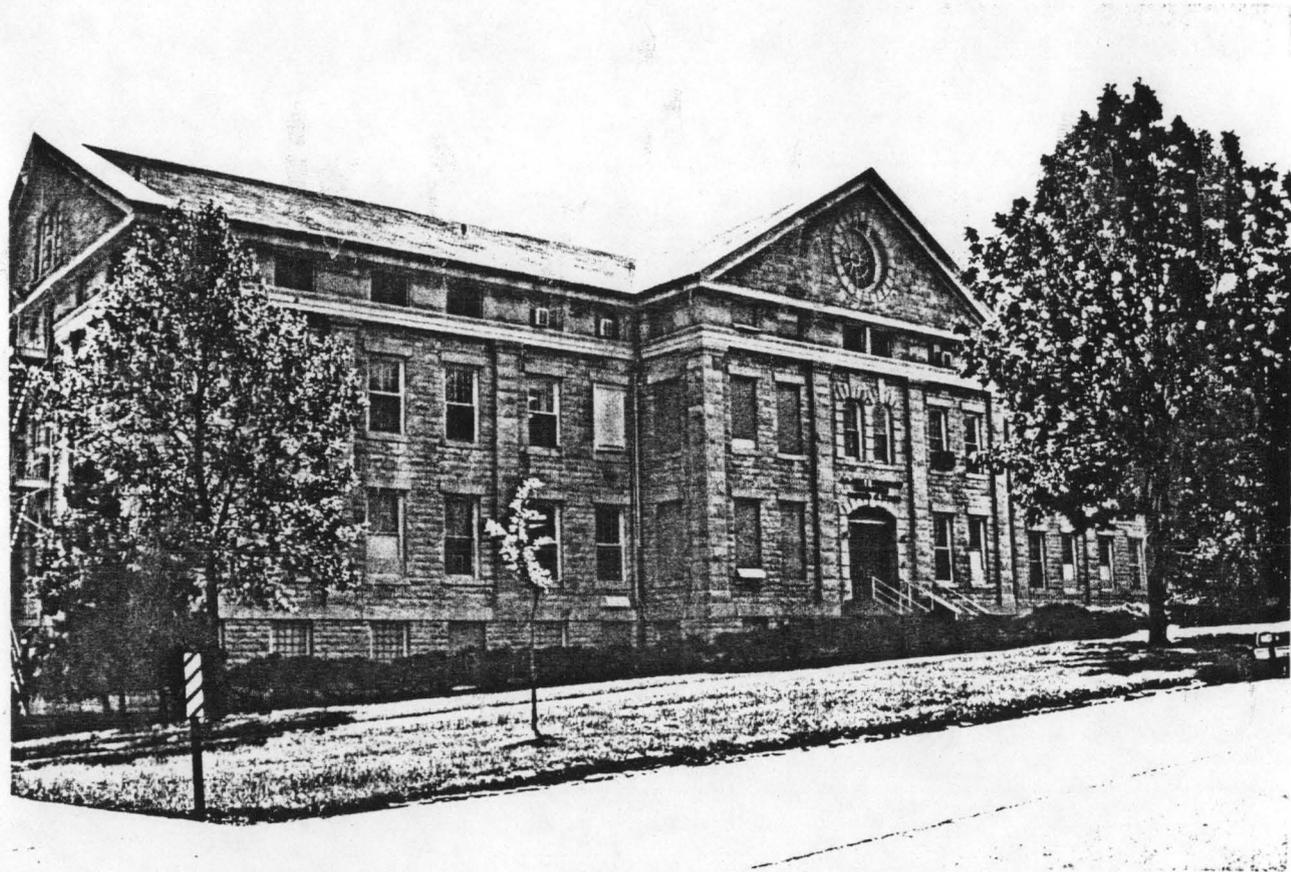


Figure 14: Constructed as a barracks in 1873, Building 90 now serves as a training facility. (Source: Field inventory photograph, 1984, Barbara Hightower, Building Technology Inc.)



Figure 33: Storehouse A (Building 131) was built of brick in 1905 to replace a nearly identical stone structure which had burned. (Source: Field inventory photograph, 1984, Barbara Hightower, Building Technology Inc.)

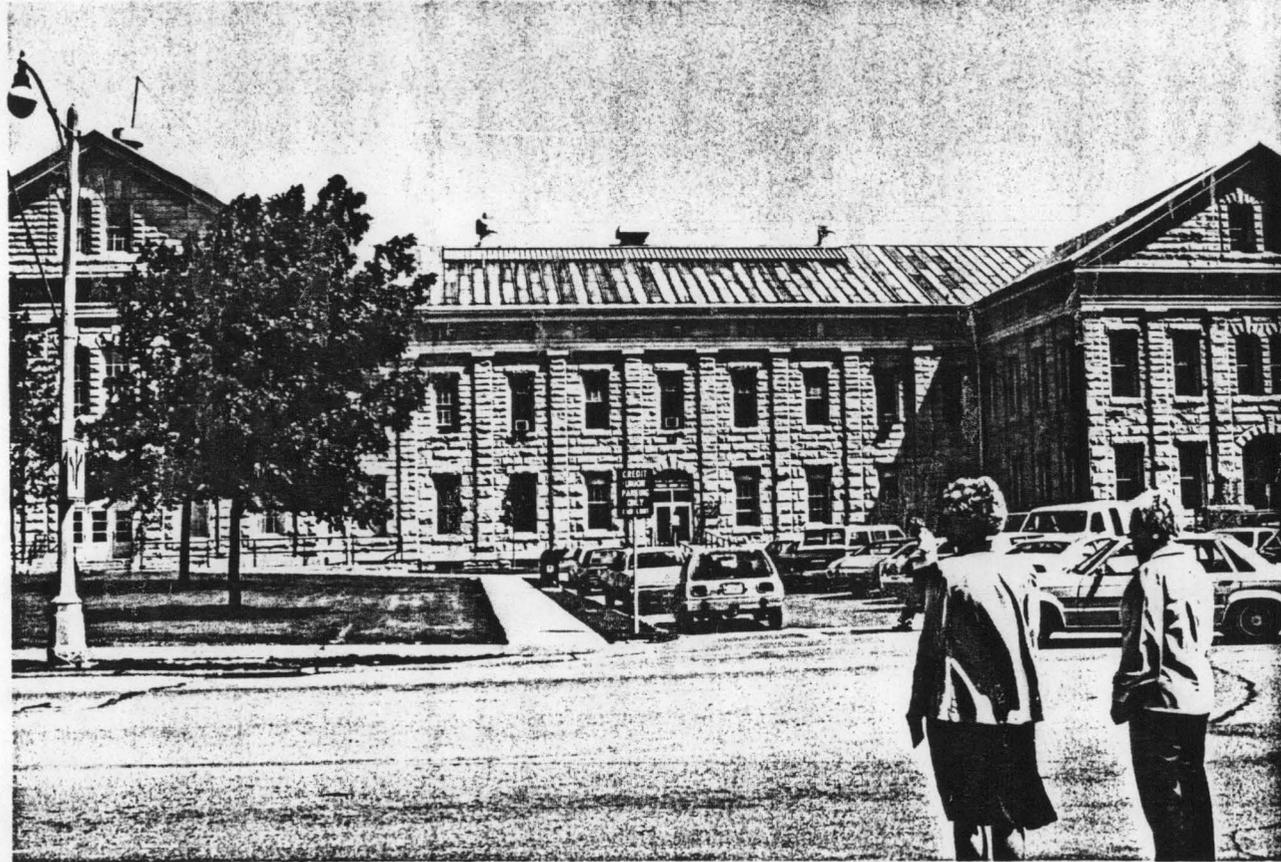


Figure 22: Building 61 (center foreground) connects the wings of Buildings 60 (left) and 61 (right). Constructed during World War I, Building 61 is representative of the other three connecting links for the stone shops on Rodman Avenue that were completed during that period. All were carefully designed with stone veneer walls to match the detailing of the original shops. (Source: Field inventory photograph, 1984, Barbara Hightower, Building Technology Inc.)

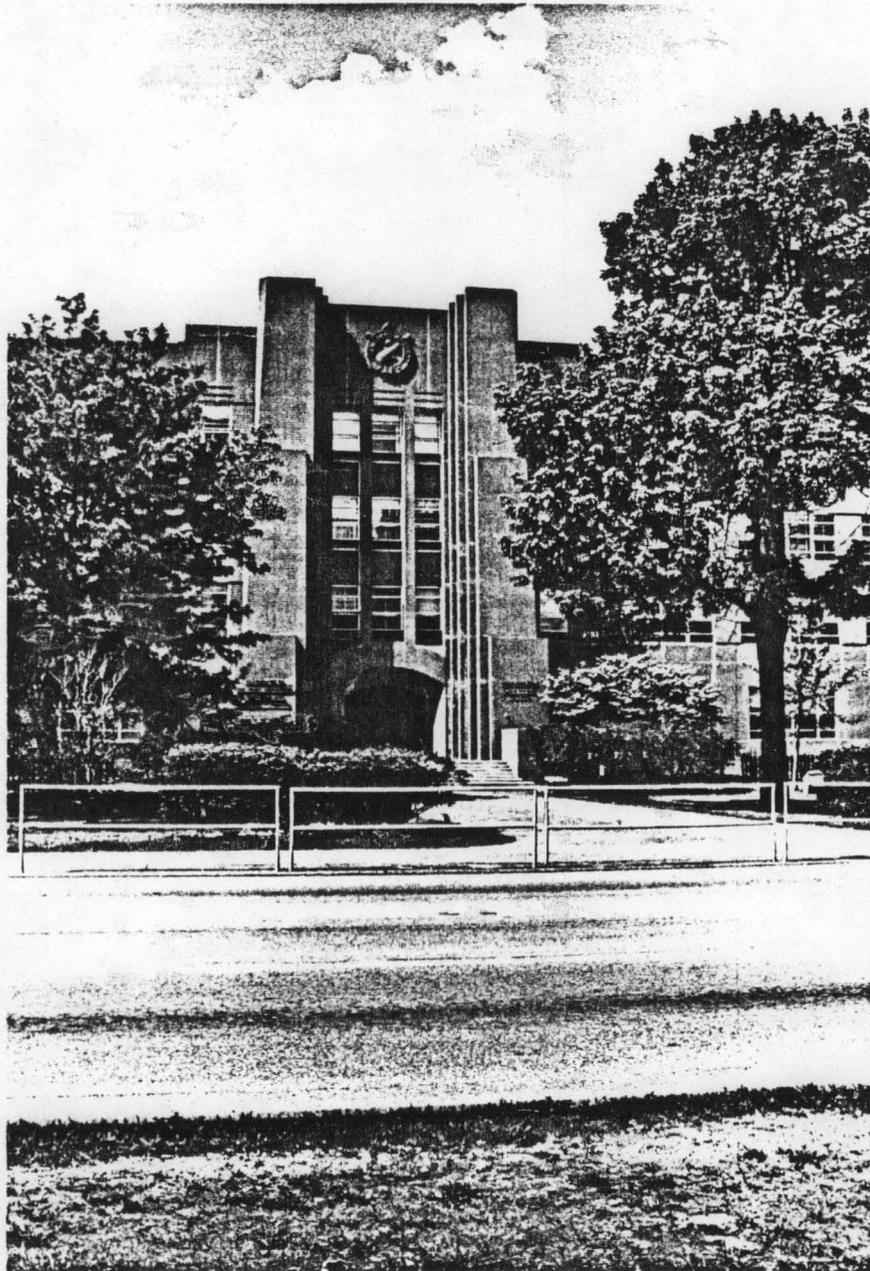


Figure 27: Constructed in 1942, Building 390 perpetuates its original function as RIA Headquarters. (Source: Field inventory photograph, 1984, Robert C. Mack, MacDonald and Mack Partnership.)

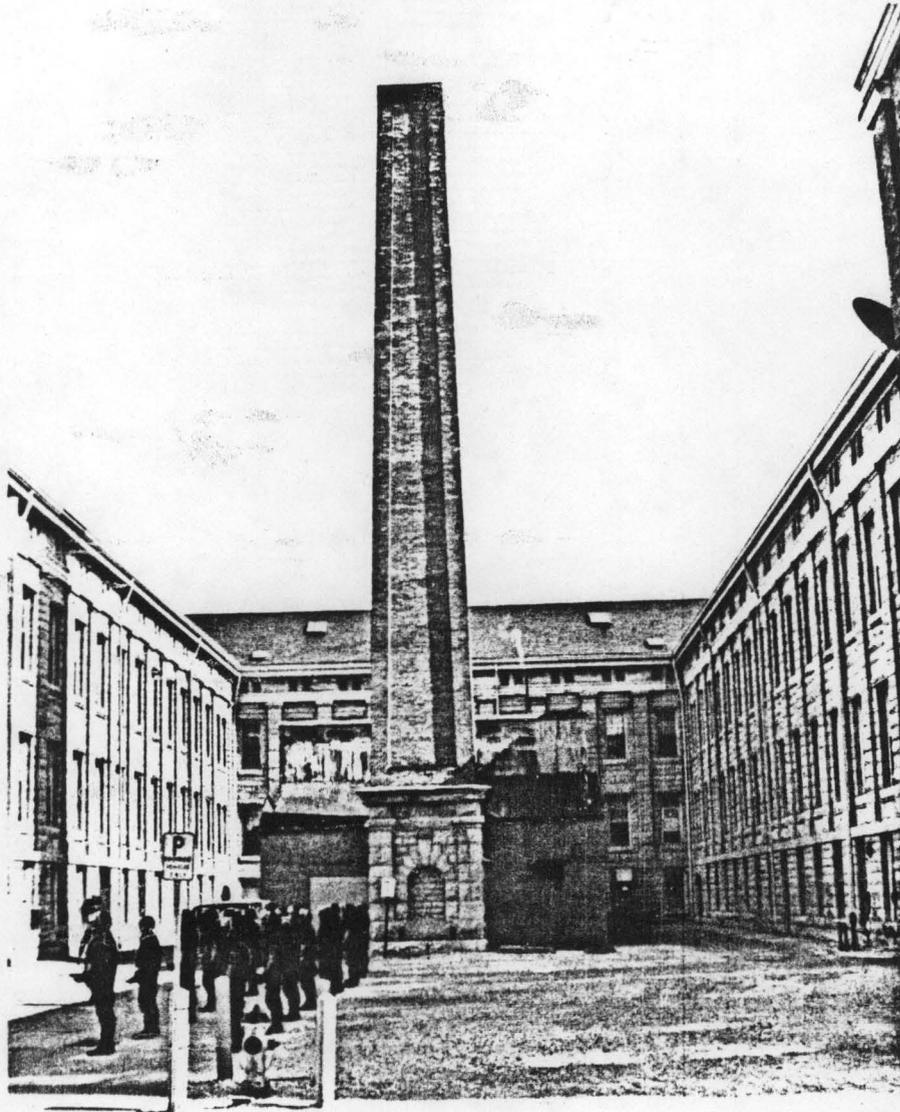


Figure 28: The Boiler House (Building 105) was completed in 1873 to provide steam to Shop C. Its design followed the classical features of the large stone buildings. (Source: Field inventory photograph, 1984, Barbara Hightower, Building Technology Inc.)

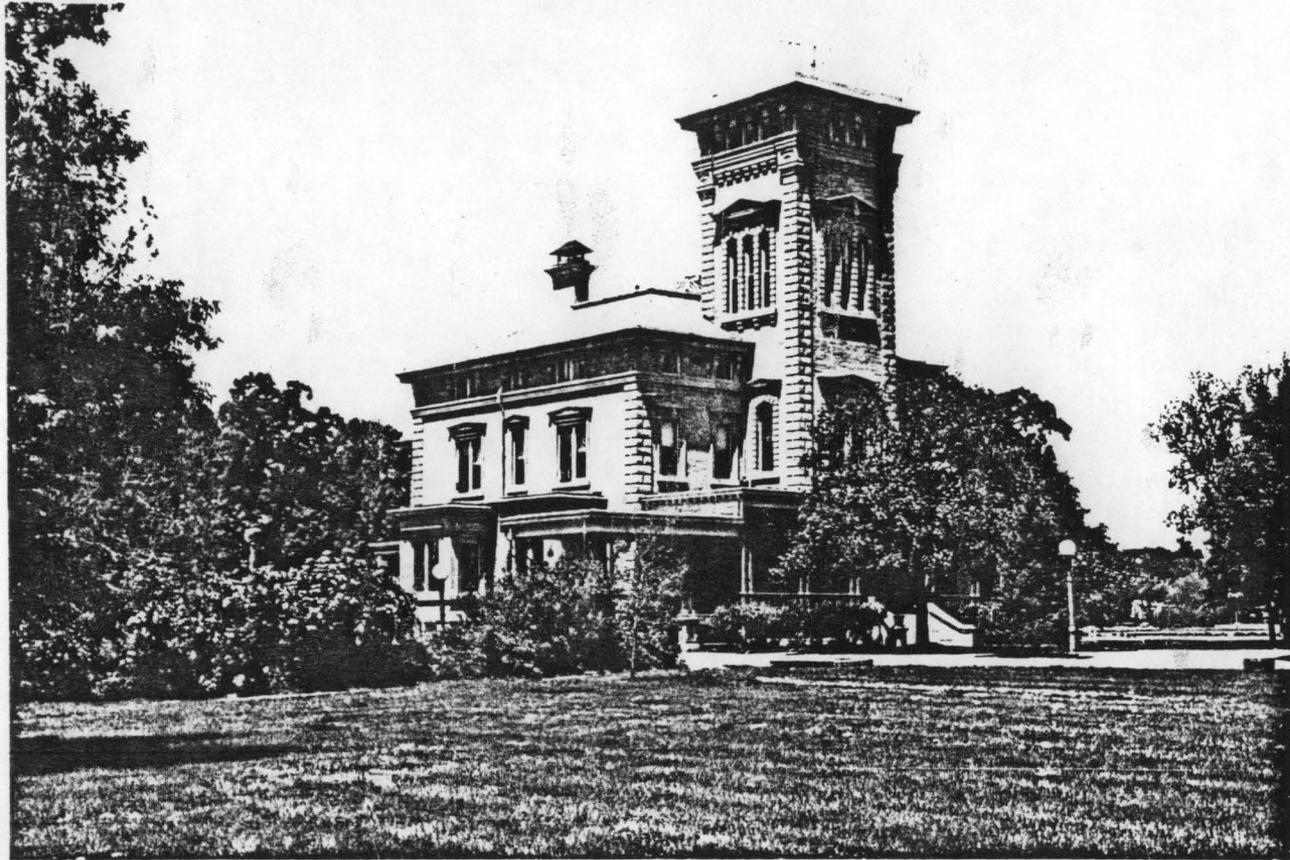


Figure 10: Completed in 1871, Building 301 was designed to be the Commanding Officer's Quarters and still serves its original purpose. (Source: Field inventory photograph, 1984, Barbara Hightower, Building Technology Inc.)



Figure 11: Building 2 furnishes an excellent example of the Italianate detailing incorporated into the three Subalterns' Quarters constructed at the arsenal during the 1870s. (Source: Field inventory photograph, 1983 Barbara Hightower, Building Technology Inc.)



Figure 18: Building 6 was constructed in 1905 as an Officer's Residence. It continues to serve that purpose. (Source: Field inventory photograph, 1984, Barbara Hightower, Building Technology Inc.)



Figure 41: Quarters 7 (Building 7) was completed in 1902. Although built of wood rather than stone, it incorporated many of the classical details of the earlier residences. (Source: Field inventory photograph, 1984, Barbara Hightower, Building Technology Inc.)



Figure 42: The Hospital (Building 81), completed in 1907, is a brick structure with simplified classical detailing. It now serves as a family residence. (Source: Field inventory photograph, 1984, Barbara Hightower, Building Technology Inc.)

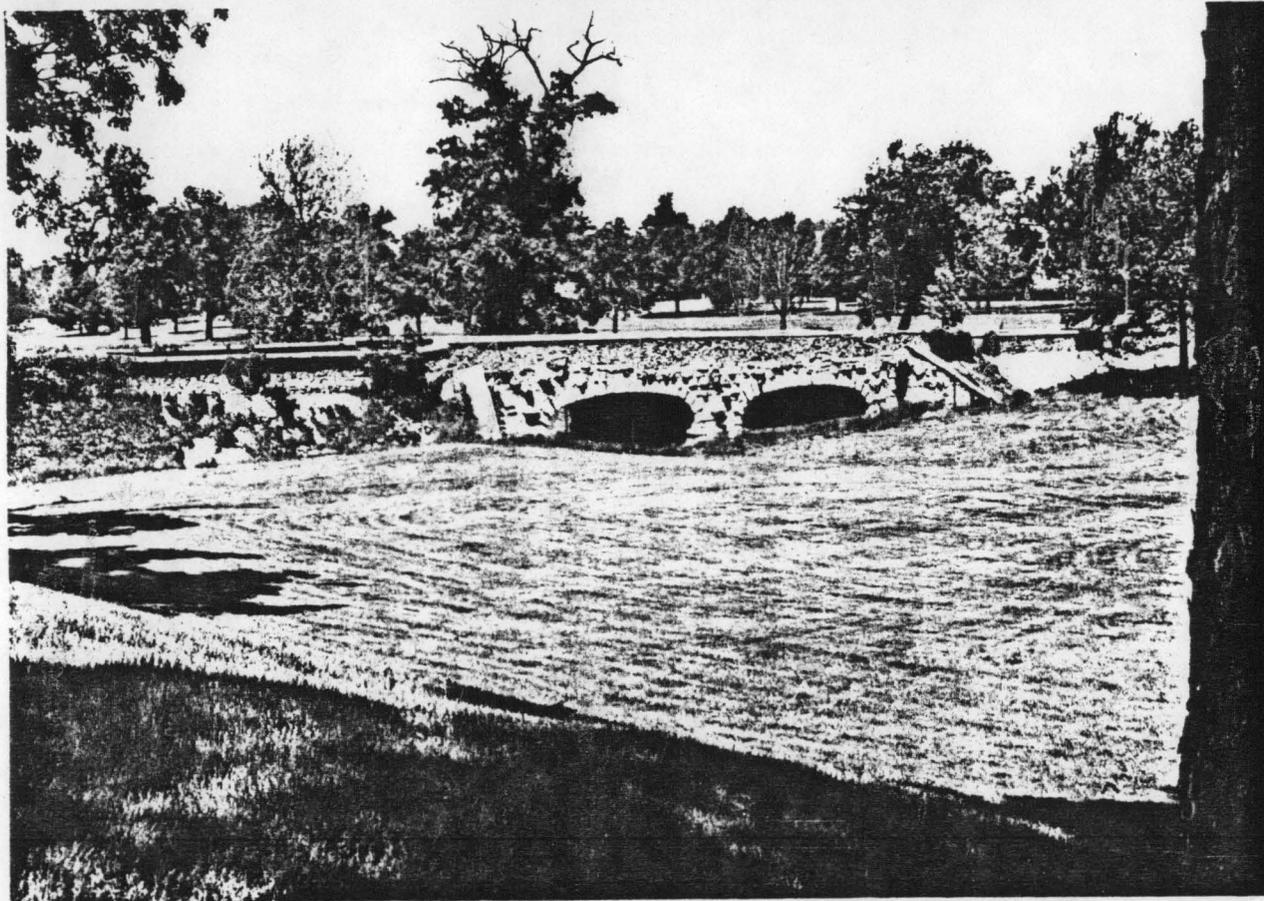


Figure 36: The Stone Bridge (Facility 57) was completed in 1881 to connect the officers' residences with the central manufacturing area. (Source: Field inventory photograph, 1984, Robert Mack, MacDonald and Mack Partnership.)

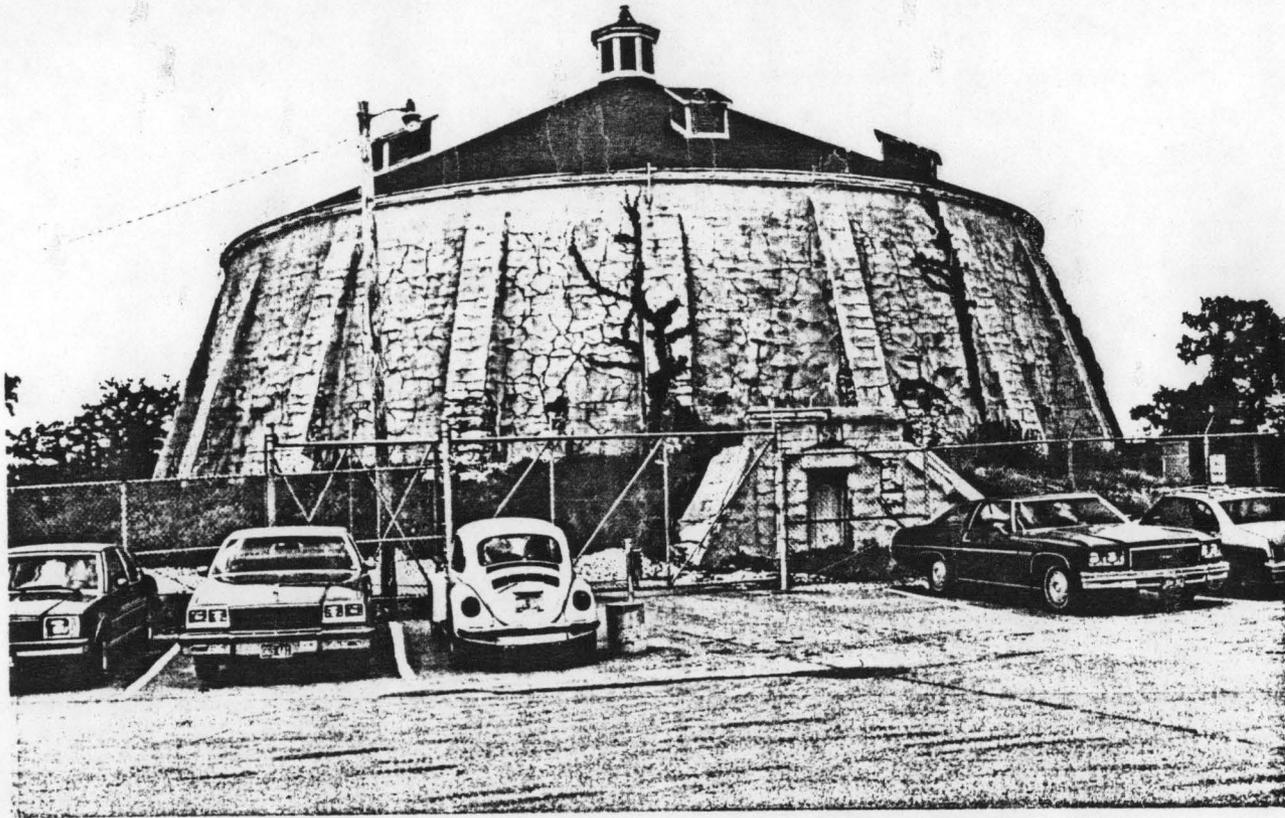


Figure 7: The original water reservoir for Rock Island Arsenal, Building 53 is no longer in active use. (Source: Field inventory photograph, 1984, Robert C. Mack, MacDonald and Mack Partnership.)

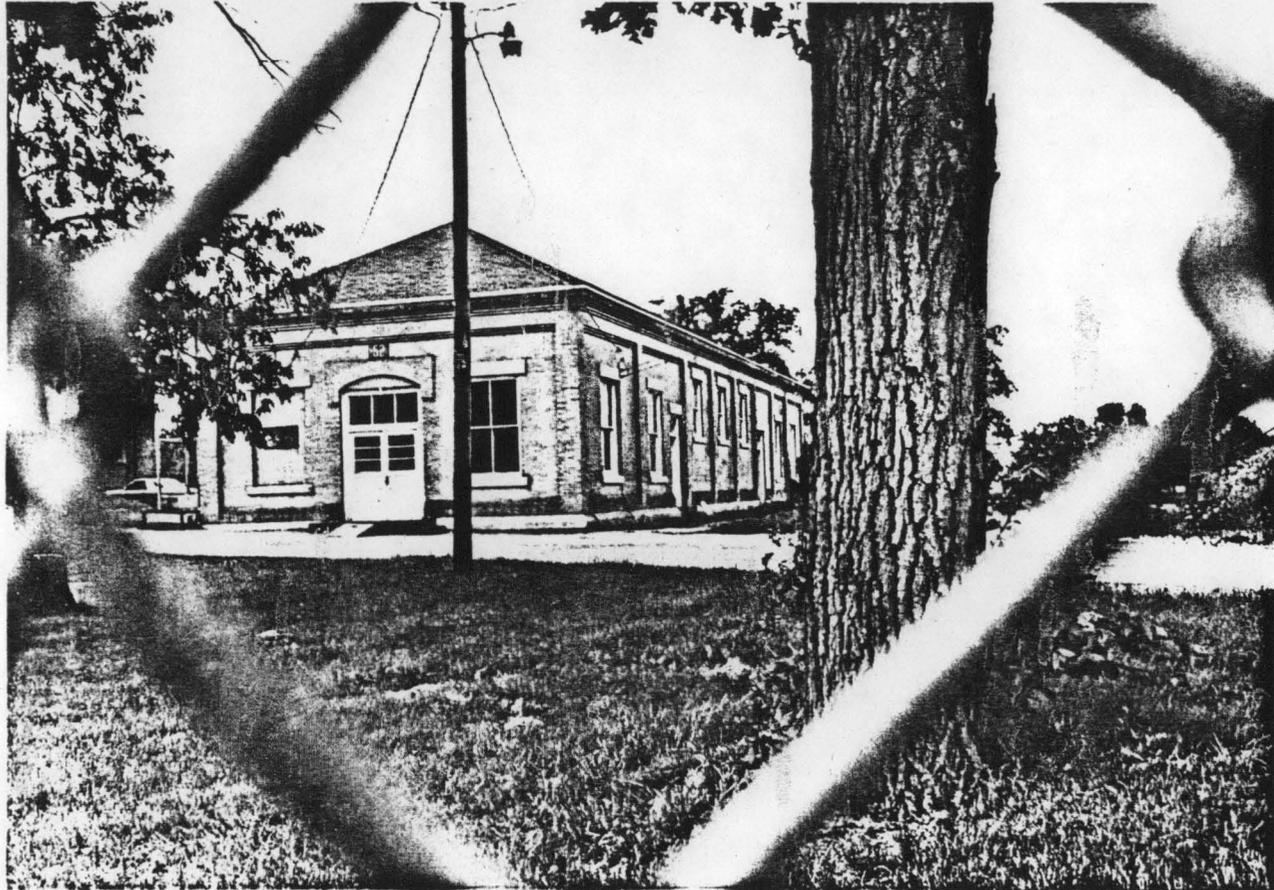


Figure 39: Completed in 1912, the Water Filtration Plant (Building 52) is nearly identical to the Lumber Shed (Building 138) constructed twenty-five years earlier. (Source: Field inventory photograph, 1984, Barbara Hightower, Building Technology Inc.)



Figure 26: Hydroelectric Plant (Building 160), 1944. (Source: RIA Historical Office.)

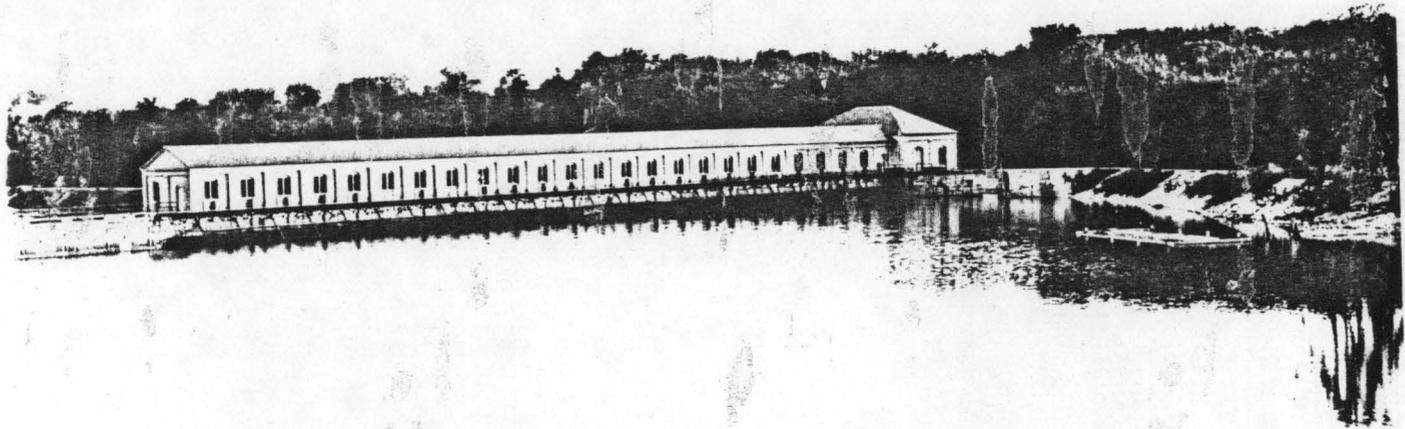


Figure 19: Hydroelectric Plant (Building 160), c. 1905. (Source: RIA Historical Office.)



Figure 17: Completed as a Lumber Shed in 1886, Building 138 now functions as a general storage facility. Although the building is not a Greek revival structure, it maintained the prevailing classical tone of the arsenal's architecture by incorporating such details as pilasters and segmental arches. (Source: Field inventory photograph, 1984, Barbara Hightower, Building Technology Inc.)

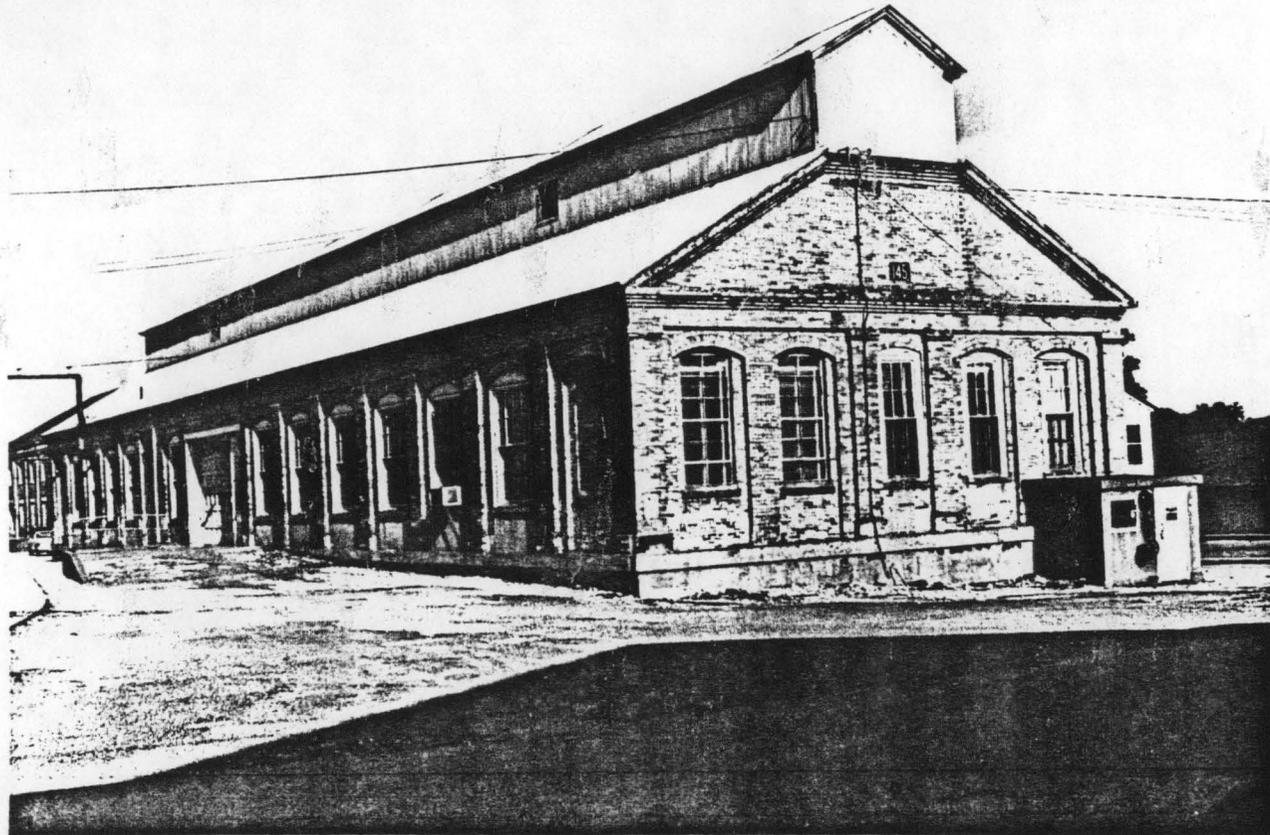


Figure 40: This Storage Building (Building 145) was completed in 1899 for coal storage. In a simplified manner, it reflects many of the classical elements of the earlier buildings. (Source: Field inventory photograph, 1984, Barbara Hightower, Building Technology Inc.)

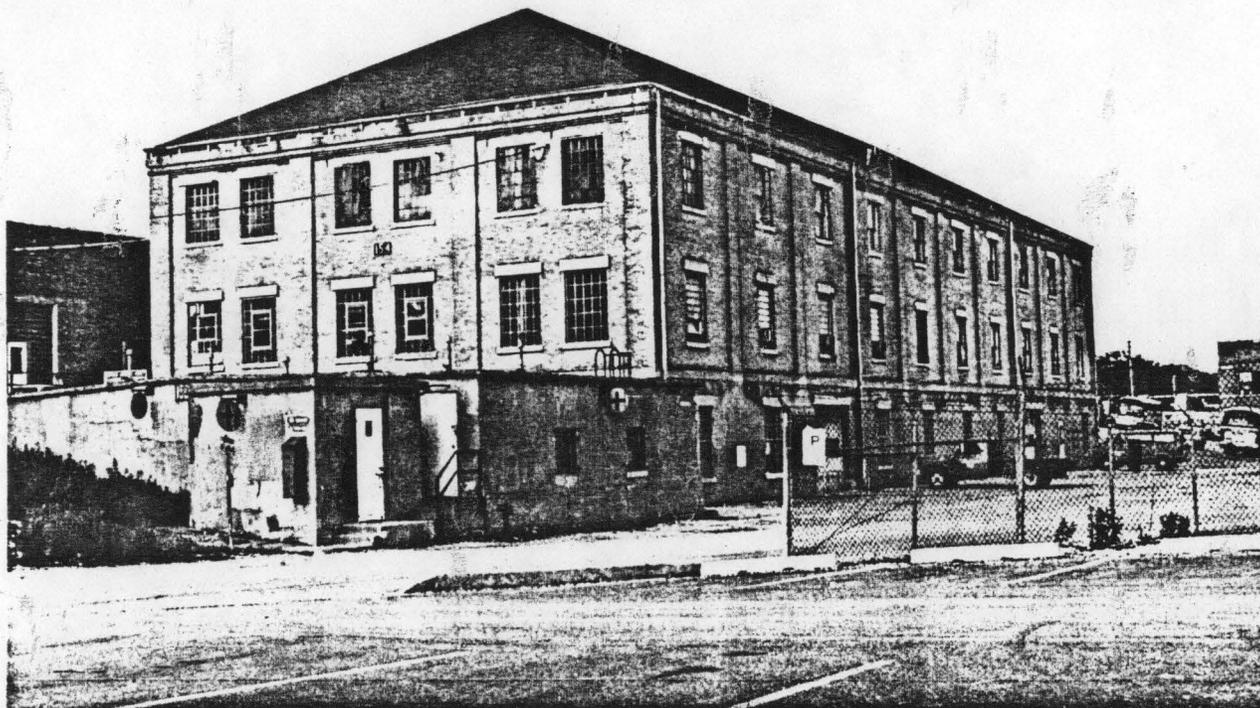


Figure 38: Completed in 1911, this Storage Building (Building 154) is a three-story version of the 1886 Closed Lumber Shed (Building 138, Figure 17). (Source: Field inventory photograph, 1984, Barbara Hightower, Building Technology Inc.)



Figure 31: The TNT Building (Building 251), completed in 1917, was designed in a simplified Gothic revival style to blend with the Artillery Ammunition Loading Plant. It now serves as a motor repair shop. (Source: Field inventory photograph, 1984, Barbara Hightower, Building Technology Inc.)



Figure 32: The 1918 Incinerator Building (Building 133) was designed in a simplified Gothic revival manner to blend with the Artillery Ammunition Loading Plant directly across the street. The wing to the south (right) is a later addition. (Source: Field inventory photograph, 1984, Barbara Hightower, Building Technology Inc.)

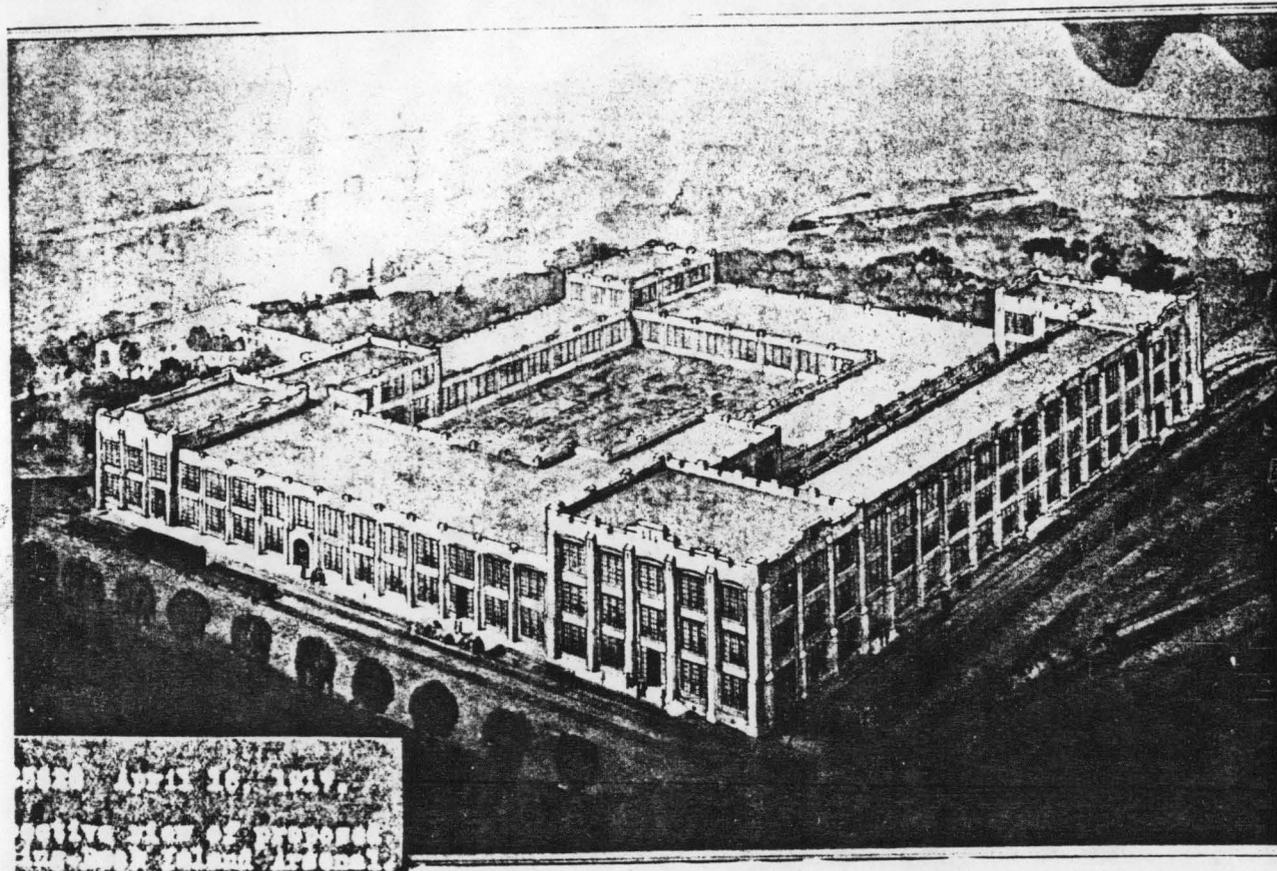


Figure 23: Architectural rendering of the Artillery Ammunition Loading Plant (Building 250), prepared by Westinghouse-Church-Kerr Company of New York in the spring of 1917. (Source: RIA Historical Office.)



Figure 24: Building 250 in 1931. (Source: RIA Historical Office.)



Figure 34: The 1918 Field and Siegel Building (Building 220) was designed in a modified classical revival style in an effort to maintain the character of Rodman Avenue. (Source: Field inventory photograph, 1984, Barbara Hightower, Building Technology Inc.)



Figure 43: The modified classical detailing of Storehouse W-1 (Building 350) was intended to enhance the main axis of Rodman Avenue. Completed in 1918, the building now contains administrative offices. (Source: Field inventory photograph, 1984, Robert C. Mack, MacDonald and Mack Partnership.)



Figure 35: The Recuperator Building (Building 210) was completed in 1921. Its modified classical design was intended to make it compatible with the earlier stone buildings and to enhance the "grand avenue" of Rodman Avenue. (Source: Field inventory photograph, 1984, Barbara Hightower, Building Technology Inc.)

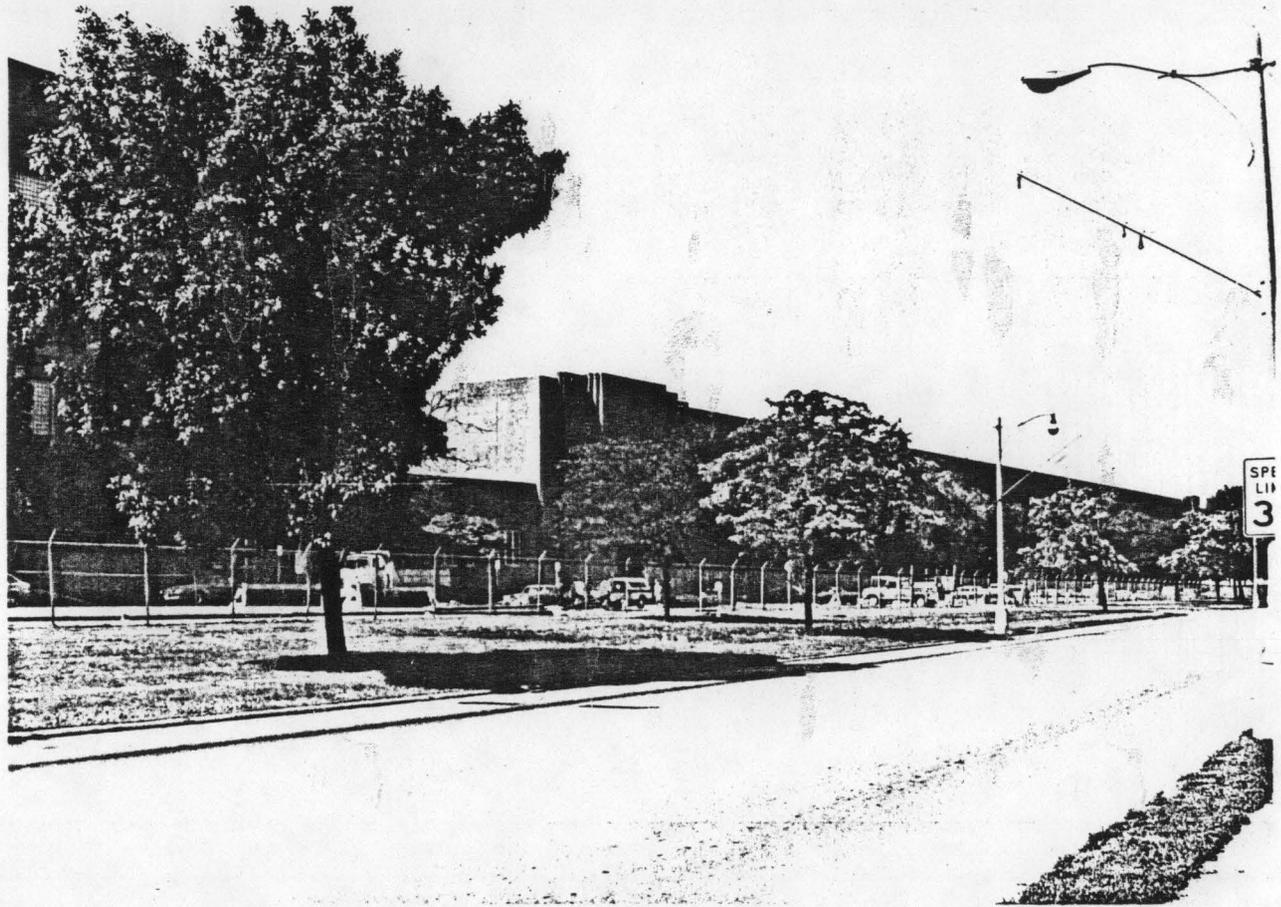


Figure 44: The Overhaul and Assembly Shop (Building 208), completed in 1943, is the visual introduction to the "grand avenue" of Rodman Avenue. Its modest detailing, reminiscent of late WPA designs, was intended to make the building compatible with the earlier manufacturing buildings. (Source: Field inventory photograph, 1984, Robert Mack, MacDonald and Mack Partnership.)



Figure 45: When completed in 1942, the Warehouse (Building 299) was reported to be one of the largest storage buildings in the world, covering nearly 18 acres. (Source: Field inventory photograph, 1984, Barbara Hightower, Building Technology Inc.)

July 17, 1967

H34-HH

Mr. B. A. Fisher  
Department of the Army  
Chicago District, Corps of Engineers  
219 South Dearborn Street  
Chicago, Illinois 60604

Dear Mr. Fisher:

Our Northeast Regional Office in Philadelphia has referred to this office your inquiry about the possibility of designating the Rock Island Arsenal in Illinois a Registered National Historic Landmark.

Your letter discusses very informatively the many facets of the history of Rock Island. The early Fort Armstrong and the contribution of the arsenal during both the Civil War and the Spanish American War seem to represent the most significant periods in the history of the Island.

We are enclosing a booklet, NPS Criteria for Parklands, that lists the criteria for historic Landmarks (pp. 29-31). The criterion discussing integrity of historic sites is especially pertinent to a consideration of Fort Armstrong. In order to satisfy this criterion a historic structure should be the original and be relatively unchanged. We note from your enclosures that the present blockhouse is a replica of the original and was constructed in 1916.

The National Survey of Historic Sites and Buildings has conducted studies of sites related to both the Civil War and the Spanish American War. In its review of these studies, the Advisory Board on National Parks, Historic Sites, Buildings, and Monuments did not recommend the Rock Island Arsenal for designation as a Registered National Historic Landmark.

Because of the foregoing considerations, it is our view that the Rock Island Arsenal and other sites on the Island do not meet the criteria established by the Secretary of the Interior's Advisory Board for evaluation of sites considered for inclusion in the Registry of National Historic Landmarks.

We appreciate your interest in the Registered National Historic Landmark program.

Sincerely yours,

/S/ ROBERT M. UTLEY

Robert M. Utley  
Chief Historian

*Enclosures  
are in Mr. S's  
Reports File ✓  
Pulled & in  
Folder*

Enclosure

cc: Regional Director, Northeast, w/c inc.  
WSC-HHS-Mr. Sheely

HJSheely/jsa/7-17-67

July 19, 1967

H34-HH

Mr. B. A. Fisher  
Department of the Army  
Chicago District, Corps of Engineers  
219 South Dearborn Street  
Chicago, Illinois 60604

Dear Mr. Fisher:

Thank you for the additional information on Rock Island, the Arsenal, Fort Armstrong, and the Mississippi River Bridge which you forwarded with your letter of July 12.

Since the principal structures discussed are no longer extant, we believe, as we indicated earlier, that the reconstructed Fort Armstrong and the remnants of the bridge would not meet the criteria established by the Secretary of the Interior's Advisory Board for the evaluation of sites considered for inclusion in the Registry of National Historic Landmarks.

Sincerely yours,

/S/ ROBERT M. UTLEY

Robert M. Utley  
Chief Historian

cc:

Regional Director, w/c/inc, Northeast  
WSC-HHS-Mr. Sheely

HJSheely:rnc 7/19/67

*Enclosures are in  
Reports File -  
7-25-67  
rnc.*



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE  
NORTHEAST REGION  
143 SOUTH THIRD STREET  
PHILADELPHIA, PA. 19106

IN REPLY REFER TO:

H34  
NER

JUN 30 1967

Mr. B. A. Fisher  
Chief, Real Estate Division  
Department of the Army  
Chicago District, Corps of Engineers  
219 South Dearborn Street  
Chicago, Illinois 60604

Dear Mr. Fisher:

Thank you for your letter of June 27 regarding Registered National Historic Landmark status for the Rock Island Arsenal.

Because the National Survey of Historic Sites and Buildings, which considers historic sites for possible landmark status, is conducted out of our Washington Office, we have referred your letter and the informational materials attached, to it.

Your interest in historic preservation and the Registry of National Historic Landmarks is very much appreciated.

Sincerely yours,

George A. Palmer

George A. Palmer  
Acting Regional Director

cc:

✓ Director JUL 2 1967  
Attn: National Survey of Historic Sites & Bldgs., WSC w/c incoming



STATE OF ILLINOIS  
 RICHARD B. OGILVIE, GOVERNOR  
 DEPARTMENT OF CONSERVATION  
 SPRINGFIELD 62706

January 28, 1971

Mr. Murray H. Nelligan  
 Landmark and National Register Specialist  
 National Park Service, Northeast Region  
 143 South Third Street  
 Philadelphia, Pennsylvania 19106

Dear Mr. Nelligan:

Mr. Clifford W. Stephens, U. S. Army Weapons Command Historian,  
 Commanding General U. S. Army Weapons Command, Att: AHSWE-ADH,  
 Rock Island, Illinois, 61201, has inquired concerning what steps  
 are necessary in order for the Rock Island Arsenal to receive  
 a bronze plaque and certificate signifying its placement in the  
 National Register. Would you be kind enough to pursue this  
 matter for us? If there is anything we can do to assist in  
 the matter, please let us know.

Thank you for your attention and interest.

Sincerely yours,

Henry N. Barkhausen  
 Director

HNB/ap

cc: Honorable Tom Railsback  
 Mr. Clifford W. Stephens

DEPT. OF CONSERVATION  
 FEB 4 10 46 AM '71  
 CONGRESSIONAL LIAISON

1-11208

Congress of the United States

House of Representatives

Washington, D.C.

February 3, 1971

Director  
Congressional Liaison Office  
Department of the Interior  
Washington, D. C.

Sir:

The attached communication  
is sent for your consideration.  
Please investigate the statements  
contained therein and forward me  
the necessary information for re-  
ply, returning the enclosed corre-  
spondence with your answer.

Yours truly,



TOM RAILSBACK, M. C.

TR:um

H34-333

MAR 4 - 1971

Hon. Tom Railsback  
House of Representatives  
Washington, D.C.

Dear Mr. Railsback:

We are pleased to reply to your recent inquiry in behalf of Mr. Henry H. Barikhausen, Director, Department of Conservation, State of Illinois, who requested information on the procedures to be followed in order to receive a bronze plaque and certificate attesting to the placement of the Rock Island Arsenal on the National Register of Historic Places.

A property nominated and enrolled on the National Register is not provided with a bronze plaque and certificate in recognition of this distinction. It is a national historic landmark that is awarded a plaque and certificate. The Rock Island Arsenal has not been designated a national landmark by the Secretary of the Interior. It has, however, been enrolled on the National Register of Historic Places. We regret the misunderstanding about these two programs, which are further explained in the enclosed folders.

We appreciate your interest in the preservation programs of the National Park Service.

Sincerely yours,

(Sgd) Harthen L. Bill

Acting Director

Enclosures

cc:  
CL ) w/c of inc.

Director, NE Region }  
T-Mr. Butterfield }  
LL-Mr. Melvin }  
HHS-Mr. Sheely }

FNP:HJSheely:crb:2-22-71

(HP-Illinois-Rock Island Arsenal)

CL-14208

COUNTIES:

CARROLL	MC DONOUGH
FULTON	MERCER
HANCOCK	ROCK ISLAND
HENDERSON	WARREN
HENRY	WHITESIDE
ADAMS (LIMA, MENDON AND Ursa TWPS. ONLY)	
BUREAU (FAIRFIELD, GOLD, GREENVILLE AND MANLIUS TWPS. ONLY)	
LEE (EAST GROVE, HAMILTON, HARMON, MARION, NELSON, PALMYRA, AND SOUTH DIXON TWPS. ONLY)	

Congress of the United States  
House of Representatives  
Washington, D.C. 20515

Room 228  
FEDERAL BUILDING  
211-19TH STREET  
ROCK ISLAND, ILLINOIS 61201  
AREA: 309-794-1681  
Action Office 7ND  
For info only CL-WJ

JUDICIARY COMMITTEE

February 20, 1973

Mr. Frank Wolf  
Office of Congressional Liaison  
Department of the Interior  
Washington, D. C.

Dear Frank:

Interest has recently been expressed by citizens from the Quad Cities area in Illinois and Iowa to have the Rock Island Arsenal, Rock Island, Illinois, designated a national landmark. As you may know, the Arsenal is presently enrolled on the National Register of Historic Places.

It is my understanding that the first step leading to eligibility for Landmark designation is consideration of prospective properties in a National Survey of Historic Sites and Buildings. Would you please advise me of the procedure by which the Rock Island Arsenal can be included in such consideration.

Interest has also been expressed in the establishment of Rock Island Arsenal as a national park, perhaps with an appropriate national memorial to the Mississippi River and the role it has played in our national history. In an effort to evaluate the possibility of legislation for these purposes, I would be interested in knowing whether the Jefferson National Expansion Memorial in St. Louis, Missouri or the Lincoln Home National Historic Site in Springfield, Illinois are designated national landmarks and whether they are part of the national park system. I would also like to inquire as to whether the property on which the St. Louis Memorial was built was owned by the United States.

Your assistance in these matters is greatly appreciated.

Sincerely,  
*Tom Railsback*  
TOM RAILSBACK  
Member of Congress

5-49802

TR:ns

OFFICE OF THE  
SECRETARY OF THE INTERIOR

February 22, 1973

FNP  
Peggy:-

Please control and expedite.  
Frank would like to hand  
carry response to Hill.

Thanks.  
Pat

**RUSH**

Assistant to the Secretary  
for Congressional Liaison

*put in the  
new file.  
148*

PARTIAL DRAFT: HJ Sheely/vf/3/6/73

S-49802

Honorable Tom Railsback  
House of Representatives  
Washington, D.C.

Dear Mr. Railsback:

The Office of Congressional Liaison has asked that we reply to your inquiry about the Rock Island Arsenal in Rock Island, Illinois.

The procedure for requesting a study of a historical property as a potential national historic landmark is a direct one. We ask the individual or group interested in the property to review the criteria for national significance that are set forth in a leaflet that we are enclosing. If in their view the historical values of the place meet these criteria, we ask that they send the Director of the National Park Service, Mr. Ronald H. Walker, a brief summary setting forth the basis for the national significance of the property. Illustrations are also very helpful.

We should point out that as early as the summer of 1967 we corresponded with the Chief of the Real Estate Division of the Arsenal, and he provided us with a full summary of the historical values of the island. We reviewed carefully a considerable body of information that he sent. This leads us to point out to him that the Historic Sites Survey is oriented toward the identification of physical structures and sites still basically retaining their original character. We suggested that since the principal structures that he had discussed are no longer extant, that we did not believe that the Arsenal or the areas other

S-49802

Mr. Sheely's copy-----

historical features would meet the landmark criteria established by the Secretary of the Interior's Advisory Board on National Parks, Historic Sites, Buildings, and Monuments.

Neither the Jefferson National Expansion Memorial National Historic Site in St. Louis, nor the Lincoln Home National Historic Site in Springfield, Illinois, is a national historic landmark. They are both units of the National Park System.

WHITE HOUSE, CONGRESSIONAL, OR SECRETARIAL CORRESPONDENCE

TO: PHH

FROM: Division of Legislative Services (LS)

SUBJECT: Preservation-Northeast

CONTROL NUMBER: S-49802

SUSPENSE DATE: March 7, 1973

RUSH

*Rec'd PHH/S  
4:45 pm 3/2*

The attached correspondence is forwarded for the preparation of a draft reply. In the event the above suspense date cannot be met, please furnish me an interim draft reply on or before that suspense date, and include reasons for the delay and an estimate as to the date a final reply may be expected.

All draft replies must be surnamed by the Chief of the Division preparing the draft. It will be optional with that Division Chief as to whether his Assistant Director should also surname the draft.

For NPS signature XXXXXXXXXXXXXXXXXXXXXXXXXXXX  
For Secretarial signature \_\_\_\_\_

*Ira Whitlock*  
Ira Whitlock

PLEASE LEAVE THIS MEMO ATTACHED TO THE CORRESPONDENCE

February 28, 1973

Honorable Tom Railsback  
House of Representatives  
Washington, D.C.

Dear Mr. Railsback:

The Office of Congressional Liaison has asked us to acknowledge your inquiry concerning the Rock Island Arsenal in Rock Island, Illinois.

We appreciate your interest in this matter and will provide you a reply at our earliest opportunity.

Sincerely yours,

Ronald H. Walker

Ronald H. Walker  
Director

cc:  
LOS (2) w/original incoming  
FNP:CRBraxton:crb:2-28-73

(S-49802)

MAR 9 1973

H34-PHR

Honorable Tom Railsback  
House of Representatives  
Washington, D.C.

Dear Mr. Railsback:

The Office of Congressional Liaison has asked us to thank you for your inquiry concerning the Rock Island Arsenal in Rock Island, Illinois.

The procedure for requesting a study of a historical property as a potential national historic landmark is a direct one. We ask the individual or group interested in a property to review the criteria for national significance that are set forth in the enclosed leaflet. If in their view the historical values of the place meet these criteria, we ask that they send the Director of the National Park Service a brief summary setting forth the basis for the national significance of the property. Illustrations are also very helpful.

In 1967 we corresponded with the Chief of the Real Estate Division of the Arsenal. He provided us with a full summary of the historical values of the island. We reviewed carefully a considerable body of information that he sent. We suggested that since the principal structures that he had discussed are no longer extant, we did not believe that the Arsenal or the area's other historical features would meet the landmark criteria established by the Secretary of the Interior's Advisory Board on National Parks, Historic Sites, Buildings, and Monuments.

Neither the Jefferson National Expansion Memorial in St. Louis, nor the Lincoln Home National Historic Site in Springfield, Illinois, is a national historic landmark. Both are units of the National Park System. The 90.96 acres within Jefferson National Expansion Memorial were purchased by the United States with funds provided in one-fourth part by the city of St. Louis.

We appreciate your interest in this matter.

Sincerely yours,

/s/ Ernest Allen Connally  
Associate Director

Enclosure

cc:  
CL

Director-NERegion ) w/copy of incoming

Director-MWRegion )

OM )

LI

PHH-Mr. Sheely )

LOS )

FNP:HJSheely:HWPfanz:crb:3-8-73

H34(418)

APR 24 1987

Mr. Tom Slattery  
AMCCOM Historical Office (R)  
Department of the Army  
Headquarters, U. S. Army Armament,  
Munitions, and Chemical Command  
Rock Island, Illinois 61299

Dear Mr. Slattery:

We appreciate the expressions of interest we have received from the staff at the Rock Island Arsenal in the possibility of a National Historic Landmark nomination of the Arsenal. To follow up on your recent telephone conversations with James Charleton and me, let me reiterate a few brief points:

-- National Historic Landmark nomination studies must be prepared on the National Register inventory-nomination form, and must meet the standards for National Register documentation. The form must include information about the inventory of historic structures at the Arsenal, if only a list summarizing the HABS/HAER documentation of those structures with appropriate appendices. Enclosed is a copy of "How to Complete National Register Forms." Should you need further information in this area, please contact us at the above address or by calling Ben Levy or Jim Charleton of my staff at (202)343-8167.

-- National Historic Landmarks must meet the criteria for national significance described in the enclosed Landmarks Program regulations (36 CFR 65.4). When you arrange for the preparation of the Landmark nomination study of Rock Island Arsenal, please bear in mind that the study should clearly and specifically show how the Arsenal compares, in terms of its historical significance, with other extant historic properties, such as Springfield Armory, that played a role in the history of American arsenals and armaments systems. By now, you have probably received copies of National Historic Landmark studies on Watervliet Arsenal, Governors Island, and Fort Hancock. We enclose herewith a copy of the Landmark nomination study of Fort Snelling. I hope that these will provide helpful information about the ways in which Landmark nomination cases are presented.

It is extremely important, of course, that the appropriate Army officials be notified and consulted as the Rock Island Arsenal study develops. While my office will be responsible for formally notifying parties specified in the Landmarks Program regulations, I trust that you will also contact the appropriate officials in your chain of command. In this regard, I would urge that you consult Dr. Constance Ramirez and Lt. Col. Kit Valentine about this proposed study as soon as possible; both have responsibilities in the Army historic preservation program.

As promised in our recent telephone conversation, I did ask the Advisory Board members whether, in principle, they would be willing to review a nomination of the Arsenal on an accelerated schedule. The Board indicated willingness to do so. I must stress, though, that this accelerated review can happen only if a revised nomination can be prepared through your office that meets National Register standards and that adequately documents the proposition that the Arsenal meets Landmarks Program criteria.

If such a revised nomination is prepared, submitting it to the Board members by mail and requesting a decision from the Secretary of the Interior would consume about two months. As a result, I would recommend that we consider a date of May 11 as a deadline for a nomination study of the Arsenal to be completed. I realize that this allows very little time, but this is a necessary deadline if we are to meet your goal of a Landmark designation by July 11. I ask your understanding of the fact that my staff and I are responsible for ensuring that regulatory procedural requirements, as well as the Landmarks Program's stringent criteria of national significance, are met.

Your interest in recognition of the Arsenal's history and in the Landmarks Program are sincerely appreciated. I look forward to further discussions with you about this study.

Sincerely,

**Edwin C. Bearss**

Edwin C. Bearss  
Chief Historian

Enclosure

bcc: Dr. Constance Ramirez [w/c incoming letter of April 7]  
Office of the Chief of Engineers  
ATTN: DAEN-ZCF-B  
20 Massachusetts Avenue  
Washington, DC 20314-1004

LTC Kit Valentine Asst. [w/c incoming letter of April 7]  
Director of Civil Works  
Environmental Programs  
DAEN-CW2-P  
Pulaski Building  
Washington, DC 20314

cc: 001 RF; 400 RF; /418 ROCK ISLAND ARSENAL (NHL Pending)  
418 Levy [w/c of incoming]  
418 Feller  
418 Charleton  
LFeller:sd:04-23-87  
LF disk 25, item 31



DEPARTMENT OF THE ARMY  
ROCK ISLAND ARSENAL  
ROCK ISLAND, ILLINOIS 61299-5000

REPLY TO  
ATTENTION OF:

SMCRI-CO

9 July 1987

Mr. Edwin C. Bearss  
Chief Historian  
History Division  
National Park Service  
Washington, D. C. 20013-7127

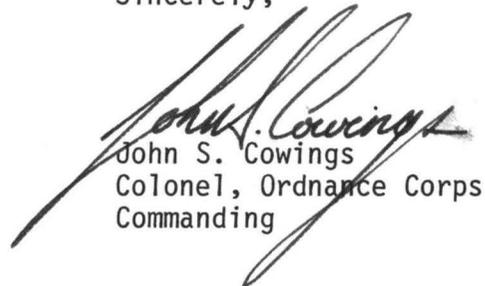
Dear Mr. Bearss:

The enclosed National Historic Landmark Inventory - Nomination submission is being forwarded to your office for appropriate action.

The Rock Island Arsenal Historic District is so unique in the degree to which the original ideas and concepts of General Rodman's plan have been preserved, that it would best be appreciated by an on-site courtesy visit by a representative of your office. Such a visit could be coordinated to view historic architecture of buildings and operations of the Rock Island Arsenal via an historic tour of Arsenal Island. Over 65,000 visitors freely view the exterior of these historic Arsenal Old Stone Buildings and the Rock Island Arsenal Museum, yearly.

If the Rock Island Arsenal can be of any further assistance in advancing this nomination please contact my office immediately.

Sincerely,

  
John S. Cowings  
Colonel, Ordnance Corps  
Commanding

Enclosure  
As stated

Laura - I have taken a cursory excursion through this nomination and find that the conception is a sound one. The document cannot be used in its current state, however, as a finished product because there are clearly formal items missing or others that need to be addressed: USGS map; original current photographs; ground plan too small and UTM, not legible; map adequate to show boundary description; boundary justification needed in item #10.

I am going to leave the detailed review of this nomination to you. I know you'll need time for it and you'll have it. For the time being however, just draft a letter of response thanking them for the excellent draft, pointing out several general considerations and letting them know that we will provide them a detailed evaluation as time permits.

Let me know how you can schedule this evaluation into your work plan.

B 8/11/87



#1866

CONGRESS OF THE UNITED STATES

August 12, 1987

Mr. William P. Mott  
Director  
National Park Service  
P.O. Box 37127  
Washington, D.C. 20013-7127

Dear Mr. Mott:

The Rock Island Arsenal in Rock Island, Illinois, has recently been nominated for designation as a National Historic Landmark. As the Member of Congress from the region in Iowa adjacent to the Arsenal and as the representative of many of the installation's past and present employees, I hereby endorse the Arsenal's application for Landmark status and request that the Park Service act affirmatively.

The history of the Rock Island Arsenal is long and distinguished. It dates from the second decade of the 19th century, when the first fort was constructed on the strategically located island in the middle of the Mississippi River. Later, in the 1850s, Rock Island was the location of the first railroad bridge across the River. Construction of the Arsenal was begun in 1862 because of the need to augment the Union Army's munitions manufacturing capability as a result of the destruction of the armory at Harper's Ferry, Virginia (now West Virginia). Though the initial Arsenal buildings were not completed by the end of the war in 1865, Rock Arsenal did serve as a confederate prison camp for the final two years of the conflict.

The Arsenal has subsequently played an integral part in every military involvement of the United States. It led the production of arms, munitions and supplies necessary for victory in World Wars I & II. Indeed, the capability of the Arsenal was so great that it was able to increase its production seven-fold in the four years following the outbreak of war in 1939. Today the Rock Island Arsenal continues to manufacture a wide variety of components and assemblies that private industry has historically been unable to supply. These components include many of the most crucial elements of the Army's munitions supply system. In addition, the Arsenal serves as a major depot for the storage and distribution of Army supplies.

With the occasion of the 125th anniversary of the Rock Island Arsenal, it is my belief that it would be particularly appropriate to designate several of its most historic and important buildings and

OFFICES:

1514 LONGWORTH HOUSE OFFICE BUILDING  
WASHINGTON, D.C. 20515  
(202) 225-6576

306 F AND M BANK BUILDING  
THIRD AND JEFFERSON STREETS  
BURLINGTON, IOWA 52601  
(319) 752-4584

322 WEST THIRD STREET  
DAVENPORT, IOWA 52801  
(319) 326-1841

ROOM 204, PARKVIEW PLAZA  
107 E. SECOND STREET  
OTTUMWA, IOWA 52501  
(515) 682-8549

facilities as a National Historic Landmark and/or District. As the nomination awaits staff review, I respectfully urge that all possible consideration be given to this proposal.

Thank you for your attention to this matter.

Sincerely,



Jim Leach  
Member of Congress

CONGRESSIONAL LIAISON

CONTROLLED CORRESPONDENCE 1987

DATE 08/17/87

CONTROL NUMBER: CL-87-1866

TO: 400-----

LAST NAME: LEACH, REP.

FIRST NAME JIM

CONSTITUENT:

SIGNATURE DUE DATE 08/31/87

SUBJECT: NAT HIST LANDMARKS

DESCRIPTION: RE DESIGNATION OF ROCK ISLAND ARSENAL IN ILLINOIS

SIGNATURE LEVEL:

CASEWORKER: MP PHONE NUMBER: 343-1330

PLEASE PROCESS THE ATTACHED AS INDICATED BELOW:

1. DRAFT FOR \_\_\_\_'S SIGNATURE BY:-----

2. FINAL FOR DIR'S SIGNATURE BY:-----

\*\*\*\* PLEASE ADD THE ABOVE CONTROL NUMBER TO FNP LINE.

3. DIRECT REPLY (in REGION) BY:-----

\_\_\_ PLEASE FAX COPY OF RESPONSE TO 190 UPON SIGNATURE.

\_\_\_ PLEASE SEND COPY OF RESPONSE TO 190 (DO NOT USE BLUE ENVELOPE).

\*\*\*\*PLEASE ADD THE ABOVE CONTROL NUMBER TO FNP LINE.

→ 4. REVIEW FOR ACTION AS APPROPRIATE: No Reply Required

ATTACHMENT

H30(418)

AUG 27 1987

Mr. Thomas J. Slattery  
U.S. Army Armament, Munitions,  
and Chemical Command  
AMCCOM Historical Office  
Rock Island, Illinois 61299-6000

Dear Mr. Slattery:

I have received your National Historic Landmark nomination study of the Rock Island Arsenal Rodman Plan-Old Stone Buildings, and wish to thank and commend you for your efforts. My staff and I appreciate the research and analysis that went into your study. You deserve congratulations for producing this work, especially within such a short time.

I must frankly tell you that the Arsenal's history and associated buildings are sufficiently complex so that we wish to take more time to review the study in greater detail. We will write to you again in the near future with further comments, based on that review. I ask your understanding of the need for more consideration of this nomination; I recognize that you have already put forth great effort in this project.

In the interim, perhaps it would be helpful to note here some of the formal aspects of the nomination that need refinement. Like National Register nominations, National Historic Landmark nominations must include an original USGS map with boundaries and geographical coordinates clearly marked. It would also be helpful to have an additional map on which the boundary of the proposed Landmark district is delineated at a scale more adequate than that of the Landmark district map that you have already provided. Please note that UTM coordinates should be shown on a USGS map if there is a USGS map with UTM ticks available. The UTM coordinates do not have to describe the Landmark boundary exactly, though. The coordinates must describe a polygon that encloses the Landmark boundary reasonably closely.

The nomination should include a boundary justification in item 10 that is a brief and concise explanation of the rationale for choosing the boundary. For Rock Island, this should explain why the nominated structures and area, and no other buildings or parts of the Island, constitute the nationally significant resources of the Arsenal. The body of your study, of course, suggests reasons for the proposed boundary, but an explicit statement of your reasoning should be included in item 10. Finally, we will ultimately need original photographic prints, rather than photocopies, for our files.

I appreciate your wish to include a Landmark designation in the commemoration of the Arsenal's 125th anniversary. Regrettably, I do not believe that it will be possible to bring this nomination before the next meeting of the National Park System Advisory Board, which is scheduled for November, 1987. The deadline for public notification of all Landmark studies on the Board's November agenda is fast approaching. As a result, the prospect of a Landmark designation for Rock Island in 1987 is remote.

Again, please accept our sincere appreciation of your efforts. We look forward to further discussion of the Rock Island Arsenal with you.

Sincerely,

/s/ James H. Charleton

for

Edwin C. Bearss  
Chief Historian

cc: 001 Reading File  
400 Reading File  
418 Levy  
418-Rock Island Arsenal (NHL Pending)  
Rodman Plan - Old Stone Buildings  
LFeller:pt:08/21/87  
Feller disk 27, item 29

H34(418)

**SEP 22 1987**

Dr. Michael Devine, Director  
Illinois Historic Preservation Agency  
Old State Capitol  
Springfield, Illinois 62701

Dear Dr. Devine:

We wish to inform you that the National Park Service is studying the property identified on the enclosed sheet to determine its potential for designation as a National Historic Landmark. The National Historic Landmarks Program recognizes sites of national significance in the Nation's history, architecture, archeology, and culture. Each Landmark receives a certificate of designation; owners may also apply for a bronze plaque.

National Historic Landmark designation follows three steps: study, which requires a visit to the property and preparation of a nomination; review of the nomination by the National Park System Advisory Board; and a decision by the Secretary of the Interior on the Board's recommendations.

When we complete our study of the property, you will receive a copy of it. At that time you will have 60 days to submit your views in writing if you so desire. After the 60-day period, we will submit the nomination and your comments to the Advisory Board and inform the Secretary of the Board's recommendations.

To assist you in considering this matter, we have enclosed a copy of the regulations that govern the National Historic Landmarks Program. They describe the effects of designation (Sec. 65.2) and specify how you may comment on a proposed designation (Sec. 65.5(d)(4-5)). We also call your attention to the supplemental information that appears on the enclosed sheet.

Sincerely,

**Edwin C. Bearss**

Edwin C. Bearss  
Chief Historian

Enclosures

IDENTICAL LETTERS HAVE BEEN SENT TO THOSE PEOPLE LISTED ON THE ATTACHED LIST

cc: Mr. Thomas J. Slattery  
AMCCOM Historical Office  
Department of the Army  
Headquarters, U.S. Army  
Armament, Munitions, and Chemical Command  
Rock Island, Illinois 61299

LTC Kit Valentine  
Assistant Director, Civil Works  
Environmental Programs  
DAEN-CW2-P  
Pulaski Building  
Washington, DC 20314

Dr. Constance Ramirez  
Headquarters, Department of the Army  
ATTN: DAEN-ZCF-B  
Washington, DC 20314

Col. John S. Cowings  
Department of the Army  
Rock Island Arsenal  
Rock Island, Illinois 61299-5000

bcc: Regional Director (RMRO) (1200) Attention: G. Kendrick  
Regional Director (MWRO) (6000)  
001 Reading File  
400 Reading File  
418-ROCK ISLAND ARSENAL (NHL Pending)  
LFeller:pt:08/14/87



DEPARTMENT OF THE ARMY  
HEADQUARTERS, U.S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND  
ROCK ISLAND, ILLINOIS 61299-6000

REPLY TO  
ATTENTION OF

AMSMC-HO

2 December 1987

Mr. Ben Levy  
History Division  
National Park Service  
Washington, D. C. 20013-7127

Dear Mr. Levy:

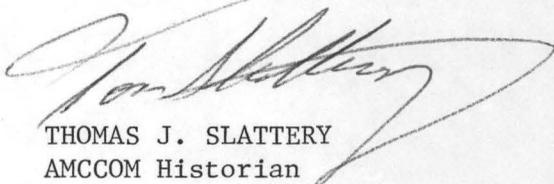
The enclosed map and photographs are being forwarded to you per your request for inclusion in the Rock Island Arsenal's NHL nomination submission.

The map has a color-code key to assist in locating where each photograph was taken. Photographs with views looking west on Rodman Avenue were color-coded in red and numbered one through seven. Those photographs with views looking east on Rodman Avenue were color-coded in blue and number eight through twelve. Photographs of Officer's Quarters Row were color-coded in black and lettered. These photographs, with the exception of one, were taken in November 1987. One 8 x 10 photo color-coded in black and marked with an x provides a view of Rodman Avenue looking east during the summer of 1986.

In the spirit of cooperation the Rock Island Arsenal has provided not one but two different sizes of each photograph taken in November 1987. These photographs certainly show the relationship that the 19th century, stone constructed, manufacturing buildings; and officer's quarters had to one another. Rodman Avenue, originally known as Main Avenue, is still the primary east-west thoroughfare for Arsenal Island. Rodman Avenue continues to link the original site of the arsenal, at the Clock Tower Building, with the subsequent "Grand Arsenal" developed during General Rodman's and Major Daniel Flagler's commands. The intended feeling of a grand entrance and approach to the 10 massive stone shops have been maintained as evident from the enclosed photographs. Also visible from the photographs is the highly intact condition of the 19th century shop buildings and officer's quarters. Collectively these buildings still make a cohesive architectural statement in terms of both their scale and size.

The historic district proposed by the Rock Island Arsenal comprises the stone constructed manufacturing buildings and officer's quarters built during the 19th century. Minor buildings such as sheds and ruins were not included.

Incls  
Photographs  
Map

  
THOMAS J. SLATTERY  
AMCCOM Historian

Directory for RIA Photographs (taken November 1987)

Map Color	No.#	View	Note
Red	1	View of Rodman Ave. looking west from RIA entrance & Clock Tower Bldg.	Clock Tower Bldg. #205, was 1st permanent RIA bldg.(1863-6
Red	2	View of Rodman Ave. looking west from intersection of Rodman & Buffington Rd.	Note:Clock Tower in distance
Red	3	View of Rodman Ave. looking west from turn off to REARM Bldg.	
Red	4	View of Rodman Ave. looking west, present RIA Manufacturing complex on left.	Buildings in order from foreground back: Bldg. 220 (WWI era construction); REARM Bldg. (1986 construction); Bldg. 208 (built during WWII)
Red	5	View of Rodman Ave, looking west from intersection of Gillespie & Rodman Aves.	Note: Old RIA Hq. (1889-1922 on right & Post Bldg.#225, still operating as police & fire station on left. (1873 c
Red	6	View of Rodman Ave., looking west from East Ave & Rodman Ave. intersection	Note: parking area to left of Rodman Ave. was once a road bed for RIA trolley tracks.
Red	7	View of Rodman Ave. from Memorial Park area looking west.	Bldg. 110 on left & rest of Arsenal Row and Bldg. 68 on right & rest of Armory Row.
Red	7a	View of Memorial (RIA Museum's gun park) Park outdoor display for visitors	Bldg. 110 in background
Blue	8	View of Rodman Ave looking east from East & Rodman Aves. intersection	RIA 19th Century Manufacturing Complex out of view opposite direction.
Blue	9	View of Rodman Ave. looking east from just past Gillespie & Rodman Intersection	Note: one story bldg. on left in middle still operates as foundry & blacksmith shop as originally built in 1870's.
Blue	10	View of Rodman Ave. looking east in front of Post Headquarters Bldg. 390.	Note: Collectively these buildings still make a cohesive architectural statement in terms of both their size and scale.
Blue	11	View of Rodman Ave. looking east from in front of Bldg. 350.	Note: Headquarters Bldg. 390 a 1942 ca. bldg. on left & Bldg. 220, a WWI era construction on the right.
Blue	12	View of entrance to Rodman Avenue looking east	Note: Old Stone Gate House, 1875 ca. on left.



# United States Department of the Interior

NATIONAL PARK SERVICE

P.O. BOX 37127

WASHINGTON, D.C. 20013-7127

IN REPLY REFER TO:

H30(418)

AUG 27 1987

Mr. Thomas J. Slattery  
U.S. Army Armament, Munitions,  
and Chemical Command  
AMCCOM Historical Office  
Rock Island, Illinois 61299-6000

Dear Mr. Slattery:

I have received your National Historic Landmark nomination study of the Rock Island Arsenal Rodman Plan-Old Stone Buildings, and wish to thank and commend you for your efforts. My staff and I appreciate the research and analysis that went into your study. You deserve congratulations for producing this work, especially within such a short time.

I must frankly tell you that the Arsenal's history and associated buildings are sufficiently complex so that we wish to take more time to review the study in greater detail. We will write to you again in the near future with further comments, based on that review. I ask your understanding of the need for more consideration of this nomination; I recognize that you have already put forth great effort in this project.

In the interim, perhaps it would be helpful to note here some of the formal aspects of the nomination that need refinement. Like National Register nominations, National Historic Landmark nominations must include an original USGS map with boundaries and geographical coordinates clearly marked. It would also be helpful to have an additional map on which the boundary of the proposed Landmark district is delineated at a scale more adequate than that of the Landmark district map that you have already provided. Please note that UTM coordinates should be shown on a USGS map if there is a USGS map with UTM ticks available. The UTM coordinates do not have to describe the Landmark boundary exactly, though. The coordinates must describe a polygon that encloses the Landmark boundary reasonably closely.

The nomination should include a boundary justification in item 10 that is a brief and concise explanation of the rationale for choosing the boundary. For Rock Island, this should explain why the nominated structures and area, and no other buildings or parts of the Island, constitute the nationally significant resources of the Arsenal. The body of your study, of course, suggests reasons for the proposed boundary, but an explicit statement of your reasoning should be included in item 10. Finally, we will ultimately need original photographic prints, rather than photocopies, for our files.

I appreciate your wish to include a Landmark designation in the commemoration of the Arsenal's 125th anniversary. Regrettably, I do not believe that it will be possible to bring this nomination before the next meeting of the National Park System Advisory Board, which is scheduled for November, 1987. The deadline for public notification of all Landmark studies on the Board's November agenda is fast approaching. As a result, the prospect of a Landmark designation for Rock Island in 1987 is remote.

Again, please accept our sincere appreciation of your efforts. We look forward to further discussion of the Rock Island Arsenal with you.

Sincerely,

/s/ James H. Charleton

**for**

Edwin C. Bearss  
Chief Historian

cc: 001 Reading File  
400 Reading File  
418 Levy  
418-Rock Island Arsenal (NHL Pending)  
Rodman Plan-Old Stone Buildings  
LFeller:pt:08/21/87  
Feller disk 27, item 29

H34(418)

Feb. 25  
~~MAR~~ 1, 1988

Honorable Paul E. Mulcahey  
Chairman  
Rock Island County Board  
1504 Third Avenue  
Rock Island, Illinois 61201

Dear Mr. Mulcahey:

We are pleased to inform you that the National Park Service has completed the study of the property identified on the enclosed sheet for the purpose of nominating it for possible designation as a National Historic Landmark. We enclose a copy of the study report. The National Park System Advisory Board will consider the nomination during its next meeting, at the time and place indicated on the enclosure. The Board will make its recommendation to the Secretary of the Interior based upon the criteria of the National Historic Landmarks Program.

You have 60 days to submit your views in writing, if you so desire. After the 60-day period, we will submit the nomination and your comments to the Advisory Board and then inform the Secretary of the Board's recommendations for his final action.

To assist you in considering this matter, we have enclosed a copy of the regulations that govern the National Historic Landmarks Program. They describe the criteria for designation (Sec. 65.4), the effects of designation (Sec. 65.2), and specify how you may comment on a proposed designation (Sec. 65.5(d)(4-5)). Should you wish to comment, please send your comments to me, at the National Park Service, History Division (418), P.O. Box 37127, Washington, DC 20013-7127.

Sincerely,

**Edwin C. Bearss**

Edwin C. Bearss  
Chief Historian

Enclosures

PROPERTY STUDIED FOR NATIONAL HISTORIC LANDMARK DESIGNATION

ROCK ISLAND ARSENAL, Rock Island County, Illinois

As a private owner of the property identified above you may concur in or object to the designation. Your comments may govern whether or not the property will be designated. You can find guidance for your comments in Section 65.5(d)(4-5) of the enclosed regulations.

In commenting on the possible designation of the property identified above you can find guidance in Section 65.5(d)(4) of the enclosed regulations.

The above property will be considered for possible designation as a National Historic Landmark by the National Park System Advisory Board at a meeting on the afternoon of April 26, 1988 at the National Park Service's Mather Training Center at Harpers Ferry, West Virginia. Should you wish to obtain information about the meeting, or about the National Historic Landmarks Program, please contact Ben Levy at the National Park Service, History Division (418), P.O. Box 37127, Washington, DC 20013-7127, 202-343-8164 or FTS 343-8164.

If you have questions about the study report, you may contact Mr. Thomas J. Slattery at the AMCCOM Historical Office, Department of the Army, Headquarters, U.S. Army Armament, Munitions, and Chemical Command, Rock Island, Illinois 61299.

IDENTICAL LETTERS SENT TO THE FOLLOWING PEOPLE:

Honorable Paul Simon  
United States Senate  
Washington, DC 20510

Honorable Lane Evans  
House of Representatives  
Washington, DC 20515

Honorable Jim Leach  
House of Representatives  
Washington, DC 20515

Honorable John O. Marsh, Jr.  
Secretary of the Army  
The Pentagon  
Washington, DC 20310

cc: Mr. Thomas J. Slattery  
AMCCOM Historical Office  
Department of the Army  
Headquarters, U.S. Army Armament,  
Munitions, and Chemical Command  
Rock Island, Illinois 61299

bcc: Regional Director (RMRO) (1200) Attn: G. Kendrick  
Regional Director (MWRO) (6000) Attn: J. York O'Bright  
001 RF  
190 Congressional Liaison  
400 RF  
~~418 ROCK ISLAND ARSENAL (NHL Pending)~~  
PMilner:gm:02-24-88  
MITCHELL NOTICE LETTER DISK 2

LANE EVANS

17TH DISTRICT, ILLINOIS

COMMITTEES

HOUSE AGRICULTURE COMMITTEE

HOUSE COMMITTEE ON  
VETERANS' AFFAIRS

**Congress of the United States**  
**House of Representatives**  
**Washington, D.C. 20515**

March 17, 1988

WASHINGTON OFFICE:  
1427 LONGWORTH BUILDING  
WASHINGTON, D.C. 20515  
(202) 225-5905

DISTRICT OFFICES:  
3727 BLACKHAWK ROAD  
ROCK ISLAND, ILLINOIS 61201  
(309) 793-5780  
TOLL FREE: 800-322-6210

125 EAST MAIN STREET  
GALESBURG, ILLINOIS 61401  
(309) 342-4411

MONMOUTH CITY HALL  
SECOND FLOOR  
MONMOUTH, ILLINOIS 61462

208 1/2 NORTH LAFAYETTE  
MACOMB, ILLINOIS 61455

Mr. Edwin C. Bearss  
Chief Historian  
History Division  
National Park Service  
Washington, D.C. 20012-7127

Dear Mr. Bearss:

In this the 125th anniversary year of the Rock Island Arsenal, it is especially fitting that the Arsenal be considered for status as a national landmark. As the Congressman from the 17th District of Illinois, where the Arsenal is situated, I wish to express my strong support for the designation of the Rock Island Arsenal as a national landmark. One of only two currently active Army manufacturing arsenals in the United States, the Rock Island Arsenal is both a valuable historic resource and an important symbol of this nation's continuing commitment to an effective national defense.

The conferral of National Landmark status on the Rock Island Arsenal is, first, a tribute to the vision of its designer, General Thomas J. Rodman. General Rodman's plan for a grand arsenal resulted in an architectural achievement unique to our area of the Midwest and a military installation unique in its technological capabilities. The massive stone shops of the industrial section and the stately homes of the residential section have become popular tourist sights even while they remain the living and working places of many of our area residents.

As you may know, the solidly constructed and durable Rock Island Arsenal has been in active use since the late 1800s; from the time of the Spanish-American War until the the Vietnam era the Arsenal has been highly regarded by soldiers in the field for its quick supply capabilities. Throughout its history, the Arsenal has been the construction site for a large variety of equipment -- from mess kits to Howitzers, from saddles for the cavalry to rocket launchers for the infantry. In addition to its manufacture and supply activities, the Arsenal has been a leader in the design, testing, and development of military technologies; the self-propelled gun carriages developed at the Rock Island Arsenal have become the prototype for modern U.S. Army tanks.

Today, the Rock Island Arsenal continues to uphold the traditions of dependable supply and technological innovation, while remaining one of the major employers in the area. Currently the Arsenal is actively involved in the development and manufacture of the Army's new M198 Howitzer.

In light of its historical contribution to maintaining the capability of our national defense, it is clear that the Rock Island Arsenal is deserving of National Landmark status. I encourage the National Park Service to bestow this notable honor upon the Arsenal, and I appreciate this opportunity to add my comments in support of the Arsenal's application. Thank you for your consideration in this matter.

Sincerely,

*Lane Evans*

LANE EVANS  
Member of Congress

am



United States Department of the Interior



NATIONAL PARK SERVICE

P.O. BOX 37127

WASHINGTON, D.C. 20013-7127

IN REPLY REFER TO:

H30(418)

MAY 20 1988

Memorandum

To: The Secretary

Through: Acting Assistant Secretary for Fish and Wildlife and Parks

From: Acting Director, National Park Service

Subject Summary: Designations of 10 Properties as National Historic Landmarks-- Request for Secretarial Action

DISCUSSION: At a meeting on April 26, 1988, the National Park System Advisory Board recommended designation of the following properties as National Historic Landmarks:

1. Morrmouth, Natchez, Mississippi
2. Senator Stephen Benton Elkins House (Halliehurst), Elkins, West Virginia
3. Camp Hoover, Shenandoah National Park, Madison County, Virginia
4. Virginia Governor's Mansion, Richmond, Virginia
5. Borough House, Stateburg, South Carolina
6. Blandwood, Greensboro, North Carolina
7. Scow Schooner Alma, Golden Gate National Recreation Area, San Francisco, California
8. Rock Island Arsenal, Rock Island, Illinois
9. Chief Joseph Battleground of the Bear's Paw, Blaine County, Montana
10. USCGC Taney, Baltimore, Maryland

In accordance with National Historic Landmarks Program regulations, the Board reviewed the studies nominating these properties for Landmark status, and found that the properties meet National Historic Landmarks Program criteria. The Board therefore voted to recommend that they be designated as National Historic Landmarks. None of the parties required to be notified of Landmark nomination proposals objects to these nominations.

I recommend that you approve the Board's recommendations and designate as National Historic Landmarks all the properties listed above.

Approve

*Ronald Paul Hodel*

Disapprove

Date

JUN 07 1988

Date

Prepared by: Patty Milner ext.: 343-8172

*James R. ...*  
*[Signature]*  
JUN 2 1988

MONMOUTH, Natchez, Mississippi.

More than any other structure, Monmouth embodies the life, ambitions, accomplishments, and forceful character of its owner, John A. Quitman, a prominent Southern political figure in the mid-19th century. Originally, a Federal-style residence, the house underwent an extensive remodeling in the Greek Revival style circa 1853, which was carried out by Quitman, who shaped it into what he believed to be an appropriate symbol of his status and role as a wealthy and politically powerful member of the planter aristocracy. As his residence for 32 years, and as the location of many of the events associated with his political career (serving in the Mexican-American War, holding various state government positions including Governor, running unsuccessfully for Vice-President, serving in the House of Representatives, participating in Cuban filibustering expeditions and being a strong proponent of states rights), Monmouth is the place which best represents the man, his career, and the significant role he played in setting the stage for the Civil War.

SENATOR STEPHEN BENTON ELKINS HOUSE (Halliehurst), Elkins, West Virginia.

Halliehurst was built for U.S. Senator Stephen Benton Elkins in 1890. It is a large wooden house with multiple towers, turrets, dormers, and elaborate interior woodwork. Its baronial style directly reflects the wealth and influence of Senator Elkins, who was a major figure in Republican politics from the 1880s until his death in 1911 and in the development of West Virginia's coal and railroad industries.

Elkins gained a reputation in national politics as a "President maker" because of his alliance with James G. Blaine. He played a major role in Blaine's campaign for the Presidency in 1884, when Blaine was the Republican nominee. In the 1888 election, with Blaine reluctant to run again, Elkins was influential in negotiations between Blaine's supporters and Benjamin Harrison that ultimately contributed to Harrison's nomination. Elkins subsequently became Harrison's Secretary of War. In 1895, he was elected U.S. Senator from West Virginia. He became chairman of the Senate Committee on Interstate Commerce, and sponsored two major railroad regulating laws that bear his name, an anti-rebate act of 1903 and the Mann-Elkins Act of 1910. Elkins has been described as "one of the late nineteenth century's most successful businessmen-politicians."

CAMP HOOVER, Shenandoah National Park, Madison County, Virginia.

Begun as a private, "rustic"-style fishing camp and rural retreat by President and Mrs. Hoover in 1929, early in his Presidency, Camp Rapidan, or Camp Hoover, as it came to be called, is a monument to their strong interest in conservation. It also witnessed a precedent-setting example of American Presidents' habit of conducting vital business in informal settings: the disarmament discussions between Hoover and British Prime Minister Ramsay MacDonald in the fall of 1929. Hoover's example also inspired President Franklin D. Roosevelt to build "Shangri-la" (now Camp David). Camp Hoover, now within the Shenandoah National Park, is still available for the use of Presidents and their staffs.

Virginia Governor's Mansion, Richmond, Virginia.

This structure, located within the Capitol Square in Richmond, is a finely proportioned, rectangular, two-story brick residence constructed between 1811 and 1813. Federal in inspiration, the executive mansion has served as the official residence of the State's governors since then, making it the oldest executive residence in the United States, except for the White House, still used for its original purpose and a fitting symbol of the evolving role of the institution since that time. The mansion's key occupants were directly linked with nationally significant events such as Nat Turner's Rebellion, the John Brown raid, Virginia's leadership in the secession crisis and Civil War, Reconstruction, and the development of the State's fabled political "organization".

BOROUGH HOUSE, Stateburg, South Carolina.

The Borough House Plantation is a complex consisting of a main house, formal gardens, and 27 dependencies, most of which date to the late 18th and early 19th centuries. Of these, six dependencies and portions of the main house were constructed of pise de terre (rammed earth) in 1821. Borough House Plantation is the largest known collection of "high style" pise buildings in the United States.

BLANDWOOD, Greensboro, North Carolina.

Designed by master architect Alexander Jackson Davis in 1844, Blandwood is the earliest surviving example of the American Italian Villa. It is described by Davis authority Jane Davies, as "probably the prototype for one of the most popular American house patterns in the Italianate mode: a bold central front tower projecting from a rectangular block." Davies has described the restoration of Blandwood as sensitive and as accurate as possible.

Scow Schooner ALMA, Golden Gate National Recreation Area, San Francisco, California.

The 1891 scow schooner Alma, a historic vessel moored as part of the collection of the National Maritime Museum, San Francisco, is an excellent example of a once-common, vernacular work-a-day craft found on the major waterways of the United States from Colonial times through the 20th century. While built and operated on San Francisco Bay, Alma is in many ways indistinguishable from scows which were launched and sailed on Chesapeake Bay, the Gulf Coast, the Great Lakes, inland rivers, and other coastal waters of the United States. No scow schooners save Alma are known to survive afloat in the United States. Possessing a high level of integrity, Alma is of exceptional national significance as the only American scow schooner surviving as a floating, intact representative of her type.

ROCK ISLAND ARSENAL RODMAN-PLAN STONE BUILDINGS, Rock Island, Illinois.

The Rock Island Arsenal's stone buildings, planned and inspired by Gen. Thomas J. Rodman, represent one of the largest military construction projects of the late 19th century. These ten large manufacturing shops and ancillary buildings remain today the administrative and technological core of the arsenal, which is one of only two 19th-century Army arsenals still engaged in munitions production. Newer buildings nearby reflect the continuing operations of the arsenal, but changes to the arsenal's Rodman-plan 19th-century buildings have been relatively minor.

General Rodman, a major figure in the history of American ordnance technology, outlined an ambitious construction program when he was the arsenal's second commandant, between 1865 and 1871. Though carrying out this building program required a large part of the arsenal's productive effort over the next 30 years, by 1875 the arsenal had begun to supply nearly all the ordnance stores required by the Army in the west. Among the arsenal's significant contributions to U.S. ordnance technology are its leading roles in production of artillery carriages and recoil mechanisms. The U.S. Army made major strides in the transition from horse- to auto-drawn artillery at Rock Island.

CHIEF JOSEPH BATTLEGROUND OF THE BEAR'S PAW, Blaine County, Montana.

The Bear Paw Mountain fight and siege ended on October 5, 1877, with the surrender of Chief Joseph and more than 400 of his people. Although Chief Joseph was not the great strategist and tactician that popular literature pictures, his role at the Bear Paw surrender and as an articulate and compelling spokesman for his people, before and after the war, assures his national significance. The Nez Perce had halted a mere 45 miles south of the Canadian border in their flight in order to allow the women and children to rest, not realizing that Col. Nelson A. Miles, under orders from Maj. Gen. Howard, had managed to catch up with them. Early on the morning of September 30, the Nez Perce discovered the presence of the soldiers and Col. Miles was forced to order an attack on the Indian encampment. The Nez Perce managed to drive the soldiers back, but Miles' men set up a siege of the encampment, including occasional artillery fire. The weather was cold, windy, and snowy adding to the Indians discomfort. Toward evening, on October 5, Chief Joseph rode out from the besieged encampment to surrender to Col. Miles. It was here that he made his famous statement: "Here me, my chiefs, I am tired; my heart is sick and sad. From where the sun now stands, I will fight no more." The Bear Paw surrender, signaled more than the end of the long flight from Idaho and Oregon. It marked the close of the Nez Perces' existence as an "independent Indian people." Henceforth, they lived as a group of displaced persons, in the white culture but certainly not of it. In a real sense, the Nez Perce nation was no more. This site has a great amount of integrity, and standing at the battleground today, one can almost feel that it is October 5, 1877.

USCGC TANEY, Baltimore, Maryland.

The U.S. Coast Guard high-endurance cutter Roger B. Taney, currently in a temporary berth prior to joining the fleet of the Baltimore Maritime Museum in Baltimore's Inner Harbor, is the last vessel still afloat to have survived the Pearl Harbor attack. Taney was built in 1935-36 at the Philadelphia Naval Shipyard. She saw valuable wartime service in the Pacific, Mediterranean, and the North Atlantic during World War II and also served in the Korean and Viet Nam conflicts in addition to performing the many tasks called for in Coast Guard service. Taney's association with events important in American history and in the history of the Coast Guard, her long association with technological advances in aviation, meteorology and communications, and her embodiment of the distinctive characteristics of a distinguished, long-serving class of warships, all serve to make her a nationally significant vessel.

H34(418)

JUN 20 1988

Honorable Paul E. Mulcahey, Chairman  
Rock Island County Board  
1504 Third Avenue  
Rock Island, Illinois 61201

Dear Mr. Mulcahey:

I am pleased to inform you that the property identified on the enclosed sheet has been found to possess national significance in the history of the United States. As a result, the Secretary of the Interior has designated it a National Historic Landmark.

The purpose of landmark designation is to identify and recognize nationally significant sites and to encourage their owners to preserve them. Landmarks are chosen after careful study by the National Park Service. They are evaluated by the National Park System Advisory Board and designated by the Secretary of the Interior in accordance with the Historic Sites Act of 1935 and the National Historic Preservation Act of 1966.

Designation as a National Historic Landmark automatically places a property in the National Register of Historic Places, if it is not already so listed, and extends to it the safeguards and benefits provided by the National Historic Preservation Act of 1966 and other Federal laws protecting historic properties.

We are pleased to include this property on the roll of National Historic Landmarks as a significant representative of our nation's heritage.

Sincerely,

~~Edwin C. Bearss~~

Edwin C. Bearss  
Chief Historian

Enclosure

The Secretary of the Interior recently designated the following property a National Historic Landmark:

Rock Island Arsenal (Rodman Plan-Old Stone Buildings), Rock Island, Illinois

A certificate attesting to the national significance of the property and the Secretary's designation of it as a National Historic Landmark will be sent to you, as the owner. You are also eligible to receive a bronze plaque to commemorate its designation. Copies of the plaque application form are enclosed. Please complete the form in triplicate and return two copies to the National Park Service, History Division (418), P.O. Box 37127, Washington, DC 20013-7127. You may retain the third copy for your records.

Unless you specify otherwise, both the certificate and the plaque will bear the name of the property as it appears above. Both plaque and certificate have standard texts, except for the name of the property (a maximum of two lines) and the year of designation, which appears on the plaque. If you have questions about the certificate or plaque, such as the precise text to appear, please contact Jim Charleton at the above address, or by telephone (202) 343-8165 or FTS: 343-8165.

The National Park Service will be pleased to assist you if you wish to arrange a ceremony for the presentation of the plaque. Such a ceremony should be scheduled a minimum of several months after notice of designation to provide time to cast the plaque and to arrange the participation of appropriate officials in the ceremony.

The owner of each Landmark receives a certificate of designation, and, upon application, will also be awarded a bronze plaque. We are notifying the owner of the property's designation and providing the appropriate application forms.

IDENTICAL LETTER SENT TO

Honorable Paul E. Mulchey, Chairman  
Rock Island County Board  
1504 Third Avenue  
Rock Island, Illinois 61201

Dr. Michael Devine, Director  
Illinois Historic Preservation Agency  
Old State Capitol  
Springfield, Illinois 62701

cc: Mr. Thomas J. Slattery  
AMCCOM Historical Office  
Department of the Army  
Armament, Munitions, and Chemical Command  
Rock Island, Illinois 61299-5000

LTC Kit Valentine  
Assistant Director, Civil Works  
Environmental Programs  
DAFN-CW2-P  
Pulaski Building  
Washington, DC 20314

Dr. Constance Ramirez  
Headquarters, Department of the Army  
ATTN: DAFN-ZCF-B  
Washington, DC 20314

Col. John S. Cowings  
Department of the Army  
Rock Island Arsenal  
Rock Island, Illinois 61299-5000

bcc: Regional Director (RMRO) (1200) Attention: G. Kendrick w/copy of study  
Regional Director (MWRO) (6000) Attention: J. York O'Bright  
001 Reading File  
400 Reading File

↳ 418 ROCK ISLAND ARSENAL (NHL)  
LFeller:hk:6/15/88

H34(418)

JUN 28 1988

Honorable Jim Leach  
House of Representatives  
Washington, DC 20510

Dear Mr. Leach:

I am pleased to inform you that the property identified on the enclosed sheet has been found to possess national significance in the history of the United States. As a result, the Secretary of the Interior has designated it a National Historic Landmark.

The purpose of landmark designation is to identify and recognize nationally significant sites and to encourage their owners to preserve them. Landmarks are chosen after careful study by the National Park Service. They are evaluated by the National Park System Advisory Board and designated by the Secretary of the Interior in accordance with the Historic Sites Act of 1935 and the National Historic Preservation Act of 1966.

Designation as a National Historic Landmark automatically places a property in the National Register of Historic Places, if it is not already so listed, and extends to it the safeguards and benefits provided by the National Historic Preservation Act of 1966 and other Federal laws protecting historic properties.

We are pleased to include this property on the roll of National Historic Landmarks as a significant representative of our nation's heritage.

Sincerely,  
s/ Denis P. Galvin  
(for)

William Penn Mott, Jr.  
Director

Enclosure

The Secretary of the Interior recently designated the following property a National Historic Landmark:

Rock Island Arsenal (Rodman Plan-Old Stone Buildings), Rock Island, Illinois

Secretary  
Marsh   
Only

A certificate attesting to the national significance of the property and the Secretary's designation of it as a National Historic Landmark will be sent to you, as the owner. You are also eligible to receive a bronze plaque to commemorate its designation. Copies of the plaque application form are enclosed. Please complete the form in triplicate and return two copies to the National Park Service, History Division (418), P.O. Box 37127, Washington, DC 20013-7127. You may retain the third copy for your records.

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The National Park Service will be pleased to assist an owner who wishes to arrange a ceremony for the presentation of the plaque. Such a ceremony should be scheduled a minimum of several months after notice of designation to provide time to cast the plaque and to arrange the participation of appropriate officials in the ceremony.

all   
other  
parties The owner of each Landmark receives a certificate of designation, and, upon application, will also be awarded a bronze plaque. We are notifying the owner of the property's designation and providing the appropriate application forms.

IDENTICAL LETTERS SENT TO THE FOLLOWING PERSONS:

Honorable Alan J. Dixon  
United States Senate  
Washington, DC 20510

Honorable Lane Evans  
House of Representatives  
Washington, DC 20515

Honorable Paul Simon  
United States Senate  
Washington, DC 20510

Honorable Jim Leach  
House of Representatives  
Washington, DC 20515

Honorable John O. Marsh, Jr.  
Secretary of the Army  
The Pentagon  
Washington, DC 20310

cc: Mr. Thomas J. Slattery  
AMCCOM Historical Office  
Department of the Army  
Headquarters, U.S. Army  
Armament, Munitions, and  
Chemical Command  
Rock Island, Illinois 61299-5000

LTC Kit Valentine  
Assistant Director, Civil Works  
Environmental Programs  
DAEN-CW2-P  
Pulaski Building  
Washington, DC 20314

Col. John S. Cowings  
Department of the Army  
Rock Island Arsenal  
Rock Island, Illinois 61299-5000

Dr. Constance Ramirez  
Headquarters, Department  
of the Army  
Attn: DAEN-ZCF-B  
Washington, DC 20314

bcc: Regional Director, (RMRO) (1200) Attn: G. Kendrick  
Regional Director, (MWRO) (6000) Attn: J. York O'Bright  
001-RF  
190-CL  
400-RF  
418-ROCK ISLAND (NHL)  
418-Feller

MITCHELL NOTICE LETTER DISK 2



REPLY TO  
ATTENTION OF

SMCRI-CO

DEPARTMENT OF THE ARMY

ROCK ISLAND ARSENAL  
ROCK ISLAND, IL 61299-5000

October 12, 1988

NHL

OCT 25 1988

Chief  
Division of History  
National Park Service  
P.O. Box 37127  
Washington, D.C. 20013-7127

Dear Sir:

As the Commanding Officer of Rock Island Arsenal located in Rock Island, Rock Island County, Illinois, I hereby make application for a bronze plaque identifying the property as a National Historic Landmark.

a. Fully conscious of the high responsibility to the Nation that goes with the ownership and care of a property classified as having national significance and worthy of National Historic Landmark status, the Arsenal agrees to preserve, so far as practicable and to the best of its ability, the historical values of the site that satisfy the criteria for national significance.

b. The Arsenal agrees to permit periodic inspection of the property by a representative of the National Park Service for the purpose of monitoring its integrity and the nature and degree of any threats thereto.

c. Should the Landmark designation ever be revoked in accordance with the procedures outlined in the National Historic Landmarks regulations, the bronze plaque and the certificate of designation will be surrendered upon request to the National Park Service.

d. The Arsenal further agrees to affix the plaque for public view and in an appropriate manner.

Sincerely,

David T. Morgan, Jr.  
Colonel, Ordnance Corps  
Commanding

IDENTICAL LETTERS SENT TO THE FOLLOWING PERSONS:

Honorable Alan J. Dixon  
United States Senate  
Washington, DC 20510

Honorable Lane Evans  
House of Representatives  
Washington, DC 20515

Honorable Paul Simon  
United States Senate  
Washington, DC 20510

Honorable Jim Leach  
House of Representatives  
Washington, DC 20515

Honorable John O. Marsh, Jr.  
Secretary of the Army  
The Pentagon  
Washington, DC 20310

cc: Mr. Thomas J. Slattery  
AMCCOM Historical Office  
Department of the Army  
Headquarters, U.S. Army  
Armament, Munitions, and  
Chemical Command  
Rock Island, Illinois 61299-5000

LTC Kit Valentine  
Assistant Director, Civil Works  
Environmental Programs  
DAEN-CW2-P  
Pulaski Building  
Washington, DC 20314

Col. John S. Cowings  
Department of the Army  
Rock Island Arsenal  
Rock Island, Illinois 61299-5000

Dr. Constance Ramirez  
Headquarters, Department  
of the Army  
Attn: DAEN-ZCF-B  
Washington, DC 20314

bcc: Regional Director, (RMRO) (1200) Attn: G. Kendrick  
Regional Director, (MWRO) (6000) Attn: J. York O'Bright  
001-RF  
190-CL  
400-RF  
418-ROCK ISLAND (NHL)  
418-Feller  
MITCHELL NOTICE LETTER DISK 2

H34(418)

NOV 28 1988

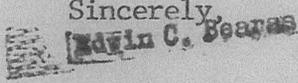
Col. David T. Morgan, Jr.  
Commanding Officer  
Rock Island Arsenal  
Rock Island, Illinois 61299-5000

Dear Colonel Morgan:

We are pleased to have received your application for the bronze plaque identifying the Rock Island Arsenal, Illinois, as a National Historic Landmark.

The Regional Offices of the National Park Service coordinate the presentation of National Historic Landmark plaques and certificates. Therefore, we are notifying the Rocky Mountain Regional Office of your application, with the request that they proceed to order and provide the bronze plaque and National Historic Landmark certificate. If you have any questions regarding this issue, you may contact:

Mr. Greg Kendrick  
Rocky Mountain Regional Office  
National Park Service  
12795 W. Alameda Parkway, P.O. Box 25287  
Denver, CO 80225-0287  
(303)-969-2875.

Sincerely,  


Edwin C. Bearss  
Chief Historian

cc: 001 Reading File  
400 Reading File  
418 Plaques and Certificates  
418 Rock Island Arsenal (NHL)  
Kendrick RMRO

JHC dk A-B:2



DEPARTMENT OF THE ARMY

ROCK ISLAND ARSENAL  
ROCK ISLAND, IL 61299-5000

October 12, 1988

OCT 25 1988

REPLY TO  
ATTENTION OF

SMCRI-CO

Chief  
Division of History  
National Park Service  
P.O. Box 37127  
Washington, D.C. 20013-7127

Dear Sir:

As the Commanding Officer of Rock Island Arsenal located in Rock Island, Rock Island County, Illinois, I hereby make application for a bronze plaque identifying the property as a National Historic Landmark.

a. Fully conscious of the high responsibility to the Nation that goes with the ownership and care of a property classified as having national significance and worthy of National Historic Landmark status, the Arsenal agrees to preserve, so far as practicable and to the best of its ability, the historical values of the site that satisfy the criteria for national significance.

b. The Arsenal agrees to permit periodic inspection of the property by a representative of the National Park Service for the purpose of monitoring its integrity and the nature and degree of any threats thereto.

c. Should the Landmark designation ever be revoked in accordance with the procedures outlined in the National Historic Landmarks regulations, the bronze plaque and the certificate of designation will be surrendered upon request to the National Park Service.

d. The Arsenal further agrees to affix the plaque for public view and in an appropriate manner.

Sincerely,

David T. Morgan, Jr.  
Colonel, Ordnance Corps  
Commanding

H34(418)

NOV 29 1988

Memorandum

To: National Historic Landmark Coordinator, Rocky Mountain  
Regional Office

From: Chief Historian **Edwin C. Bearns**

Subject: National Historic Landmark Plaque Applications

Single copies are attached of the applications by the owners of the Rock Island Arsenal, Illinois, and the Two Medicine Camp Store, Montana, for the plaques identifying these National Historic Landmarks. We ask you to contact the owners and arrange to order and provide the plaques from the Regional budget. We will provide the requisite National Historic Landmark certificates.

The Department would appreciate being advised of arrangements made to present the National Historic Landmark plaques and certificates. Every effort should be made to coordinate ceremonies with the availability of high-level Departmental staff and to secure the participation of Members of Congress who represent the localities.

Attachments

cc: 001 RF  
400 RF  
418 Plaques and Certificates  
418 Rock Island Arsenal (NHL)  
418 Two Medicine Camp Store (NHL)  
Kendrick RMRO  
JHC dk A-B:2

# 2-Way Memo

Subject: Rock Island NHL Dedication

### INSTRUCTIONS

Use routing symbols whenever possible.

**SENDER (Originator of message):**

Use brief, informal language.

Conserve space.

Forward original and one copy.

**RECEIVER (Replier to message):**

Reply below the message, keep one copy, return one copy.

To : Historian Charleton

DATE OF MESSAGE	ROUTING SYMBOL
5/19/89	

SIGNATURE OF ORIGINATOR  
*Ben Levy*

TITLE OF ORIGINATOR  
 Senior Chief Historian

FOLD

MESSAGE

FOLD

The subject dedication is to be held on July 11. Please inform the region that they should have the regional director ready for presenting, if possible, or an alternative. Also inform Director's and Secretary's offices of request that they Director or Secretary might wish to speak and present.

Contact at Rock Island is Tom Slattery AC309-782-1450

*File: Rock Island NHL*

REPLY

From :

DATE OF REPLY	ROUTING SYMBOL

SIGNATURE OF REPLIER

TITLE OF REPLIER

2-Way Memo

Subject: Rock Island Mill Dedication

GUIDES TO SIMPLIFIED INFORMAL CORRESPONDENCE

INSTRUCTIONS  
Use routing symbols whenever possible.  
SENDER (Originator of message):  
Use brief, informal language.  
Conserve space.  
Forward original and one copy.  
RECEIVER (Recipient of message):  
Reply below the message, keep one

The cost to create a typical Government letter rises every year, as well as the cost to file and to dispose of it. Informal communication, resulting from the use of Optional Form 27, 2-WAY MEMO, can reduce these costs substantially.

DATE OF MESSAGE  
ROUTING SYMBOL

Experienced letterwriters have observed the following about Government correspondence practices:

SIGNATURE OF ORIGINATOR

The bulk of correspondence is conducted within the governmental family—between offices whose day-to-day relationships could permit simple, informal written communication.

Many written communications are for immediate action, are routine in nature (such as requests for information or services), and do not require copies for distribution.

Many written communications are less than a dozen lines in length.

The subject dedication is to be held on July 11. Please inform the region that they should have the regional director ready for presenting, if possible, or an alternative. Also inform Director's and Secretary's offices of request that they direct or Secretary might wish to speak and present.

PRINCIPLES INVOLVED

PRACTICAL PURPOSES SERVED BY 2-WAY MEMO

1. When agencies issue instructions encouraging the use of memoranda and informal correspondence within the agency, there is a noticeable drop in the communications effort and in the time required to respond to a request, as well as a reduction of useless copies in file. Examining the two types of correspondence shows that formal correspondence has certain drawbacks.

1. The message and the reply are placed on the same page in brief, informal language. This simplifies writing, handling, storing, and disposing of short communications.

a. Formal correspondence is usually more wordy because of salutations, introductory paragraphs, complimentary closings, etc. It becomes a difficult writing chore because of continual polishing and editing.

2. The message may be prepared by typewriter or by hand; the reply may be typewritten, by hand, or by rubber stamp.

b. Formal correspondence typically calls for more reviews, resulting in many rewrites and retypes, and for excessive time-in-shop.

3. It is possible to achieve a greater delegation of signing authority with the 2-WAY MEMO because of its informal nature.

c. Formal correspondence goes through stricter clearance channels, and frequently makes communication between "opposite numbers" very difficult.

4. The 2-WAY MEMO may be designated for special handling. It may be marked URGENT if exceptional speed is required. It may be stamped for special mailing services. It may be used for classified material if it is marked with the proper security classification.

2. In many cases, the best reply is an informal endorsement on an incoming letter. Optional Form 27, 2-WAY MEMO, takes advantage of this principle.

5. The "TO" line and the "FROM" line are so placed that the 2-WAY MEMO may be sent in a window envelope and returned in a window envelope, if desired.

6. The 2-WAY MEMO is particularly well suited for communication between "opposite numbers" within one agency or in different agencies.

DATE OF REPLY  
ROUTING SYMBOL  
TITLE OF REPLIER

The above guides have been prepared by the Office of Records and Information Management National Archives and Records Service, General Service Administration.

12 JAN 1990

SMCRI-EH (210-20a)

SUBJECT: Replace Windows, Building 110, Project Request Number 77-89

Ms. Anne Haaker  
Illinois Historic Preservation Agency  
Old State Capitol  
Springfield, Illinois 62701

Dear Ms. Haaker:

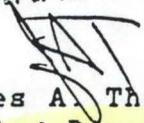
This office is preparing a project to replace the remaining original windows on the first floor, east wing of building 110, and is forwarding the plans and specifications for your review and comment. This project will also remove the exterior vent stacks on the east wing of building 110. The windows to be replaced were purposely left out of earlier projects because of the active vent stacks routed through these windows. Now that the function requiring the vent stacks has been transferred to another building, we would like to remove the vent stacks and replace the windows to match the rest of the windows on building 110. The project that replaced the bulk of the windows in building 110 also provided spare windows. These spare windows will be used in this project to help preserve the historic integrity of building 110.

This office has reviewed the project to replace the windows in building 110, and taking into account the criteria of effect and adverse effect, we find this project will have no adverse effect on the historical significance of the Arsenal. We request your concurrence with our finding of no adverse effect for the project to replace the windows in building 110.

If you have any questions on this project, please contact Mr. Bobby Roberts, SMCRI-EHP, commercial (309) 782-2535.

Sincerely,

ORIGINAL SIGNED

  
James A. Thompson  
Acting Director, Directorate of  
Engineering and Housing

Enclosures

SMCRI-EHE  
FILE COPY

Handwritten notes: R, BT, 110, H1ST



Illinois Historic  
Preservation Agency

Old State Capitol • Springfield, Illinois 62701 • (217) 782-4836

217/785-4512

Rock Island  
Rock Island Arsenal  
Window Replacement  
Building 110  
IHPA Log #01122788

January 29, 1990

Directorate of Engineering and Housing  
Rock Island Arsenal  
SMCRI-EH  
Department of the Army  
Rock Island, Illinois 61299-5000

Dear Mr. Thompson:

We have reviewed your proposal to replace windows in Building 110. This property was listed on the National Register of Historic Places on September 30, 1969.

In our opinion the project meets The Secretary of the Interior's "Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings" and, if you agree to provide us with final plans and specifications prior to release of funds, we would concur in a finding of no adverse effect as defined in 36 CFR Part 800.9.

Please include this letter with your documented finding to the Advisory Council on Historic Preservation (The Old Post Office Building, 1100 Pennsylvania Avenue, N.W., #809, Washington, D.C. 20004) as specified in 36 CFR 800.6. If they have no objections to this finding within 30 days of receipt, you will have satisfied your responsibilities pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended.

If you have any questions, please contact Anne Haaker, Coordinator, Resource Protection Services, at 217/785-4512.

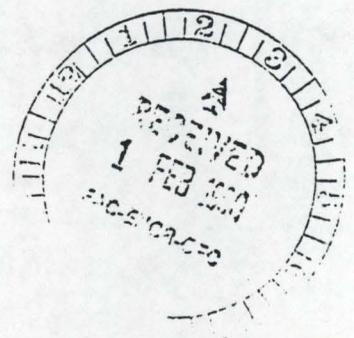
Sincerely,

*Theodore Hild*

Theodore W. Hild  
Deputy State Historic  
Preservation Officer

TWH:AMH:kh

cc: ACHP, Charlene Vaughn



15 MAY 1990

SMCRI-EH (210-20a)

SUBJECT: Replace Windows - Building 110, Project Request  
(PR) 77-89

Ms. Charlene Dwin  
Advisory Council on Historic Preservation  
Old Post Office Building  
1100 Pennsylvania Avenue, NW  
Suite 809  
Washington, DC 20004

Dear Ms. Dwin:

This office is preparing a project to replace the remaining original windows on the first floor, east wing of building 110, and is forwarding the plans and specifications for your review and comment. The windows to be replaced were purposely left out of earlier projects because of the active vent stacks routed through these windows. Now that the function requiring the vent stacks has been transferred to another building, we would like to remove the vent stacks and replace the windows to match the rest of the windows on building 110. The project that replaced the bulk of the windows in building 110 also provided spare windows. These spare windows will be used in this project to help preserve the historic integrity of building 110. We are also enclosing the concurrence from the Illinois Historic Preservation Agency.

This office has reviewed the project to replace the windows in building 110, and taking into account the criteria of effect and adverse effect, we find this project will have no adverse effect on the historical significance of the Arsenal. We request your concurrence with our finding of no adverse effect for the project to replace the windows in building 110.

If you have any questions on this project, please contact Mr. Bobby Roberts, SMCRI-EHP, (309) 782-2535.

Sincerely,

ORIGINAL SIGNED

John A. Ruble  
Director, Directorate of  
Engineering and Housing

Enclosures

HIST 110  
SMCRI-EHE  
FILE COPY

Advisory  
Council On  
Historic  
Preservation

The Old Post Office Building  
1100 Pennsylvania Avenue, NW, #809  
Washington, DC 20004

JUN 14 1990

John A. Ruble  
Director, Directorate of  
Engineering and Housing  
Rock Island Arsenal  
Department of the Army  
Rock Island, Illinois 61299-5000

REF: Window Replacement, Building 110  
Rock Island Arsenal, Illinois

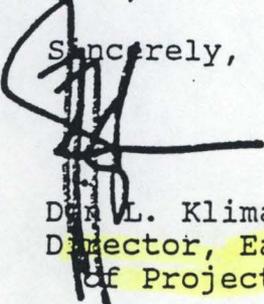
Dear Mr. Ruble:

On May 21, 1990, the Council received your determination that the referenced project would not adversely affect Building 110, a property listed on the National Register of Historic Places. We have reviewed your supporting documentation and we agree with your determination. Our agreement is based upon the review of the final plans and specifications by the Illinois State Historic Preservation Officer (SHPO) as stated in the SHPO letter of January 29, 1990.

This letter confirms that the requirements of the National Historic Preservation Act and the Council's regulations have been met for this project. Both this letter and your supporting documentation should be retained in your environmental or project files.

If you have any questions, please contact Valerie DeCarlo at FTS (202) 786-0505. Thank you for your cooperation.

Sincerely,

  
Dan L. Klima  
Director, Eastern Office  
of Project Review



(202-786-0505)



DEPARTMENT OF THE ARMY  
ROCK ISLAND ARSENAL  
ROCK ISLAND, ILLINOIS 61299-5000



March 9, 1992

REPLY TO  
ATTENTION OF

SMCRI-EH (420-10c)

SUBJECT: Replacement of Windows in Building 225

Mr. Bill Callahan  
Illinois Historic Preservation Agency  
Old State Capitol  
Springfield, Illinois 62701

Dear Mr. Callahan:

This office has developed a project to replace windows in Building 225. The new windows will match the replacement units installed in Building 102. We have enclosed a typical window detail of this project for your review and comment.

Building 225 is a Category I historic structure built in 1874. Building 225 is a part of the Rock Island Arsenal National Historic Landmark.

This office has reviewed the project to replace the windows and taking into account the criteria of effect and adverse effect, we find this project will have no adverse effect on the historical significance of the Arsenal. We request your concurrence with our finding of no adverse effect for the project.

If you have any questions regarding this project, please contact Mr. Rich Todd, SMCRI-EHP, commercial (309) 782-2045.

Sincerely,

John A. Ruble  
Director, Directorate of  
Engineering and Housing

Enclosures



# Illinois Historic Preservation Agency

Old State Capitol Springfield, Illinois 62701 (217) 782-4836

Suite 4-900 State of Illinois Center 100 W. Randolph Chicago, IL 60601 (312) 814-1409

Rock Island County  
Rock Island Arsenal  
Replace Windows and Door - Building 225, East Wing  
IHPA Log #13032392

April 6, 1992

John A. Ruble  
Director, Directorate of  
Engineering and Housing  
Department of the Army  
Attn: Rich Todd, SMCRI-EHP  
Rock Island Arsenal  
Rock Island, Illinois 61299-5000

Dear Mr. Ruble:

We have reviewed the referenced project. This property is within the Rock Island Arsenal National Historic Landmark District.

In our opinion the project meets the Secretary of the Interior's "Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings" provided that the following conditions are met:

1. Replacement windows have a divided lite pattern matching the historic configuration.
2. This office is provided an opportunity to review final plans and specifications.

Please include this letter with your documented finding to the Advisory Council on Historic Preservation (The Old Post Office Building, 1100 Pennsylvania Avenue, N.W., #809, Washington, D.C. 20004) as specified in 36 CFR 800.5(D). If they have no objections to this finding within 30 days of receipt, you will have satisfied your responsibilities pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended.

If you have any questions, please contact Anne Haaker, Coordinator, Resource Protection Services, Illinois Historic Preservation Agency, Old State Capitol, Springfield, Illinois 62701, 217/785-3977.

Sincerely,

Theodore W. Hild  
Deputy State Historic  
Preservation Officer



TWH:WJC:kh

cc: Charlene Vaughn, ACHP

Re: your copy



DEPARTMENT OF THE ARMY  
ROCK ISLAND ARSENAL  
ROCK ISLAND, ILLINOIS 61299-5000

14 JUL 1992

REPLY TO  
ATTENTION OF:

SMCRI-EH

SUBJECT: Window and Door Replacement, Buildings 67, 102, 225  
and 350

ACHP

The Old Post Office Building  
1100 Pennsylvania Avenue, N.W., #809  
Washington, D.C. 20004

Dear Ms. Vaughn:

This office has developed several projects to replace windows in various buildings throughout the island. All of the windows, except those in building 350, will be of the same design as the previously approved windows installed in building 102. We have enclosed a typical window section for these projects. As these projects will be completed in-house, detailed specifications will not be created. Suitability of design will be determined from contractor supplied shop drawings.

Buildings 102 and 225 are Category I buildings built in 1876 and 1874 respectively. Building 67 is a Category II building built in 1918, and building 350 is a Category III building built in 1918. Buildings 67, 102, and 225 are part of the Rock Island Arsenal National Historic Landmark; building 350 is not.

This office has reviewed the project for window and door replacement, buildings 67, 102, 225 and 350, and taking into account the criteria of effect and adverse effect, we find this project will have no adverse effect on the historical significance of the Arsenal. We request your concurrence with our finding of no adverse effect for the project.

If you have any questions regarding this project, please contact Mr. Rich Todd, SMCRI-EHP, commercial (309) 782-2045.

Sincerely,

SIGNED

John A. Ruble  
Director, Directorate of  
Engineering and Housing

Enclosures

# Advisory Council On Historic Preservation

The Old Post Office Building  
1100 Pennsylvania Avenue, NW, #809  
Washington, DC 20004

JUL 24 1992

John A. Ruble, Director  
Directorate of Engineering and Housing  
Department of the Army  
Rock Island Arsenal  
Rock Island, IL 61299-5000

Attn: SMCRI-EHP

REF: Proposed Replacement of Windows  
Buildings 67, 102, 225, and 350  
Rock Island County, Illinois

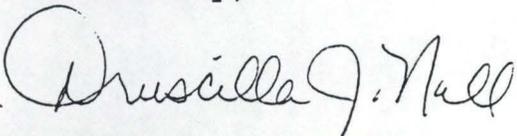
Dear Mr. Ruble:

On July 21, 1992, the Council received your determination that the referenced project would have no adverse effect upon the Rock Island Arsenal National Historic Landmark, which is listed on the National Register of Historic Places. Based upon the material which accompanied your determination, including the concurrence of the Illinois State Historic Preservation Office (SHPO), we see no reason to raise an objection provided that the Army implements the conditions established in the letters of April 6, 1992, from the SHPO.

Both this letter and your supporting documentation should be retained in your environmental or project files, as evidence of your compliance with Section 106 of the National Historic Preservation Act. Upon completion of the project according to the specified conditions, your Section 106 responsibilities will be fully met.

If you have any questions, please contact Valerie DeCarlo at (202) 786-0505. Thank you for your cooperation.

Sincerely,

  
for Don L. Klima  
Director, Eastern Office  
of Project Review

127 JUL 1992  
PLANNING & INSPECTION  
DIVISION  
SMCRI-EHP



DEPARTMENT OF THE ARMY  
ROCK ISLAND ARSENAL  
ROCK ISLAND, ILLINOIS 61299-5000

September 14, 1994

RECEIVED

SEP 13 1994  
06091694  
Preservation Services

REPLY TO  
ATTENTION OF:

Directorate of Public Works

SUBJECT: Replace Windows, Building 131, Phase I, Project Request  
Number 79-94

Ms. Tracy Scully  
Illinois Historic Preservation Agency  
Old State Capitol  
Springfield, Illinois 62701

30 SEP 1994  
NAE  
STANDARD

IHPA REVIEW

H/A \_\_\_\_\_  
AC \_\_\_\_\_  
AR \_\_\_\_\_  
File R. Currier

Dear Ms. Scully:

This office has developed a project to replace windows in building 131. As funding is limited, this building will be completed in two phases. Rather than process each phase individually, request approval for the entire building be granted at this time. Replacement windows are identical to windows currently being installed in various stone shops including buildings 60, 61, and 225. We have enclosed the plans and specifications of this project for your review and comment.

Building 131 is a Category II historic structure built in 1903. Building 131 is not a part of the Rock Island Arsenal National Historic Landmark.

This office has reviewed the project to replace windows in building 131 and taking into account the criteria of effect and adverse effect, we find this project will have no adverse effect on the historical significance of the Arsenal. We request your concurrence with our finding of no adverse effect for the project.

If you have any questions regarding this project, please contact Mr. Rich Todd, SMCRI-PWB, commercial (309) 782-2045.

Sincerely,

John A. Ruble  
Director, Directorate of  
Public Works

Enclosures

OFFICIAL USE ONLY  
9/14/94



DEPARTMENT OF THE ARMY  
ROCK ISLAND ARSENAL  
ROCK ISLAND, ILLINOIS 61299-5000

September 14, 1994

REPLY TO  
ATTENTION OF:

Directorate of Public Works

SUBJECT: Replace Windows, Building 131, Phase I, Project Request  
Number 79-94

Ms. Tracy Scully  
Illinois Historic Preservation Agency  
Old State Capitol  
Springfield, Illinois 62701

Dear Ms. Scully:

This office has developed a project to replace windows in building 131. As funding is limited, this building will be completed in two phases. Rather than process each phase individually, request approval for the entire building be granted at this time. Replacement windows are identical to windows currently being installed in various stone shops including buildings 60, 61, and 225. We have enclosed the plans and specifications of this project for your review and comment.

Building 131 is a Category II historic structure built in 1903. Building 131 is not a part of the Rock Island Arsenal National Historic Landmark.

This office has reviewed the project to replace windows in building 131 and taking into account the criteria of effect and adverse effect, we find this project will have no adverse effect on the historical significance of the Arsenal. We request your concurrence with our finding of no adverse effect for the project.

If you have any questions regarding this project, please contact Mr. Rich Todd, SMCRI-PWB, commercial (309) 782-2045.

Sincerely,

SIGNED

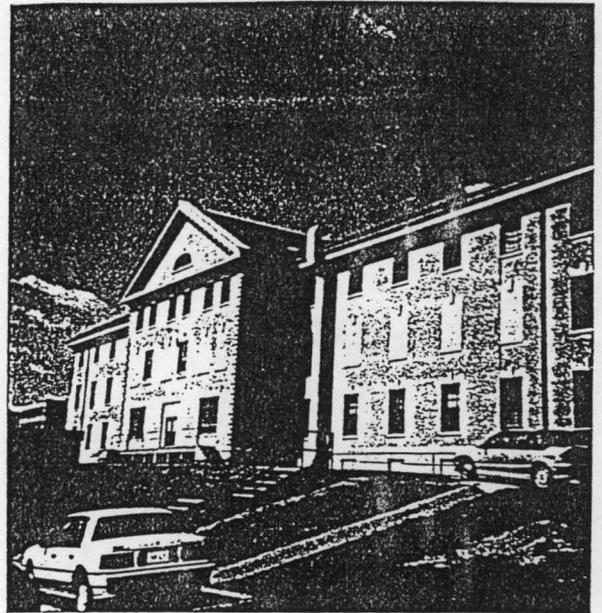
John A. Ruble  
Director, Directorate of  
Public Works

Enclosures

White



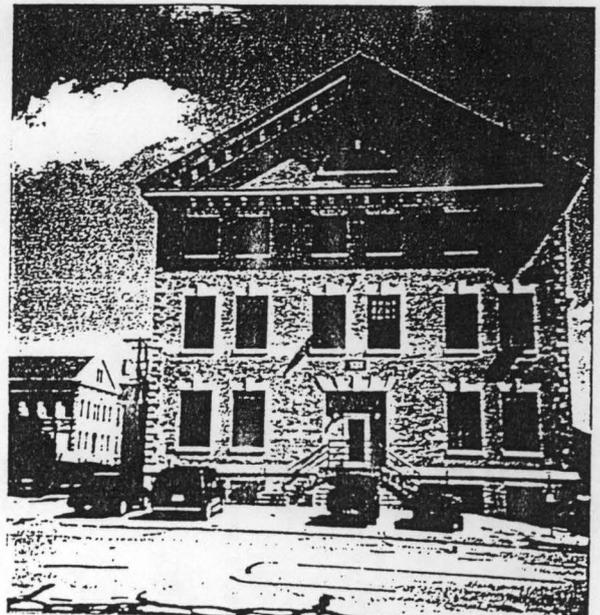
North Face



South Face



East Face



West Face

Replace Windows - Building 131





DEPARTMENT OF THE ARMY  
ROCK ISLAND ARSENAL  
ROCK ISLAND, ILLINOIS 61299-5000  
September 14, 1994

RECEIVED

SEP 16 1994  
06091694  
Preservation Services

REPLY TO  
ATTENTION OF:

Directorate of Public Works

SUBJECT: Replace Windows, Building 131, Phase I, Project Request  
Number 79-94

Ms. Tracy Scully  
Illinois Historic Preservation Agency  
Old State Capitol  
Springfield, Illinois 62701

30 SEP 1994  
NAE  
FOR & SVCS  
DN  
SMCRI-EHS

IHPA REVIEW

H/A \_\_\_\_\_  
AC \_\_\_\_\_  
AR \_\_\_\_\_  
File R. Army

Dear Ms. Scully:

This office has developed a project to replace windows in building 131. As funding is limited, this building will be completed in two phases. Rather than process each phase individually, request approval for the entire building be granted at this time. Replacement windows are identical to windows currently being installed in various stone shops including buildings 60, 61, and 225. We have enclosed the plans and specifications of this project for your review and comment.

Building 131 is a Category II historic structure built in 1903. Building 131 is not a part of the Rock Island Arsenal National Historic Landmark.

This office has reviewed the project to replace windows in building 131 and taking into account the criteria of effect and adverse effect, we find this project will have no adverse effect on the historical significance of the Arsenal. We request your concurrence with our finding of no adverse effect for the project.

If you have any questions regarding this project, please contact Mr. Rich Todd, SMCRI-PWB, commercial (309) 782-2045.

Sincerely,

John A. Ruble  
Director, Directorate of  
Public Works

Enclosures

CONCUR  
Anne E. [Signature]

By: \_\_\_\_\_  
State Historic Preservation Officer  
9/21/94



DEPARTMENT OF THE ARMY

ROCK ISLAND ARSENAL  
ROCK ISLAND, ILLINOIS 61299-5000



23 FEB 1995

REPLY TO  
ATTENTION OF

Directorate of Public Works

SUBJECT: Replace Windows, Building 131, Phase I, Project Request Number 79-94

Advisory Council for Historic Preservation

ATTN: Ms. Valerie DeCarlo  
The Old Post Office Building  
1100 Pennsylvania Avenue, Northwest  
#809  
Washington, D.C. 20004

Dear Ms. DeCarlo:

This office has developed a project to replace windows in building 131. As funding is limited, this building will be completed in two phases. Rather than process each phase individually, request approval for the entire building be granted at this time. Replacement windows are identical to windows currently approved and being installed in various stone shops including buildings 60, 61, and 225. We are providing information in support of our proposed finding, as required by 36 CFR Section 800.8(a).

a. Please find enclosed the plans of this project, as well as a map identifying the project location, and photographs of the site.

b. Building 131 is a Category II historic structure built in 1903. Building 131 is not a part of the Rock Island Arsenal National Historic Landmark. It was constructed in 1903 as a replacement for Storehouse "A" that burned earlier in that same year (Storehouse A was one of the major storehouses built according to General Rodman's master plan). Constructed in brick rather than stone, the new storehouse replicated the Greek revival detailing and scale of the original building. Currently used as administrative area, laboratories, and storage, it is considered a contributing structure. It is not within a National Historic Landmark Zone (NHL), and according to the Historic American Building Survey (HABS) it "embodies an equal concern for utilitarian and aesthetic considerations that became increasingly rare during subsequent wartime construction programs".

c. In 1969 the entire Rock Island Arsenal was placed on the National Register of Historic Places because of its historic significance. Building 131 was included in this group. Historic American Building Survey/Historic American Engineering Record documentation was created for this building, as a part of an overall submittal, in May of 1984.

d. Replacement of windows in building 131 will have no adverse effect on the historic fabric of the building. As stated previously, these windows will be identical in design to the windows approved for installation in buildings 60, 61, and 225. Consideration was given to the style, color, trim configuration and the divided lite pattern when these windows were first approved for use. None of the agreed upon characteristics have been altered. We consider this project to be a minor rehabilitation of the structure, and accordingly the work will strictly follow the Secretary's "Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings".

Wheeler

e. We received the Illinois State Historic Preservation Officer's concurrence on this project, as is evidenced by the enclosed letter.

This office has reviewed the project to replace the windows in building 131 and taking into account the criteria of effect and adverse effect, we find that this project will have no adverse effect on the historical significance of the Arsenal. We request your concurrence with our finding of no adverse effect.

We hope that this package provides you with the information that you require. If you have any questions regarding this submittal, please contact Mr. Rich Todd, SMCRI-PWB, commercial (309) 782-2045.

Sincerely,

SIGNED

John A. Ruble  
Director, Directorate of  
Public Works

Enclosures

# Advisory Council On Historic Preservation

---

The Old Post Office Building  
1100 Pennsylvania Avenue, NW, #809  
Washington, DC 20004

---

MAR 30 1995

Mr. John A. Ruble  
Director, Directorate of Public Works  
Department of the Army  
Rock Island Arsenal  
Rock Island, Illinois 61299-5000

REF: Proposed Window Replacment, Building 131  
Rock Island Arsenal, Illinois

Dear Mr. Ruble:

On February 27, 1995, the Council received your determination that the referenced project would not adversely affect the Rock Island Arsenal Historic District, a property included in the National Register of Historic Places.

Since the documentation did not identify the type of material for either the original windows or the replacements, we contacted Mr. Rich Todd of your staff for this information. We understand that the originals are wooden and the Army proposes to replace them with aluminum. Since replacement of historic material with a different, noncompatible material does not meet the Secretary of the Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*, we are unable to agree with your finding.

Accordingly, we request that you provide us with a description of the alternatives that were considered but rejected and the reason for their rejection. Further, the documentation did not explain why the windows are proposed for replacement nor whether or not there was an assessment of their condition. We would appreciate this information as well.

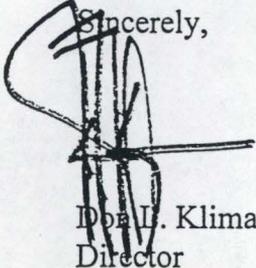
The Army should initiate consultation with the Illinois State Historic Preservation Officer pursuant to Section 800.5(e) of the Council's regulations.

Pending receipt of the Council's comments, you should refrain from taking or sanctioning any action that could result in an adverse effect to the property or that would foreclose the consideration of alternatives to avoid or reduce the adverse effects.

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3 APR 1995  
SMCRI-PWB  
DPW

We look forward to working with you to develop an appropriate resolution. Should you have any questions or require additional information, please call Valerie DeCarlo at (202) 606-8505.

Sincerely,

A handwritten signature in black ink, appearing to read "Don L. Klima". The signature is written over a horizontal line and is somewhat stylized and overlapping.

Don L. Klima  
Director  
Eastern Office of Review

## Replace Windows Building list

<u>Building Number</u>	<u>Year Built</u>	<u>Contributing Structure</u>	<u>Within NHL Zone</u>
56	1893	Yes	Yes
60	1867-73	Yes	Yes
61	1918	Yes	Yes
62	1871-76	Yes	Yes
64	1874-1878	Yes	Yes
66	1878-86	Yes	Yes
67	1918	Yes	Yes
68	1881-93	Yes	Yes
90	1873	Yes	Yes
102	1873-76	Yes	Yes
103	1918	Yes	Yes
104	1867-72	Yes	Yes
106	1874	Yes	Yes
108	1877-82	Yes	Yes
109	1918	Yes	Yes
110	1878-83	Yes	Yes
131	1903	Yes	No

Building 56 was originally constructed as a storehouse. In the original Rodman plan, a storehouse was to be erected behind each of the stoneshops. Building 56 is the only remaining storage building, as the original building 131 was destroyed by fire. The building houses the Army Management Engineering College.

Building 90 was constructed as a barracks building. It now houses various offices and training functions.

Buildings 60, 61, 62, 66, 67, 68, 102, 103, 104, 108, 109, and 110 are the core arsenal buildings. Originally constructed to house the arsenal's manufacturing, they have been converted to administrative use. Buildings 61, 67, 103, and 109 were add-on buildings; where the original stone shops are limestone, these buildings are reinforced concrete with a limestone veneer.

Building 64, used for the plating and treatment of materials until the mid 1980's, has recently undergone a complete environmental cleanup. Years of use left hazardous chemicals on all exposed surfaces, with the porous materials absorbing these chemicals. The limestone walls, as well as the wood frame doors and windows were most effected. While the limestone walls could be cleaned, the wood windows and doors were removed. Temporary plywood panels currently protect the interior of the building. These panels have been painted bronzetone to blend with the adjoining buildings.

Building 106 was originally constructed as the arsenals forge shop. Upon the completion of project REARM in the mid 1980s, the forging operations were relocated to building 212. Building 106 is currently used for interim storage of materials and light industrial work.

Building 131 was one of only two storehouses constructed under the original Rodman plan. The current building was constructed in 1903 as a replacement for Storehouse "A" that burned earlier in that same year. Constructed in brick rather than stone, the new storehouse replicated the Greek revival detailing and scale of the original building. It currently houses administrative areas, laboratories, and storage.



DEPARTMENT OF THE ARMY

ROCK ISLAND ARSENAL  
ROCK ISLAND, ILLINOIS 61299-5000

September 4, 1996

RECEIVED

SEP 6 - 1996

Preservation Services



REPLY TO  
ATTENTION OF

Directorate of Public Works

SUBJECT: Window Replacement, Multiple Buildings

IHPA REVIEW

H/A \_\_\_\_\_  
AC \_\_\_\_\_  
AR \_\_\_\_\_  
File RI Army

*Please  
return  
by  
9/27/96  
Thanks  
Tracy*

Ms. Tracey Sculle  
Illinois Historic Preservation Agency  
Old State Capitol  
Springfield, Illinois 62701

Dear Ms. Sculle:

In September of 1994, we forwarded a request for project approval to your office. The project "Replace Windows, Building 131, Phase I, Project Request Number 79-94" was reviewed and responded to on 21 September 1994. In the review package, we provided design drawings and specifications detailing the project criteria. Clearly stated in both the plans and the specifications was the requirement to use aluminum windows as replacements for the existing wood windows. We further stated that these windows would match those previously approved for use in buildings 60, 61, and 225. This window design had been approved earlier and was in fact a duplicate of the window design for buildings 102, 103, 108, and 110 (also previously approved). We received your concurrence with our project request on 30 September 1994 (encl 1).

We then forwarded this project to the Advisory Council for Historic Preservation (ACHP) (Encl 2). The package included design drawings and specifications that identified the replacement windows to be aluminum, matching the previously approved window design. Ms. DeCarlo from the ACHP phoned us shortly after receiving our package to clarify window material types. We informed her that we were to be using aluminum, and that the window design, color, and materials would exactly match those approved on previous installation projects. On 3 April 1995, we received the ACHP's response (Encl 3). In summary, the letter stated that they did not agree with our finding of no adverse effect, and that we should begin consultation with your office.

Prior to initiation of consultation, we were informed that several people from your office would be visiting the Quad City area for a historical meeting and that you would like to tour the island and to discuss the window issue. Arrangements were made and the meeting was held here on August 23, 1995. The meeting was attended by both yourself and Carol Dyson from your office, Ms. Valerie DeCarlo from the ACHP, Mr. Steve Austin from the Fort Worth District Corps of Engineers (representing the Army Material Command), Mr. Horace Foxall of the Seattle District Corps of Engineers, and Mr. Rich Todd from the Arsenal.

The meeting began with a brief discussion of the history of the window replacement program. As stated during the meeting, the program began in the early 1980's with the Alter Admin projects. Concurrence was granted for these projects by both the Illinois Historic Preservation Agency (IHPA) and the ACHP, and a majority of the 1st and 2nd floor wood windows in buildings 102,

103, 108, 109, and 110 were replaced. Subsequent to these large projects, numerous small projects were submitted, approved, and completed to replace additional wood windows with aluminum. At the time of the August meeting, nearly 40% of the 1st and 2nd floor windows in the stone shops had been replaced.

After presentation of this information, we requested that discussions be held concerning the remaining windows. At that time we were informed by both your office and the ACHP that no further replacement of wood windows with aluminum would be allowed. Furthermore, Ms. Dyson recommended that we consider reinstallation of new wood windows in the place of the new aluminum windows. We stated that it would be neither economically feasible nor prudent to replace new windows and that we would not be able to support the suggestion. When discussions were directed back to the issue of replacement of the existing old wood windows, and what needed to be done to obtain approval, we were informed that the decision that no further replacements would be allowed was final, and that this was not "a negotiating session".

Mr. Foxall stated that there should be no reason for us to want to replace the remaining windows. He stated that properly repaired, cleaned, repainted, weatherstripped windows with new internal storm windows would prove more economical than aluminum replacements. When asked how he arrived at his determination, we were informed that his opinion was based on the results of a cost analysis completed at the Seattle District Corps of Engineers. When we asked for a copy, we were informed at different times that: 1) he would send us a copy, 2) that the study had not yet been completed. In either case, a copy of the study was first requested in March of 1995, and after repeated requests we could not obtain it for our review and/or use. We determined that without assistance from Mr. Foxall, we would fund and perform our own economic analysis.

Further meeting discussions on August 23rd centered around the use of aluminum windows as a viable replacement option. We were informed during the meeting that RIA is the only organization, with historical buildings, that is pursuing aluminum as a replacement alternative.

To document the history of this program, we have compiled a package of correspondence dating back to 1984 (Encl 4). In the earliest letters, preliminary discussions describe the process by which the current aluminum windows were selected. Issues such as color, muntin width, integral or applied muntins, and exterior window trim are all discussed. It is these issues that were agreed upon and which led to the selection of the current choice for replacement. Subsequent letters ask that the same style of window be used, and in every case, including building 131, you have concurred in our request. The following is a list of the letters found at enclosure 4:

<u>Title</u>	<u>Date</u>	<u>From/To</u>	<u>Concurrence Status</u>
Renovate Buildings 102,103,109,110	1/17/84	RIA/IDOC*	
Buildings 102, 103, 109, 110	3/19/84	IDOC/RIA	
Historic Preservation - Alter HQ Phase III	4/10/84	RIA Memo	

Window Replacement - Buildings 102, 103, 109, 110	9/3/85	RIA/IDOC	
Window Replacement, Alter Headquarters Facility - Phase III	3/19/86	RIA/IDOC	
Alter Headquarters - Phase III	6/23/86	RIA/IDOC	
Rehabilitate Exterior, Building 145	6/14/88	R.I.Corps/ IHPA	
Rehabilitate Exterior, Building 145	6/27/88	<b>IHPA/</b> R.I.Corps	<b>No Adverse Effect</b>
Rehabilitate Exterior, Building 145	6/30/88	R.I.Corps/ ACHP	
Replace Windows, Building 110, P.R. Number 77-89	1/12/90	RIA/IHPA	
Replace Windows, Building 110, P.R. Number 77-89	1/29/90	<b>IHPA/RIA</b>	<b>No Adverse Effect</b>
Replace Windows, Building 110, P.R. Number 77-89	5/15/90	RIA/ACHP	
Replace Windows, Building 110, P.R. Number 77-89	6/14/90	<b>ACHP/RIA</b>	<b>No Adverse Effect</b>
Replace Windows in Building 60	2/4/92	RIA/IHPA	
Replace Windows in Building 60	3/12/96	<b>IHPA/RIA</b>	<b>No Adverse Effect</b>
Window Replacement, Building 225 East Wing	4/6/92	RIA/IHPA	
Window Replacement, Building 225, East Wing	4/6/92	<b>IHPA/RIA</b>	<b>No Adverse Effect</b>
Replacement of Windows in Building 225	3/9/92	RIA/IHPA	
Window Replacement, Building 225	4/6/92	<b>IHPA/RIA</b>	<b>No Adverse Effect</b>
Replacement of Windows in Building 102	3/17/92	RIA/IHPA	

Replacement of Windows in Building 102	4/6/92	IHPA/RIA	No Adverse Effect
Replacement of Windows in Building 67	3/19/92	RIA/IHPA	
Replacement of Windows in Building 67	4/6/92	IHPA/RIA	No Adverse Effect
Window and Door Replacement Buildings 67, 102, 225, and 350	7/14/92	RIA/ACHP	
Proposed Replacement of Windows, Buildings 67, 102, 225, and 350	7/24/92	ACHP/RIA	No Adverse Effect
Replace Windows, Building 131, Phase I, P.R. 79-94	9/14/95	RIA/IHPA	
Replace Windows, Building 131, Phase I, P.R. 79-94	9/30/95	IHPA/RIA	No Adverse Effect
Replace Windows, Building 131, Phase I, P.R. 79-94	2/23/95	RIA/ACHP	
Replace Windows, Building 131, Phase I, P.R. 79-94	3/30/95	ACHP/RIA	<u>Nonconcur</u>

\* Precursor to IHPA

The result of these letters and their approval has been the replacement of approximately 40% of the 1st and 2nd floor windows (the most visually apparent) in the historic stone shops. These windows, over 1,100 in all, have cost the installation approximately \$2.8 million to install over the past 12 years.

Up to this point, we have discussed the history of the window replacement program here at RIA. Following is our plan for the future replacement of windows.

We have developed a program to replace windows in 19 buildings. Of these 19 buildings, 1 building is complete (building 145), 1 building is nearing completion (building 225) and 10 have had some windows replaced. All of this work has been performed with the appropriate historical approval. The existing (unreplaced) windows in these buildings are wood frame sash, designed for use in industrial buildings. Since construction of the buildings in the late 1800's, their use has changed from manufacturing to administrative. A complete list of the proposed buildings, their year of construction, and their historical significance can be found at enclosure 5.

An analysis of maintenance and repair costs for these windows indicate that replacement with aluminum units is the most cost effective option. Two

economic analyses were performed: one for the two buildings that remain semi-industrial (64 and 106), and one for the buildings that have been converted to administrative use. These economic analyses can be found at enclosures 6 and 7 ("Life Cycle Cost Analysis - Architectural Options for Repair and/or Replacement, Doors and Windows", Buildings 64 & 106, May 1996. Prepared by the Rock Island District U.S. Army Corps of Engineers, and "40 - Year Life Cycle Cost Analysis of Architectural Options for the Repair and/or Replacement of the Windows in the Historic Stoneshops", August 1996. Prepared by the Directorate of Public Works, Rock Island Arsenal). The results of both analyses indicate that the most cost effective solution to the window problem is replacement with new aluminum units.

The results of the second study more appropriately match the majority of the buildings in this program. Projects continue to convert the stone shops from manufacturing to administrative. The results of the building 62 study show a savings of \$1.4 million over forty years. Applying these savings on a per-square-foot-of-glass basis to all 19 buildings in the program, yields a savings of \$14.4 million over forty years.

Please find enclosed the window sketches, specifications, a map identifying the building locations, and appropriate photographs of the buildings (enclosures 8, 9, 10, 11).

We believe that replacement of these windows will have no adverse effect on the historic fabric of the buildings. As stated previously, the windows will be identical in design to the 1,100 plus windows already installed. The design has true divided lites; the colors will match the original colors (as determined by studies conducted in the mid 1980's); the exterior trim detail will be reproduced to match the existing trim; and in order to increase the insulating effectiveness of the windows, storms will be installed on the interior face.

As stated in the paragraphs concerning the coordination meeting held last August, we were informed that RIA is the only organization that is pursuing aluminum as a replacement alternative. We have found in our research that this is not the case. Listed below are a few examples we have discovered in our research:

The closest example of aluminum replacement windows is at the western end of the island at the Rock Island District Corps of Engineers Clocktower building. The Rock Island District is a separate entity/property and consequently does not report to the Rock Island Arsenal. They perform their own historical reviews and obtain their own approvals. All of the original wood windows in the clocktower have been replaced with aluminum. See enclosure 12 for an overall building view and a typical window closeup view.

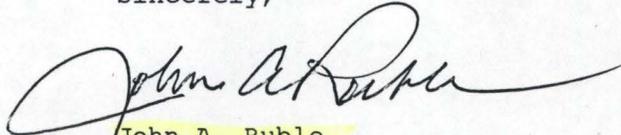
A November 1995 Architecture Magazine article concerning the repair of historic windows lists aluminum replacements as a viable alternative. Installed in the AT&T Corporate Headquarters building in New York City, they replace two different types of existing windows: steel clad wood, and steel (enclosure 13).

According to a U.S. Department of the Interior Preservation Tech Notes, Windows, Number 18, the 3,000 3 1/2' X 7' windows at the Boott Cotton Mills in Lowell, Massachusetts were recently replaced. Located in a National Historic Landmark District, these windows were duplicated in aluminum. Two alternatives were considered prior to the selection of aluminum: repair of the existing wood windows, and replacement of the old wood windows with new wood windows. Neither of these latter alternatives were determined viable. Although the design differed from our design in that it retained the window frames, the sashes were replaced with aluminum units with true divided lites, and interior storms were incorporated in the design. (enclosure 14)

This office has reviewed the program to replace the remaining windows in buildings 56, 60, 61, 62, 64, 66, 67, 68, 90, 102, 103, 104, 106, 108, 109, 110, and 131, and taking into account the criteria of effect and adverse effect, we find that this project will have no adverse effect on the historical significance of the Arsenal. We request your concurrence with our finding of no adverse effect.

If you have any questions regarding this submittal, please contact Mr. Rich Todd, SIORI-PWB, commercial (309) 782-2045.

Sincerely,



John A. Ruble  
Director, Directorate of  
Public Works

Enclosures



# Illinois Historic Preservation Agency

1 Old State Capitol Plaza • Springfield, Illinois 62701-1507 • (217) 782-4836 • TTY (217) 524-7128

## ARCHITECTURAL REVIEW COMMENTS

**Project Name:** Rock Island Arsenal  
Rock Island, IL  
**Project Type:** Window Survey  
**Review Documents:** Window Replacement, Multiple Buildings, 9/96

Buildings 56,60,61,62,64,66,67,68,90,102,103,104,  
106,108,109,110, and 131

**From:** Mike Jackson, AIA  
Chief Architect, Preservation Services  
Carol Dyson  
Architectural Coordinator, Preservation Services

**Date:** October 7, 1996

### IHPA Summary

The IHPA does not agree with the RIA conclusion that their life cycle cost analysis justifies the use of metal replacement windows instead of the repair of the original wood windows. The IHPA also does not agree with aspects of both the methodology and the assumptions upon which the life cycle cost analysis is based. Standard number six states that "Deteriorated features should be repaired rather than replaced." Only when the "severity of deterioration" requires replacement does Standard number six address the issue of replacement materials. The RIA study indicates that it is feasible to retain and repair these windows and that initial costs are less than replacement windows. These windows have in fact been maintained and are in good condition overall. Neither the Standards, nor the intent of Section 106 encourages the replacement of significant features of a National Historic Landmark building because the owner wishes to eliminate certain aspects of maintenance. Furthermore, in our opinion, the RIA study recommendation that the 40-year life cycle cost of replacement windows is less than that of window repair is flawed in its economic analysis protocol, and its building material assumptions. Using conventional methodology and revised construction assumptions, the following alternative life cycle cost analysis shows that the repair of the historic wood windows is in fact the cheaper option in both initial and 40 year costs.

### **Critique of the study conclusion:**

The RIA's study concludes, that although the initial cost of repair of wood windows is less than replacement, that based on their life-cycle cost analysis, the 40 year cost of aluminum is the least expensive cost for the Arsenal facilities. We disagree with this conclusion because the study is fundamentally flawed. Its most serious flaw is its failure to follow cost analysis conventions that require that costs incurred in future years (particularly costs incurred decades later) are valued less than initial costs in real (inflation-adjusted) dollars. We conducted the analysis using an appropriate discount rate that was selected with the aid of a U.S. Department of Treasury economist.

### **Cost Analysis**

The cost analysis is fundamentally flawed in both its methodology and its assumptions, and once these flaws are corrected, repairing the windows is found to be the most cost-effective alternative. These flaws and the steps this office took to correct them are discussed below. It is important to remember that repairing windows is found to be comparably cost-effective to aluminum windows even if only the methodology protocol is corrected.

We recommend that State Historic Preservation Offices and the Advisory Council consider that perhaps future cost-analyses be conducted by an independent third-party.

## Discount rate

The study methodology neglects the convention used in all forms of project analysis that a stream of costs or benefits in future years has to be discounted by a rate that reflects the cost of capital for the entity carrying out the activity. The RIA study states that a discount rate of "3%" is used, although it does not explicitly state whether a nominal or real (inflation-adjusted) rate is used and does not explain their logic for using this figure. A careful review of the tables found in Appendix C reveal that a 3% nominal rate is used at the same time that a 3% inflation rate is assumed and applied to most cost items.

These two actions negate each other and mean that the RIA has assigned a discount rate of 0%. In other words, they value costs incurred in 2035 the same as costs incurred in 1996. This is an inappropriate decision that causes the window repair option (which costs less initially but is assumed by the Army to cause somewhat higher costs to be incurred in future years) to be considered less cost-effective than replacement with aluminum windows. If it was the Army's intention to have a real discount rate of 3% then they should have combined their use of a 3% inflation rate with a 6% nominal discount rate.<sup>1</sup>

Economists within the U.S. Department of Treasury and the state's Department of Public Aid have indicated that cost-effectiveness evaluations of government projects should use a discount rate that reflects the real (inflation-adjusted) borrowing cost to the governmental entity in question. The logic is that a project is not cost-effective unless it yields a return on investment that is at least equal to those otherwise available to the government. Since an alternative activity available to the federal government is repayment of its debt, the current rate of interest paid on U.S. Treasury bonds is typically used as the discount for federal government projects. Given the long time period covered by the evaluation, the Treasury economist recommended the current rate paid on 30-year U.S. Treasury Bonds, 6.85%, be used as the discount rate.<sup>2</sup>

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<sup>1</sup> In general, one effect of a low real discount rate is that it makes it easier to justify larger initial expenditures. A high discount rate will make it more difficult.

<sup>2</sup> No 40-year bonds are presently sold by the U.S. Treasury.

We used this 6.85% nominal discount rate figure in the reanalysis, which was done under two sets of assumptions: (1) those used by RIA and (2) those considered to be more appropriate by the IHPA. Under the reanalysis using a revised discount rate and the RIA assumptions, the cost to repair the existing windows has a net present value of \$2,643,836, and the cost of aluminum replacement windows has a net present value of \$2,469,000. Under the second re-analysis using IHPA assumptions and the revised discount rate, the repair of existing windows has a net present value of \$2,214,989 while the replacement with aluminum windows has a net present value of \$2,841,862.

### **Other Study Oversights**

**Scheduled repainting for repaired windows.** The Army plans to repaint the repaired windows every five years. Our office, which reviews over 500 rehabilitation projects a year, believes that the five year painting cycle for wood windows is too short. A seven to ten year cycle is probably more typical of the maintenance cycle that these windows have received in the past. Furthermore, if the windows are totally stripped and repainted in a full-scale lead-abatement project as is suggested in the army's cost figures, it is not unlikely for the first cycle to have a ten to fifteen year life. For the purpose of our second IHPA analysis, we have assumed that the windows need to be repainted every eight years.

**Infiltration calculations for existing not repaired windows.** It appears that the Army has assumed that repaired windows will lose heat and cooling to infiltration at the same rate as they do now in an unrepaired state. The experience of our office indicates that repaired windows with new caulk and weather-stripping are considerably more efficient than unrepaired windows and are in fact comparable to new windows. However in our reanalysis, we based our calculations on the assumption that the repaired, recaulked and weather-stripped windows would have an infiltration value that is midway between that of the existing windows and new windows.

**Omission of replacement costs for aluminum windows.** We have discovered that many of the first aluminum replacement windows of twenty years ago are now being replaced. For the purposes of our reanalysis, we have not included aluminum re-replacement costs,

however it is highly unlikely they will last as long as maintained wood windows will.

**Omission of costs for the maintenance of the aluminum spring balance systems** for new windows-- aluminum or wood. In the RIA study no cost has been given for the maintenance of the aluminum spring balance systems. These have a limited warranty period and recent evidence from numerous projects installed in the 1970s indicates that a twenty year life space may be typical, particularly for large scale units such as these. The wholesale replacement of the spring balances should be added to the aluminum window life cycle cost. We have calculated a twenty year replacement cycle for the spring balance system, with a cost that that is comparable to that of weather-stripping. The aluminum replacement sash consists of a double, double-hung system (two sets of sash with spring balances for each set of sash).

**Paint removal repair costs appear high.** The highest single cost of the rehabilitation is that of lead paint abatement. There is no specific information about what is included in this estimate, but there are no code requirements that all lead paint be removed from any office building. It appears that one of the study's assumptions is that full-scale lead paint abatement is necessary if these windows are repaired. The applicable federal laws on this subject aim to reduce the hazard of lead-based paint to small children, and OSHA rules cover hazards to workers. Neither of these rules require total removal. Lead paint hazard reduction techniques are available that will substantially reduce the cost. For the IHPA second analysis, we have reduced the lead paint abatement cost by a conservative 15%

**Weather-stripping costs are low for the aluminum windows.**

The RIA report states that it doubled the cost of replacement weather-stripping for the wood window with storm windows option because there would be two sets of sash to weather-strip. The aluminum double-sash system has double weather-stripping at head and jamb and triple weather-stripping at the interior sash and double weather-stripping at the exterior sash (specifications 08520). However the RIA study did not accordingly increase the periodic costs of weather-stripping the aluminum sash. Using their assumption for the wood with storm window doubling of costs as an example, for the IHPA revised assumptions we doubled the weather-stripping costs of a single sash system for the aluminum windows.

**The RIA study was run from year 1996 to year 2035 - 39 years**  
While some internal factors were set at forty years, this oversight is not statistically significant but it should be noted that we corrected the recalculations so that all our calculations are consistently set at 40 years.

### **Administrative History**

In a recent project, the ACHP requested additional study of the replacement window issue, which resulted in the RIA study. The study materials point out that in the mid 1980s and early 1990s several projects were approved by the ACHP and Illinois SHPO for replacement windows using aluminum instead of wood. The current study request is based upon several factors, which we have summarized below:

1. The NHL status of the arsenal. The facility was upgraded from a listing on the National Register (9/30/69) to that of a National Historic Landmark as of June 20, 1988.
2. Increased availability of window restoration materials and Illinois contractors who have a good track record on window restoration.
3. Better understanding and appreciation of the quality of 19th C. window technology. We have consistently found that the quality of the materials used in the production of 19th c. wood windows is of superior grade and durability than can be found today. We have also gained increased awareness of the historic integrity of early and mid-19th century cylinder glass, which has a distinct wavy appearance.
4. Better economic tools that compare the true life-cycle cost.
5. New environmental regulations on lead-based paint. We have found that these particular regulations are so new that there is an inconsistent understanding of how they apply.

### **IHPA Conclusion:**

The Army Corps of Engineers and the Rock Island Arsenal have obviously spent considerable time investigating this issue and have been helpful enough to submit a great deal of their back-up calculations and assumptions for their studies. We have addressed these issues under the constraint of a much shorter time frame and without all of the research or specifications that many of the RIA's assumptions are based (In particular it would be informative to see the details of the energy study - or the lead paint removal protocols.) It should be noted that we have made every effort to be conservative in the revisions that have made to the RIA assumptions. The technology of historic preservation has come a long way in the last 15 years. The past approval of aluminum replacement windows does not reflect our contemporary knowledge of preservation, as has been enumerated in this document. The preservation Standards should be adhered to for the 17 remaining structures included in this project review that have not yet gone through a major reinvestment cycle.

Isolating the cost of a single component of a large scale building can be misleading. The open industrial spaces inside these buildings are easily suited for major office conversion. The solid exterior masonry walls and internal structural component are capable of handling the modern floor loading requirements with only minor modifications to the attic levels. The wood windows are among the few elements of these buildings that are significant features to the overall structures. They have survived for almost 130 years, and there is no reason to believe that they will not survive for another 130 years if properly maintained.

We are, as always, glad to discuss any of these issues further with the RIA. We all share an appreciation of the high significance of these historic buildings. Our office has had the benefit of being involved with numerous major rehabilitation projects that included historic window repairs. In the course of reviewing comparable large-scale and high profile projects we have been able to watch building owners and tenants suspicious of historic window repair become highly satisfied when they see thoroughly rehabilitated windows in place.

Attachment: IHPA life-cycle cost analysis

## **ANALYSES USING RIA ASSUMPTIONS -- ONLY DISCOUNT RATE IS CHANGED**

(Discount Rate is changed from 0% to 3.85% real, or from 3% to 6.85% nominal, using the Army's 3% inflation rate)

<i>Repair existing windows has a net present value of</i>	<u>\$2,643,836</u>
<i>Replace w/ new aluminum windows has a net present value of</i>	<u>\$2,469,000</u>

Repair Existing Wood Windows -- RIA Assumptions

Year	Lead Paint Removal	Paint Windows	Repair Windows	Weatherstrip	Heating Cost Due Windows	AC Due Window	Infiltration	Total Annual Outlays	Discount Factor	Present Value
1	\$804,021	\$116,669	\$150,085	\$174,420	\$7,202	\$30,421	\$7,029	\$1,289,847	0.97	\$1,247,133
2					\$7,274	\$31,334	\$7,170	\$45,778	0.90	\$41,424
3					\$7,346	\$32,274	\$7,313	\$46,933	0.85	\$39,747
4					\$7,419	\$33,242	\$7,460	\$48,121	0.79	\$38,141
5		\$131,312			\$7,494	\$34,239	\$7,609	\$180,654	0.74	\$134,006
6					\$7,569	\$35,267	\$7,761	\$50,596	0.69	\$35,125
7					\$7,644	\$36,325	\$7,916	\$51,885	0.65	\$33,711
8					\$7,721	\$37,414	\$8,075	\$53,210	0.61	\$32,355
9					\$7,798	\$38,537	\$8,236	\$54,571	0.57	\$31,056
10		\$152,226			\$7,876	\$39,693	\$8,401	\$208,196	0.53	\$110,886
11					\$7,955	\$40,884	\$8,569	\$57,407	0.50	\$28,615
12					\$8,034	\$42,110	\$8,740	\$58,885	0.47	\$27,470
13					\$8,115	\$43,374	\$8,915	\$60,403	0.44	\$26,372
14					\$8,196	\$44,675	\$9,093	\$61,964	0.41	\$25,319
15		\$176,472			\$8,278	\$46,015	\$9,275	\$240,040	0.38	\$91,794
16					\$8,360	\$47,395	\$9,461	\$65,217	0.36	\$23,341
17					\$8,444	\$48,817	\$9,650	\$66,911	0.33	\$22,412
18					\$8,528	\$50,282	\$9,843	\$68,653	0.31	\$21,521
19					\$8,614	\$51,790	\$10,040	\$70,444	0.29	\$20,667
20		\$204,579		\$305,846	\$8,700	\$53,344	\$10,241	\$582,709	0.27	\$159,997
21					\$8,787	\$54,944	\$10,445	\$74,177	0.26	\$19,061
22					\$8,875	\$56,593	\$10,654	\$76,122	0.24	\$18,307
23					\$8,964	\$58,290	\$10,867	\$78,121	0.23	\$17,583
24					\$9,053	\$60,039	\$11,085	\$80,177	0.21	\$16,889
25		\$237,163			\$9,144	\$61,840	\$11,306	\$319,453	0.20	\$62,979
26					\$9,235	\$63,696	\$11,532	\$84,463	0.18	\$15,584
27					\$9,327	\$65,606	\$11,763	\$86,697	0.17	\$14,971
28					\$9,421	\$67,575	\$11,998	\$88,994	0.16	\$14,382
29					\$9,515	\$69,602	\$12,238	\$91,355	0.15	\$13,817
30		\$274,937			\$9,610	\$71,690	\$12,483	\$368,720	0.14	\$52,193
31					\$9,706	\$73,841	\$12,733	\$96,280	0.13	\$12,755
32					\$9,803	\$76,056	\$12,987	\$98,847	0.12	\$12,255
33					\$9,901	\$78,337	\$13,247	\$101,486	0.12	\$11,776
34					\$10,000	\$80,688	\$13,512	\$104,200	0.11	\$11,316
35		\$318,728			\$10,100	\$83,108	\$13,782	\$425,719	0.10	\$43,268
36					\$10,201	\$85,601	\$14,058	\$109,861	0.10	\$10,450
37					\$10,303	\$88,170	\$14,339	\$112,812	0.09	\$10,043
38					\$10,406	\$90,815	\$14,626	\$115,847	0.08	\$9,652
39					\$10,510	\$93,539	\$14,919	\$118,968	0.08	\$9,276
40		\$369,493		\$552,392	\$10,616	\$96,345	\$15,217	\$1,044,063	0.07	\$76,189

NPV = \$2,643,836

Replace with Aluminum Windows – RIA Assumptions

Year	Remove Old Windw	Install new Windows	xxxFillenxxx	Weatherstrip	Heating Cost Due Windows	AC Due Windows	Infiltration	Total Annual Outlays	Discount Rate	Present Value
1	\$106,744	\$1,671,717	\$0	\$0	\$3,958	\$25,311	\$2,219	\$1,809,949	0.97	\$1,750,011
2					\$3,998	\$26,070	\$2,263	\$32,331	0.90	\$29,257
3					\$4,038	\$26,852	\$2,309	\$33,199	0.85	\$28,115
4					\$4,078	\$27,658	\$2,355	\$34,091	0.79	\$27,020
5					\$4,119	\$28,488	\$2,402	\$35,008	0.74	\$25,969
6					\$4,160	\$29,342	\$2,450	\$35,952	0.69	\$24,959
7					\$4,201	\$30,223	\$2,499	\$36,923	0.65	\$23,990
8					\$4,244	\$31,129	\$2,549	\$37,922	0.61	\$23,059
9					\$4,286	\$32,063	\$2,600	\$38,949	0.57	\$22,165
10					\$4,329	\$33,025	\$2,652	\$40,006	0.53	\$21,307
11					\$4,372	\$34,016	\$2,705	\$41,093	0.50	\$20,483
12					\$4,416	\$35,036	\$2,759	\$42,211	0.47	\$19,692
13					\$4,460	\$36,087	\$2,814	\$43,362	0.44	\$18,932
14					\$4,505	\$37,170	\$2,871	\$44,545	0.41	\$18,201
15					\$4,550	\$38,285	\$2,928	\$45,763	0.38	\$17,500
16					\$4,595	\$39,434	\$2,986	\$47,015	0.36	\$16,827
17					\$4,641	\$40,617	\$3,046	\$48,304	0.33	\$16,180
18					\$4,687	\$41,835	\$3,107	\$49,630	0.31	\$15,558
19					\$4,734	\$43,090	\$3,169	\$50,994	0.29	\$14,961
20				\$305,846	\$4,782	\$44,383	\$3,233	\$358,243	0.27	\$98,364
21					\$4,830	\$45,714	\$3,297	\$53,841	0.26	\$13,836
22					\$4,878	\$47,086	\$3,363	\$55,327	0.24	\$13,306
23					\$4,927	\$48,498	\$3,431	\$56,856	0.23	\$12,797
24					\$4,976	\$49,953	\$3,499	\$58,428	0.21	\$12,308
25					\$5,026	\$51,452	\$3,569	\$60,047	0.20	\$11,838
26					\$5,076	\$52,996	\$3,641	\$61,712	0.18	\$11,386
27					\$5,127	\$54,585	\$3,713	\$63,425	0.17	\$10,952
28					\$5,178	\$56,223	\$3,788	\$65,189	0.16	\$10,535
29					\$5,230	\$57,910	\$3,863	\$67,003	0.15	\$10,134
30					\$5,282	\$59,647	\$3,941	\$68,870	0.14	\$9,749
31					\$5,335	\$61,436	\$4,019	\$70,791	0.13	\$9,378
32					\$5,388	\$63,280	\$4,100	\$72,767	0.12	\$9,022
33					\$5,442	\$65,178	\$4,182	\$74,802	0.12	\$8,680
34					\$5,496	\$67,133	\$4,265	\$76,895	0.11	\$8,351
35					\$5,551	\$69,147	\$4,351	\$79,049	0.10	\$8,034
36					\$5,607	\$71,222	\$4,438	\$81,266	0.10	\$7,730
37					\$5,663	\$73,358	\$4,527	\$83,548	0.09	\$7,437
38					\$5,720	\$75,559	\$4,617	\$85,896	0.08	\$7,156
39					\$5,777	\$77,826	\$4,709	\$88,312	0.08	\$6,886
40				\$552,392	\$5,835	\$80,161	\$4,804	\$643,191	0.07	\$46,936
										\$2,469,000

## ANALYSES BASED ON IHPA ASSUMPTIONS

<i>Repair Existing Wood Windows has a Net Present Value of</i>	<u>\$2,214,989</u>
<i>Replace with Aluminum Windows has a Net Present Value of</i>	<u>\$2,841,862</u>

Repair Existing Wood Windows – IHPA Assumptions

Year	Lead Paint Removal	Paint Windows	Repair Windows	Weatherstrip	Heating Cost Due Windws	AC Due Windows	Infiltration	Total Annual Outlays	Discount Factor	Present Value
1	\$683,418	\$116,669	\$150,085	\$174,420	\$7,202	\$30,421	\$4,239	\$1,166,454	0.97	\$1,127,826
2					\$7,274	\$31,334	\$4,324	\$42,932	0.90	\$38,849
3					\$7,348	\$32,274	\$4,410	\$44,030	0.85	\$37,289
4					\$7,419	\$33,242	\$4,499	\$45,160	0.79	\$35,794
5					\$7,494	\$34,239	\$4,589	\$46,322	0.74	\$34,361
6					\$7,569	\$35,287	\$4,680	\$47,516	0.69	\$32,987
7					\$7,644	\$36,325	\$4,774	\$48,743	0.65	\$31,669
8					\$7,721	\$37,414	\$4,869	\$50,005	0.61	\$30,406
9		\$147,793			\$7,798	\$38,537	\$4,967	\$199,094	0.57	\$113,302
10					\$7,878	\$39,693	\$5,066	\$52,635	0.53	\$28,034
11					\$7,955	\$40,884	\$5,167	\$54,006	0.50	\$26,920
12					\$8,034	\$42,110	\$5,271	\$55,415	0.47	\$25,851
13					\$8,115	\$43,374	\$5,376	\$56,864	0.44	\$24,827
14					\$8,196	\$44,675	\$5,484	\$58,354	0.41	\$23,844
15					\$8,278	\$46,015	\$5,593	\$59,886	0.38	\$22,901
16					\$8,360	\$47,395	\$5,705	\$61,461	0.36	\$21,997
17		\$187,219			\$8,444	\$48,817	\$5,819	\$250,300	0.33	\$83,838
18					\$8,528	\$50,282	\$5,936	\$64,746	0.31	\$20,297
19					\$8,614	\$51,790	\$6,055	\$66,459	0.29	\$19,498
20					\$8,700	\$53,344	\$6,176	\$68,220	0.27	\$18,731
21				\$315,022	\$8,787	\$54,944	\$6,299	\$385,052	0.26	\$98,947
22					\$8,875	\$56,593	\$6,425	\$71,893	0.24	\$17,290
23					\$8,964	\$58,290	\$6,554	\$73,808	0.23	\$16,613
24					\$9,053	\$60,039	\$6,685	\$75,777	0.21	\$15,962
25		\$237,164			\$9,144	\$61,840	\$6,818	\$314,966	0.20	\$62,094
26					\$9,235	\$63,696	\$6,955	\$79,885	0.18	\$14,739
27					\$9,327	\$65,606	\$7,094	\$82,028	0.17	\$14,164
28					\$9,421	\$67,575	\$7,236	\$84,231	0.16	\$13,612
29					\$9,515	\$69,602	\$7,380	\$86,497	0.15	\$13,082
30					\$9,610	\$71,690	\$7,528	\$88,828	0.14	\$12,574
31					\$9,708	\$73,841	\$7,679	\$91,225	0.13	\$12,085
32					\$9,803	\$76,056	\$7,832	\$93,691	0.12	\$11,616
33		\$300,432			\$9,901	\$78,337	\$7,989	\$396,660	0.12	\$46,026
34					\$10,000	\$80,688	\$8,149	\$98,836	0.11	\$10,733
35					\$10,100	\$83,108	\$8,312	\$101,520	0.10	\$10,318
36					\$10,201	\$85,601	\$8,478	\$104,281	0.10	\$9,919
37					\$10,303	\$88,170	\$8,647	\$107,120	0.09	\$9,536
38					\$10,408	\$90,815	\$8,820	\$110,041	0.08	\$9,168
39					\$10,510	\$93,539	\$8,997	\$113,046	0.08	\$8,815
40					\$10,616	\$96,345	\$9,177	\$116,137	0.07	\$8,475

NPV = \$2,214,989

Replace with Aluminum Windows -- IHPA Assumptions

Year	Remove Old Windows	Install New Windows	Replace Spring Balances	Weatherstrip	Heating Cost Due Window	AC Due Windows	Infiltration	Total Annual Outlays	Discount Factor	Present Value
1	\$106,744	\$1,671,717	\$0	\$0	\$3,958	\$25,311	\$2,219	\$1,809,949	0.97	\$1,750,011
2					\$3,998	\$26,070	\$2,263	\$32,331	0.90	\$29,257
3					\$4,038	\$26,852	\$2,309	\$33,199	0.85	\$28,115
4					\$4,078	\$27,658	\$2,355	\$34,091	0.79	\$27,020
5					\$4,119	\$28,488	\$2,402	\$35,008	0.74	\$25,969
6					\$4,160	\$29,342	\$2,450	\$35,952	0.69	\$24,959
7					\$4,201	\$30,223	\$2,499	\$36,923	0.65	\$23,990
8					\$4,244	\$31,129	\$2,549	\$37,922	0.61	\$23,059
9					\$4,286	\$32,063	\$2,600	\$38,949	0.57	\$22,165
10					\$4,329	\$33,025	\$2,652	\$40,006	0.53	\$21,307
11					\$4,372	\$34,016	\$2,705	\$41,093	0.50	\$20,483
12					\$4,416	\$35,036	\$2,759	\$42,211	0.47	\$19,692
13					\$4,460	\$36,087	\$2,814	\$43,362	0.44	\$18,932
14					\$4,505	\$37,170	\$2,871	\$44,545	0.41	\$18,201
15					\$4,550	\$38,285	\$2,928	\$45,763	0.38	\$17,500
16					\$4,595	\$39,434	\$2,986	\$47,015	0.36	\$16,827
17					\$4,641	\$40,617	\$3,046	\$48,304	0.33	\$16,180
18					\$4,687	\$41,835	\$3,107	\$49,630	0.31	\$15,558
19					\$4,734	\$43,090	\$3,169	\$50,994	0.29	\$14,961
20			\$611,692	\$611,692	\$4,782	\$44,383	\$3,233	\$1,275,781	0.27	\$350,296
21					\$4,830	\$45,714	\$3,297	\$53,841	0.26	\$13,836
22					\$4,878	\$47,086	\$3,363	\$55,327	0.24	\$13,306
23					\$4,927	\$48,498	\$3,431	\$56,856	0.23	\$12,797
24					\$4,976	\$49,953	\$3,499	\$58,428	0.21	\$12,308
25					\$5,026	\$51,452	\$3,569	\$60,047	0.20	\$11,838
26					\$5,076	\$52,996	\$3,641	\$61,712	0.18	\$11,386
27					\$5,127	\$54,585	\$3,713	\$63,425	0.17	\$10,952
28					\$5,178	\$56,223	\$3,788	\$65,189	0.16	\$10,535
29					\$5,230	\$57,910	\$3,863	\$67,003	0.15	\$10,134
30					\$5,282	\$59,647	\$3,941	\$68,870	0.14	\$9,749
31					\$5,335	\$61,436	\$4,019	\$70,791	0.13	\$9,378
32					\$5,388	\$63,280	\$4,100	\$72,767	0.12	\$9,022
33					\$5,442	\$65,178	\$4,182	\$74,802	0.12	\$8,680
34					\$5,496	\$67,133	\$4,265	\$76,895	0.11	\$8,351
35					\$5,551	\$69,147	\$4,351	\$79,049	0.10	\$8,034
36					\$5,607	\$71,222	\$4,438	\$81,266	0.10	\$7,730
37					\$5,663	\$73,358	\$4,527	\$83,548	0.09	\$7,437
38					\$5,720	\$75,559	\$4,617	\$85,896	0.08	\$7,156
39					\$5,777	\$77,826	\$4,709	\$88,312	0.08	\$6,886
40			\$1,104,784	\$1,104,784	\$5,835	\$80,161	\$4,804	\$2,300,367	0.07	\$167,867
										\$2,841,862



**Illinois Historic  
Preservation Agency**

1 Old State Capitol Plaza • Springfield, Illinois 62701-1507 • (217) 782-4836 • TTY (217) 524-7128

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October 9, 1996

Mr. John A. Ruble, Director  
Directorate of Public Works  
Department of the Army  
Rock Island Arsenal  
Rock Island, Illinois 61299-5000

Re: Window Replacement in Multiple Buildings at Rock Island Arsenal

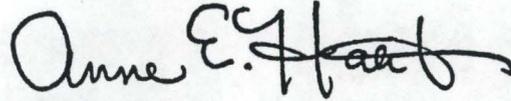
Dear Mr. Ruble:

Our office has received the information sent by Rock Island Arsenal on September 4, 1996, regarding window replacement. A copy of the information provided to our office should also be provided to the Advisory Council on Historic Preservation for their review. The Council has determined that continued replacement of historic wood windows with aluminum at the Arsenal is an adverse effect. Therefore, your request for our concurrence with your "no adverse effect" determination is unnecessary, since a determination on this issue has already been made.

Based on the information provided, our office does not agree with the Arsenal's conclusion that their life cycle cost analysis justifies the use of metal replacement windows instead of the repair of the original wood windows. Furthermore, we do not agree with aspects of both the methodology and the assumptions upon which the life cycle cost analysis is based. Please see the attached architectural review comments for further details and an alternative life cycle cost analysis using conventional methodology and revised construction assumptions.

A copy of this letter, review comments and life cycle cost analysis will be forwarded to the Council. At this stage, the Arsenal should be dealing directly with the Council, as well as our office. We will await the comments and direction of the Council in this matter. If you have any questions, please contact Ms. Tracey A. Sculle, Cultural Resources Manager, at 217/785-3977.

Sincerely,

A handwritten signature in black ink that reads "Anne E. Haaker". The signature is written in a cursive style with a large initial "A" and a long, sweeping tail on the "k".

Anne E. Haaker  
Deputy State Historic  
Preservation Officer

AEH:TAS

cc: Don Klima, ACHP  
Constance Ramirez, Department of the Army

# Advisory Council On Historic Preservation

DRAFT  
SHOW D. Miller

The Old Post Office Building  
1100 Pennsylvania Avenue, NW, #809  
Washington, DC 20004

NOV 22 1996

Ms. Katherine H. Stevenson  
Associate Director  
Cultural Resource Stewardship and Partnerships  
National Park Service  
1849 C Street, NW  
Washington, D.C. 20240

Dear Ms. Stevenson:

Pursuant to Section 106 of the National Historic Preservation Act (NHPA), the Council is currently in consultation with the Army and the Illinois State Historic Preservation Office regarding the proposed replacement of windows in 17 buildings within the Rock Island Arsenal National Historic Landmark (NHL). These projects will adversely affect the NHL.

Section 800.10 of the Council's regulations (36 CFR Part 800) outlines provisions whereby the Council will give special consideration to National Historic Landmarks during review of Federal undertakings. Requesting a report from the Department of Interior pursuant to Section 213 of NHPA is cited as one such provision. Section 213 states:

To assist the Council in discharging its responsibilities under this Act, the Secretary [of Interior] at the request of the Chairman, shall provide a report to the Council detailing the significance of any historic property, describing the effects of any proposed undertaking on the affected property, and recommending measures to avoid, minimize, or mitigate adverse effects.

Given the importance of the National Historic Landmark and the extensive consultation among the parties thus far, we feel it important that the Council take advantage of all mechanisms for gathering information and input. Therefore, we ask that the National Park Service, acting on behalf of the Secretary of Interior as provided for in Section 301 of the NHPA, provide the Council with a Section 213 report on the NHL and the proposed window replacements.

In our view, this case presents an interesting challenge for the Army in balancing mission needs with the responsibilities for managing a National Historic Landmark. Both the Army and the SHPO have prepared a cost analysis of replacement vs. repair. We suggest that these analyses be considered in the review.

We wish to also invite the National Park Service to participate in the Section 106 consultation for these projects. The SHPO, the Council, and the Army have been discussing the larger issue of maintenance of historic wood elements in all of the buildings at the Arsenal. The Army has suggested that replacement of all such elements would reduce their maintenance costs and the replacement of windows in these 17 buildings is an example of such an effort. Our consultation would greatly benefit from the knowledge and expertise of the National Park Service in addressing these issues and assist NPS in development of recommendations it may offer under Section 213.

We will be happy to make available documentation we have received on the project and to assist in coordinating with the Army in obtaining copies of needed material. If you have any questions, please feel free to contact Don L. Klima, Director of the Office of Planning and Review at (202) 606-8505.

We look forward to obtaining the Department of Interior's views on these undertakings. Thank you for your assistance.

Sincerely,



John M. Fowler  
Acting Executive Director

# Memo

**Date:** 02/13/97  
**To:** Susan Escherich  
**From:** Diane Miller  
**RE:** Rock Island Arsenal Windows

---

From the materials the state sent me, I pulled some sample letters. This is not by any means all the projects that were reviewed, but it should give you an idea.

## 1<sup>st</sup> Set—Building 110

- 12Jan90 Army to SHPO
- 29Jan90 SHPO to Army
- 15May90 Army to ACHP
- 14Jun90 ACHP to Army

## 2<sup>nd</sup> Set—Building 225

- 9Mar92 Army to SHPO
- 6Apr92 SHPO to Army
- 14Jul92 Army to ACHP
- 24Jul92 ACHP to Army

## 3<sup>rd</sup> Set—Building 131 (where the controversy began)

- 14Sep94 Army to SHPO (missing SHPO to Army reply)
- 23Feb95 Army to ACHP
- 30Mar95 ACHP to Army

AFTER THIS LETTER, A MEETING WAS HELD AT THE BASE IN AUGUST 1995. AS A RESULT THE ARMY HAD THE COE UNDERTAKE A STUDY OF THE COST/LIFE CYCLE ISSUE.

- 4Sep96 Army to SHPO forwarding copies of old correspondence and COE analysis

- 9Oct96 SHPO to Army sending results of SHPO review of the COE analysis which disagrees with COE results (NOTE: since this time, the base HPO, Rich Todd has been on a detail and is just now returning to his normal duties. That is the reason the issue is being raised again at this point.)

I have a copy of the COE and SHPO reports, but am not faxing those. Perhaps I am missing something, but it seems to me that the base has a strong argument to finish the replacement of the windows. You may want to check out Preservation Tech Note 18 on Windows, which the base also included in its submission to the SHPO.

I understand from 36 CFR 800.10 that the Council can ask for a report from the Secretary of Interior during the 106 process, detailing the significance of the NHL, describing any effects of the undertaking on it, and recommending measures to avoid or mitigate harm to it. I think, therefore, that if NPS were to get involved with Rock Island Arsenal at this point, it would need to be at the request (presumably written) of the ACHP to the Secretary. We may not want to stir that pot though, because as we discussed, we may tend to agree with the Army.

I have spoken with Rich Todd at Rock Island and with Tracey Sculle at the IL SHPO. I have not spoken with the ACHP at this point, and I do not know what caused them to raise an issue with the window replacement now.

At this point, I do not see any means for the Park Service to insert itself in the process. The ball I believe is in the court of the Rock Island Arsenal and/or the ACHP. I do not plan to get further involved unless there is a more formal request from one of the parties.

---

Author: Diane Miller at NP-MWRO  
Date: 5/29/97 12:20 PM  
Priority: Normal  
TO: Susan Escherich at NP-WASO-HPS  
CC: Marty Sterkel  
CC: Bill Nelligan  
CC: Jana Gross  
Subject: Rock Island Arsenal

----- Message Contents -----

Susan,

In going through my Section 8 updates, I got to Rock Island Arsenal, which as you may recall was a controversy from last year.

I called Rich Todd at the base to get an update. Ann Swallow from the SHPO already told me that the Army is not interested in changing their plans (for replacing, rather than repairing the windows). The SHPO and the NPS state coordinator both recommend the Rock Island as a Priority 1; Rich Todd and the army recommend a Priority 3.

I told Rich that the Priority 2 from last year was based on the window controversy and didn't mean that they are bad stewards of their property, but that it was just a controversy to be monitored. I told him that we view the report as a tool for convincing management and others that funds are needed, or protection, or whatever, to protect the resource.

As to the current status, Rich told me that they have had several conversations with the SHPO, but have determined that they just don't agree. They are getting a package together to send to the ACHP. The ACHP has already weighed in on this issue--they were the ones I believe who first raised the problem. Rich told me that the Valerie De Carlo, who was the reviewer before, has left the ACHP and so they are going to try again. If that fails to resolve things, they are already floating the idea of terminating consultation and/or not following the ACHP advice up the Chain of Command to the Pentagon. (as per 36 CFR 800.7) I think they hope it doesn't come to that, but they want to be able to get on with things. He says the issue affects 80% of their buildings which already have 40% of the windows replaced.

I asked him to copy me on whatever they send to the Advisory Council. (I am also trying to arrange a short meeting with Chuck Fisher when I am in DC for the NHL meeting--either Monday afternoon or Tuesday morning, early. Perhaps you should join us.) In the meantime, I could see an argument for any of the 3 Priority levels for the 1997 Section 8 report. But in actuality, I almost think the Section 8 report is best left out of the mix for this property this year. Can we just leave it out but not list it as being dropped from the list? Or, given the preparation time, defer this decision until later?

Any thoughts on the matter?

--Diane



IN REPLY REFER TO:

# United States Department of the Interior

OCT - 8 1997

NATIONAL PARK SERVICE  
P.O. Box 37127  
Washington, D. C. 20013-7127

H4215(2255)

Mr. John Fowler  
Acting Executive Director  
Advisory Council on Historic Preservation  
1100 Pennsylvania Ave., NW, #809  
Washington, D.C.

Dear Mr. Fowler:

Your staff recently made us aware of a letter of November 22, 1996 that was addressed to Katherine Stevenson of the National Park Service concerning proposed window work at the Rock Island Arsenal National Historic Landmark. We apologize for the delay in this response.

Our comments concerning the proposed window work are included as a separate attachment. If we can be a further assistance concerning work to the Rock Island Arsenal National Historic Landmark, please feel free to contact Diane Miller at 402-221-3744, or Susan Escherich or Charles Fisher of my office at 202-343-9578.

Sincerely,

de Teel Patterson Tiller  
Manager, Heritage Preservation Services Program

cc: Diane Miller  
Carol Dyson, IL-SHPO

bcc Valerie di Carlo

PS - Valerie - my phone is 343-9591.

- Susan

FACSIMILE COVER SHEET

ADVISORY COUNCIL ON HISTORIC PRESERVATION

1100 PENNSYLVANIA AVENUE, N.W. SUITE 809

WASHINGTON, D.C. 20004

Date: 10/10/97

To: Susan Eschench

Organization: \_\_\_\_\_

Fax Number: 343 3921

From: Valerie DeCarlo  
Office of Planning and Review

Phone: (202) 606-8530

Fax: (202) 606-5072

Comments: Thank again

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Number of pages including this cover sheet: 5

*If you have problems with this transmission, please call me (202) 606-8530. The Council's main number is (202) 606-8505.*

## **National Park Service comments on the Rock Island Arsenal Window Project**

**The Rock Island Arsenal is a National Historic Landmark comprising numerous low-scale buildings. The windows in these buildings are quite prominent and are character-defining features. The predominant window type appears to be vertically sliding sash which are double-hung and are made of wood. Light patterns vary, including six-over-six, eight-over-eight, three-over-three, and twelve-over-twelve. Most of the windows appear dark in color. They have a fairly common setback within the masonry opening, a simple sill, and a brick molding around the frame.**

**The Secretary of the Interior's Standards for Rehabilitation define rehabilitation as the act or process of making possible a compatible use for a property through repair, alteration, and additions while preserving these portions or features which convey its historical, cultural, or architectural values. In regard to the Rock Island Arsenal and the effort to upgrade the facility, the Department of the Army is particularly commended for its continued use of the many historic buildings comprising this National Historic Landmark. We recognize that with so many historic structures, appropriate maintenance, repair and replacement work is an ongoing effort.**

**In our work with the window industry over many years, we have seen considerable progress in capabilities both to maintain and repair existing windows and also in the quality of wood replacements that are designed for the historic preservation market. Certainly the repair and upgrading of historic windows is much more commonplace then it was just 10 years ago.**

**In regard to the work at the Rock Island Arsenal, the question of whether to repair or replace historic windows is properly being examined in terms of today's practices and capabilities rather than basing decisions on what was approved 10 years ago. In accordance with the Secretary of the Interior's Standards for Rehabilitation, as well as common to preservation standards and guidance practiced in Europe, "deteriorated historic features should be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials."**

**In absence of any substantive documentation available to us specifically addressing the level of deterioration and in reading through the wealth of information on the project, it would appear that the historic windows are in reasonably sound condition. This condition can be attributed both to the building maintenance program as well as the quality of the windows that are in place. Thus according to the Secretary of the Interior's Standards for Rehabilitation, there is no real basis to justify replacement. As a National Historic Landmark, the appropriate work regarding the windows is clear and straight forward--maintain, repair and upgrade the existing windows.**

**For purposes of discussion only, we have provided comments on two additional points--financial implications and suitable replacement window units. Replacement windows on significant facades of two to four story buildings need to match very closely the visual qualities of the historic windows. Usually on such low-scale structures as Building 145, wood replacements with true divided lights would be the appropriate solution. Increased energy performances could be**

achieved through the use of good weather stripping, caulking and reglazing, and either a "piggyback" aluminum storm panel or a separate interior storm window. Where aluminum replacement windows may be appropriate at the Rock Island Arsenal, they should match as closely as possible the historic windows. The recommended solution in this scenario would be to retain and use the wood frames--leaving them unpanned--and replacing only the sash in aluminum. We have enclosed a *Preservation Tech Note* on window work at Boott Mill which explains this approach. The sash should match the sight lines of the historic window. With so many window companies and window lines to choose from, matching the rails and stiles should not be difficult.

Considering the scale of the buildings at the Rock Island Arsenal, the aluminum sash should have true-divided lights with the exterior face of the trapezoidal-design muntin matching the dimension of the historic windows. This does not appear to have been achieved in the 1980s replacements.

With small divided glass lights, dual glazing can be achieved either through a piggyback interior storm panel attached directly to the sash or with a separate interior storm unit. If the window frame and brick molding are in poor condition, only then should consideration be made of using a custom aluminum pan along with as appropriate brick molding. The reveal or depth to which the window is placed in the wall opening should also match the historic windows.

While it may have been acceptable in the mid-1980s, the replacement window unit being used at the Arsenal would not be considered as appropriate design today. Thus, where replacement windows are really needed, we recommend that further investigation be done as to appropriate aluminum replacements--ones that would meet the Standards for Rehabilitation as applied to the Arsenal. Evaluating the cost analysis of both the Rock Island Arsenal and Illinois State Historic Preservation Office would not be particularly beneficial at the point since the replacement costs that are used in both studies are for a replacement window system which we feel is not appropriate.

Considering the importance of the windows to the historic character of the Rock Island buildings; the condition of the historic windows; and the fact that this facility is a National Historic Landmark, the repair approach should be utilized, even if replacement windows may be somewhat cheaper over a 40 year period. Only in cases where it is prohibitively more expensive to repair rather than replace, would we recommend wholesale changes to windows at the Rock Island Arsenal.

In administering other programs such as the Federal historic preservative tax incentives, our usual position on buildings such as commonly found at the Rock Island Arsenal is that wood replacement windows should be used when repair is not practical. Admittedly, there are some buildings that are included in the Rock Island Arsenal documentation where a good aluminum window may be appropriate.

In summary, we would recommend the following:

1. If it has not already been done, the historic buildings at the Arsenal should be surveyed so as to determine which ones are more significant than others. One window solution for the entire

**National Historic Landmark does not appear to be a constructive approach.**

- 2. Historic windows that are in reasonably sound condition should be repaired rather than replaced.**
- 3. Alternate replacement windows solutions should be utilized where replacement rather than repair is appropriate. Special consideration should be made to utilize a solution similar to that described in the enclosed *Preservation Tech Note*. This includes the retention of wood frames as exposed elements.**
- 4. Whether to repair or to replace windows should be based on a variety of factors including window condition, historic significance of the building, visual prominence, costs, material integrity of the historic buildings, and other changes to the building that may be planned.**

**We would strongly discourage the single window solution approach for this National Historic Landmark. We would urge you to continue working with the facilities manager at the Rock Island Arsenal and the Illinois State Historic Preservation Office to develop a better preservation plan.**



# United States Department of the Interior

NATIONAL PARK SERVICE

1849 C Street, N.W.

Washington, D.C. 20240

IN REPLY REFER TO:

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## FACSIMILE

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TO: *Diane Miller* FROM: *Susan Eschen*

COMPANY:

DATE:

*8/12/98*

FAX NUMBER:

TOTAL PAGES INCLUDING COVER:

*402-221-3465*

*6*

PHONE NUMBER:

RE:

*Rocky Island Arsenal*

NOTES/COMMENTS:

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# LIFE CYCLE COST ANALYSIS

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## ARCHITECTURAL OPTIONS FOR REPAIR AND/OR REPLACEMENT DOORS AND WINDOWS BUILDINGS 64 & 106

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prepared by

ROCK ISLAND DISTRICT  
U.S. ARMY CORPS OF ENGINEERS  
ROCK ISLAND, ILLINOIS



5/96

40-YEAR LIFE CYCLE COST ANALYSIS  
OF ARCHITECTURAL OPTIONS  
FOR THE  
REPAIR AND/OR REPLACEMENT OF THE DOORS AND WINDOWS  
BUILDINGS 64 & 106

ROCK ISLAND ARSENAL  
ROCK ISLAND, ILLINOIS

MAY 1996

## PREFACE

This is a study to determine the 40-year life cycle costs of the installation, maintenance, and energy use savings derived by the repair and/or replacement of the doors and windows of Buildings 64 and 106, Rock Island Arsenal, Rock Island, Illinois. Building 64, the old plating shop, is being considered for renovation into a two floor office building. Building 106, the old foundry, is currently being used for storage and other miscellaneous industrial uses. The current heat loss of Buildings 64 and 106 is much greater than most other buildings at the arsenal<sup>1</sup>.

40-YEAR LIFE CYCLE COST ANALYSIS  
OF VARIOUS ARCHITECTURAL OPTIONS  
FOR THE  
REPAIR AND/OR REPLACEMENT OF THE DOORS AND WINDOWS  
BUILDINGS 64 & 106

ROCK ISLAND ARSENAL  
ROCK ISLAND, ILLINOIS

MAY 1996

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## INTRODUCTION

Stone shops Buildings 64 and 106 were built in 1874 and 1871 respectively and are listed on the National Register of Historic Places<sup>2</sup>. The massive buildings are constructed of limestone blocks in a U-shaped floor plan with 300' x 60' sides and a 210' x 60' front (Plates 1-2). The 16 original exterior doors on Building 64 and 14 original exterior doors on Building 106, were wood panel construction ranging in size from 6'-8" to 15' wide and 17' to over 20' high. The main windows, over 100 on each building, were 4'-6" wide and 14 to 15 feet tall wood framed, triple-hung, with 18 divided lites of single pane glass. Because these buildings are considered historic, the doors and windows must be repaired or replaced in a manner historically accurate to match the profiles of the doors and windows of the original construction.

Building 64, the old plating shop, has recently undergone a hazardous waste clean-up contract which included the removal and disposal of all original wood windows and doors because they were laden with toxic material. Two options for the replacement of the doors and windows of Building 64 will be considered in this study:

Option 1 - replace with wood doors & windows

Option 2 - replace with aluminum doors & windows

Building 106, on the other hand, has most of its original wood windows intact. A few of the original doors remain, although they have been

modified from their original design. All the doors and windows have been painted with multiple layers of lead paint. Three options for the repair and/or replacement of the doors and windows of Building 106 will be considered in this study:

Option 1 - Replace the doors which are not original, repair the doors which are original, and repair the existing windows

Option 2 - Replace with wood doors and windows

Option 3 - Replace with aluminum doors and windows

Plates 3-7 illustrate as accurately as possible the original door and window construction to be matched by the new replacement construction. The replacement windows for both buildings will be designed using the original windows of Building 106 as a model and resizing them accordingly for the larger window openings in Building 64 (Plate 3). The doors will be designed from archival research of available photographs of Buildings 64 and 106 (Appendix E) and by examining the partial remains of the existing historic doors on Building 106 (Plates 4-7).

The 40-year life-cycle cost analysis for each option to repair or replace the doors and windows of both buildings is based on the following: cost of material and installation to repair or replace the doors and windows, calculations on heat usage and infiltration, maintenance cost for painting wood doors and windows, and cost of replacing the weatherstripping for the both the wood and aluminum doors and windows.

The cost of material and installation was provided by local door and window suppliers. Some window manufacturers were unable to provide a price for a window so large and unique (i.e. triple hung). The manufacturers who did provide the information for this study modified the operation of the window so that it consisted of one or two double hung components and one or two fixed components.

Repairs for the windows of building 106 have been estimated to include an average replacement of one muntin and one pane of glass per large window and cleaning and minor putty work on all windows. The remaining original doors are to be rehabilitated back to their historic appearance. A contingency has been included in the cost of the repair work because of unknown conditions from not being able to enter all areas of the building at the time of the survey and the possibility of the conditions of the windows and doors changing before the work begins.

The wood doors and windows require painting on a regular basis by arsenal maintenance personnel. The cost of painting the doors and windows every five years is included in the life cycle cost analysis. Weatherstripping on the doors and windows needs to be replaced about every 20 years. Therefore, the cost of replacing the weatherstripping for both the wood and aluminum doors and windows in 20 years and at 40 years is included in the 40-year life cycle cost analysis.

The existing heat usage and energy costs were obtained from an energy analysis performed by Gard, Inc., and data supplied by Dave Osborn, Rock Island Arsenal. Other energy data was supplied by the various sources listed at the end of the study and noted in the calculations.

The cumulative costs in the life cycle analysis include inflation and are given in today's dollars. The inflation rate for material and installation is shown at 3% because of the low rate of inflation in recent years. The cost of energy consumed includes an inflation rate of only 1% because the price of coal has risen very little in the past few years.

The cost estimates provided herein include only an analysis of the historic doors and windows of the main stone shops. The costs for repairing or replacing the steel doors and windows of the building additions and any other minor architectural work required is not included in this study. A 15% design contingency was added to the cost estimates to compensate for unknown construction conditions because not all areas of the buildings were available for inspection.

## 40-YEAR LIFE CYCLE COST ANALYSIS

### COMPARISON OF RESULTS

	<u>INITIAL INSTALLATION COSTS</u>	<u>TOTAL 40-YEAR COST*</u>
<u>BUILDING 64</u>		
NEW WOOD	\$1,005,465	\$2,263,898
NEW ALUMINUM	\$1,034,432	\$1,593,616
 <u>BUILDING 106</u>		
REPAIR	\$802,237	\$2,554,668
NEW WOOD	\$1,027,537	\$2,613,104
NEW ALUMINUM	\$1,119,831	\$1,583,250

\*Today's dollars

## SUMMARY

The initial cost for the repair and/or replacement of the doors and windows of Buildings 64 & 106 is close to \$1,000,000, no matter if they are repaired, replaced with wood, or replaced with aluminum. The least expensive option over a 40 year period for either building is to replace the doors and windows with aluminum. A savings of \$700,00 to \$1million is realized with the replacement aluminum doors and windows because they are not required to be painted every five years as are the wood doors and windows.



**COST ESTIMATE  
BUILDING 64  
NEW WOOD WINDOWS & DOORS**

<u>DEMOLITION</u>	<u>QUANTITY</u>	<u>COST EA.</u>	<u>SUBTOTAL</u>	<u>TOTAL</u>
PLYWOOD & REMAINING DOORS	1	7351	7351	\$7,351
 <u>MATERIAL &amp; INSTALLATION, PRIMED</u>				
<u>WINDOWS</u>	<u>QUANTITY</u>	<u>COST EA.</u>	<u>SUBTOTAL</u>	
4'-6" x 15'-4"	123	2513	309,099	
4'-3" x 7'-9"	16	2721	43,536	
 <u>DOORS</u>				
10'-0" x 20'-4"	8	17139	137,112	
6'-8" x 20'-4"	2	11633	23,266	
4'-6" x 20'-4"	3	8238	24,714	
13'-0" x 20'-4"	4	20698	82,792	
15'-0" x 20'-4"	2	26509	53,018	
8'-0" x 20'-4"	2	14279	28,558	
 TOTAL				\$702,095
 <u>PAINT</u>				
<u>WINDOWS</u>	<u>QUANTITY</u>	<u>COST EA.</u>	<u>SUBTOTAL</u>	
4'-6" x 15'-4"	123	202	24,846	
4'-3" x 7'-9"	16	128	2048	
 <u>DOORS</u>				
10'-0" x 20'-4"	8	246	1,968	
6'-8" x 20'-4"	2	164	328	
4'-6" x 20'-4"	3	111	333	
13'-0" x 20'-4"	4	319	1,276	
15'-0" x 20'-4"	2	351	702	
 TOTAL				<u>\$31,501</u>
				740,947
15% DESIGN CONTINGENCY				<u>111,143</u>
				852,090
18% CONTRACTING COSTS				<u>153,375</u>
<b>TOTAL PROJECT COST</b>				<b>\$1,005,465</b>

**COST ESTIMATE  
BUILDING 64  
NEW ALUMINUM WINDOWS & DOORS**

<u>DEMOLITION</u>	<u>QUANTITY</u>	<u>COST EA.</u>	<u>SUBTOTAL</u>	<u>TOTAL</u>
PLYWOOD & REMAINING DOORS	1	7351	7351	\$7,351
<u>MATERIAL &amp; INSTALLATION</u>	<u>QUANTITY</u>	<u>COST EA.</u>	<u>SUBTOTAL</u>	
<u>WINDOWS</u>				
4'-6" x 15'-4"	123	3920	482160	
4'-3" x 7'-9"	16	2687	42,992	
<u>DOORS</u>				
10'-0" x 20'-4"	8	11275	90,200	
6'-8" x 20'-4"	2	7315	14,630	
4'-6" x 20'-4"	3	5060	15,180	
13'-0" x 20'-4"	4	14685	58,740	
15'-0" x 20'-4"	2	16500	33,000	
8'-0" x 20'-4"	2	9020	<u>18,040</u>	
TOTAL				<u>\$754,942</u>
				762,293
		15% DESIGN CONTINGENCY		<u>114,344</u>
				876,637
		18% CONTRACTING COSTS		157,795
		<b>TOTAL PROJECT COST</b>		<b>\$1,034,432</b>

**COST ESTIMATE  
 BUILDING 106  
 REPAIR EXISTING WOOD WINDOWS & DOORS**

LEAD PAINT REMOVAL				TOTAL
<u>WINDOWS</u>	<u>QUANTITY</u>	<u>COST EA.</u>	<u>SUBTOTAL</u>	
4'-6" x 14'-2"	107	1644	175,908	
4'-3" x 7'-9"	16	1044	16,704	
1-10" x 3'-4"	308	205	63,140	
TOTAL				\$255,752

PAINT				TOTAL
<u>WINDOWS</u>	<u>QUANTITY</u>	<u>COST EA.</u>	<u>TOTAL</u>	
4'-6" x 14'-2"	107	164	17,548	
4'-3" x 7'-9"	16	128	2048	
1-10" x 3'-4"	308	84	25,872	
TOTAL				\$45,468

REMOVAL & DISPOSAL				TOTAL
<u>DOORS</u>	<u>QUANTITY</u>	<u>COST EA.</u>	<u>SUBTOTAL</u>	
4'-6" x 17'-9"	3	106	318	
10'-0 x 17'-9"	9	234	2106	
TOTAL				\$2,424

REPAIR				TOTAL
<u>WINDOWS</u>	<u>QUANTITY</u>	<u>COST EA.</u>	<u>SUBTOTAL</u>	
4'-6" x 14'-2"	107	215	23005	
4'-3" x 7'-9"	16	180	2880	
1-10" x 3'-4"	308	88	27104	
TOTAL				\$52,989

(CONTINUED)

REPAIR			
DOORS	QUANTITY	COST EA.	SUBTOTAL
4'6" x 17'-9"	1	6100	6100
6'-8" X 17'-0"	1	6800	6800
10'-0 x 17'-9"	1	4100	4100
TOTAL			\$17,000

WEATHERSTRIP			
WINDOWS	QUANTITY	COST EA.	SUBTOTAL
4'-6" x 14'-2"	107	350	37450
4'-3" x 7'-9"	16	230	3680
TOTAL			\$41,130

WEATHERSTRIP			
REPAIRED DOORS	QUANTITY	COST EA.	SUBTOTAL
4'6" x 17'-9"	1	160	160
6'-8" X 17'-0"	1	230	230
10'-0 x 17'-9"	1	410	410
TOTAL			\$ 800

LEAD PAINT REMOVAL			
REPAIRED DOORS	QUANTITY	COST EA.	SUBTOTAL
4'6" x 17'-9"	1	1966	1966
6'-8" X 17'-0"	1	2596	2596
10'-0 x 17'-9"	1	3822	3822
TOTAL			\$8,384

(CONTINUED)

MATERIAL & INSTALLATION, PRIMED

NEW DOORS	QUANTITY	COST EA.	SUBTOTAL
4'6" x 17'-9"	3	8488	25464
10'-0 x 17'-9"	9	15163	136467

TOTAL \$161,931

PAINT

NEW DOORS	QUANTITY	COST EA.	TOTAL
4'6" x 17'-9"	4	193	772
10'-0 x 17'-9"	10	425	4250
6'-8" x 17'-9"	1	284	284

TOTAL \$5,306

15% DESIGN CONTINGENCY 591,184  
88,678

18% CONTRACTING COSTS 679,862  
122,375

TOTAL PROJECT COST \$802,237

**COST ESTIMATE  
BUILDING 106  
NEW WOOD WINDOWS & DOORS**

REMOVAL	QUANTITY	COST EA.	SUBTOTAL	TOTAL
<u>WINDOWS</u>				
4'-6" x 14'-2"	107	254	27,178	
4'-3" x 7'-9"	16	132	2112	
1-10" x 3'-4"	308	24	7392	
<u>DOORS</u>				
4'6" x 17'-9"	4	106	424	
6'-8" x 17'-0"	1	155	155	
10'-0 x 17'-9"	10	234	2340	
<b>TOTAL</b>				<b>\$39,600</b>

MATERIAL & INSTALLATION, PRIMED	QUANTITY	COST EA.	TOTAL	
<u>WINDOWS</u>				
4'-6" x 14'-2"	107	2513	268,891	
4'-3" x 7'-9"	16	2721	43,536	
1-10" x 3'-4"	308	504	155,232	
<u>DOORS</u>				
4'6" x 17'-9"	4	8488	33,952	
6'-8" x 17'-0"	1	11533	11,533	
10'-0 x 17'-9"	10	15163	151,630	
<b>TOTAL</b>				<b>\$664,774</b>

PAINT	QUANTITY	COST EA.	TOTAL	
<u>WINDOWS</u>				
4'-6" x 14'-2"	107	164	17,548	
4'-3" x 7'-9"	16	128	2048	
1-10" x 3'-4"	308	84	25,872	
<u>DOORS</u>				
10'-0" x 17'-9"	10	425	4250	
6'-8" x 17'-9"	1	284	284	
4'-6" x 17'-9"	4	193	772	

TOTAL

\$50,774

15% DESIGN CONTINGENCY

755,148

113,272

18% CONTRACTING COSTS

868,420

156,316

**TOTAL PROJECT COST**

**\$1,024,736**

**COST ESTIMATE  
 BUILDING 106  
 NEW ALUMINUM WINDOWS & DOORS**

REMOVAL WINDOWS	QUANTITY	COST EA.	SUBTOTAL	TOTAL
4'-6" x 14'-2"	107	254	27,178	
4'-3" x 7'-9"	16	132	2,112	
1-10" x 3'-4"	308	24	7392	
<u>DOORS</u>				
4'-6" x 17'-9"	4	106	424	
6'-8" x 17'-0"	1	155	155	
10'-0 x 17'-9"	10	234	2,340	
<b>TOTAL</b>				<b>\$39,600</b>

MATERIAL & INSTALLATION WINDOWS	QUANTITY	COST EA.	SUBTOTAL	
4'-6" x 14'-2"	107	3692	395,044	
4'-3" x 7'-9"	16	2687	42,992	
1-10" x 3'-4"	308	673	207,284	
<u>DOORS</u>				
10'-0"x 17'-9"	10	11275	112,750	
6'-8" x 17'-0"	1	7315	7,315	
4'-6" x 17'-9"	4	5060	20,240	
<b>TOTAL</b>				<b>\$785,625</b>

	825,225
15% DESIGN CONTINGENCY	<u>123,784</u>
	949,009
18% CONTRACTING COSTS	170,822
<b>TOTAL PROJECT COST</b>	<b>\$1,119,831</b>

**COST ESTIMATE  
DOOR AND WINDOW MAINTENANCE**

**BUILDING 64**

**PAINT**

WINDOWS	QUANTITY	COST EA.	SUBTOTAL
4'-6" x 15'-4"	123	202	24,846
4'-3" x 7'-9"	16	128	2048

**DOORS**

10'-0" x 20'-4"	8	246	1,968
6'-8" x 20'-4"	2	164	328
4'-6" x 20'-4"	3	111	333
13'-0" x 20'-4"	4	319	1,276
15'-0" x 20'-4"	2	351	702

**TOTAL**

	\$31,501
15% DESIGN CONTINGENCY	<u>4,725</u>
	36,226
18% CONTRACTING COSTS	<u>6,521</u>
<b>TOTAL COST</b>	<b>\$42,747</b>

**BUILDING 106**

**PAINT**

WINDOWS	QUANTITY	COST EA.	TOTAL
4'-6" x 14'-2"	107	164	17,548
4'-3" x 7'-9"	16	128	2048
1-10" x 3'-4"	308	84	25,872

**DOORS**

10'-0" x 17'-9"	10	425	4250
6'-8" x 17'-9"	1	284	284
4'-6" x 17'-9"	4	193	772

**TOTAL**

	\$50,774
15% DESIGN CONTINGENCY	<u>7,616</u>
	58,390
18% CONTRACTING COSTS	<u>10,510</u>
<b>TOTAL COST</b>	<b>\$68,900</b>

**BUILDING 64****WEATHERSTRIPPING MATERIAL & REINSTALLATION**

<u>WINDOWS</u>	<u>QUANTITY</u>	<u>COST EA.</u>	<u>SUBTOTAL</u>	<u>TOTAL</u>
4'-6" x 15'-4"	123	375	46125	
4'-3" x 7'-9"	16	230	3680	
<b>DOORS</b>				
10'-0" x 20'-4"	8	450	3600	
6'-8" x 20'-4"	2	250	500	
4'-6" x 20'-4"	3	180	540	
13'-0" x 20'-4"	4	480	1920	
15'-0" x 20'-4"	2	500	1000	
8'-0" x 20'-4"	2	260	520	
<b>TOTAL</b>				\$57,885
			15% DESIGN CONTINGENCY	<u>8,683</u>
				66,568
			18% CONTRACTING COSTS	<u>11,982</u>
			<b>TOTAL COST</b>	<b>\$78,550</b>

**BUILDING 106****WEATHERSTRIPPING MATERIAL & REINSTALLATION**

<u>WINDOWS</u>	<u>QUANTITY</u>	<u>COST EA.</u>	<u>SUBTOTAL</u>	<u>TOTAL</u>
4'-6" x 14'-2"	107	350	37,450	
4'-3" x 7'-9"	16	230	3680	
<b>DOORS</b>				
4'-6" x 17'-9"	4	160	640	
6'-8" x 17'-0"	1	230	230	
10'-0 x 17'-9"	10	410	4100	
<b>TOTAL</b>				\$46,100
			15% DESIGN CONTINGENCY	<u>6,915</u>
				53,015
			18% CONTRACTING COSTS	<u>9,543</u>
			<b>TOTAL COST</b>	<b>\$62,558</b>



**BUILDING 64**

**DOOR & WINDOW CONTRIBUTION TO HEATING COST  
NEW WOOD DOORS & WINDOWS**

---

**CONDUCTED HEAT LOSSES**

U1 = U-VALUE FOR DOUBLE GLAZED WOOD WINDOWS = .56<sup>3</sup>

U2 = U-VALUE FOR WOOD DOORS = .50<sup>4</sup>

A1 = AREA OF WINDOWS (44335 X .276) = 12236.5 SF<sup>7</sup>

A2 = AREA OF DOORS = 3700 SF

TD = DESIGN HEATING LOAD TEMPERATURE DIFFERENCE = 68° - (-4°) = 72°<sup>5</sup>

(U)(A)(TD) = BTUH<sup>6</sup>

WINDOWS - (.56)(12236.5)(72) = 493376 BTUH

DOORS - (.50)(3700)(72) = 133200 BTUH

TOTAL CONDUCTANCE                      626576 BTUH

---

.627mBTU X 1978.7 HRS/YR<sup>8</sup> = 1240.6 mBTU/YR

1240.6 mBTU/YR

24.6 mBTU/TON OF COAL<sup>9</sup>        =    50.4 TONS OF COAL/YR

X \$47.00 /TON OF COAL<sup>9</sup>

**TOTAL            \$2370 /YR**

**BUILDING 64**

**DOOR & WINDOW CONTRIBUTION TO HEATING COST  
NEW ALUMINUM DOORS & WINDOWS**

---

**CONDUCTED HEAT LOSSES**

U1 = U-VALUE FOR DOUBLE GLAZED ALUMINUM WINDOWS = .68<sup>3</sup>

U2 = U-VALUE FOR INSULATED ALUMINUM DOORS = .20<sup>4</sup>

A1 = AREA OF WINDOWS (44335 X .276) = 12236.5 SF<sup>7</sup>

A2 = AREA OF DOORS = 3700 SF

TD = DESIGN HEATING LOAD TEMPERATURE DIFFERENCE = 68° - (-4°) = 72°<sup>5</sup>

(U)(A)(TD) = BTUH<sup>6</sup>

WINDOWS - (.68)(12236.5)(72) = 599099 BTUH

DOORS - (.2)(3700)(72) = 53280 BTUH

TOTAL CONDUCTANCE                      652379 BTUH

---

.652 mBTU X 1978.7 HRS/YR<sup>8</sup> = 1290.1 mBTU/YR

1290.1 mBTU/YR

24.6 mBTU/TON OF COAL<sup>9</sup>      =      52.4 TONS OF COAL/YR  
X \$47.00 /TON OF COAL<sup>9</sup>

**TOTAL      \$2463 /YR**

BUILDING 64

DOOR & WINDOW INFILTRATION CONTRIBUTION TO HEATING COST  
NEW DOORS & WINDOWS

---

FRESH AIR HEAT LOSSES

CFM1 = CUBIC FEET/MINUTE INFILTRATION WINDOWS = 0.18 CFM/FOOT OF CRACK<sup>10</sup>

CFM2 = CUBIC FEET/MINUTE INFILTRATION DOORS = 1.0 CFM/FOOT OF CRACK<sup>4</sup>

LF1 = LINEAR FEET OF CRACK WINDOWS - 6379'

LF2 = LINEAR FEET OF CRACK DOORS - 1683'

1.08 = BTUH REQUIRED TO INCREASE TEMPERATURE OF 1 CFM BY 1° F

TD = DESIGN HEATING LOAD TEMPERATURE DIFFERENCE = 68° - (-4°) = 72°<sup>5</sup>

(CFM)(LF)(1.08)(TD) = BTUH<sup>6</sup>

WINDOWS - (0.18)(6379)(1.08)(72) = 89285.6 BTUH

DOORS - (1.0)(1683)(1.08)(72) = 130870 BTUH

TOTAL 220155.6 BTUH

---

.220 mBTU X 1978.7 HRS/YR<sup>8</sup> = 435.3 mBTU/YR

435.3 mBTU/YR

24.6 mBTU/TON OF COAL<sup>9</sup> = 17.7 TONS OF COAL/YR

X \$47.00 /TON OF COAL<sup>9</sup>

TOTAL \$832 /YR

BUILDING 106

DOOR & WINDOW CONTRIBUTION TO HEATING COST  
REPAIRED DOORS & WINDOWS

---

CONDUCTED HEAT LOSSES

$U = U\text{-VALUE FOR DOORS} = .50^4$

$A = \text{AREA OF DOORS} = 2200 \text{ SF}$

$TD = \text{DESIGN HEATING LOAD TEMPERATURE DIFFERENCE} = 68^\circ - (-4^\circ) = 72^\circ^5$

$(U)(A)(TD) = \text{BTUH}^6$

$\text{DOORS} - (.5)(2200)(72) = 79200 \text{ BTUH}$

WINDOWS - CONDUCTANCE	BTU/HR
DOORS - CONDUCTANCE	1090232 <sup>11</sup>
	<u>79200</u>
TOTAL	1169432 BTUH

$U = 1.24^3$

---

$1.17 \text{ mBTU} \times 1978.7 \text{ HRS/YR}^8 = 2315.0 \text{ mBTU/YR}$

2315.0 mBTU/YR

$24.6 \text{ mBTU/TON OF COAL}^9 = 94.1 \text{ TONS OF COAL/YR}$   
 $\times \underline{\$47.00 / \text{TON OF COAL}^9}$

TOTAL \$4423 /YR

**BUILDING 106**

**DOOR & WINDOW CONTRIBUTION TO HEATING COST  
NEW WOOD DOORS & WINDOWS**

---

**CONDUCTED HEAT LOSSES**

U1 = U-VALUE FOR DOUBLE GLAZED WOOD WINDOWS = .56<sup>3</sup>

U2 = U-VALUE FOR WOOD DOORS = .50<sup>4</sup>

A1 = AREA OF WINDOWS (66703 X .171) = 11406.2 SF<sup>7</sup>

A2 = AREA OF DOORS = 2200 SF

TD = DESIGN HEATING LOAD TEMPERATURE DIFFERENCE = 68° - (-4°) = 72°<sup>5</sup>

(U)(A)(TD) = BTUH<sup>6</sup>

WINDOWS - (.56)(11406.21)(72) = 459898 BTUH

DOORS - (.50)(2200)(72) = 79200 BTUH

TOTAL CONDUCTANCE                      539098 BTUH

---

.539 mBTU X 1978.7 HRS/YR<sup>8</sup> = 1066.5 mBTU/YR

1066.5 mBTU/YR

24.6 mBTU/TON OF COAL<sup>9</sup>        =        43.4 TONS OF COAL/YR

X \$47.00 /TON OF COAL<sup>9</sup>

**TOTAL        \$2040 /YR**

**BUILDING 106**

**DOOR & WINDOW CONTRIBUTION TO HEATING COST  
NEW ALUMINUM DOORS & WINDOWS**

---

**CONDUCTED HEAT LOSSES**

1U = U-VALUE FOR DOUBLE GLAZED ALUMINUM WINDOWS = .68<sup>3</sup>

U2 = U-VALUE FOR INSULATED ALUMINUM DOORS = .20<sup>4</sup>

A1 = AREA OF WINDOWS (66703 X .171) = 11406.21 SF<sup>7</sup>

A2 = AREA OF DOORS = 2200 SF

TD = DESIGN HEATING LOAD TEMPERATURE DIFFERENCE = 68° - (-4°) = 72°<sup>5</sup>

(U)(A)(TD) = BTUH<sup>6</sup>

WINDOWS - (.68)(11406.2)(72) = 558448 BTUH

DOORS - (.20)(2200)(72) = 31680 BTUH

TOTAL CONDUCTANCE 590128 BTUH

---

.590 mBTU X 1978.7 HRS/YR<sup>8</sup> = 1167.4 mBTU/YR

1167.4 mBTU/YR

24.6 mBTU/TON OF COAL<sup>9</sup> = 47.5 TONS OF COAL/YR

X \$47.00 /TON OF COAL<sup>9</sup>

**TOTAL \$2233 /YR**

**BUILDING 106**

**WINDOW & DOOR INFILTRATION CONTRIBUTION TO HEATING COST  
RETROFIT EXISTING WINDOWS & DOORS WITH WEATHERSTRIPPING**

---

FRESH AIR HEAT LOSSES

CFM1 = CUBIC FEET/MINUTE INFILTRATION WINDOWS = .57 CFM/FOOT OF CRACK<sup>12</sup>

CFM2 = CUBIC FEET/MINUTE INFILTRATION DOORS = 1.0 CFM/FOOT OF CRACK<sup>4</sup>

L1 = LINEAR FEET OF CRACK WINDOWS - 8493'

LF2 = LINEAR FEET OF CRACK DOORS - 1056'

1.08 = BTUH REQUIRED TO INCREASE TEMPERATURE OF 1 CFM BY 1° F

TD = DESIGN HEATING LOAD TEMPERATURE DIFFERENCE = 68° - (-4°) = 72°<sup>5</sup>

$(CFM)(LF)(1.08)(TD) = BTUH^6$

WINDOWS -  $(0.57)(8493)(1.08)(72) = 376436.9$  BTUH

DOORS -  $(1.0)(1056)(1.08)(72) = \underline{82114.6}$  BTUH

TOTAL 458554.5 BTUH

---

$.459 \text{ mBTU} \times 1978.7 \text{ HRS/YR}^8 = 908.2 \text{ mBTU/YR}$

908.2 mBTU/YR

$24.6 \text{ mBTU/TON OF COAL}^9 = 36.9 \text{ TONS OF COAL/YR}$

$\times \underline{\$47.00 / \text{TON OF COAL}^9}$

**TOTAL \$1734 /YR**





**40-YEAR LIFE CYCLE COST ANALYSIS**

**BUILDING 64  
NEW WOOD WINDOWS AND DOORS**

YEAR	INSTALLATION (P.10)	PAINTING (P.18)	WSTRIP (P.19)	HEAT USAGE (P.20)	INFILTRATION (P.22)	TOTAL
1	1,005,465	(42,747)	(78,550)	2370	832	1,008,667
2				2394	840	
3				2418	849	
4				2442	857	
5		49,555		2466	866	
6				2491	874	
7				2516	883	
8				2541	892	
9				2566	901	
10		57,448		2592	910	
11				2618	919	
12				2644	928	
13				2671	938	
14				2697	947	
15		66,598		2724	956	
16				2751	966	
17				2779	976	
18				2807	985	
19				2835	995	
20		77,206	141,870	2863	1005	
21				2892	1015	
22				2921	1025	
23				2950	1036	
24				2979	1046	
25		89,503		3009	1056	
26				3039	1067	
27				3070	1078	
28				3100	1088	
29				3131	1099	
30		103,758		3163	1110	
31				3194	1121	
32				3226	1133	
33				3259	1144	
34				3291	1155	
35		120,284		3324	1167	
36				3357	1179	
37				3391	1190	
38				3425	1202	
39				3459	1214	
40		139,442	256,233	3494	1226	
CUMULATIVE TOTAL***	1,005,465	703,796	398,103	115,861	40,673	\$ 2,263,898

\* ASSUMES 3% YEARLY INFLATION RATE

\*\* ASSUMES 1% YEARLY INFLATION RATE

\*\*\* ALL NUMBERS ARE IN TODAY'S DOLLARS

**40-YEAR LIFE CYCLE COST ANALYSIS**

**BUILDING 64  
NEW ALUMINUM WINDOWS AND DOORS**

YEAR	INSTALLATION (P.11)	PAINTING	WSTRIP (P.19)	HEAT USAGE (P.21)	INFILTRATION (P.22)	TOTAL
1	1,034,432	(0,000)	(78,550)	2463	832	1,037,727
2				2488	840	
3				2513	849	
4				2538	857	
5		-		2563	866	
6				2589	874	
7				2615	883	
8				2641	892	
9				2667	901	
10		-		2694	910	
11				2721	919	
12				2748	928	
13				2775	938	
14				2803	947	
15		-		2831	956	
16				2859	966	
17				2888	976	
18				2917	985	
19				2946	995	
20		-	141,870	2976	1005	
21				3005	1015	
22				3035	1025	
23				3066	1036	
24				3096	1046	
25		-		3127	1056	
26				3159	1067	
27				3190	1078	
28				3222	1088	
29				3254	1099	
30		-		3287	1110	
31				3320	1121	
32				3353	1133	
33				3386	1144	
34				3420	1155	
35		-		3455	1167	
36				3489	1179	
37				3524	1190	
38				3559	1202	
39				3595	1214	
40		-	256,233	3631	1226	

CUMULATIVE TOTAL***	1,034,432	-	398,103	120,407	40,673	\$ 1,593,616
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\* ASSUMES 3% YEARLY INFLATION RATE  
 \*\* ASSUMES 1% YEARLY INFLATION RATE  
 \*\*\* ALL NUMBERS ARE IN TODAY'S DOLLARS

**40-YEAR LIFE CYCLE COST ANALYSIS**

**BUILDING 106  
REPAIR EXISTING WINDOWS AND DOORS**

*10/8 pt 1*  
~~INSTALLATION~~

YEAR	<del>INSTALLATION</del> (P.12-14)	PAINTING (P.18)	WSTRIP (P.19)	HEAT USAGE (P.23)	INFILTRATION (P.26)	TOTAL
1	802,237	(68,900)	(62,558)	4423	1734	808,394
2				4467	1751	
3				4512	1769	
4				4557	1787	
5		79,874		4603	1804	
6				4649	1822	
7				4695	1841	
8				4742	1859	
9				4789	1878	
10		92,596		4837	1896	
11				4886	1915	
12				4935	1935	
13				4984	1954	
14				5034	1973	
15		107,344		5084	1993	
16				5135	2013	
17				5186	2033	
18				5238	2054	
19				5291	2074	
20		124,441	112,987	5343	2095	
21				5397	2116	
22				5451	2137	
23				5505	2158	
24				5560	2180	
25		144,261		5616	2202	
26				5672	2224	
27				5729	2246	
28				5786	2268	
29				5844	2291	
30		167,238		5903	2314	
31				5962	2337	
32				6021	2361	
33				6081	2384	
34				6142	2408	
35		193,875		6204	2432	
36				6266	2456	
37				6328	2481	
38				6392	2506	
39				6455	2531	
40		224,754	204,067	6520	2556	

CUMULATIVE TOTAL ***	802,237	1,134,384	317,053	216,224	84,769	\$ 2,554,668
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\* ASSUMES 3% YEARLY INFLATION RATE  
 \*\* ASSUMES 1% YEARLY INFLATION RATE  
 \*\*\* ALL NUMBERS ARE IN TODAY'S DOLLARS

**40-YEAR LIFE CYCLE COST ANALYSIS**

**BUILDING 106  
NEW WOOD WINDOWS AND DOORS**

YEAR	INSTALLATION (P.15)	PAINTING (P.18)	WSTRIP (P.19)	HEAT USAGE (P.24)	INFILTRATION (P.27)	TOTAL
1	1,024,736	(68,900)	(62,558)	2040	761	1,027,537
2				2060	769	
3				2081	776	
4				2102	784	
5		79,874		2123	792	
6				2144	800	
7				2166	808	
8				2187	816	
9				2209	824	
10		92,596		2231	832	
11				2253	841	
12				2276	849	
13				2299	858	
14				2322	866	
15		107,344		2345	875	
16				2368	883	
17				2392	892	
18				2416	901	
19				2440	910	
20		124,441	112,987	2465	919	
21				2489	929	
22				2514	938	
23				2539	947	
24				2565	957	
25		144,261		2590	966	
26				2616	976	
27				2642	986	
28				2669	996	
29				2695	1006	
30		167,238		2722	1016	
31				2750	1026	
32				2777	1036	
33				2805	1046	
34				2833	1057	
35		193,875		2861	1067	
36				2890	1078	
37				2919	1089	
38				2948	1100	
39				2977	1111	
40		224,754	204,067	3007	1122	

CUMULATIVE TOTAL***	1,024,736	1,134,384	317,053	99,728	37,203	\$ 2,613,104
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\* ASSUMES 3% YEARLY INFLATION RATE

\*\* ASSUMES 1% YEARLY INFLATION RATE

\*\*\* ALL NUMBERS ARE IN TODAY'S DOLLARS

**40-YEAR LIFE CYCLE COST ANALYSIS**

**BUILDING 106  
NEW ALUMINUM WINDOWS AND DOORS**

YEAR	INSTALLATION (P.17)	PAINTING (P.18)	WSTRIP (P.19)	HEAT USAGE (P.25)	INFILTRATION (P.27)	TOTAL
1	1,119,831	(0,000)	(62,558)	2233	761	1,122,825
2				2255	769	
3				2278	776	
4				2301	784	
5		-		2324	792	
6				2347	800	
7				2370	808	
8				2394	816	
9				2418	824	
10		-		2442	832	
11				2467	841	
12				2491	849	
13				2516	858	
14				2541	866	
15		-		2567	875	
16				2592	883	
17				2618	892	
18				2645	901	
19				2671	910	
20		-	112,987	2698	919	
21				2725	929	
22				2752	938	
23				2779	947	
24				2807	957	
25		-		2835	966	
26				2864	976	
27				2892	986	
28				2921	996	
29				2950	1006	
30		-		2980	1016	
31				3010	1026	
32				3040	1036	
33				3070	1046	
34				3101	1057	
35		-		3132	1067	
36				3163	1078	
37				3195	1089	
38				3227	1100	
39				3259	1111	
40		-	204,067	3292	1122	
CUMULATIVE						
TOTAL***	1,119,831	-	317,053	109,163	37,203	\$ 1,583,250

\* ASSUMES 3% YEARLY INFLATION RATE  
 \*\* ASSUMES 1% YEARLY INFLATION RATE  
 \*\*\* ALL NUMBERS ARE IN TODAY'S DOLLARS

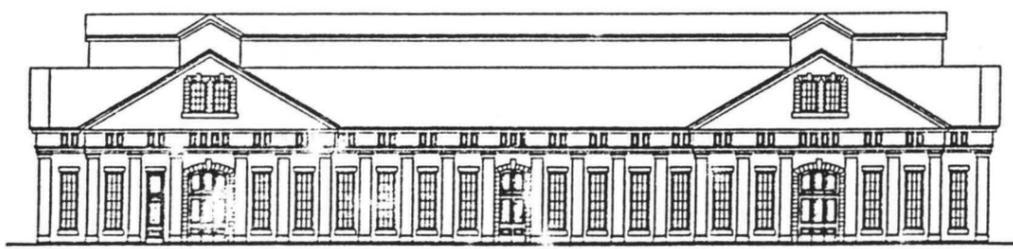


## NOTES

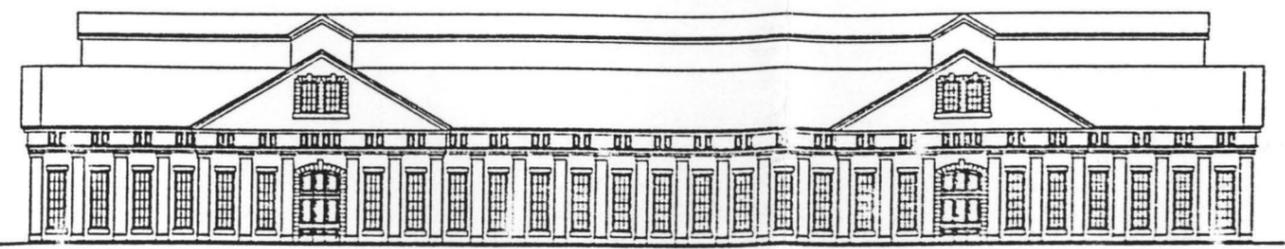
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- <sup>1</sup> pp4-32,4-33; Energy Engineering Analysis Program - Volume 1, Gard, Inc., June 1981.
- <sup>2</sup> An Illustrated History of the Rock Island Arsenal Parts 1 & 2, Thomas Slattery, Historical Office Rock Island Arsenal, Rock Island, Illinois, 1990.
- <sup>3</sup> pp4-18; The Window Workbook for Historic Buildings, Historic Preservation Education Foundation, 1986.
- <sup>4</sup> Average from various manufacturers.
- <sup>5</sup> Appendix B2; Energy Engineering Analysis Program - Volume 3, Gard, Inc., June 1981; Difference between Design Heating Load and DBT (dry bulb temperature).
- <sup>6</sup> pp12; Efficient Buildings - heating and cooling, J. Trost, A-C Publications, 1987.
- <sup>7</sup> Appendix B2; Energy Engineering Analysis Program - Volume 3, Gard, Inc., June 1981; Total area of the building faces multiplied by the percentage of window area to wall area.
- <sup>8</sup> Appendix D1; Energy Engineering Analysis Program - Volume 1, Gard, Inc., June 1981.
- <sup>9</sup> Heating Load Study, Dave Osborn, Rock Island Arsenal, Sept. 1990.
- <sup>10</sup> Window Workshop Notes, New York Landmarks Conservancy, New York City, April 1986.
- <sup>11</sup> Appendix B2; Energy Engineering Analysis Program - Volume 3, Gard, Inc., June 1981.
- <sup>12</sup> Time Saver Standards for Architectural Design Data, Reprinted by Mechanical Plum/Elec Systems, Mark Schiler, Architectural License Seminars, Los Angeles, 1991.



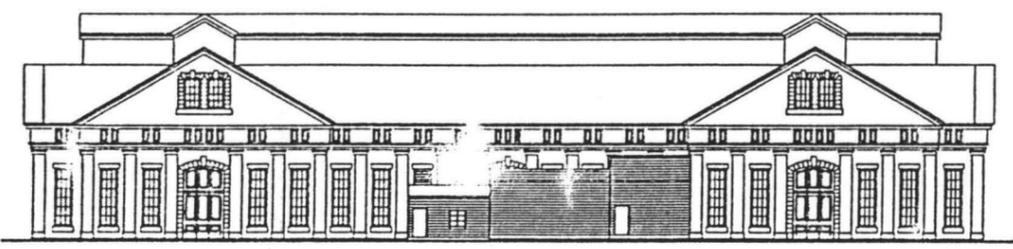




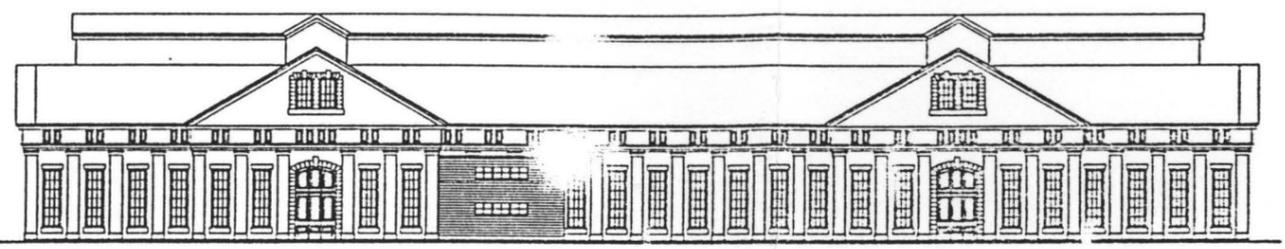
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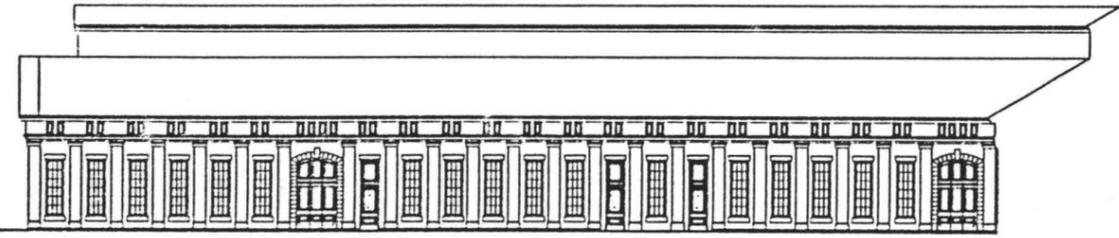
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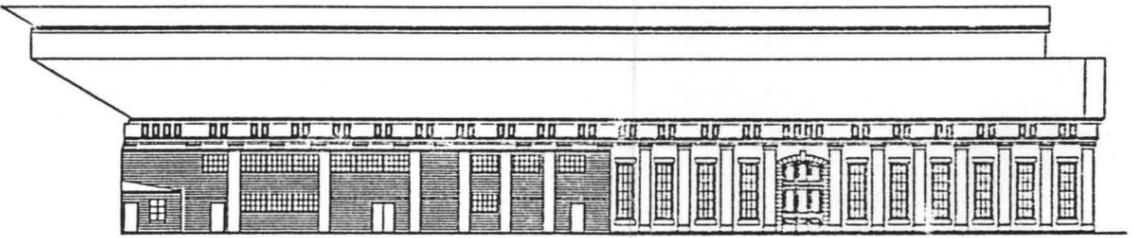
SOUTH ELEVATION



EAST ELEVATION



COURTYARD WEST ELEVATION



COURTYARD EAST ELEVATION

U.S. Army Corps  
of Engineers  
Rock Island  
District

System	Description	Date	Appr. by

Designed By	CIP	Date	XX	XXX	XX

U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
ROCK ISLAND, ILLINOIS

U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
LOUISVILLE, KENTUCKY

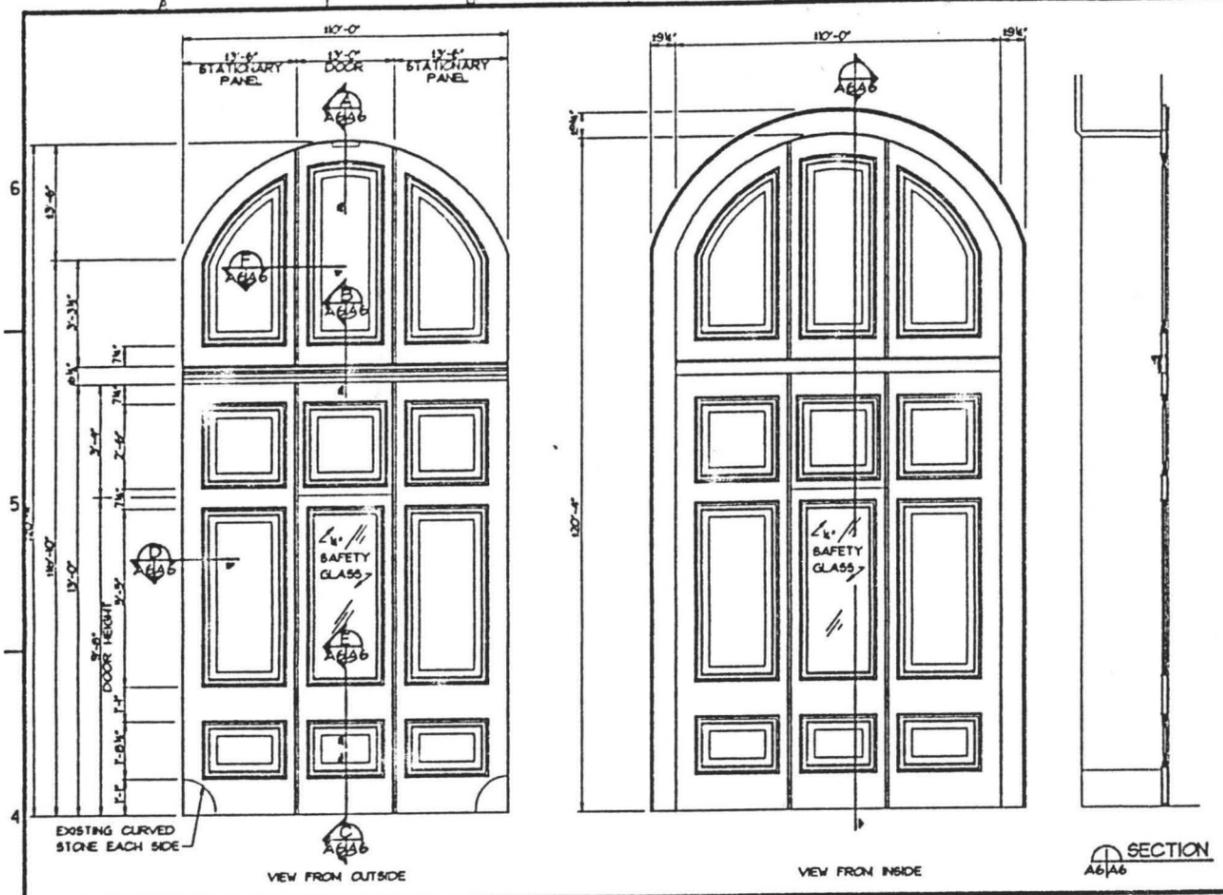
ROCK ISLAND ARSENAL, ILLINOIS  
BUILDING 106  
REPAIR WINDOWS AND DOORS  
PR. NO. 128-88

**BUILDING 106  
ELEVATIONS**

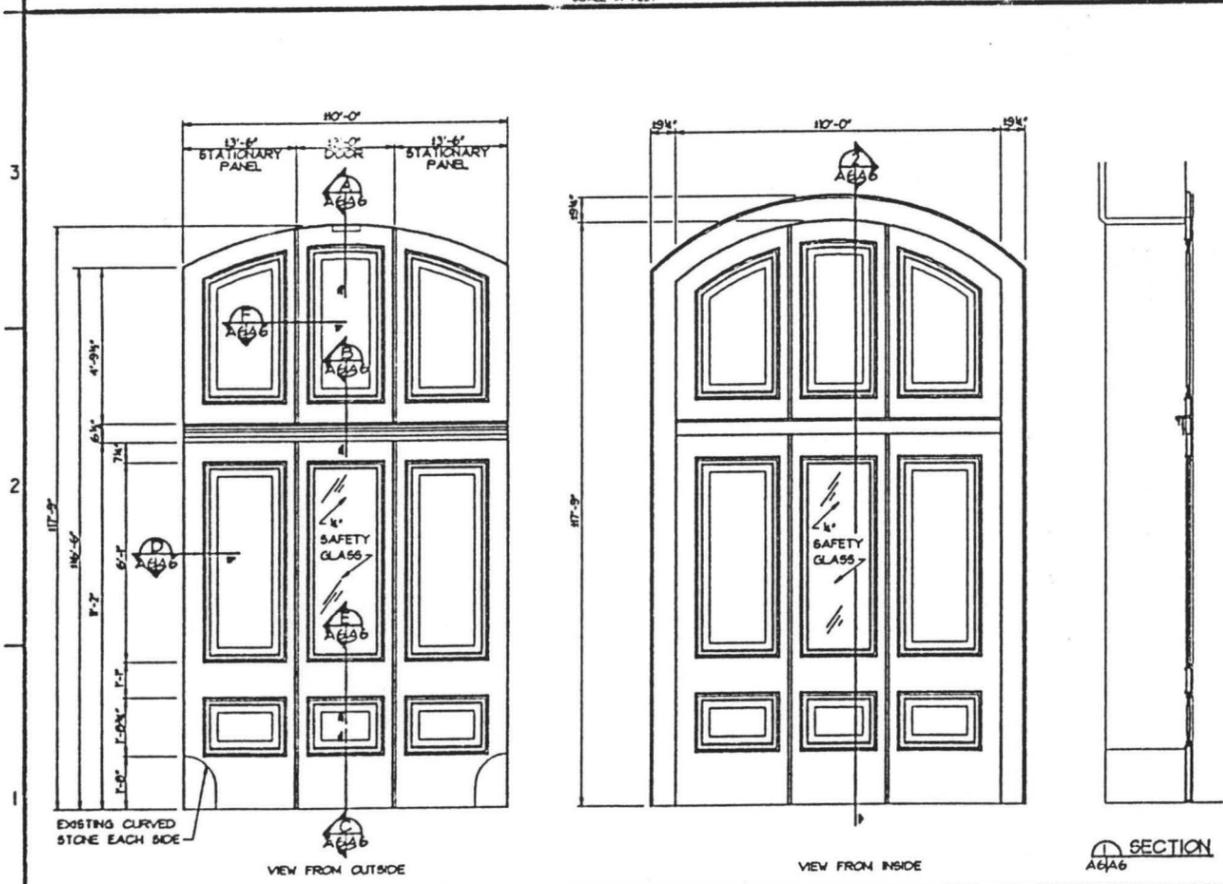
Sheet  
Reference  
Number

Sheet X of XX

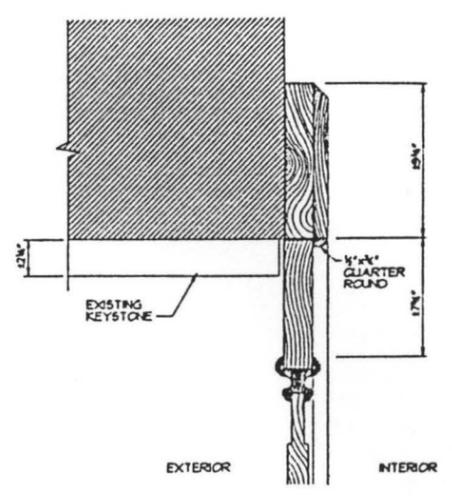




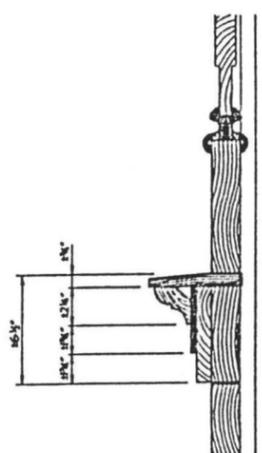
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SCALE IN FEET



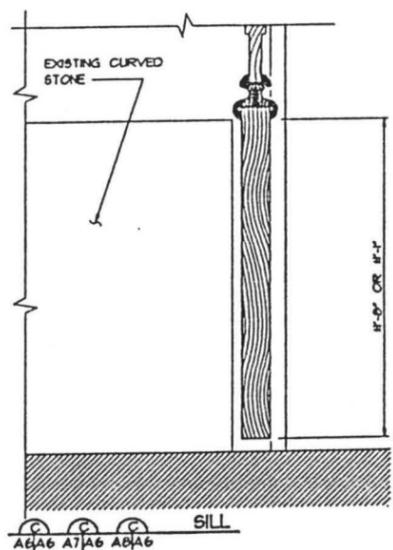
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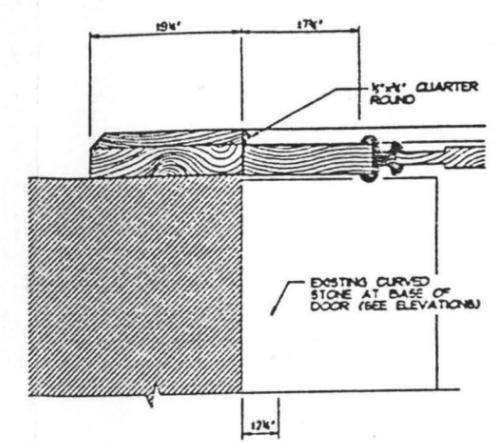
TRANSOM HEAD  
A6/A6 A7/A6 A8/A6



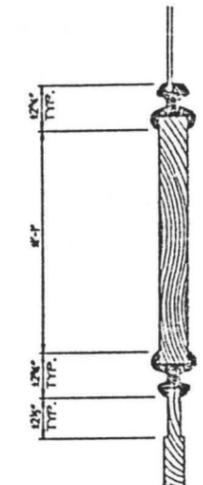
TRANSOM SILL/DOOR HEAD  
A6/A6 A7/A6 A8/A6



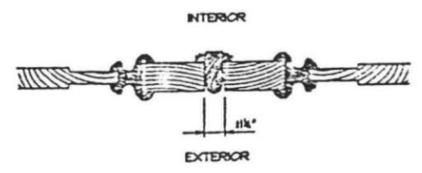
DOOR SECTIONS  
SCALE IN INCHES



TRANSOM HEAD  
A6/A6 A7/A6 A8/A6



PANEL RAIL  
A6/A6 A7/A6 A8/A6



'T' ASTRIGAL  
A6/A6 A7/A6 A8/A6

- HARDWARE**
1. KEY LOCKS
  2. BUTT HINGES
  3. SURFACE MOUNTED CLOSER
  4. SURFACE MOUNTED PANEIC DEVICE w/ SURFACE BOLTS & THUMB LATCH PULL
  5. WEATHERSTRIP AS PER INDUSTRY STANDARDS
- \* TOOLS REQUIRED (NOT SHOWN) TO ACCOMMODATE WEATHERSTRIPPING SHALL NOT ALTER THE EXPOSED PROFILES NOR OVERALL APPEARANCE.

DOOR SECTIONS  
SCALE IN INCHES

Symbol	Notes	Revision

Designed By	CPT	Scale	AS SHOWN
Drawn By	MPP	Drawing Code	XXXX
Checked By	RLM	Initial/Date	XXXX-XX-XX
Reviewed By	CS		

U.S. ARMY ENGINEER DISTRICT  
ROCK ISLAND, ILLINOIS

U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
LOUISVILLE, KENTUCKY

ROCK ISLAND ARSENAL, ILLINOIS  
BUILDING 64 & 106  
REPAIR WINDOWS AND DOORS  
PR NO. 128-88

**BUILDING 64 & 106  
ORIGINAL DOOR  
ELEVATIONS & DETAILS**



Scale	AS SHOWN
Designation	XXXXX
Revision	Rev 1 of 1

Drawn By	CPT
Checked By	RJM
Reviewed By	CS

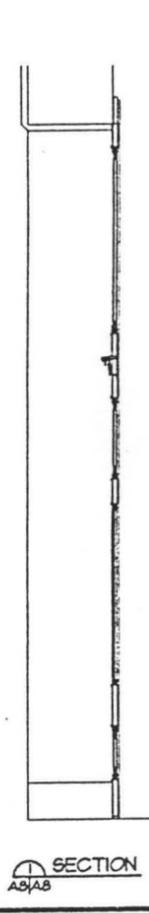
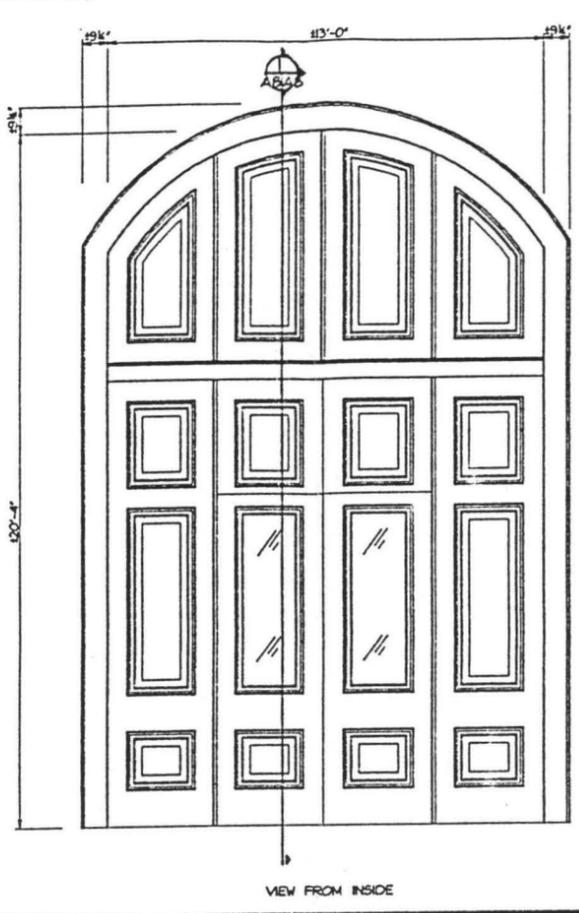
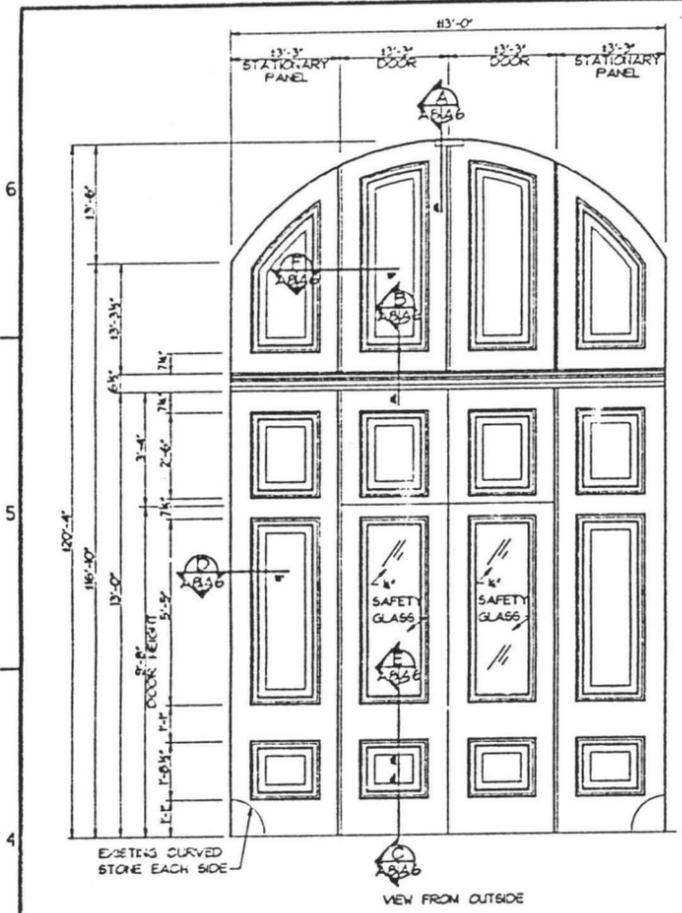
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
ROCK ISLAND, ILL. INDIS

U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
LOUISVILLE, KENTUCKY

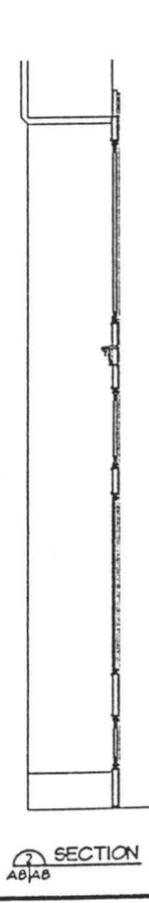
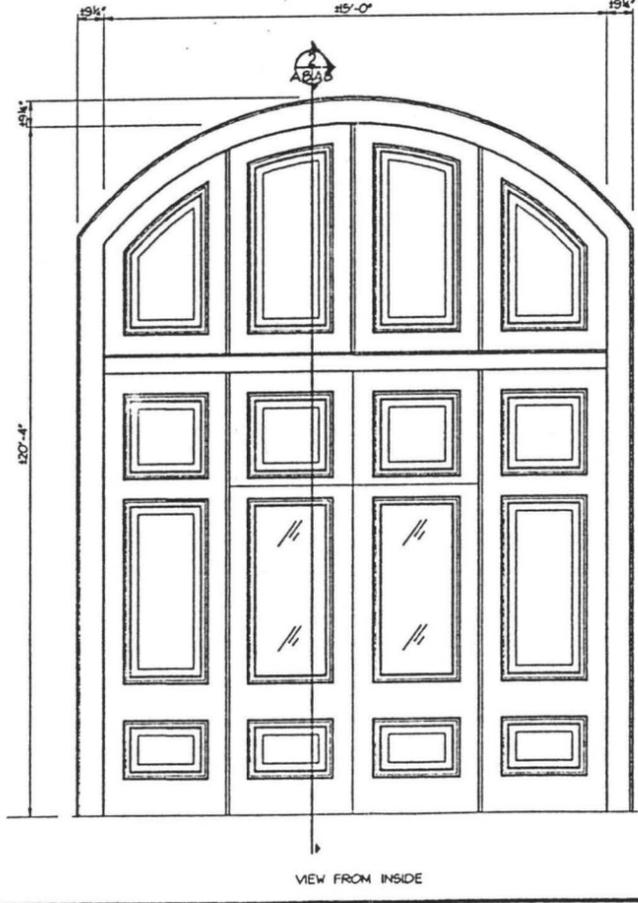
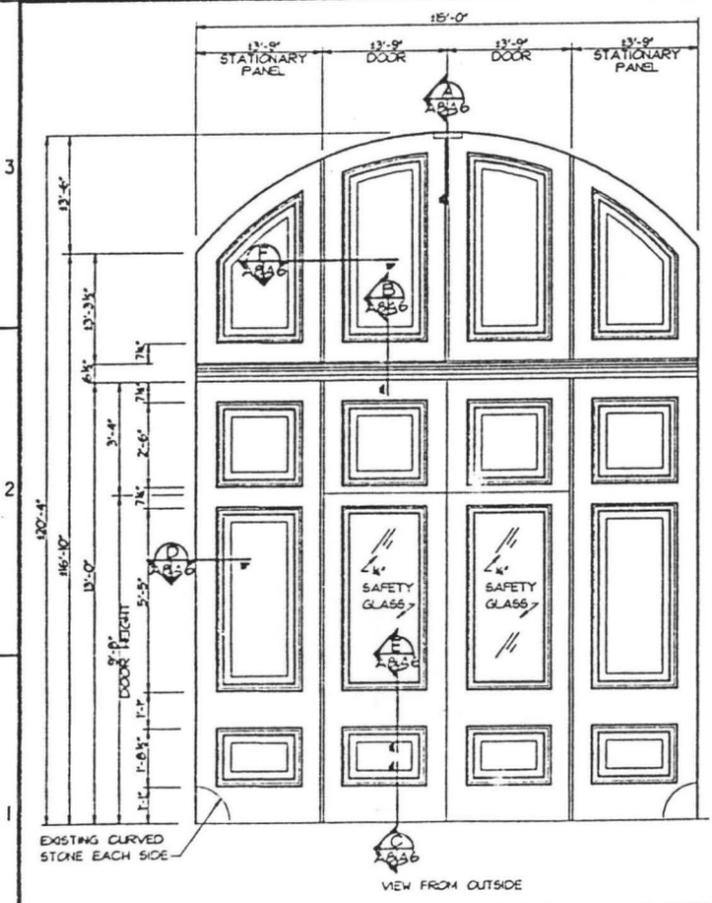
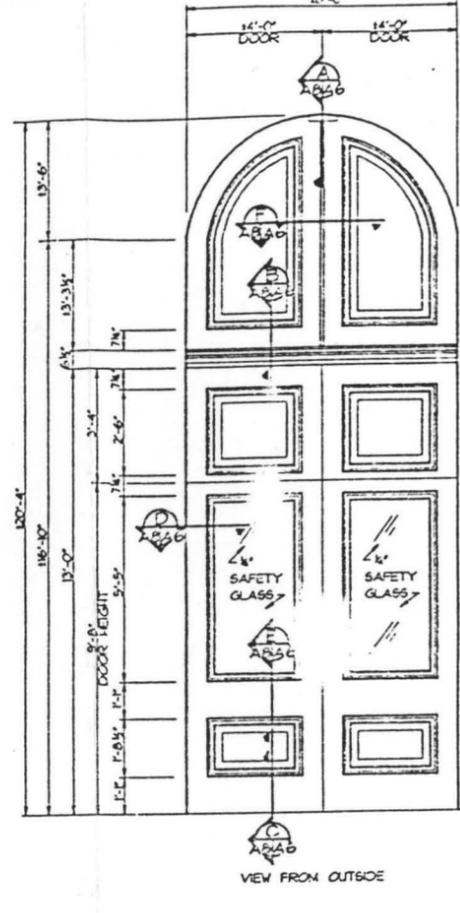
ROCK ISLAND ARSENAL, ILL. INDIS  
BUILDING 64 A, 106  
REPAIR WINDOWS AND DOORS  
PIR NO. 128-88

**BUILDING 64 & 106  
DOOR ELEVATIONS  
& DETAILS**

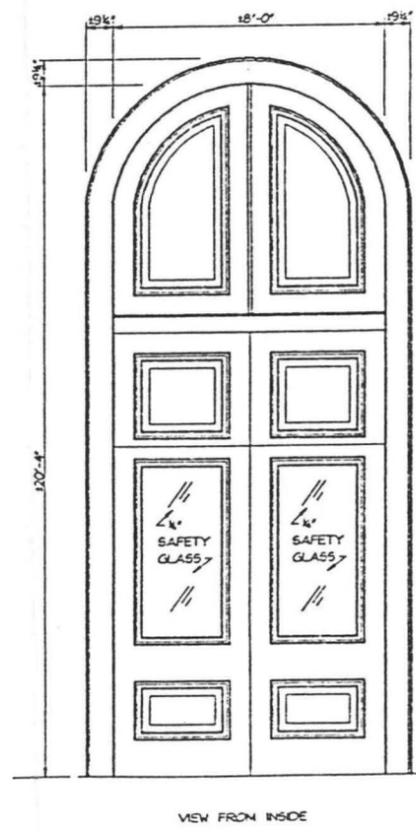
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Sheet 2 of 22



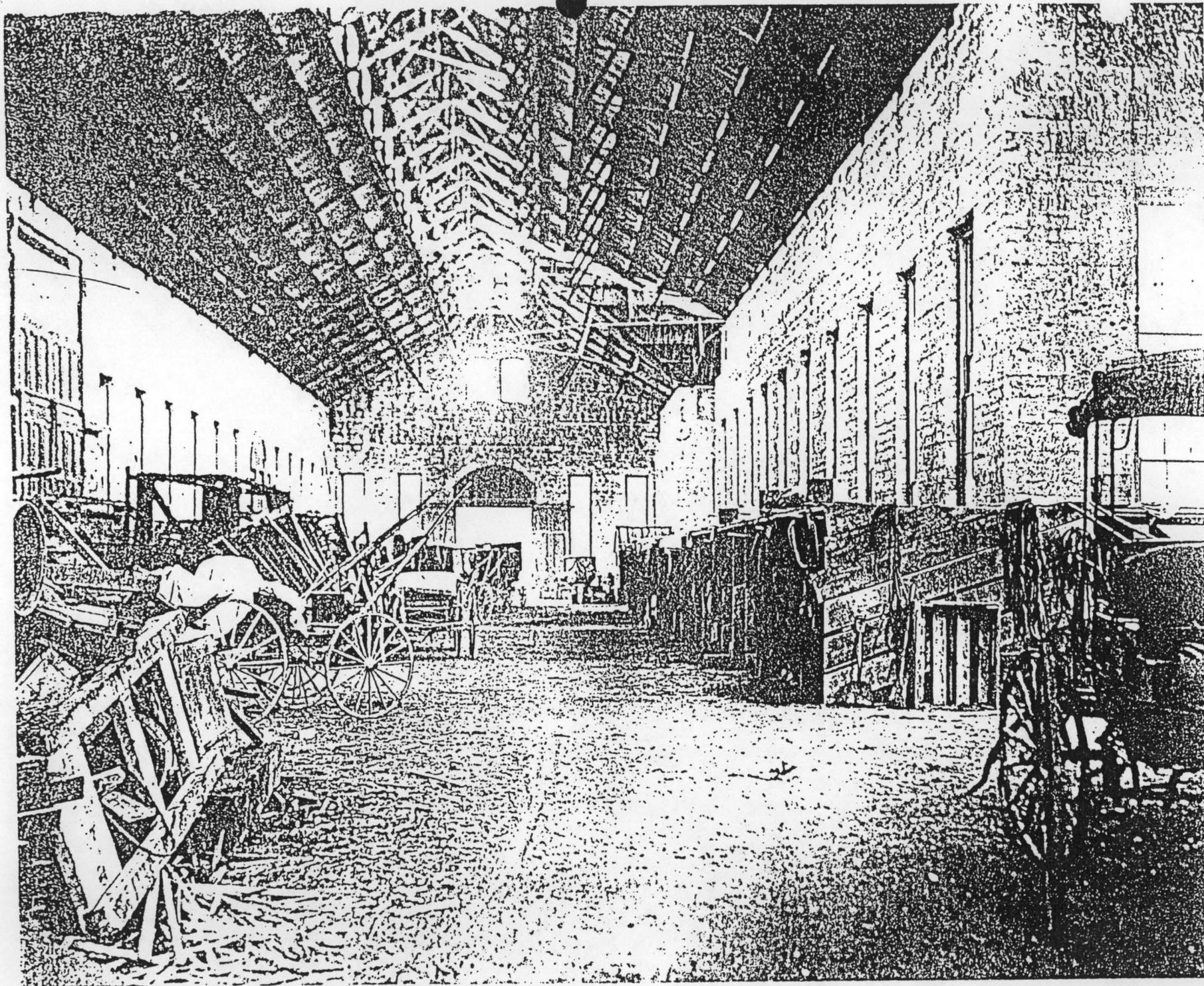
**DOOR ELEVATION '64G'**  
SCALE IN FEET



**DOOR ELEVATION '64H'**  
SCALE IN FEET

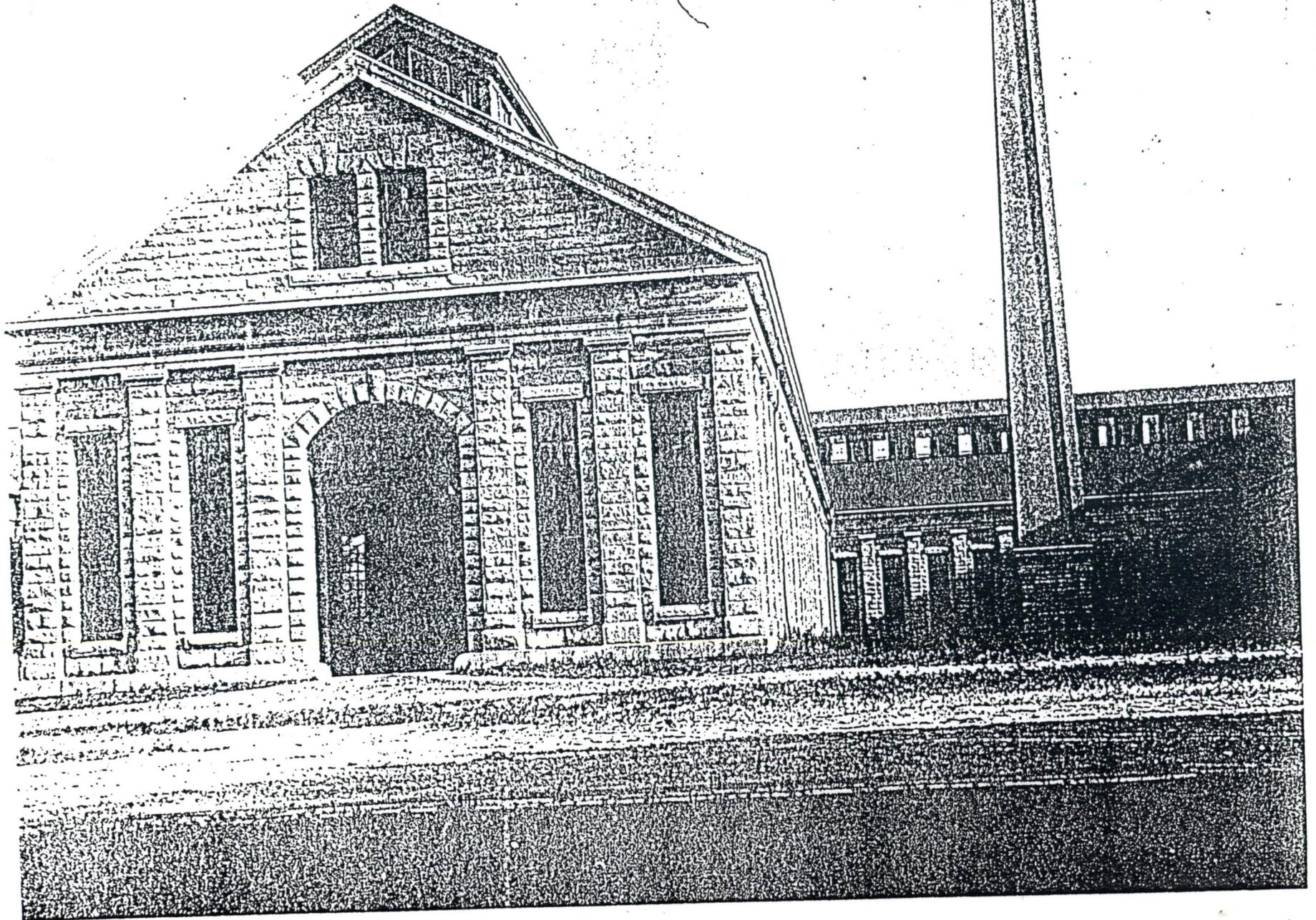


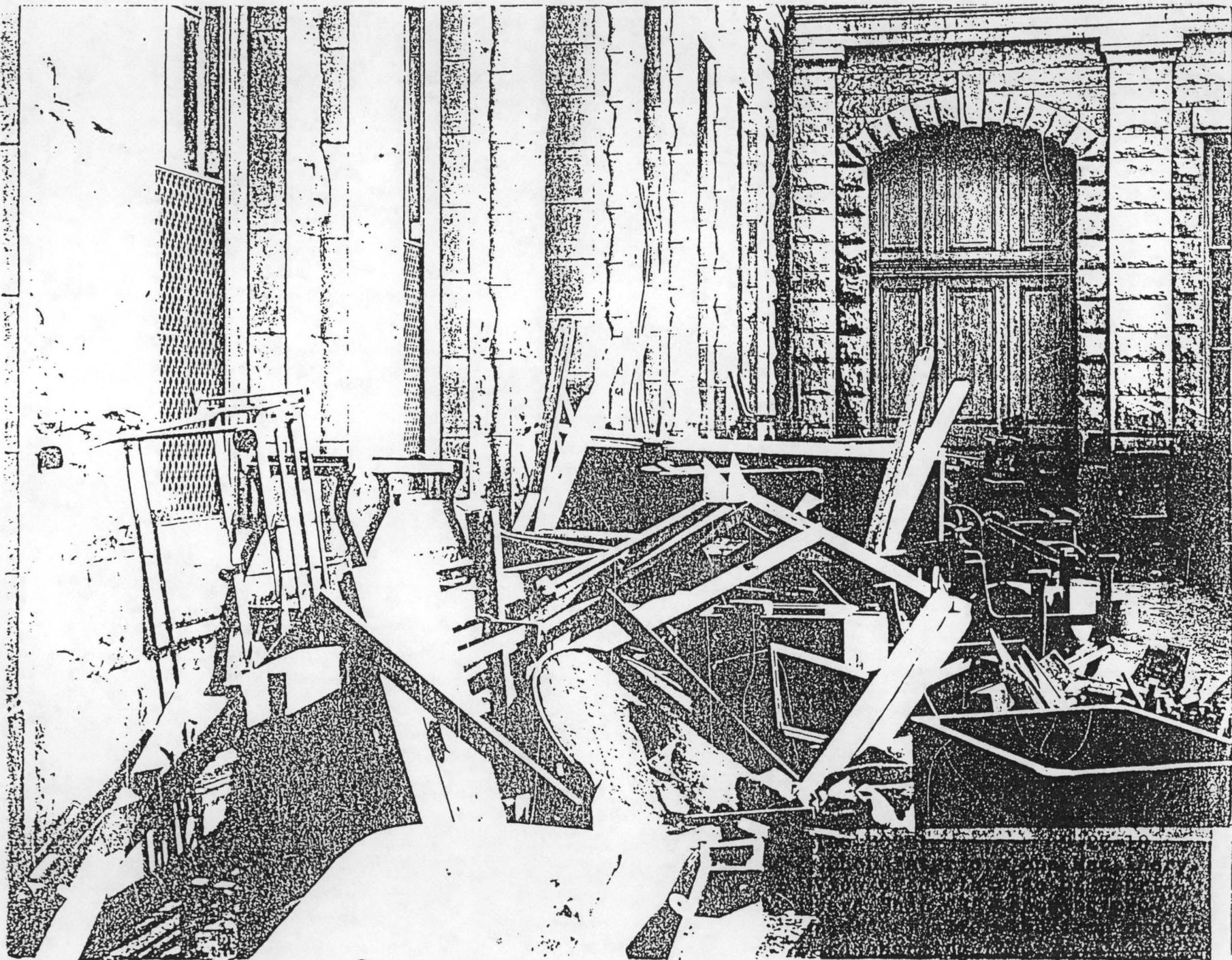
**DOOR ELEVATION '64H'**  
SCALE IN FEET



North End.

SHOP "17"





# ROCK ISLAND ARSENAL.

## *A Forging Shop.*

### *Front Elevation.*

*Trace two Shops like this; one for the Arsenal, to be used as Forging Shop & Foundry,  
and one for the Armory to be used as Forging Shop & Rolling Mill.*



5 0 10 20 30 40 50 60 70 80 90 feet.

*Rock Island Arsenal.  
February 12<sup>th</sup> 1877.*

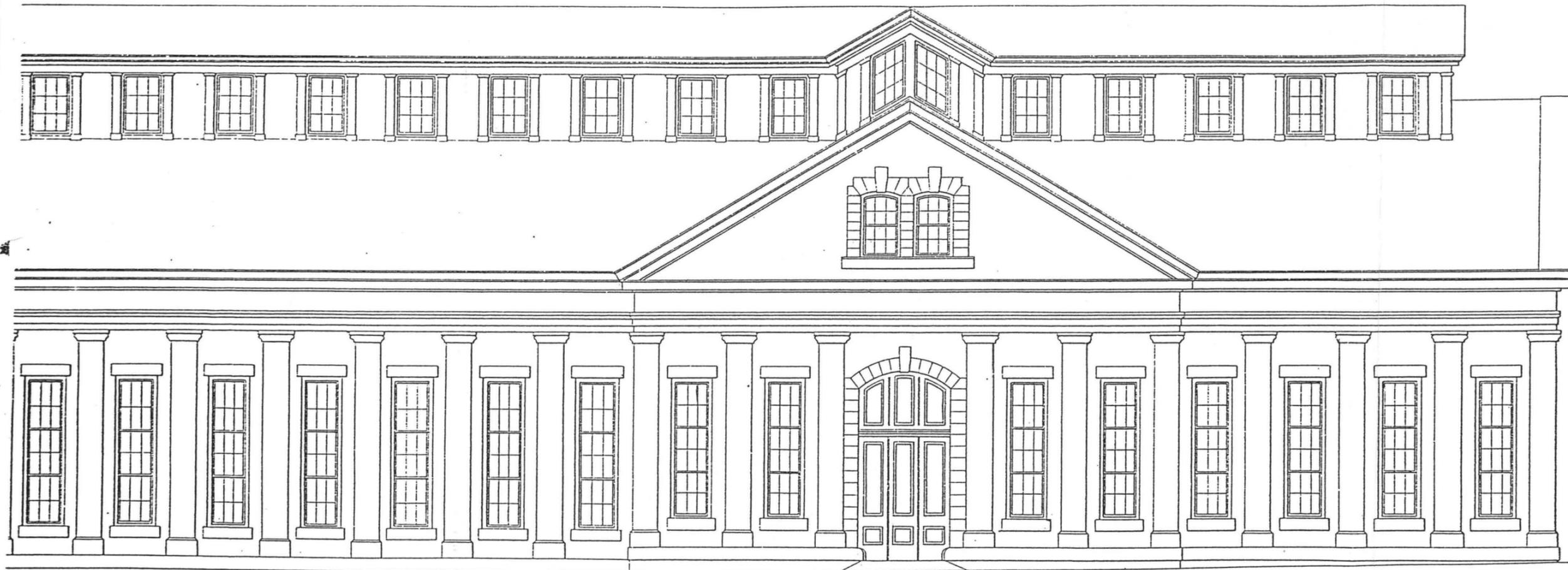
*D. W. Hayler,  
Major of Ordnance.  
Brvt Lieut Col. U.S.A.  
Comm<sup>dg</sup>.*

ISLAND ARSENAL.

*A Forging Shop.*

*Side Elevation.*

*Use this; one for the Arsenal, to be used as Forging Shop & Foundry,  
another to be used as Forging Shop & Rolling Mill.*



30 40 50 60 70 80 90 100 feet.

*Rock Island Arsenal  
February 12<sup>th</sup> 18  
D. W. Hayes  
Major of Ordnance  
Brvt. Lieut. Col. U.  
Comdr.*

**40-YEAR LIFE CYCLE COST ANALYSIS  
OF ARCHITECTURAL OPTIONS  
FOR THE  
REPAIR AND/OR REPLACEMENT  
OF THE WINDOWS  
IN THE HISTORIC STONESHOPS**



**ROCK ISLAND ARSENAL  
ROCK ISLAND, ILLINOIS**

**AUGUST 1996**

40-YEAR LIFE CYCLE COST ANALYSIS  
OF ARCHITECTURAL OPTIONS  
FOR THE  
REPAIR AND/OR REPLACEMENT  
OF THE WINDOWS  
IN THE HISTORIC STONESHOPS

ROCK ISLAND ARSENAL  
ROCK ISLAND, ILLINOIS

AUGUST 1996

## PREFACE

This is a study to determine the 40-year life cycle costs of the installation, maintenance, and energy use derived by the repair and/or replacement of the stone shop windows, Rock Island Arsenal, Rock Island, Illinois. Building 62, an old manufacturing shop, is being considered as an example for the purposes of this analysis. Building 62 is currently being used for administrative offices and is typical of the usage of all of the stone buildings. It was selected as it is one of the buildings where the wood windows are still intact, and no storm windows have been installed.

40-YEAR LIFE CYCLE COST ANALYSIS  
OF VARIOUS ARCHITECTURAL OPTIONS  
FOR THE REPAIR AND/OR REPLACEMENT  
OF THE WINDOWS OF BUILDING 62

ROCK ISLAND ARSENAL  
ROCK ISLAND, ILLINOIS  
AUGUST 1996

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2% was used for energy costs caused by infiltration as it effects both heating and air conditioning average of 3 and 1 percentages. Although the original cost estimate prepared by the Corps of Engineers did not include a discount value, this analysis does include one (3%).

The cost estimates provided herein include only an analysis of the historic windows of the main stone shops. The costs for repairing or replacing the doors of the building and any other minor architectural work required is not included in this study. A 15% design contingency was added to the cost estimates to compensate for unknown construction conditions. Although 10% is more typical for a project such as this, 15% was chosen because not all of the windows could be analyzed individually.

A value of 18% was attached to the total construction cost to allow for the in-house contracting costs. This 18% is broken down into: 6% for design, 6% for contract development, and 6% for supervision and administration (S & A) of the construction contract. These are real and necessary costs associated with the total project that are frequently overlooked in an analysis.

**40-YEAR LIFE CYCLE COST ANALYSIS  
COMPARISON OF RESULTS**

<u>OPTION</u>	<u>INITIAL INSTALLATION COSTS</u>	<u>TOTAL 40-YEAR COSTS*</u>
REPAIR EXISTING WOOD	\$1,270,923	\$4,118,453
NEW WOOD	\$1,324,573	\$3,679,823
NEW ALUMINUM	\$1,783,396	\$3,275,617
REPAIR W/NEW STORMS	\$1,790,834	\$4,680,490

\* Today's Dollars

## SUMMARY

Repair Existing Wood Windows was determined to be the least expensive initially (\$1.3 million), and Repair Existing Wood Windows (with new storms) was determined to be the most costly initially (\$1.8 million).

Installation of interior storms on existing windows would not be cost effective based on these results, however, installation of the storms is typically required to reduce Heating, Ventilating, and Air Conditioning (HVAC) equipment purchase costs. The additional HVAC costs required when interior storms are not used greatly exceed the savings from their omission.

The least expensive option over a 40 year period for this building is to replace the windows with aluminum. At a cost of \$3.3 million, it is \$1.4 million less than "Repair Existing Wood Windows with New Storms", and \$.84 million less than "Repair Existing Wood Windows".

APPENDIX A

**COST ESTIMATE, BUILDING 62  
REPAIR EXISTING WOOD WINDOWS**

LEAD PAINT REMOVAL	QUANTITY	COST EACH	SUBTOTAL	TOTAL
4'6" X 10'6"	282	\$1,387	\$391,134	
4'6" X 8'6"	114	\$1,183	\$134,862	
1'9"X3'6"	282	\$205	\$57,810	
				<u>\$583,806</u>

(WITH 15% DES. CONT. AND 18% CONT. COSTS)

**\$792,225**

PAINT	QUANTITY	COST EACH	SUBTOTAL	TOTAL
4'6" X 10'6"	282	\$159	\$44,838	
4'6" X 8'6"	114	\$142	\$16,188	
1'9"X3'6"	282	\$84	\$23,688	
				<u>\$84,714</u>

(WITH 15% DES. CONT. AND 18% CONT. COSTS)

**\$114,957**

REPAIR	QUANTITY	COST EACH	SUBTOTAL	TOTAL
4'6" X 10'6"	282	\$218	\$61,476	
4'6" X 8'6"	114	\$199	\$22,686	
1'9"X3'6"	282	\$88	\$24,816	
				<u>\$108,978</u>

(WITH 15% DES. CONT. AND 18% CONT. COSTS)

**\$147,883**

WEATHERSTRIP	QUANTITY	COST EACH	SUBTOTAL	TOTAL
4'6" X 10'6"	282	\$301	\$84,882	
4'6" X 8'6"	114	\$260	\$29,640	
1'9"X3'6"	282	\$43	\$12,126	
				<u>\$126,648</u>

(WITH 15% DES. CONT. AND 18% CONT. COSTS)

**\$171,861**

**COST ESTIMATE, BUILDING 62  
NEW WOOD WINDOWS**

REMOVAL	QUANTITY	COST EACH	SUBTOTAL	TOTAL
4'6" X 10'6"	282	\$189	\$53,298	
4'6" X 8'6"	114	\$153	\$17,442	
1'9"X3'6"	282	\$24	\$6,768	
				<u>\$77,508</u>

(WITH 15% DES. CONT. AND 18% CONT. COSTS)

**\$105,178**

MAT. AND INST, PRIMED	QUANTITY	COST EACH	SUBTOTAL	TOTAL
4'6" X 10'6"	282	\$1,737	\$489,834	
4'6" X 8'6"	114	\$1,406	\$160,284	
1'9"X3'6"	282	\$504	\$142,128	
				<u>\$792,246</u>

(WITH 15% DES. CONT. AND 18% CONT. COSTS)

**\$1,075,078**

PAINT	QUANTITY	COST EACH	SUBTOTAL	TOTAL
4'6" X 10'6"	282	\$159	\$44,838	
4'6" X 8'6"	114	\$142	\$16,188	
1'9"X3'6"	282	\$84	\$23,688	
				<u>\$84,714</u>

(WITH 15% DES. CONT. AND 18% CONT. COSTS)

**\$114,957**

**COST ESTIMATE, BUILDING 62  
NEW ALUMINUM WINDOWS**

REMOVAL	QUANTITY	COST EACH	SUBTOTAL	TOTAL
4'6" X 10'6"	282	\$189	\$53,298	
4'6" X 8'6"	114	\$153	\$17,442	
1'9"X3'6"	282	\$24	\$6,768	
				<u>\$77,508</u>

(WITH 15% DES. CONT. AND 18% CONT. COSTS)

**\$105,178**

MAT. AND INST.	QUANTITY	COST EACH	SUBTOTAL	TOTAL
4'6" X 10'6"	282	\$2,736	\$771,552	
4'6" X 8'6"	114	\$2,215	\$252,510	
1'9"X3'6"	282	\$673	\$189,786	
				<u>\$1,213,848</u>

(WITH 15% DES. CONT. AND 18% CONT. COSTS)

**\$1,647,192**

**COST ESTIMATE, BUILDING 62  
REPAIRED WINDOWS WITH NEW STORMS**

LEAD PAINT REMOVAL	QUANTITY	COST EACH	SUBTOTAL	TOTAL
4'6" X 10'6"	282	\$1,387	\$391,134	
4'6" X 8'6"	114	\$1,183	\$134,862	
1'9"X3'6"	282	\$205	\$57,810	
				<u>\$583,806</u>

(WITH 15% DES. CONT. AND 18% CONT. COSTS)

**\$792,225**

PAINT	QUANTITY	COST EACH	SUBTOTAL	TOTAL
4'6" X 10'6"	282	\$159	\$44,838	
4'6" X 8'6"	114	\$142	\$16,188	
1'9"X3'6"	282	\$84	\$23,688	
				<u>\$84,714</u>

(WITH 15% DES. CONT. AND 18% CONT. COSTS)

**\$114,957**

REPAIR	QUANTITY	COST EACH	SUBTOTAL	TOTAL
4'6" X 10'6"	282	\$218	\$61,476	
4'6" X 8'6"	114	\$199	\$22,686	
1'9"X3'6"	282	\$88	\$24,816	
				<u>\$108,978</u>

(WITH 15% DES. CONT. AND 18% CONT. COSTS)

**\$147,883**

WEATHERSTRIP	QUANTITY	COST EACH	SUBTOTAL	TOTAL
4'6" X 10'6"	282	\$301	\$84,882	
4'6" X 8'6"	114	\$260	\$29,640	
1'9"X3'6"	282	\$43	\$12,126	
				<u>\$126,648</u>

(WITH 15% DES. CONT. AND 18% CONT. COSTS)

**\$171,861**

INSTALL STORMS	QUANTITY	COST EACH	SUBTOTAL	TOTAL
4'6" X 10'6"	282	\$945	\$266,490	
4'6" X 8'6"	114	\$765	\$87,210	
1'9"X3'6"	282	\$123	\$34,545	
				<u>\$388,245</u>

(WITH 15% DES. CONT. AND 18% CONT. COSTS)

**\$526,848**

COST ESTIMATE, BUILDING 62  
WINDOW PAINTING

<u>PAINING</u>	<u>QUANTITY</u>	<u>COST EACH</u>	<u>SUBTOTAL</u>	<u>TOTAL</u>
4'6" X 10'6"	282	\$159	\$44,838	
4'6" X 8'6"	114	\$142	\$16,188	
1'9"X3'6"	282	\$84	\$23,688	
				<u>\$84,714</u>
				\$84,714
		15% DESIGN CONTINGENCY		\$12,707
				\$97,421
		18% CONTRACTING COSTS		\$17,536
		TOTAL PROJECT COST		<b>\$114,957</b>

**COST ESTIMATE, BUILDING 62  
WEATHERSTRIPPING MATERIAL AND REINSTALLATION**

<u>REPLACE WEATHERSTRIPPING</u>	<u>QUANTITY</u>	<u>COST EACH</u>	<u>SUBTOTAL</u>	<u>TOTAL</u>
4'6" X 10'6"	282	\$301	\$84,882	
4'6" X 8'6"	114	\$260	\$29,640	
1'9"X3'6"	282	\$43	\$12,126	
				<u>\$126,648</u>
				\$126,648
		15% DESIGN CONTINGENCY		\$18,997
				\$145,645
		18% CONTRACTING COSTS		\$26,216
		<b>TOTAL PROJECT COST</b>		<b>\$171,861</b>
		<b>TOTAL PROJECT COST FOR ORIGINAL WINDOWS WITH STORMS</b>		<b>\$309,350</b>

APPENDIX B

WINDOW CONTRIBUTION  
TO HEATING COST  
REPAIRED WINDOWS

BUILDING 62

---

CONDUCTED HEAT LOSSES

U = U-VALUE FOR WINDOWS = 1.24

A = AREA OF WINDOWS = 19,461 SQUARE FEET

TD = DESIGN HEATING LOAD TEMPERATURE DIFFERENCE =  $72 - (-4) = 76$  DEGREES

$(U)(A)(TD) = \text{BTUH}$

WINDOW CONDUCTANCE =  $(1.24)(19461)(76) = 1,834,061 \text{ BTUH} = 1.83 \text{ mBTU}$

---

$1.83 \text{ mBTU} \times 1978.7 \text{ HRS/YR} = 3621 \text{ mBTU/YR}$

$(3621 \text{ mBTU/YR}) / (24.6 \text{ mBTU/TON OF COAL}) = 147.2 \text{ TONS OF COAL/YR}$

$147.2 \text{ TONS/YR} \times \$48.68/\text{TON OF COAL} = \$7166/\text{YR}$

TOTAL = \$7166/YR

WINDOW CONTRIBUTION  
TO HEATING COST -  
NEW WOOD WINDOWS

BUILDING 62

---

CONDUCTED HEAT LOSSES

U = U-VALUE FOR WINDOWS = .56

A = AREA OF WINDOWS = 19,461 SQUARE FEET

TD = DESIGN HEATING LOAD TEMPERATURE DIFFERENCE = 72 - (-4) = 76 DEGREES

(U)(A)(TD) = BTUH

WINDOW CONDUCTANCE = (.56)(19461)(76) = 828,260 BTUH = .828 mBTU

---

.828 mBTU X 1978.7 HRS/YR = 1638.4 mBTU/YR

(1638.4 mBTU/YR)/(24.6 mBTU/TON OF COAL) = 66.6 TONS OF COAL/YR

66.6 TONS/YR X \$48.68/TON OF COAL = \$3242/YR

TOTAL = \$3242/YR

WINDOW CONTRIBUTION  
TO HEATING COST -  
NEW ALUMINUM WINDOWS

BUILDING 62

---

CONDUCTED HEAT LOSSES

U = U-VALUE FOR WINDOWS = .68

A = AREA OF WINDOWS = 19,461 SQUARE FEET

TD = DESIGN HEATING LOAD TEMPERATURE DIFFERENCE =  $72 - (-4) = 76$  DEGREES

$(U)(A)(TD) = \text{BTUH}$

WINDOW CONDUCTANCE =  $(.68)(19461)(76) = 1,005,744 \text{ BTUH} = 1.006 \text{ mBTU}$

---

$1.006 \text{ mBTU} \times 1978.7 \text{ HRS/YR} = 1990.6 \text{ mBTU/YR}$

$(1990.6 \text{ mBTU/YR}) / (24.6 \text{ mBTU/TON OF COAL}) = 80.9 \text{ TONS OF COAL/YR}$

$80.9 \text{ TONS/YR} \times \$48.68/\text{TON OF COAL} = \$3938/\text{YR}$

TOTAL = \$3938/YR

WINDOW CONTRIBUTION  
TO HEATING COST -  
REPAIRED WINDOWS WITH NEW STORMS

BUILDING 62

---

CONDUCTED HEAT LOSSES

U = U-VALUE FOR WINDOWS = 1.01

A = AREA OF WINDOWS = 19,461 SQUARE FEET

TD = DESIGN HEATING LOAD TEMPERATURE DIFFERENCE =  $72 - (-4) = 76$  DEGREES

$(U)(A)(TD) = \text{BTUH}$

WINDOW CONDUCTANCE =  $(1.01)(19461)(76) = 1,493,826 \text{ BTUH} = 1.494 \text{ mBTU}$

---

$1.494 \text{ mBTU} \times 1978.7 \text{ HRS/YR} = 2956.2 \text{ mBTU/YR}$

$(2956.2 \text{ mBTU/YR}) / (24.6 \text{ mBTU/TON OF COAL}) = 120.2 \text{ TONS OF COAL/YR}$

$120.2 \text{ TONS/YR} \times \$48.68/\text{TON OF COAL} = \$5850/\text{YR}$

**TOTAL = \$5850/YR**

WINDOW CONTRIBUTION  
TO AIR CONDITIONING COST -  
REPAIRED WINDOWS

BUILDING 62

---

TOTAL HEAT GAIN = (DIRECT RADIATION + CONVECTION RADIATION + CONDUCTED HEAT) \* AREA

DR = DIRECT RADIATION = 68.3 (AVERAGE OVER 12 HOUR PERIOD, TRANE A. C. MANUAL, PAGE 376)

SF = SHADE FACTOR = .55 (FOR GLASS IN SUN WITH VENETIAN BLINDS)

CR = CONVECTION RADIATION = 10.3 (AVERAGE OVER 12 HOUR PERIOD FROM TRANE MANUAL)

TF = TYPE FACTOR = .87 (FOR SINGLE PANE COMMON GLASS)

TD = DESIGN A. C. LOAD TEMPERATURE DIFFERENCE = 95 - 76 = 19 DEGREES

U = U-VALUE FOR WINDOWS = 1.24

A = AREA OF WINDOWS = 19,461 SQUARE FEET

HEAT GAIN = A (DR X SF + CR X TF + TD X U )  
= 19,461 (68.3 X .55 + 10.3 X .87 + 19 X 1.24 )  
= 1,363,949 BTUH

---

1,363,949 BTUH X 1500 HRS/ YEAR = 2,045,915,469 BTU/YEAR

1 KWH = 3412.66 BTU

1 KWH COST = \$.05 ( NEWLY REMODELED BUILDINGS ARE USING ELECTRICAL A. C.)

2,045,915,469 X .05/ 3412.66 = \$29,975

TOTAL = \$29,975/YR

WINDOW CONTRIBUTION  
TO AIR CONDITIONING COST -  
NEW WOOD WINDOWS

BUILDING 62

---

TOTAL HEAT GAIN = (DIRECT RADIATION + CONVECTION RADIATION + CONDUCTED HEAT) \* AREA

DR = DIRECT RADIATION = 68.3 (AVERAGE OVER 12 HOUR PERIOD, TRANE A. C. MANUAL, PAGE 376)

SF = SHADE FACTOR = .55 (FOR GLASS IN SUN WITH VENETIAN BLINDS)

CR = CONVECTION RADIATION = 10.3 (AVERAGE OVER 12 HOUR PERIOD FROM TRANE MANUAL)

TF = TYPE FACTOR = .76 (FOR DOUBLE PANE COMMON GLASS)

TD = DESIGN A. C. LOAD TEMPERATURE DIFFERENCE = 95 - 76 = 19 DEGREES

U = U-VALUE FOR WINDOWS = .56

A = AREA OF WINDOWS = 19,461 SQUARE FEET

HEAT GAIN = A (DR X SF + CR X TF + TD X U)  
= 19,461 (68.3 X .55 + 10.3 X .76 + 19 X .56)  
= 1,090,458 BTUH

---

1,090,458 BTUH X 1500 HRS/ YEAR = 1,635,687,000 BTU/YEAR

1 KWH = 3412.66 BTU

1 KWH COST = \$.05 ( NEWLY REMODELED BUILDINGS ARE USING ELECTRICAL A. C.)

1,635,687,000 X .05/ 3412.66 = \$23,976

TOTAL = \$23,976/YR

WINDOW CONTRIBUTION  
TO AIR CONDITIONING COST -  
NEW ALUMINUM WINDOWS

BUILDING 62

---

TOTAL HEAT GAIN = (DIRECT RADIATION + CONVECTION RADIATION + CONDUCTED HEAT) \* AREA

DR = DIRECT RADIATION = 68.3 (AVERAGE OVER 12 HOUR PERIOD, TRANE A. C. MANUAL, PAGE 376)

SF = SHADE FACTOR = .55 (FOR GLASS IN SUN WITH VENETIAN BLINDS)

CR = CONVECTION RADIATION = 10.3 (AVERAGE OVER 12 HOUR PERIOD FROM TRANE MANUAL)

TF = TYPE FACTOR = .76 (FOR DOUBLE PANE COMMON GLASS)

TD = DESIGN A. C. LOAD TEMPERATURE DIFFERENCE = 95 - 76 = 19 DEGREES

U = U-VALUE FOR WINDOWS = .68

A = AREA OF WINDOWS = 19,461 SQUARE FEET

HEAT GAIN = A (DR X SF + CR X TF + TD X U )  
= 19,461 (68.3 X .55 + 10.3 X .76 + 19 X .68 )  
= 1,134,829 BTUH

---

1,134,829 BTUH X 1500 HRS/ YEAR = 1,702,243,940 BTU/YEAR

1 KWH = 3412.66 BTU

1 KWH COST = \$.05 ( NEWLY REMODELED BUILDINGS ARE USING ELECTRICAL A. C.)

1,702,243,940 X .05/ 3412.66 = \$24,940

TOTAL = \$24,940/YR

**WINDOW CONTRIBUTION  
TO AIR CONDITIONING COST -  
REPAIRED WINDOWS WITH STORMS**

**BUILDING 62**

---

**TOTAL HEAT GAIN = (DIRECT RADIATION + CONVECTION RADIATION + CONDUCTED HEAT) \* AREA**

DR = DIRECT RADIATION = 68.3 (AVERAGE OVER 12 HOUR PERIOD, TRANE A. C. MANUAL, PAGE 376)

SF = SHADE FACTOR = .55 (FOR GLASS IN SUN WITH VENETIAN BLINDS)

CR = CONVECTION RADIATION = 10.3 (AVERAGE OVER 12 HOUR PERIOD FROM TRANE MANUAL)

TF = TYPE FACTOR = .76 (FOR DOUBLE PANE COMMON GLASS)

TD = DESIGN A. C. LOAD TEMPERATURE DIFFERENCE = 95 - 76 = 19 DEGREES

U = U-VALUE FOR WINDOWS = 1.01

A = AREA OF WINDOWS = 19,461 SQUARE FEET

$$\begin{aligned}\text{HEAT GAIN} &= A (\text{DR} \times \text{SF} + \text{CR} \times \text{TF} + \text{TD} \times \text{U}) \\ &= 19,461 (68.3 \times .55 + 10.3 \times .76 + 19 \times 1.01) \\ &= 1,256,849 \text{ BTUH}\end{aligned}$$

---

1,256,849 BTUH X 1500 HRS/ YEAR = 1,885,276,645 BTU/YEAR

1 KWH = 3412.66 BTU

1 KWH COST = \$.05 ( NEWLY REMODELED BUILDINGS ARE USING ELECTRICAL A. C.)

1,885,276,645 X .05/ 3412.66 = \$27,622

**TOTAL = \$27,622/YR**

**INFILTRATION CONTRIBUTION  
TO HEATING AND AIR CONDITIONING COST -  
EXISTING WINDOWS**

**BUILDING 62**

---

**FRESH AIR HEAT AND A.C. LOSSES**

CFM = CUBIC FEET /MINUTE INFILTRATION FOR WINDOWS = .57 CFM/FOOT OF CRACK

LF = LINEAR FEET OF CRACK, WINDOWS = 16167

BTUH REQUIRED TO INCREASE TEMPERATURE OF 1 CFM BY 1 DEGREE F = USE 1.08

BTUH REQUIRED TO DECREASE TEMPERATURE OF 1 CFM BY 1 DEGREE F = USE 1.08

TDH = DESIGN HEATING LOAD TEMPERATURE DIFFERENCE = 68 DEGREES - (-4 DEGREES) = 72 DEGREES

TDC = DESIGN COOLING LOAD TEMPERATURE DIFFERENCE = 95 DEGREES - 76 DEGREES = 19 DEGREES

CFM X LF X 1.08 X TD\_ = BTUH

*140* .57 X 16167 X 1.08 X 72 = 716,573 BTUH (HEATING)

.57 X 16167 X 1.08 X 19 = 189,096 BTUH (COOLING)

*552,858*

*132,699*

---

*563* .716 mBTU X 1978.7 HRS/YR = 1416.7 mBTU/YR *495.3*

(1416.7 mBTU/YR)/(24.6 mBTU/TON OF COAL) = 57.6 TONS OF COAL/YR *24 405*

57.6 TONS/YR X \$48.68/TON OF COAL = \$2804/YR *11.5*

**SUBTOTAL = \$2804/YR**

---

189,096 BTUH X 1500 HRS/ YEAR = 2,836,440,000 BTU/YEAR *199,048,570*

1 KWH = 3412.66 BTU

1 KWH COST = \$.05 ( NEWLY REMODELED BUILDINGS ARE USING ELECTRICAL A. C.)

2,836,440,000 X .05/ 3412.66 = \$4,156 *2916.3*

**SUBTOTAL = \$6,960/YR**

**TOTAL = \$4991/YR**

INFILTRATION CONTRIBUTION  
TO HEATING AND AIR CONDITIONING COST -  
NEW WINDOWS - WOOD OR ALUMINUM

BUILDING 62

---

FRESH AIR HEAT AND A.C. LOSSES

CFM = CUBIC FEET /MINUTE INFILTRATION FOR WINDOWS = .18 CFM/FOOT OF CRACK

LF = LINEAR FEET OF CRACK, WINDOWS = 16167

BTUH REQUIRED TO INCREASE TEMPERATURE OF 1 CFM BY 1 DEGREE F = USE 1.08

BTUH REQUIRED TO DECREASE TEMPERATURE OF 1 CFM BY 1 DEGREE F = USE 1.08

TDH = DESIGN HEATING LOAD TEMPERATURE DIFFERENCE = 68 DEGREES - (-4 DEGREES) = 72 DEGREES

TDC = DESIGN COOLING LOAD TEMPERATURE DIFFERENCE = 95 DEGREES - 76 DEGREES = 19 DEGREES

CFM X LF X 1.08 X TD\_ = BTUH

.18 X 16167 X 1.08 X 72 = 226,286 BTUH (HEATING)

.18 X 16167 X 1.08 X 19 = 59,714 BTUH (COOLING)

---

.226 mBTU X 1978.7 HRS/YR = 447.2 mBTU/YR

(447.2 mBTU/YR)/(24.6 mBTU/TON OF COAL) = 18.2 TONS OF COAL/YR

18.2 TONS/YR X \$48.68/TON OF COAL = \$885/YR

**SUBTOTAL = \$885/YR**

---

59,714 BTUH X 1500 HRS/ YEAR =89,571,647 BTU/YEAR

1 KWH = 3412.66 BTU

1 KWH COST = \$.05 ( NEWLY REMODELED BUILDINGS ARE USING ELECTRICAL A. C.)

89,571,647 X .05/ 3412.66 = \$1,312

**SUBTOTAL = \$1,312/YR**

**TOTAL = \$2,197/YR**

INFILTRATION CONTRIBUTION  
TO HEATING AND AIR CONDITIONING COST -  
REPAIRED WINDOWS WITH STORMS

BUILDING 62

---

FRESH AIR HEAT AND A.C. LOSSES

CFM = CUBIC FEET /MINUTE INFILTRATION FOR WINDOWS = .30 CFM/FOOT OF CRACK

LF = LINEAR FEET OF CRACK, WINDOWS = 16167

BTUH REQUIRED TO INCREASE TEMPERATURE OF 1 CFM BY 1 DEGREE F = USE 1.08

BTUH REQUIRED TO DECREASE TEMPERATURE OF 1 CFM BY 1 DEGREE F = USE 1.08

TDH = DESIGN HEATING LOAD TEMPERATURE DIFFERENCE = 68 DEGREES - (-4 DEGREES) = 72 DEGREES

TDC = DESIGN COOLING LOAD TEMPERATURE DIFFERENCE = 95 DEGREES - 76 DEGREES = 19 DEGREES

CFM X LF X 1.08 X TD\_ = BTUH

.30 X 16167 X 1.08 X 72 = 377,144 BTUH (HEATING)

.30 X 16167 X 1.08 X 19 = 99,524 BTUH (COOLING)

---

.377 mBTU X 1978.7 HRS/YR = 746 mBTU/YR

(746 mBTU/YR)/(24.6 mBTU/TON OF COAL) = 30.3 TONS OF COAL/YR

30.3 TONS/YR X \$48.68/TON OF COAL = \$1476/YR

SUBTOTAL = \$1476/YR

---

99,524 BTUH X 1500 HRS/ YEAR = 149,286,078 BTU/YEAR

1 KWH = 3412.66 BTU

1 KWH COST = \$.05 ( NEWLY REMODELED BUILDINGS ARE USING ELECTRICAL A. C.)

149,286,078 X .05/ 3412.66 = \$2,187

SUBTOTAL = \$2,187/YR

TOTAL = \$3,663/YR

APPENDIX C

EXECUTIVE SUMMARY REPORT

PAGE 001

SUBJECT TITLE : WINDOW REPAIR/REPLACEMENT, BUILDING 62  
COST RATE : 3.00%  
PERIOD OF ANALYSIS: 40 YEARS  
START YEAR : 1996  
END YEAR : 1996

PROJECT OBJECTIVE : DETERMINE THE MOST COST EFFECTIVE WINDOW CONFIGURATION FOR ANY OF THE HISTORIC STONE SHOPS. USE BUILDING 62 AS A TYPICAL BUILDING CONFIGURATION

ASSUMPTIONS OF THE ANALYSIS:

THERE ARE FOUR POTENTIAL RESOLUTIONS TO THE WINDOW PROBLEM  
REPAIR AND REPAINT EXISTING WINDOWS  
INSTALL NEW WOOD WINDOWS  
INSTALL NEW ALUMINUM WINDOWS  
INSTALL STORMS ON REPAIRED AND REPAINTED WINDOWS

MAINTAINING THE WINDOWS AS-IS CANNOT BE ACCEPTED AS AN ALTERNATIVE BECAUSE OF LONG TERM MAINTENANCE, WINDOW CONDITIONS, LEAD-BASED PAINT, AND ENERGY REQUIREMENTS

WEATHERSTRIPPING IS REQUIRED FOR ALL WINDOWS EVERY 20 YEARS

CONSIDERATION IS GIVEN TO COSTS FOR LEAD PAINT ABATEMENT, WEATHERSTRIPPING, PAINTING, REMOVAL, INSTALLATION, HEAT LOSSES, A.C. LOSSES, INFILTRATION LOSSES, AND MINOR REPAIRS

REPAIRS TO WINDOWS IN BUILDING 62 HAVE BEEN ESTIMATED TO INCLUDE AN AVERAGE REPLACEMENT OF ONE MUNTIN AND ONE PANE OF GLASS PER LARGE WINDOW AND CLEANING AND MINOR PUTTY WORK ON ALL WINDOWS

HOUSE OVERHEAD COSTS INCLUDED ARE AS FOLLOWS:

6% DESIGN, 6% CONTRACTING, AND 6% CONSTRUCTION MANAGEMENT

INFLATION WAS SELECTED FOR GENERAL CONSTRUCTION

INFLATION WAS SELECTED FOR COAL PRICES

INFLATION WAS SELECTED FOR ELECTRICAL PRICES

INFLATION WAS SELECTED FOR INFILTRATION SINCE IT EFFECTS BOTH

HEATING AND COOLING (AVERAGE OF 3% AND 1%)

RESULTS AND RECOMMENDATIONS:

ALTERNATIVE NAME	NPV	EUAC
1 REPAIR EXISTING WOOD	\$4,118,453	\$175,560
2 NEW WOOD WINDOWS	\$3,679,823	\$156,861
3 NEW ALUMINUM WINDOWS	\$3,275,617	\$139,631
4 REPAIRED WINDOWS WITH	\$4,680,490	\$199,518

NON-MONETARY BENEFITS:

THERE ARE BOTH POSITIVE AND NEGATIVE RESULTS WHETHER THE SOLUTION INVOLVES THE REPLACEMENT OF THE ORIGINAL WOOD WINDOWS OR THEIR RETENTION.

TENANTS AND POTENTIAL TENANTS VIEW THE ALUMINUM WINDOWS IN A MUCH MORE POSITIVE LIGHT

EVEN WITH WEATHERSTRIPPING AND NEW INTERNAL STORMS THE EFFECTIVENESS OF THE WINDOWS IS POOR, WITH NUMEROUS TENANT COMPLAINTS THE ALUMINUM WINDOWS DO NOT REQUIRE PERIODIC PAINTING

BOTH NEW WOOD AND NEW ALUMINUM WINDOWS AVOID THE LEAD-BASED PAINT PROBLEM

NEW WINDOWS ATTRACT NEW TENANTS, THAT IN TURN PROVIDE RENT TO FUND MORE MAINTENANCE OF THE BUILDINGS

IF BUILDING IS UNUSED, IT WILL BE LAID AWAY. UNDER THIS SCENERIO, MINIMAL WORK WILL BE PERFORMED (THAT WHICH IS REQUIRED TO KEEP THE WEATHER OUT, NOTHING MORE)

REDUCTION IN ENERGY USAGE ALLOWS SHIFTING OF LIMITED RESOURCES TO OTHER FUNDS SUCH AS MAINTENANCE

DISCUSSION:

REVIEW OF THE NET PRESENT VALUE FOR EACH OF THE FOUR ALTERNATIVES INDICATES THAT THE MOST COST EFFECTIVE ALTERNATIVE IS REPLACEMENT WITH ALUMINUM WINDOWS. THIS BEST CHOICE IS FOLLOWED, IN ORDER OF FEASIBILITY BY: REPLACEMENT WITH NEW WOOD WINDOWS, REPAIR EXISTING WOOD, AND REPAIR EXISTING WOOD WHILE ADDING INTERIOR STORMS.

REVIEW OF THE ECONOMIC ANALYSIS GRAPH NUMBER 1 INDICATES THAT ALTHOUGH ALTERNATIVE 3 (REPLACE WITH ALUMINUM WINDOWS) HAS CLOSE TO THE HIGHEST INITIAL COST (REPAIR WOOD WINDOWS WITH STORMS IS SLIGHTLY HIGHER), IT BECOMES THE LEAST COSTLY ALTERNATIVE AFTER 20 YEARS. THIS EFFECTIVELY NEGATES THE ARGUMENT THAT THE ALUMINUM WINDOWS WILL BE LESS COST EFFECTIVE SINCE THEY WILL ONLY LAST 20 YEARS AND THAT THE ORIGINAL WOOD WINDOWS WILL LAST INDEFINITELY. ACCORDING TO THIS ANALYSIS, THE BREAK EVEN POINT IS 20 YEARS; ANY LENGTH OF TIME BEYOND THAT POINT IN TIME WILL RESULT IN A COST SAVINGS.

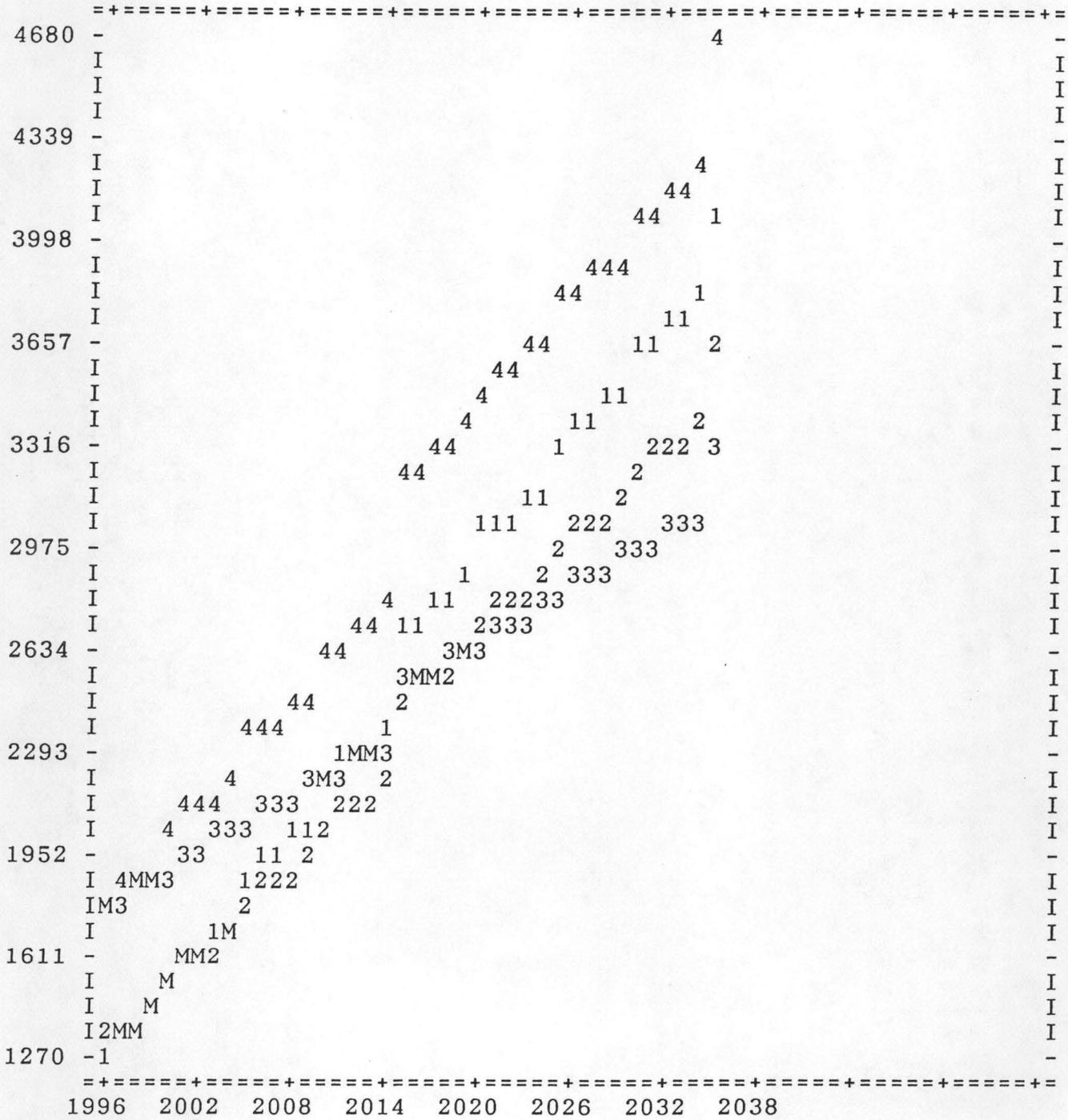
RECOMMEND THAT THE REMAINING WOOD WINDOWS BE REPLACED WITH ALUMINUM WINDOWS.

ACTION OFFICER: RICH TODD

ORGANIZATION : DIRECTORATE OF PUBLIC WORKS, ROCK ISLAND ARSENAL

ECONOMIC ANALYSIS GRAPH 1

CUMULATIVE NET PRESENT VALUE



LEGEND	DESCRIPTION	LEGEND	DESCRIPTION
1	REPAIR EXISTING WOOD	M	MERGING DATA
2	NEW WOOD WINDOWS		
3	NEW ALUMINUM WINDOWS		



ALTERNATIVE 1: REPAIR EXISTING WOOD WINDOWS

YEAR	LEAD PAINT REMOVAL (01)	PAINT WINDOWS (02)	REPAIR WINDOWS (03)	WEATHERSTRIP (04)	HEATING COSTS DUE TO WINDOWS (05)
1996	\$804,021	\$116,669	\$150,085	\$174,420	\$7,202
1997	\$0	\$0	\$0	\$0	\$7,274
1998	\$0	\$0	\$0	\$0	\$7,346
1999	\$0	\$0	\$0	\$0	\$7,420
2000	\$0	\$131,312	\$0	\$0	\$7,494
2001	\$0	\$0	\$0	\$0	\$7,569
2002	\$0	\$0	\$0	\$0	\$7,645
2003	\$0	\$0	\$0	\$0	\$7,721
2004	\$0	\$0	\$0	\$0	\$7,798
2005	\$0	\$152,226	\$0	\$0	\$7,876
2006	\$0	\$0	\$0	\$0	\$7,955
2007	\$0	\$0	\$0	\$0	\$8,035
2008	\$0	\$0	\$0	\$0	\$8,115
2009	\$0	\$0	\$0	\$0	\$8,196
2010	\$0	\$176,472	\$0	\$0	\$8,278
2011	\$0	\$0	\$0	\$0	\$8,361
2012	\$0	\$0	\$0	\$0	\$8,445
2013	\$0	\$0	\$0	\$0	\$8,529
2014	\$0	\$0	\$0	\$0	\$8,614
2015	\$0	\$204,579	\$0	\$305,846	\$8,700
2016	\$0	\$0	\$0	\$0	\$8,787
2017	\$0	\$0	\$0	\$0	\$8,875
2018	\$0	\$0	\$0	\$0	\$8,964
2019	\$0	\$0	\$0	\$0	\$9,054
2020	\$0	\$237,163	\$0	\$0	\$9,144
2021	\$0	\$0	\$0	\$0	\$9,236
2022	\$0	\$0	\$0	\$0	\$9,328
2023	\$0	\$0	\$0	\$0	\$9,421
2024	\$0	\$0	\$0	\$0	\$9,516
2025	\$0	\$274,937	\$0	\$0	\$9,611
2026	\$0	\$0	\$0	\$0	\$9,707
2027	\$0	\$0	\$0	\$0	\$9,804
2028	\$0	\$0	\$0	\$0	\$9,902
2029	\$0	\$0	\$0	\$0	\$10,001
2030	\$0	\$318,728	\$0	\$0	\$10,101
2031	\$0	\$0	\$0	\$0	\$10,202
2032	\$0	\$0	\$0	\$0	\$10,304
2033	\$0	\$0	\$0	\$0	\$10,407
2034	\$0	\$0	\$0	\$0	\$10,511
2035	\$0	\$369,493	\$0	\$552,392	\$10,616
%NPV	19.24	25.12	3.59	12.52	4.82
DISCOUNTING CONVENTION	M-O-Y	M-O-Y	M-O-Y	M-O-Y	M-O-Y
	\$792,225	\$1,034,613	\$147,883	\$515,583	\$198,647

19 years

39.8

ALTERNATIVE 1: REPAIR EXISTING WOOD WINDOWS

YEAR	AIR COND. COSTS DUE TO WINDOWS (06)	INFILTRATION COSTS DUE TO WINDOWS (07) 4154	TOTAL ANNUAL OUTLAYS	MIDDLE OF YEAR DISCOUNT FACTORS	PRESENT VALUE
1996	\$30,421	\$7,029	\$1,289,847	0.985	\$1,270,923
1997	\$31,334	\$7,170	\$45,778	0.957	\$43,792
1998	\$32,274	\$7,313	\$46,933	0.929	\$43,590
1999	\$33,242	\$7,460	\$48,122	0.902	\$43,392
2000	\$34,239	\$7,609	\$180,654	0.875	\$158,154
2001	\$35,267	\$7,761	\$50,597	0.850	\$43,004
2002	\$36,325	\$7,916	\$51,886	0.825	\$42,815
2003	\$37,414	\$8,074	\$53,209	0.801	\$42,630
2004	\$38,537	\$8,236	\$54,571	0.778	\$42,447
2005	\$39,693	\$8,401	\$208,196	0.755	\$157,224
2006	\$40,884	\$8,569	\$57,408	0.733	\$42,090
2007	\$42,110	\$8,740	\$58,885	0.712	\$41,915
2008	\$43,374	\$8,915	\$60,404	0.691	\$41,744
2009	\$44,675	\$9,093	\$61,964	0.671	\$41,575
2010	\$46,015	\$9,275	\$240,040	0.651	\$156,367
2011	\$47,395	\$9,460	\$65,216	0.632	\$41,246
2012	\$48,817	\$9,650	\$66,912	0.614	\$41,085
2013	\$50,282	\$9,843	\$68,654	0.596	\$40,928
2014	\$51,790	\$10,040	\$70,444	0.579	\$40,772
2015	\$53,344	\$10,240	\$582,709	0.562	\$327,436
2016	\$54,944	\$10,445	\$74,176	0.546	\$40,467
2017	\$56,593	\$10,654	\$76,122	0.530	\$40,319
2018	\$58,290	\$10,867	\$78,121	0.514	\$40,173
2019	\$60,039	\$11,084	\$80,177	0.499	\$40,029
2020	\$61,840	\$11,306	\$319,453	0.485	\$154,844
2021	\$63,695	\$11,532	\$84,463	0.471	\$39,748
2022	\$65,606	\$11,763	\$86,697	0.457	\$39,611
2023	\$67,575	\$11,998	\$88,994	0.444	\$39,476
2024	\$69,602	\$12,238	\$91,356	0.431	\$39,344
2025	\$71,690	\$12,483	\$368,721	0.418	\$154,169
2026	\$73,840	\$12,733	\$96,280	0.406	\$39,084
2027	\$76,056	\$12,987	\$98,847	0.394	\$38,957
2028	\$78,337	\$13,247	\$101,486	0.383	\$38,833
2029	\$80,687	\$13,512	\$104,200	0.371	\$38,710
2030	\$83,108	\$13,782	\$425,719	0.361	\$153,546
2031	\$85,601	\$14,058	\$109,861	0.350	\$38,470
2032	\$88,169	\$14,339	\$112,812	0.340	\$38,353
2033	\$90,814	\$14,626	\$115,847	0.330	\$38,237
2034	\$93,539	\$14,918	\$118,968	0.320	\$38,124
2035	\$96,345	\$15,217	\$1,044,063	0.311	\$324,830
%NPV	29.11	5.60			
	\$1,199,000	\$230,502			
DISCOUNTING CONVENTION	M-O-Y	M-O-Y			

## ALTERNATIVE 1: REPAIR EXISTING WOOD WINDOWS

YEAR	CUMULATIVE NET PRESENT VALUE
1996	\$1,270,923
1997	\$1,314,715
1998	\$1,358,305
1999	\$1,401,697
2000	\$1,559,851
2001	\$1,602,855
2002	\$1,645,670
2003	\$1,688,300
2004	\$1,730,747
2005	\$1,887,971
2006	\$1,930,061
2007	\$1,971,976
2008	\$2,013,720
2009	\$2,055,295
2010	\$2,211,662
2011	\$2,252,908
2012	\$2,293,993
2013	\$2,334,921
2014	\$2,375,693
2015	\$2,703,129
2016	\$2,743,596
2017	\$2,783,915
2018	\$2,824,088
2019	\$2,864,117
2020	\$3,018,961
2021	\$3,058,709
2022	\$3,098,320
2023	\$3,137,796
2024	\$3,177,140
2025	\$3,331,309
2026	\$3,370,393
2027	\$3,409,350
2028	\$3,448,183
2029	\$3,486,893
2030	\$3,640,439
2031	\$3,678,909
2032	\$3,717,262
2033	\$3,755,499
2034	\$3,793,623
2035	\$4,118,453

EQUIVALENT UNIFORM ANNUAL COST = \$175,560 (3.00% DISCOUNT RATE, 40 YEARS)

EXPENSE ITEMS 1, 2, 3 AND 4 USED INFLATION INDEX 1 - INFLATION - GENERAL.  
 EXPENSE ITEM 5 USED INFLATION INDEX 2 - INFLATION - COAL.  
 EXPENSE ITEM 6 USED INFLATION INDEX 3 - INFLATION - ELECTRIC.  
 EXPENSE ITEM 7 USED INFLATION INDEX 4 - INFL - INFILTRATION.

## ALTERNATIVE 2: NEW WOOD WINDOWS

YEAR	REMOVE OLD WINDOWS (01)	INSTALL NEW PRIMED WINDOWS (02)	PAINT WINDOWS (03)	WEATHERSTRIP (04)	HEATING COSTS DUE TO WINDOWS (05)
1996	\$106,744	\$1,091,084	\$116,669	\$0	\$3,258
1997	\$0	\$0	\$0	\$0	\$3,291
1998	\$0	\$0	\$0	\$0	\$3,324
1999	\$0	\$0	\$0	\$0	\$3,357
2000	\$0	\$0	\$131,312	\$0	\$3,390
2001	\$0	\$0	\$0	\$0	\$3,424
2002	\$0	\$0	\$0	\$0	\$3,459
2003	\$0	\$0	\$0	\$0	\$3,493
2004	\$0	\$0	\$0	\$0	\$3,528
2005	\$0	\$0	\$152,226	\$0	\$3,563
2006	\$0	\$0	\$0	\$0	\$3,599
2007	\$0	\$0	\$0	\$0	\$3,635
2008	\$0	\$0	\$0	\$0	\$3,671
2009	\$0	\$0	\$0	\$0	\$3,708
2010	\$0	\$0	\$176,472	\$0	\$3,745
2011	\$0	\$0	\$0	\$0	\$3,783
2012	\$0	\$0	\$0	\$0	\$3,820
2013	\$0	\$0	\$0	\$0	\$3,859
2014	\$0	\$0	\$0	\$0	\$3,897
2015	\$0	\$0	\$204,579	\$305,846	\$3,936
2016	\$0	\$0	\$0	\$0	\$3,976
2017	\$0	\$0	\$0	\$0	\$4,015
2018	\$0	\$0	\$0	\$0	\$4,055
2019	\$0	\$0	\$0	\$0	\$4,096
2020	\$0	\$0	\$237,163	\$0	\$4,137
2021	\$0	\$0	\$0	\$0	\$4,178
2022	\$0	\$0	\$0	\$0	\$4,220
2023	\$0	\$0	\$0	\$0	\$4,262
2024	\$0	\$0	\$0	\$0	\$4,305
2025	\$0	\$0	\$274,937	\$0	\$4,348
2026	\$0	\$0	\$0	\$0	\$4,392
2027	\$0	\$0	\$0	\$0	\$4,435
2028	\$0	\$0	\$0	\$0	\$4,480
2029	\$0	\$0	\$0	\$0	\$4,525
2030	\$0	\$0	\$318,728	\$0	\$4,570
2031	\$0	\$0	\$0	\$0	\$4,616
2032	\$0	\$0	\$0	\$0	\$4,662
2033	\$0	\$0	\$0	\$0	\$4,708
2034	\$0	\$0	\$0	\$0	\$4,755
2035	\$0	\$0	\$369,493	\$552,392	\$4,803
%NPV	2.86	29.22	28.12	9.34	2.44
	\$105,178	\$1,075,077	\$1,034,613	\$343,722	\$89,872
DISCOUNTING CONVENTION	M-O-Y	M-O-Y	M-O-Y	M-O-Y	M-O-Y

## ALTERNATIVE 2: NEW WOOD WINDOWS

YEAR	AIR COND. COSTS DUE TO WINDOWS (06)	INFILTRATION COSTS DUE TO WINDOWS (07)	TOTAL ANNUAL OUTLAYS	MIDDLE OF YEAR DISCOUNT FACTORS	PRESENT VALUE
1996	\$24,322	\$2,219	\$1,344,296	0.985	\$1,324,573
1997	\$25,051	\$2,263	\$30,605	0.957	\$29,278
1998	\$25,803	\$2,309	\$31,436	0.929	\$29,196
1999	\$26,577	\$2,355	\$32,289	0.902	\$29,115
2000	\$27,374	\$2,402	\$164,478	0.875	\$143,993
2001	\$28,196	\$2,450	\$34,070	0.850	\$28,958
2002	\$29,042	\$2,499	\$35,000	0.825	\$28,881
2003	\$29,913	\$2,549	\$35,955	0.801	\$28,806
2004	\$30,810	\$2,600	\$36,938	0.778	\$28,731
2005	\$31,734	\$2,652	\$190,175	0.755	\$143,616
2006	\$32,686	\$2,705	\$38,990	0.733	\$28,587
2007	\$33,667	\$2,759	\$40,061	0.712	\$28,517
2008	\$34,677	\$2,814	\$41,162	0.691	\$28,447
2009	\$35,717	\$2,870	\$42,295	0.671	\$28,379
2010	\$36,789	\$2,928	\$219,934	0.651	\$143,269
2011	\$37,893	\$2,986	\$44,662	0.632	\$28,246
2012	\$39,029	\$3,046	\$45,895	0.614	\$28,181
2013	\$40,200	\$3,107	\$47,166	0.596	\$28,117
2014	\$41,406	\$3,169	\$48,472	0.579	\$28,055
2015	\$42,648	\$3,232	\$560,241	0.562	\$314,811
2016	\$43,928	\$3,297	\$51,201	0.546	\$27,933
2017	\$45,246	\$3,363	\$52,624	0.530	\$27,873
2018	\$46,603	\$3,430	\$54,088	0.514	\$27,814
2019	\$48,001	\$3,499	\$55,596	0.499	\$27,757
2020	\$49,441	\$3,569	\$294,310	0.485	\$142,657
2021	\$50,924	\$3,640	\$58,742	0.471	\$27,644
2022	\$52,452	\$3,713	\$60,385	0.457	\$27,589
2023	\$54,026	\$3,787	\$62,075	0.444	\$27,536
2024	\$55,647	\$3,863	\$63,815	0.431	\$27,483
2025	\$57,316	\$3,940	\$340,541	0.418	\$142,388
2026	\$59,035	\$4,019	\$67,446	0.406	\$27,380
2027	\$60,806	\$4,100	\$69,341	0.394	\$27,329
2028	\$62,631	\$4,182	\$71,293	0.383	\$27,279
2029	\$64,510	\$4,265	\$73,300	0.371	\$27,230
2030	\$66,445	\$4,350	\$394,093	0.361	\$142,139
2031	\$68,438	\$4,437	\$77,491	0.350	\$27,135
2032	\$70,491	\$4,526	\$79,679	0.340	\$27,089
2033	\$72,606	\$4,617	\$81,931	0.330	\$27,043
2034	\$74,784	\$4,709	\$84,248	0.320	\$26,998
2035	\$77,028	\$4,803	\$1,008,519	0.311	\$313,771

%NPV                    26.05                    1.98  
                              \$958,600                    \$72,761

DISCOUNTING  
 CONVENTION            M-O-Y                    M-O-Y

## ALTERNATIVE 2: NEW WOOD WINDOWS

YEAR	CUMULATIVE NET PRESENT VALUE
1996	\$1,324,573
1997	\$1,353,851
1998	\$1,383,047
1999	\$1,412,162
2000	\$1,556,155
2001	\$1,585,113
2002	\$1,613,994
2003	\$1,642,800
2004	\$1,671,531
2005	\$1,815,147
2006	\$1,843,734
2007	\$1,872,251
2008	\$1,900,698
2009	\$1,929,077
2010	\$2,072,346
2011	\$2,100,592
2012	\$2,128,773
2013	\$2,156,890
2014	\$2,184,945
2015	\$2,499,756
2016	\$2,527,689
2017	\$2,555,562
2018	\$2,583,376
2019	\$2,611,133
2020	\$2,753,790
2021	\$2,781,434
2022	\$2,809,023
2023	\$2,836,559
2024	\$2,864,042
2025	\$3,006,430
2026	\$3,033,810
2027	\$3,061,139
2028	\$3,088,418
2029	\$3,115,648
2030	\$3,257,787
2031	\$3,284,922
2032	\$3,312,011
2033	\$3,339,054
2034	\$3,366,052
2035	\$3,679,823

EQUIVALENT UNIFORM ANNUAL COST = \$156,861 (3.00% DISCOUNT RATE, 40 YEARS)

EXPENSE ITEMS 1, 2, 3 AND 4 USED INFLATION INDEX 1 - INFLATION - GENERAL.  
 EXPENSE ITEM 5 USED INFLATION INDEX 2 - INFLATION - COAL.  
 EXPENSE ITEM 6 USED INFLATION INDEX 3 - INFLATION - ELECTRIC.  
 EXPENSE ITEM 7 USED INFLATION INDEX 4 - INFL - INFILTRATION.

ALTERNATIVE 3: NEW ALUMINUM WINDOWS

YEAR	REMOVE OLD WINDOWS (01)	INSTALL NEW WINDOWS (02)	WEATHERSTRIP (03)	HEATING COSTS DUE TO WINDOWS (04)	AIR COND. COSTS DUE TO WINDOWS (05)
1996	\$106,744	\$1,671,717	\$0	\$3,958	\$25,311
1997	\$0	\$0	\$0	\$3,997	\$26,071
1998	\$0	\$0	\$0	\$4,037	\$26,853
1999	\$0	\$0	\$0	\$4,078	\$27,658
2000	\$0	\$0	\$0	\$4,118	\$28,488
2001	\$0	\$0	\$0	\$4,160	\$29,343
2002	\$0	\$0	\$0	\$4,201	\$30,223
2003	\$0	\$0	\$0	\$4,243	\$31,130
2004	\$0	\$0	\$0	\$4,286	\$32,064
2005	\$0	\$0	\$0	\$4,328	\$33,026
2006	\$0	\$0	\$0	\$4,372	\$34,016
2007	\$0	\$0	\$0	\$4,415	\$35,037
2008	\$0	\$0	\$0	\$4,460	\$36,088
2009	\$0	\$0	\$0	\$4,504	\$37,171
2010	\$0	\$0	\$0	\$4,549	\$38,286
2011	\$0	\$0	\$0	\$4,595	\$39,434
2012	\$0	\$0	\$0	\$4,641	\$40,617
2013	\$0	\$0	\$0	\$4,687	\$41,836
2014	\$0	\$0	\$0	\$4,734	\$43,091
2015	\$0	\$0	\$305,846	\$4,781	\$44,384
2016	\$0	\$0	\$0	\$4,829	\$45,715
2017	\$0	\$0	\$0	\$4,877	\$47,087
2018	\$0	\$0	\$0	\$4,926	\$48,499
2019	\$0	\$0	\$0	\$4,975	\$49,954
2020	\$0	\$0	\$0	\$5,025	\$51,453
2021	\$0	\$0	\$0	\$5,075	\$52,996
2022	\$0	\$0	\$0	\$5,126	\$54,586
2023	\$0	\$0	\$0	\$5,177	\$56,224
2024	\$0	\$0	\$0	\$5,229	\$57,911
2025	\$0	\$0	\$0	\$5,281	\$59,648
2026	\$0	\$0	\$0	\$5,334	\$61,437
2027	\$0	\$0	\$0	\$5,388	\$63,280
2028	\$0	\$0	\$0	\$5,442	\$65,179
2029	\$0	\$0	\$0	\$5,496	\$67,134
2030	\$0	\$0	\$0	\$5,551	\$69,148
2031	\$0	\$0	\$0	\$5,606	\$71,223
2032	\$0	\$0	\$0	\$5,662	\$73,359
2033	\$0	\$0	\$0	\$5,719	\$75,560
2034	\$0	\$0	\$0	\$5,776	\$77,827
2035	\$0	\$0	\$552,392	\$5,834	\$80,162
%NPV	3.21	50.29	10.49	3.33	30.46
	\$105,178	\$1,647,192	\$343,722	\$109,164	\$997,600
DISCOUNTING CONVENTION	M-O-Y	M-O-Y	M-O-Y	M-O-Y	M-O-Y

## ALTERNATIVE 3: NEW ALUMINUM WINDOWS

YEAR	INFILTRATION COSTS DUE TO WINDOWS (06)	TOTAL ANNUAL OUTLAYS	MIDDLE OF YEAR DISCOUNT FACTORS	PRESENT VALUE	CUMULATIVE NET PRESENT VALUE
1996	\$2,219	\$1,809,949	0.985	\$1,783,396	\$1,783,396
1997	\$2,263	\$32,331	0.957	\$30,929	\$1,814,325
1998	\$2,309	\$33,199	0.929	\$30,834	\$1,845,159
1999	\$2,355	\$34,091	0.902	\$30,740	\$1,875,899
2000	\$2,402	\$35,008	0.875	\$30,648	\$1,906,547
2001	\$2,450	\$35,953	0.850	\$30,557	\$1,937,104
2002	\$2,499	\$36,923	0.825	\$30,469	\$1,967,573
2003	\$2,549	\$37,922	0.801	\$30,381	\$1,997,954
2004	\$2,600	\$38,950	0.778	\$30,295	\$2,028,249
2005	\$2,652	\$40,006	0.755	\$30,212	\$2,058,461
2006	\$2,705	\$41,093	0.733	\$30,128	\$2,088,589
2007	\$2,759	\$42,211	0.712	\$30,047	\$2,118,636
2008	\$2,814	\$43,362	0.691	\$29,967	\$2,148,603
2009	\$2,870	\$44,545	0.671	\$29,888	\$2,178,491
2010	\$2,928	\$45,763	0.651	\$29,810	\$2,208,301
2011	\$2,986	\$47,015	0.632	\$29,735	\$2,238,036
2012	\$3,046	\$48,304	0.614	\$29,659	\$2,267,695
2013	\$3,107	\$49,630	0.596	\$29,586	\$2,297,281
2014	\$3,169	\$50,994	0.579	\$29,514	\$2,326,795
2015	\$3,232	\$358,243	0.562	\$201,304	\$2,528,099
2016	\$3,297	\$53,841	0.546	\$29,374	\$2,557,473
2017	\$3,363	\$55,327	0.530	\$29,304	\$2,586,777
2018	\$3,430	\$56,855	0.514	\$29,237	\$2,616,014
2019	\$3,499	\$58,428	0.499	\$29,171	\$2,645,185
2020	\$3,569	\$60,047	0.485	\$29,106	\$2,674,291
2021	\$3,640	\$61,711	0.471	\$29,041	\$2,703,332
2022	\$3,713	\$63,425	0.457	\$28,978	\$2,732,310
2023	\$3,787	\$65,188	0.444	\$28,917	\$2,761,227
2024	\$3,863	\$67,003	0.431	\$28,856	\$2,790,083
2025	\$3,940	\$68,869	0.418	\$28,796	\$2,818,879
2026	\$4,019	\$70,790	0.406	\$28,737	\$2,847,616
2027	\$4,100	\$72,768	0.394	\$28,679	\$2,876,295
2028	\$4,182	\$74,803	0.383	\$28,622	\$2,904,917
2029	\$4,265	\$76,895	0.371	\$28,566	\$2,933,483
2030	\$4,350	\$79,049	0.361	\$28,511	\$2,961,994
2031	\$4,437	\$81,266	0.350	\$28,457	\$2,990,451
2032	\$4,526	\$83,547	0.340	\$28,404	\$3,018,855
2033	\$4,617	\$85,896	0.330	\$28,352	\$3,047,207
2034	\$4,709	\$88,312	0.320	\$28,300	\$3,075,507
2035	\$4,803	\$643,191	0.311	\$200,110	\$3,275,617

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 %NPV 2.22  
 \$72,761

DISCOUNTING  
 CONVENTION M-O-Y

EQUIVALENT UNIFORM ANNUAL COST = \$139,631 (3.00% DISCOUNT RATE, 40 YEARS)

## ALTERNATIVE 3: NEW ALUMINUM WINDOWS

EXPENSE ITEMS 1, 2 AND 3 USED INFLATION INDEX 1 - INFLATION - GENERAL.  
EXPENSE ITEM 4 USED INFLATION INDEX 2 - INFLATION - COAL.  
EXPENSE ITEM 5 USED INFLATION INDEX 3 - INFLATION - ELECTRIC.  
EXPENSE ITEM 6 USED INFLATION INDEX 4 - INFL - INFILTRATION.

ALTERNATIVE 4: REPAIRED WINDOWS WITH NEW STORMS

YEAR	LEAD PAINT REMOVAL (01)	PAINT WINDOWS (02)	REPAIR WINDOWS (03)	INSTALL STORMS (04)	WEATHERSTRIP WINDOWS (05)
1996	\$804,021	\$116,669	\$150,085	\$534,692	\$174,420
1997	\$0	\$0	\$0	\$0	\$0
1998	\$0	\$0	\$0	\$0	\$0
1999	\$0	\$0	\$0	\$0	\$0
2000	\$0	\$131,312	\$0	\$0	\$0
2001	\$0	\$0	\$0	\$0	\$0
2002	\$0	\$0	\$0	\$0	\$0
2003	\$0	\$0	\$0	\$0	\$0
2004	\$0	\$0	\$0	\$0	\$0
2005	\$0	\$152,226	\$0	\$0	\$0
2006	\$0	\$0	\$0	\$0	\$0
2007	\$0	\$0	\$0	\$0	\$0
2008	\$0	\$0	\$0	\$0	\$0
2009	\$0	\$0	\$0	\$0	\$0
2010	\$0	\$176,472	\$0	\$0	\$0
2011	\$0	\$0	\$0	\$0	\$0
2012	\$0	\$0	\$0	\$0	\$0
2013	\$0	\$0	\$0	\$0	\$0
2014	\$0	\$0	\$0	\$0	\$0
2015	\$0	\$204,579	\$0	\$0	\$550,524
2016	\$0	\$0	\$0	\$0	\$0
2017	\$0	\$0	\$0	\$0	\$0
2018	\$0	\$0	\$0	\$0	\$0
2019	\$0	\$0	\$0	\$0	\$0
2020	\$0	\$237,163	\$0	\$0	\$0
2021	\$0	\$0	\$0	\$0	\$0
2022	\$0	\$0	\$0	\$0	\$0
2023	\$0	\$0	\$0	\$0	\$0
2024	\$0	\$0	\$0	\$0	\$0
2025	\$0	\$274,937	\$0	\$0	\$0
2026	\$0	\$0	\$0	\$0	\$0
2027	\$0	\$0	\$0	\$0	\$0
2028	\$0	\$0	\$0	\$0	\$0
2029	\$0	\$0	\$0	\$0	\$0
2030	\$0	\$318,728	\$0	\$0	\$0
2031	\$0	\$0	\$0	\$0	\$0
2032	\$0	\$0	\$0	\$0	\$0
2033	\$0	\$0	\$0	\$0	\$0
2034	\$0	\$0	\$0	\$0	\$0
2035	\$0	\$369,493	\$0	\$0	\$994,307
%NPV	16.93	22.10	3.16	11.26	16.89
DISCOUNTING CONVENTION	M-O-Y	M-O-Y	M-O-Y	M-O-Y	M-O-Y
	\$792,225	\$1,034,613	\$147,883	\$526,848	\$790,561

## ALTERNATIVE 4: REPAIRED WINDOWS WITH NEW STORMS

YEAR	HEATING COSTS DUE TO WINDOWS (06)	AIR COND. COSTS DUE TO WINDOWS (07)	INFILTRATION COSTS DUE TO WINDOWS (08)	TOTAL ANNUAL OUTLAYS	MIDDLE OF YEAR DISCOUNT FACTORS
1996	\$5,879	\$28,033	\$3,699	\$1,817,498	0.985
1997	\$5,938	\$28,874	\$3,773	\$38,585	0.957
1998	\$5,997	\$29,740	\$3,849	\$39,586	0.929
1999	\$6,057	\$30,633	\$3,926	\$40,616	0.902
2000	\$6,118	\$31,552	\$4,004	\$172,986	0.875
2001	\$6,179	\$32,498	\$4,084	\$42,761	0.850
2002	\$6,241	\$33,473	\$4,166	\$43,880	0.825
2003	\$6,303	\$34,477	\$4,250	\$45,030	0.801
2004	\$6,366	\$35,512	\$4,334	\$46,212	0.778
2005	\$6,430	\$36,577	\$4,421	\$199,654	0.755
2006	\$6,494	\$37,674	\$4,510	\$48,678	0.733
2007	\$6,559	\$38,805	\$4,600	\$49,964	0.712
2008	\$6,625	\$39,969	\$4,692	\$51,286	0.691
2009	\$6,691	\$41,168	\$4,786	\$52,645	0.671
2010	\$6,758	\$42,403	\$4,881	\$230,514	0.651
2011	\$6,826	\$43,675	\$4,979	\$55,480	0.632
2012	\$6,894	\$44,985	\$5,079	\$56,958	0.614
2013	\$6,963	\$46,335	\$5,180	\$58,478	0.596
2014	\$7,032	\$47,725	\$5,284	\$60,041	0.579
2015	\$7,103	\$49,157	\$5,389	\$816,752	0.562
2016	\$7,174	\$50,631	\$5,497	\$63,302	0.546
2017	\$7,245	\$52,150	\$5,607	\$65,002	0.530
2018	\$7,318	\$53,715	\$5,719	\$66,752	0.514
2019	\$7,391	\$55,326	\$5,834	\$68,551	0.499
2020	\$7,465	\$56,986	\$5,950	\$307,564	0.485
2021	\$7,540	\$58,695	\$6,069	\$72,304	0.471
2022	\$7,615	\$60,456	\$6,191	\$74,262	0.457
2023	\$7,691	\$62,270	\$6,315	\$76,276	0.444
2024	\$7,768	\$64,138	\$6,441	\$78,347	0.431
2025	\$7,846	\$66,062	\$6,570	\$355,415	0.418
2026	\$7,924	\$68,044	\$6,701	\$82,669	0.406
2027	\$8,003	\$70,085	\$6,835	\$84,923	0.394
2028	\$8,084	\$72,188	\$6,972	\$87,244	0.383
2029	\$8,164	\$74,354	\$7,111	\$89,629	0.371
2030	\$8,246	\$76,584	\$7,253	\$410,811	0.361
2031	\$8,328	\$78,882	\$7,398	\$94,608	0.350
2032	\$8,412	\$81,248	\$7,546	\$97,206	0.340
2033	\$8,496	\$83,686	\$7,697	\$99,879	0.330
2034	\$8,581	\$86,196	\$7,851	\$102,628	0.320
2035	\$8,667	\$88,782	\$8,008	\$1,469,257	0.311
%NPV	3.46	23.61	2.59		
	\$162,166	\$1,104,880	\$121,314		
DISCOUNTING CONVENTION	M-O-Y	M-O-Y	M-O-Y		

## ALTERNATIVE 4: REPAIRED WINDOWS WITH NEW STORMS

YEAR	PRESENT VALUE	CUMULATIVE NET PRESENT VALUE
1996	\$1,790,834	\$1,790,834
1997	\$36,912	\$1,827,746
1998	\$36,767	\$1,864,513
1999	\$36,624	\$1,901,137
2000	\$151,441	\$2,052,578
2001	\$36,346	\$2,088,924
2002	\$36,210	\$2,125,134
2003	\$36,077	\$2,161,211
2004	\$35,945	\$2,197,156
2005	\$150,774	\$2,347,930
2006	\$35,689	\$2,383,619
2007	\$35,565	\$2,419,184
2008	\$35,442	\$2,454,626
2009	\$35,322	\$2,489,948
2010	\$150,161	\$2,640,109
2011	\$35,088	\$2,675,197
2012	\$34,973	\$2,710,170
2013	\$34,861	\$2,745,031
2014	\$34,750	\$2,779,781
2015	\$458,948	\$3,238,729
2016	\$34,535	\$3,273,264
2017	\$34,430	\$3,307,694
2018	\$34,326	\$3,342,020
2019	\$34,225	\$3,376,245
2020	\$149,081	\$3,525,326
2021	\$34,026	\$3,559,352
2022	\$33,929	\$3,593,281
2023	\$33,835	\$3,627,116
2024	\$33,741	\$3,660,857
2025	\$148,606	\$3,809,463
2026	\$33,559	\$3,843,022
2027	\$33,470	\$3,876,492
2028	\$33,383	\$3,909,875
2029	\$33,297	\$3,943,172
2030	\$148,169	\$4,091,341
2031	\$33,129	\$4,124,470
2032	\$33,048	\$4,157,518
2033	\$32,967	\$4,190,485
2034	\$32,888	\$4,223,373
2035	\$457,117	\$4,680,490

EQUIVALENT UNIFORM ANNUAL COST = \$199,518 (3.00% DISCOUNT RATE, 40 YEARS)

EXPENSE ITEMS 1, 2, 3, 4 AND 5 USED INFLATION INDEX 1 - INFLATION - GENERAL.  
 EXPENSE ITEM 6 USED INFLATION INDEX 2 - INFLATION - COAL.  
 EXPENSE ITEM 7 USED INFLATION INDEX 3 - INFLATION - ELECTRIC.  
 EXPENSE ITEM 8 USED INFLATION INDEX 4 - INFL - INFILTRATION.

## SOURCE AND DERIVATION OF COSTS AND BENEFITS:

## COSTS ARE DERIVED FROM MULTIPLE SOURCES:

CORPS OF ENGINEERS STUDY FOR WINDOW REPAIR/REPLACEMENT, BUILDINGS  
64 AND 106

MEANS ESTIMATING GUIDE FOR CONSTRUCTION

BUILDING 68 RENOVATION, COST ESTIMATE

TRANE A.C. MANUAL

GARD ENERGY ANALYSIS

ARMY INFLATION AND DISCOUNT VALUE

0001: \* VERSION 4.0  
0002: PROJECT TITLE IS 'WINDOW REPAIR/REPLACEMENT, BUILDING 62'  
0003: ACTION OFFICER IS 'RICH TODD'  
0004: ORGANIZATION IS 'DIRECTORATE OF PUBLIC WORKS, ROCK ISLAND ARSENAL'  
0005: OBJECTIVE IS &  
0006: 'DETERMINE THE MOST COST EFFECTIVE WINDOW CONFIGU' &  
0007: 'RATION FOR ANY OF THE HISTORIC STONE SHOPS. USE' &  
0008: 'BUILDING 62 AS A TYPICAL BUILDING CONFIGURATION'  
0009: \*  
0010: BEGIN ASSUMPTIONS  
0011: THERE ARE FOUR POTENTIAL RESOLUTIONS TO THE WINDOW PROBLEM  
0012: REPAIR AND REPAINT EXISTING WINDOWS  
0013: INSTALL NEW WOOD WINDOWS  
0014: INSTALL NEW ALUMINUM WINDOWS  
0015: INSTALL STORMS ON REPAIRED AND REPAINTED WINDOWS  
0016:  
0017: LEAVING THE WINDOWS AS-IS CANNOT BE ACCEPTED AS AN ALTERNATIVE BECAUSE  
0018: OF LONG TERM MAINTENANCE, WINDOW CONDITIONS, LEAD-BASED PAINT, AND  
0019: ENERGY REQUIREMENTS  
0020:  
0021: NEW WEATHERSTRIPPING IS REQUIRED FOR ALL WINDOWS EVERY 20 YEARS  
0022:  
0023: CONSIDERATION IS GIVEN TO COSTS FOR LEAD PAINT ABATEMENT,  
0024: WEATHERSTRIPPING, PAINTING, REMOVAL, INSTALLATION, HEAT LOSSES, A.C.  
0025: LOSSES, INFILTRATION LOSSES, AND MINOR REPAIRS  
0026:  
0027: REPAIRS TO WINDOWS IN BUILDING 62 HAVE BEEN ESTIMATED TO INCLUDE AN  
0028: AVERAGE REPLACEMENT OF ONE MUNTIN AND ONE PANE OF GLASS PER LARGE  
0029: WINDOW AND CLEANING AND MINOR PUTTY WORK ON ALL WINDOWS  
0030:  
0031: IN-HOUSE OVERHEAD COSTS INCLUDED ARE AS FOLLOWS:  
0032: 6% DESIGN, 6% CONTRACTING, AND 6% CONSTRUCTION MANAGEMENT  
0033:  
0034: 3% INFLATION WAS SELECTED FOR GENERAL CONSTRUCTION  
0035: 1% INFLATION WAS SELECTED FOR COAL PRICES  
0036: 3% INFLATION WAS SELECTED FOR ELECTRICAL PRICES  
0037: 2% INFLATION WAS SELECTED FOR INFILTRATION SINCE IT EFFECTS BOTH  
0038: HEATING AND COOLING (AVERAGE OF 3% AND 1%)  
0039:  
0040:  
0041:  
0042: END ASSUMPTIONS  
0043: \*  
0044: BEGIN DATA  
0045: PERIOD OF ANALYSIS IS 40 YEARS  
0046: START YEAR IS 1996  
0047: BASE YEAR IS 1996  
0048: DISCOUNT RATE IS 3.00  
0049: GLOBAL DISCOUNTING CONVENTION IS 2  
0050: INFLATION INDEX 1 IS 'INFLATION - GENERAL' &

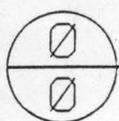
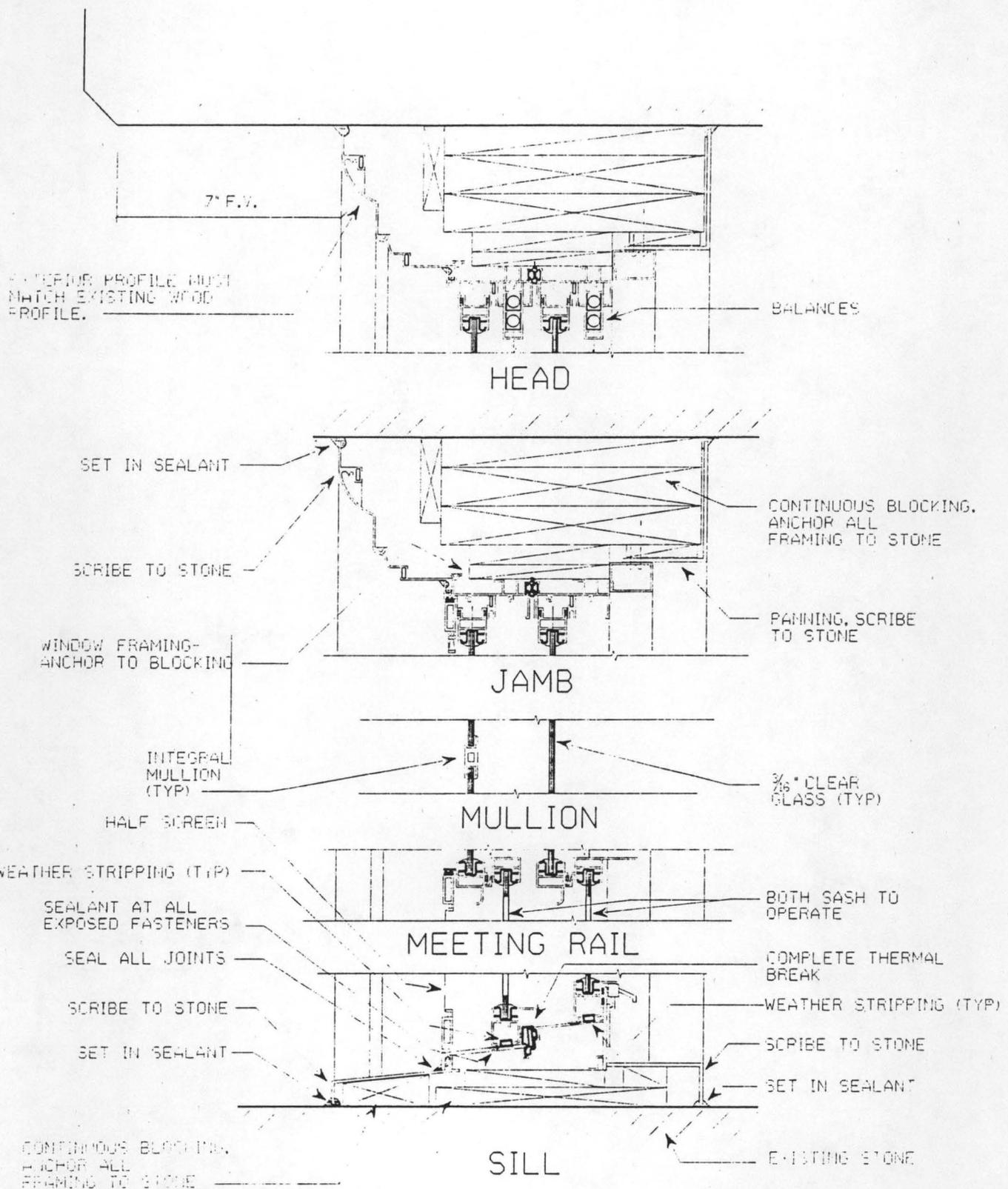




0151: INFLATION FACTORS ARE &  
0152: 5\*1 1\*2 1\*3 1\*4  
0153: DISCOUNT FACTORS ARE &  
0154: 8\*2  
0155: END ALTERNATIVE 4  
0156: \*  
0157: BEGIN SOURCE/DERIVATION  
0158: COSTS ARE DERIVED FROM MULTIPLE SOURCES:  
0159: CORPS OF ENGINEERS STUDY FOR WINDOW REPAIR/REPLACEMENT, BUILDINGS  
0160: 64 AND 106  
0161: MEANS ESTIMATING GUIDE FOR CONSTRUCTION  
0162: BUILDING 68 RENOVATION, COST ESTIMATE  
0163: TRANE A.C. MANUAL  
0164: GARD ENERGY ANALYSIS  
0165: ARMY INFLATION AND DISCOUNT VALUE  
0166: END SOURCE/DERIVATION  
0167: \*  
0168: BEGIN GRAPHICS 1  
0169: PLOT ALTERNATIVES 1 2 3 4  
0170: END GRAPHICS 1  
0171: \*  
0172: BEGIN COST SENSITIVITY ANALYSIS 1  
0173: TITLE IS 'a.c.'  
0174: ALTERNATIVES ARE 1 3  
0175: CHANGE 1 6  
0176: CHANGE 3 5  
0177: LIMIT IS 200.00  
0178: END COST SENSITIVITY ANALYSIS 1  
0179: \*  
0180: BEGIN RESULTS  
0181: REVIEW OF THE NET PRESENT VALUE FOR EACH OF THE FOUR ALTERNATIVES  
0182: INDICATES THAT THE MOST COST EFFECTIVE ALTERNATIVE IS REPLACEMENT WITH  
0183: ALUMINUM WINDOWS. THIS BEST CHOICE IS FOLLOWED, IN ORDER OF  
0184: FEASIBILITY BY: REPLACEMENT WITH NEW WOOD WINDOWS, REPAIR EXISTING  
0185: WOOD, AND REPAIR EXISTING WOOD WHILE ADDING INTERIOR STORMS.  
0186:  
0187: REVIEW OF THE ECONOMIC ANALYSIS GRAPH NUMBER 1 INDICATES THAT ALTHOUGH  
0188: ALTERNATIVE 3 (REPLACE WITH ALUMINUM WINDOWS) HAS CLOSE TO THE HIGHEST  
0189: INITIAL COST (REPAIR WOOD WINDOWS WITH STORMS IS SLIGHTLY HIGHER), IT  
0190: BECOMES THE LEAST COSTLY ALTERNATIVE AFTER 20 YEARS. THIS EFFECTIVELY  
0191: NEGATES THE ARGUMENT THAT THE ALUMINUM WINDOWS WILL BE LESS COST  
0192: EFFECTIVE SINCE THEY WILL ONLY LAST 20 YEARS AND THAT THE ORIGINAL  
0193: WOOD WINDOWS WILL LAST INDEFINITELY. ACCORDING TO THIS ANALYSIS, THE  
0194: BREAK EVEN POINT IS 20 YEARS; ANY LENGTH OF TIME BEYOND THAT POINT IN  
0195: TIME WILL RESULT IN A COST SAVINGS.  
0196:  
0197: RECOMMEND THAT THE REMAINING WOOD WINDOWS BE REPLACED WITH ALUMINUM  
0198: WINDOWS.  
0199:  
0200: END RESULTS

0201: \*  
0202: BEGIN NON-MONETARY BENEFITS  
0203: THERE ARE BOTH POSITIVE AND NEGATIVE RESULTS WHETHER THE SOLUTION  
0204: INVOLVES THE REPLACEMENT OF THE ORIGINAL WOOD WINDOWS OR THEIR  
0205: RETENTION.  
0206: TENANTS AND POTENTIAL TENANTS VIEW THE ALUMINUM WINDOWS IN A MUCH  
0207: MORE POSITIVE LIGHT  
0208: EVEN WITH WEATHERSTRIPPING AND NEW INTERNAL STORMS THE  
0209: EFFECTIVENESS OF THE WINDOWS IS POOR, WITH NUMEROUS TENANT COMPLAINTS  
0210: THE ALUMINUM WINDOWS DO NOT REQUIRE PERIODIC PAINTING  
0211: BOTH NEW WOOD AND NEW ALUMINUM WINDOWS AVOID THE LEAD-BASED PAINT  
0212: PROBLEM  
0213: NEW WINDOWS ATTRACT NEW TENANTS, THAT IN TURN PROVIDE RENT TO FUND  
0214: MORE MAINTENANCE OF THE BUILDINGS  
0215: IF BUILDING IS UNUSED, IT WILL BE LAID AWAY. UNDER THIS SCENERIO,  
0216: MINIMAL WORK WILL BE PERFORMED (THAT WHICH IS REQUIRED TO KEEP THE  
0217: WEATHER OUT, NOTHING MORE)  
0218: REDUCTION IN ENERGY USAGE ALLOWS SHIFTING OF LIMITED RESOURCES TO  
0219: OTHER FUNDS SUCH AS MAINTENANCE  
0220: END NON-MONETARY BENEFITS  
0221: \*  
0222: STOP RUN

APPENDIX D



# ALUMINUM WINDOW DETAIL

SCALE: 3/8" = 1'-0"

SECTION 08520

ALUMINUM WINDOWS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK:

- A. Requirements of SECTIONS 0 and 1 of the specifications apply to this section.
- B. Window units shall be thermal break aluminum Double-Double Hung conforming to or exceeding DH-DW-C40, "Voluntary Specifications for Aluminum Prime Windows and Sliding Glass Doors", ANSI/AAMA 101-88. (AAMA-American Architectural Manufacturer's Association)

1.02 REFERENCES:

- A. ANSI/ASTM A167 - Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip Products.
- B. ANSI/ASTM B221 - Aluminum-Alloy Extruded Bar, Rod, Wire, Shape, and Tube.
- C. ANSI/ASTM E283 - Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors.
- D. ANSI/ASTM E330 - Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- E. ASTM B209 - Aluminum and Aluminum-Alloy Sheet and Plate.
- F. ASTM E331 - Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- G. ASTM E547 - Water Penetration of Exterior Windows, Curtain Walls, and Doors by Cyclic Static Air Pressure Difference.
- H. FS RR-W-365 - Wire Fabric (Insect Screening).

1.03 PERFORMANCE:

- A. Window components to provide for expansion and contraction caused by a cycling temperature range of 210 F degrees without causing detrimental effects to components.
- B. Limit mullion deflection to 1/200 or to maximum allowed by glazing system.
- C. Drain water entering joints, condensation occurring in glazing channels, or migrating moisture occurring within system, to exterior.
- D. The manufacturer and erector shall have not less than five years in

the manufacturer, sale, installation, and servicing of window units meeting the specified required.

**1.04 SUBMITTALS:**

- A. Submit shop drawings, product data, manufacturer's installation and maintenance instructions and samples under provisions of Section 01300, Submittals.
- B. Include wall opening and component dimensions; full size sections and construction details, elevations, anchorage details, wall opening tolerances required; anchorage and fasteners; affected related work and installation requirements.
- C. Submit one full size sample illustrating window frame sections, corner section, mullion section, screen and frame, and panning.
- D. Submit a sample window for approval. The double-double hung window shall be a 3 foot 0 inch x 5 feet - 0 inch size and in an equal two over two lite configuration. The window shall be installed in a 2 inch x 6 inch wood buck with 1/4 inch minimum shimmed clearance between window frame and buck on all four sides. Window frame shall be caulked to buck only on the exterior. Window shall be constructed and glazed per the specification.
- E. Submit a list of at least five (5) projects of similar nature and scope to the COR listing name, location and architect.
- F. Prior to installation, submit current certified test reports to verify performance. Reports shall cover Air Infiltration, Water Resistance, Operating Force and Uniform Structural Load.
- G. Submit two samples of operating hardware.

**1.05 DELIVERY, STORAGE, AND HANDLING:**

- A. Store and protect window units.
- B. Provide wrapping or strippable coating to protect prefinished aluminum surfaces.
- C. Store upright, off the ground, in a dry, protected place.

**1.06 WARRANTY:**

- A. Provide 10 (ten) year manufacturer's warranty.
- B. Warranty: To cover complete window system for failure to meet specified requirements.

**PART 2 - PRODUCTS**

- 2.01 DESIGN BASE: Devac, Minneapolis, Minnesota, Thermo Barrier Series 660.

2.02 MATERIALS: Extruded Aluminum: Alloy, 6063-T6 from architectural grade homogenized aluminum primary billet.

2.03 FABRICATED COMPONENTS:

- A. Frames: Minimum nominal 0.062 inch wall thickness; thermally broken with interior portion of frame insulated from exterior.
- B. Mullion/Muntin: 3/4" wide by 1/4" thick minimum nominal 0.078 inch wall thickness applied to the exterior set of sash, extruded aluminum finish to match window.
- C. Sills: Minimum nominal 0.094 inch thickness, extruded aluminum; sloped for positive wash.
- D. Panning Trim: Minimum nominal 0.078 inch wall thickness. Miter cut at corners with integral key slots. Anchor with concealed fasteners.
- E. Insect Screens: Aluminum 18 x 16 mesh; fitted taught in tubular aluminum frame secured with reusable vinyl spline. Miter and reinforce frame corners; provide with 4 spring loaded retainer pins. Provide half screens at all locations.
- F. Weather-stripping: Sash shall be double weather-stripped at head and jamb using silcoated woven pile with mylar side or center fins. Sill shall be triple weather-stripped at interior sash and double weather-stripped at exterior sash using silcoated woven pile with mylar side fins and a neoprene seal. Vinyl weather-stripping will not be accepted. All weatherstripping shall be replaceable.
- G. Hardware: Interior sash shall have two spring loaded lock and strike plate of stainless steel. Lock shall engage automatically as window is closed. Plastic locks, nylon locks or pot metal locks will not be accepted. Block upper sashes in closed portion with appropriate blocks. Each sash shall include a continuous lift handle to aid operation.
- H. Fasteners: Stainless steel only.
- I. Thermal Barrier: The thermal barrier shall not be a structural part of the frame assembly but shall provide complete metal separation of the frame members. The thermal barrier shall accommodate shear, torsion and tensile stresses developed in the window while securely locking both halves of the frame together and not inhibiting the expansion and contraction of either part. No screws, connections or fitting shall span the thermal barrier. A bead of sealant compatible with the thermal barrier material shall be applied to the complete perimeter of the window to seal the joints between the frame and thermal-barrier material. A poured and debridged thermal barrier system shall not be used.

- J. Balances: All sash shall be double balanced. Balances shall provide a positive lifting force through the full range of sash travel and shall hold the sash stationary at any open position without the use of auxiliary frictional devices or holding pins. Balances shall be removable for field replacement and shall require no lubrication or tensional adjustment. Balance components shall be made of zinc die cast metal with nylon rollers to assure smooth operation. No pressed steel parts will be allowed in the balance mechanism other than the steel case. Balances shall provide for operating force of 20 pounds or less.

#### 2.04 GLASS AND GLAZING MATERIALS:

- A. Glass: Clear, 3/16 inch float or plate glass in interior sash and 1/8" in exterior sash.
- B. Glass at Restrooms: Inner sash to have 3/16 inch obscure glass, top and bottom.
- C. Glazing Bead: Reusable vinyl channel.

#### 2.05 WINDOW QUALITY:

- A. Windows shall meet AAMA Standards for DH-DW-C40 windows.
- B. Air Infiltration: With the primary sash in a closed and locked position, and the secondary sash in an open position, window shall be tested in accordance with ASTM-E283. Test shall be run and results reported for positive and negative pressure differentials. Air infiltration on windows shall not exceed .15 cfm per foot of sash crack perimeter under a static pressure drop of 1.56 psi or .3 cfm at 6.24 psf.
- C. Water Resistance: With the primary set of sash in the closed and locked position, and the secondary set of sash in the full open position, the window shall be subjected to a pressure drop of 6.24 psf. After passing first test, window may also be tested with both sets of sash closed and latched and shall be subjected to a minimum pressure drop of 8.00 psf. All tests shall be run in the winter and summer mode with the screen removed. Tests shall be conducted in accordance with ASTM E547 and ASTM E331.
- D. Uniform Load Structural Test:
1. With the primary set of sash in the closed and locked position, and the secondary set of sash in the full open position, test unit in accordance with ASTM E330 at a static air pressure difference of 60 pounds per square foot with high pressure applied first on one side of the unit and then on the other side.
  2. Static air pressure difference shall be 1.5 times the design wind structure load of 40 psf.

3. At conclusion of test there shall be no glass breakage, permanent damage to fasteners, hardware parts, support arms or actuating mechanisms, nor any other damage which would cause the window to be inoperable. Permanent deformation of any frame, sash, or ventilator member shall not exceed 0.4% of its span.
- E. Thermal Performance ("U" Value): When tested in accordance with AAMA-1503.1 on an exact size window of 4 foot 0 inch x 6 foot 0 inch, the thermal transmittance due to conduction (Uc) shall not exceed 0.60.
  - F. Condensation Resistance Factor (CRF): When tested in accordance with AAMA-1502.7 on an exact size window of 4 foot 0 inch x 6 foot 0 inch, the CRF shall not be less than 48.
  - G. Sound Transmission Loss Test: The window shall be tested for sound transmission loss, and a sound transmission class computed using all facilities and procedures in explicit conformity with ASTM designations E90 and E413. The sound transmission class (STC) shall be no less than 39 when glazed with 3/16 inch glass on the exterior and 3/16 inch glass on the interior.

## 2.06 FABRICATION

- A. Construction-Frames: Frames shall be constructed of continuous extrusions, miter cut at top corners and assembled with two heavy duty serrated aluminum keys per corner, press fit and fastened with a minimum of four stainless steel screws. Sill shall have a minimum slope of 5 degrees with a step design so that both interior and exterior sash have a weathering leg up behind for air and water resistance. Inside frame sill leg shall contain two rows of silicoated woven pile weather-stripping with mylar side or center fin and exterior step sill leg shall contain one row of same weathering material. Window frame shall consist of two separate units having a continuous non-conductive rigid vinyl thermal barrier between them. Overall frame depth must be 5-7/8 inches minimum and groove fit with each half, securely locking both units together, with a complete set of sash at the exterior frame and a similar set at the interior frame. Overall frame depth must be 5-7/8 inches minimum.
- B. Construction-Sash: All horizontal sash members shall be hollow tubular extrusions to resist twist and deflection. Inner and outer sash shall have the same section modulus. Sash members shall be square cut and milled to allow telescoped joints at each corner for maximum strength and weather-tightness. Assembly screws shall be of stainless steel. All sash to be removable from inside, without tools, for cleaning. Tubular sash members must be a minimum of 7/8 inch in depth. All operating sash surfaces shall be completely protected from metal-to-metal contact.

- C. All joints shall be back sealed before erection. A sealant tape shall be applied in the sealing flange before the window is installed in the panning. No sealant between window and panning is to be exposed. All exterior mullion covers shall be so designed as to have no exposed fasteners.
- D. Fabricate windows allowing for minimum clearances and shim spacing around perimeter of assembly, yet enabling installation.
- E. Develop drainage holes with moisture pattern to exterior. Do not allow moisture to enter building.
- F. Prepare components to receive anchor devices. Fabricate anchorage items.
- G. Prepare components with internal stainless steel reinforcement for operating hardware as required.
- H. Provide internal reinforcement with stainless steel members to maintain rigidity as required.
- I. Factory glaze window units.

#### 2.07 FINISHES:

- A. Exterior and Interior Aluminum Surfaces: AAMA 608.1 dark bronze anodized aluminum-AA-M12-C22-A44, Architectural Class I.
- B. Exposed Stainless Steel Items: Brushed stainless steel.
- C. Apply one coat of bituminous paint to concealed aluminum and steel surfaces in contact with cementitious or dissimilar materials.

2.08 APPEARANCE: Appearance to closely match drawings and existing windows in Rock Island Arsenal building 102.

#### PART 3 - EXECUTION

##### 3.01 INSPECTION:

- A. Verify wall openings are ready to receive work of this Section.
- B. Beginning of installation means acceptance of existing conditions.

##### 3.02 INSTALLATION:

- A. Install window frames, glass, and hardware in accordance with manufacturer's instructions.
- B. Use fully recessed screws to securely attach frame to structure.
- C. Align window frame plumb and level, free of warp or twist. Maintain dimensional tolerances, aligning with adjacent work.

- D. Pack fibrous insulation in shim spaces at perimeter to maintain continuity of thermal barrier.
- E. Install perimeter type sealant, backing materials, in accordance with Section 07900. (Apply sealant to ends of sill and screw heads for watertight seal.)
- F. Adjust operable hardware for smooth operation and tight fit of sash.

### 3.03 CLEANING:

- A. Remove protective material from prefinished aluminum surfaces.
- B. Wash down exposed surfaces using a solution of mild detergent in warm water, applied with soft, clean wiping cloths. Take care to remove dirt from corners. Wipe surfaces clean.
- C. Remove excess sealant by moderate use of mineral spirits or other solvent acceptable to sealant manufacturer.
- D. Clean all glass, inside and out.

### 3.04 TESTING:

- A. After installation is complete, on-site tests shall be conducted for air infiltration, water penetration, and lifting force by an independent testing laboratory. All tests shall be paid for by the contractor. The testing organization shall be approved by the COR prior to testing.
- B. The tests shall be conducted in accordance with ASTM E283 and E331.
- C. Four representative windows shall be tested. They shall be selected by the COR.
- D. The lifting force shall be tested using a calibrated scale. The window sash shall start in the lowest position, but not locked. The scale shall be attached to the window and the window opened by pulling on the scale which will pull open the window. The break away force shall not exceed 20 pounds. The force required to keep the window moving shall not exceed 20 pounds. If a window fails to meet this requirement, the contractor shall be allowed to make adjustments to the unit. The window shall then be retested. If the window again fails to meet the 20 pound force requirement, the window shall be considered a failure and paragraph E shall apply. This is the only test for which the contractor will be given a second chance to pass before the window is considered a failure.

- E. If a tested window fails to meet any of these standards it shall be adjusted, repaired, or replaced and tested again. Two additional windows shall also be selected and tested each time a window fails.

END OF SECTION

SECTION 08800

GLASS AND GLAZING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK:

- A. Requirements of SECTION 0 and 1 of the Specification apply to this section.
- B. Furnish and install glass, glazing compounds, glazing beads and gaskets and accessories as necessary to perform all glazing work as shown or specified.

1.02 SUBMITTALS:

- A. Descriptive Data: Manufacturer's descriptive data and installation instructions shall be submitted for approval in accordance with SECTION 01300: SUBMITTALS.
- B. Certificates of Compliance: Submit Certificates of Compliance attesting that glass meets the requirements specified. Labels or markings affixed to the glass will be acceptable in lieu of certificates.
- C. Provide data on glazing sealant. Identify colors available. Color selection by COR.

1.03 DELIVERY AND STORAGE: Glazing compounds shall be delivered to the site in the manufacturer's unopened containers. Glass shall be stored in safe, dry locations and shall not be unpacked until needed for installation.

1.04 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification. The publications are referred to in the text by the basic designation only.

American Society for Testing and Materials (ASTM):	
C1036-90	Standard Specification for Flat Glass
C 1048-90	Standard Specification for Heat Treated Flat Glass - Kind HS, Kind FT Coated and Uncoated Glass

PART 2 - PRODUCTS

2.01 GLASS MATERIALS (CONFORM TO 16CFR 1201):

- A. Float or Plate Glass: Primary glass shall conform to ASTM C1036-90, 3/16 or 1/8 in thick, as specified or indicated.
- B. Figured Glass: Type II, Class I, Form 3, Quantity of 8, Finish F1, 3/16 in thick. Pattern as approved by COR.

## 2.02 GLAZING COMPOUNDS:

- A. Glazing Compound: Suitable type approved for the application and in accordance with applicable portions of the FGMA Glazing Manual. Compound shall conform with ASTM C669-75, color grey, or neutral.
- B. Glazing Sealant shall be Either:
  - 1. Acrylic Sealant: Single component type conforming to Fed Spec TT-S-230, Type II, Class A or B; color as selected by the COR from manufacturer's standard colors.
  - 2. Polysulphide Sealant: Two component type conforming to Fed Spec TT-S-227, Class A or B; color as selected by the COR from manufacturer's standard colors.

2.03 GLAZING ACCESSORIES: As required to supplement the accessories provided with the items to be glazed and to provide a complete installation, including glazing points, clips, shims, angles, beads, setting blocks, and spacer strips. Ferrous metal accessories which will be exposed in the finished work shall have a finish that will not corrode or stain while in service.

## PART 3 - EXECUTION

### 3.01 INSPECTION:

- A. Verify surfaces of glazing channels or recesses are clean, free of obstructions, and ready for work of this section.
- B. Beginning of installation will be interpreted as acceptance of substrate.

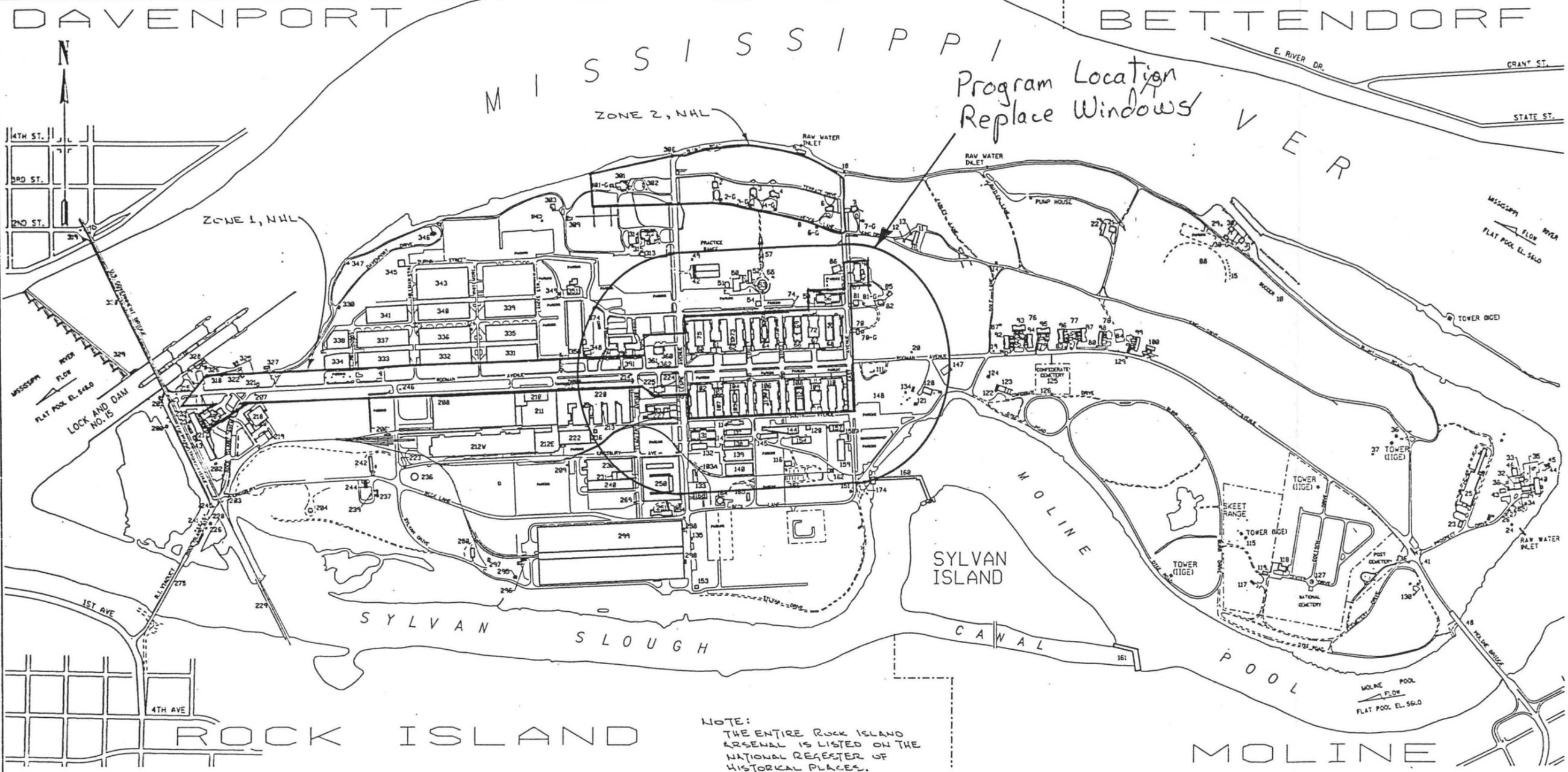
### 3.02 PREPARATION:

- A. Clean contact surfaces with solvent and wipe dry.
- B. Seal porous glazing channels or recesses.
- C. Prime surfaces scheduled to receive sealant.

### 3.03 INSTALLATION:

- A. Glazing shall be performed in accordance with the approved installation instructions of the glass manufacturer.
- B. Glass surfaces shall be thoroughly cleaned with labels, paint spots, putty, and other defacement removed, and shall be clean at the time the work is accepted.

END OF SECTION



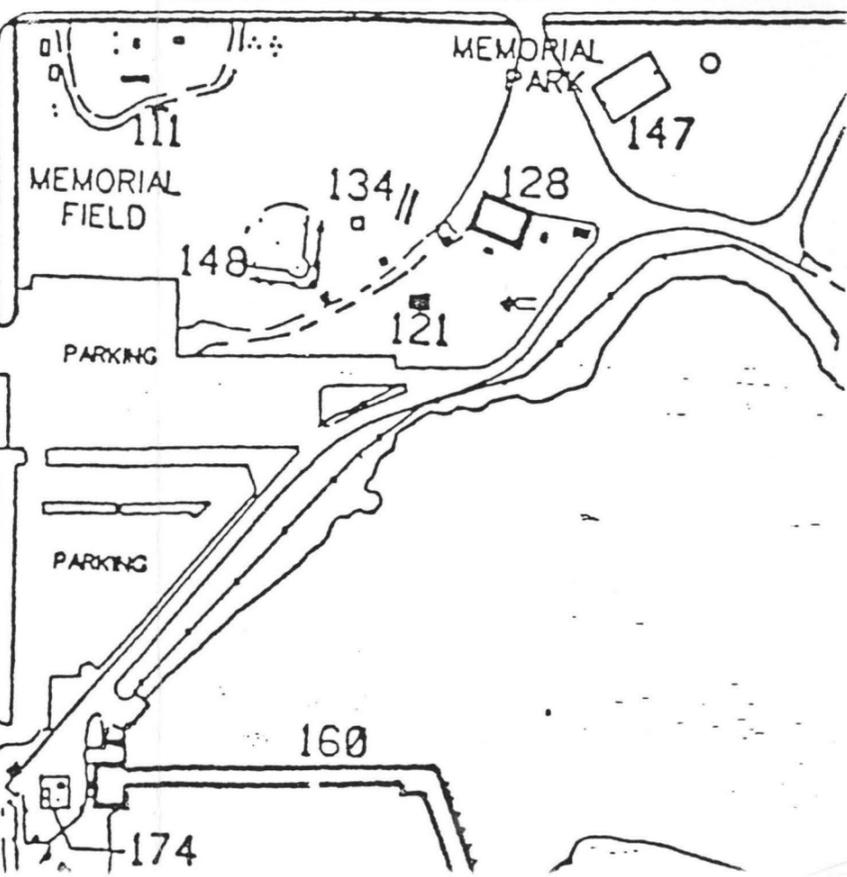
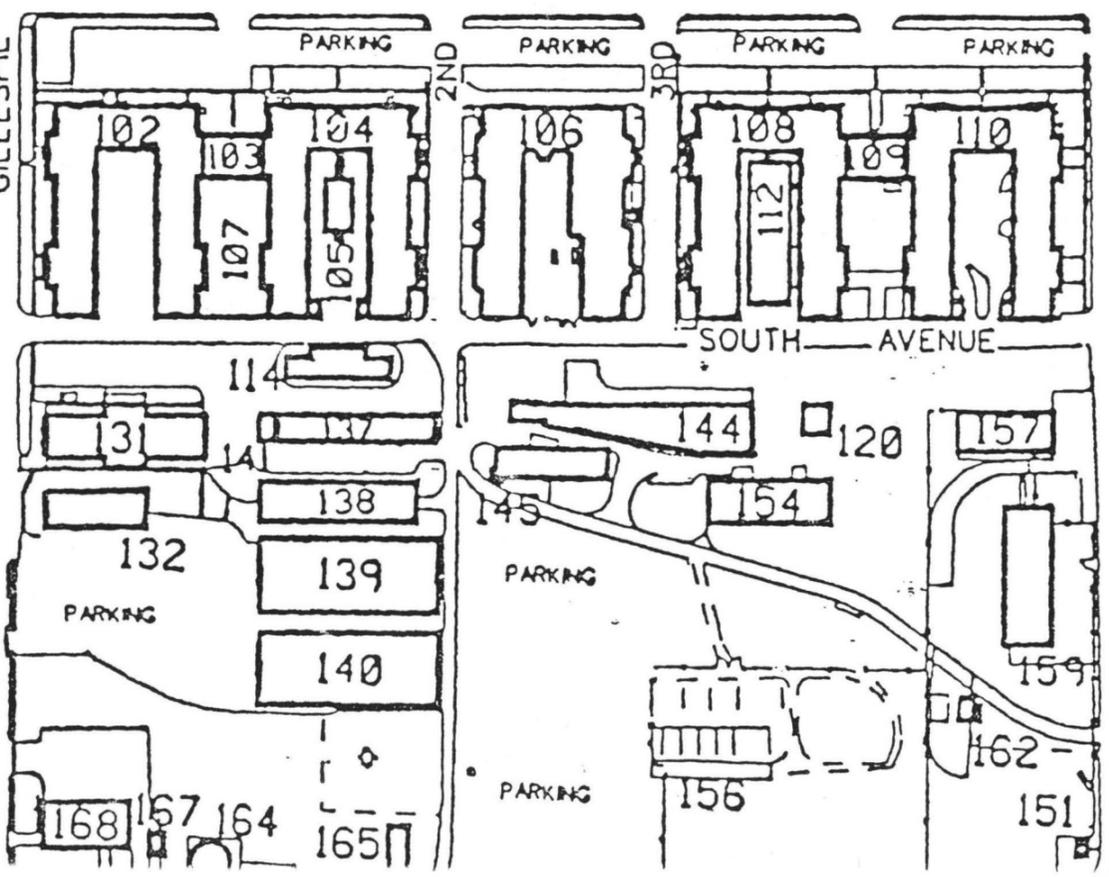
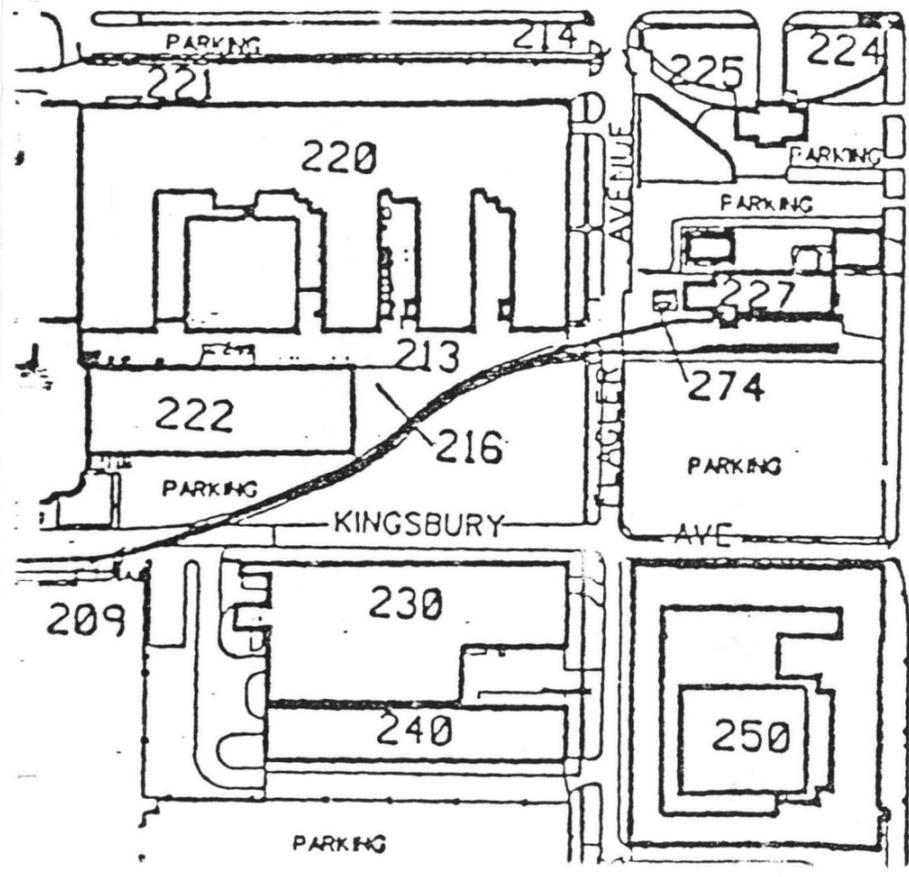
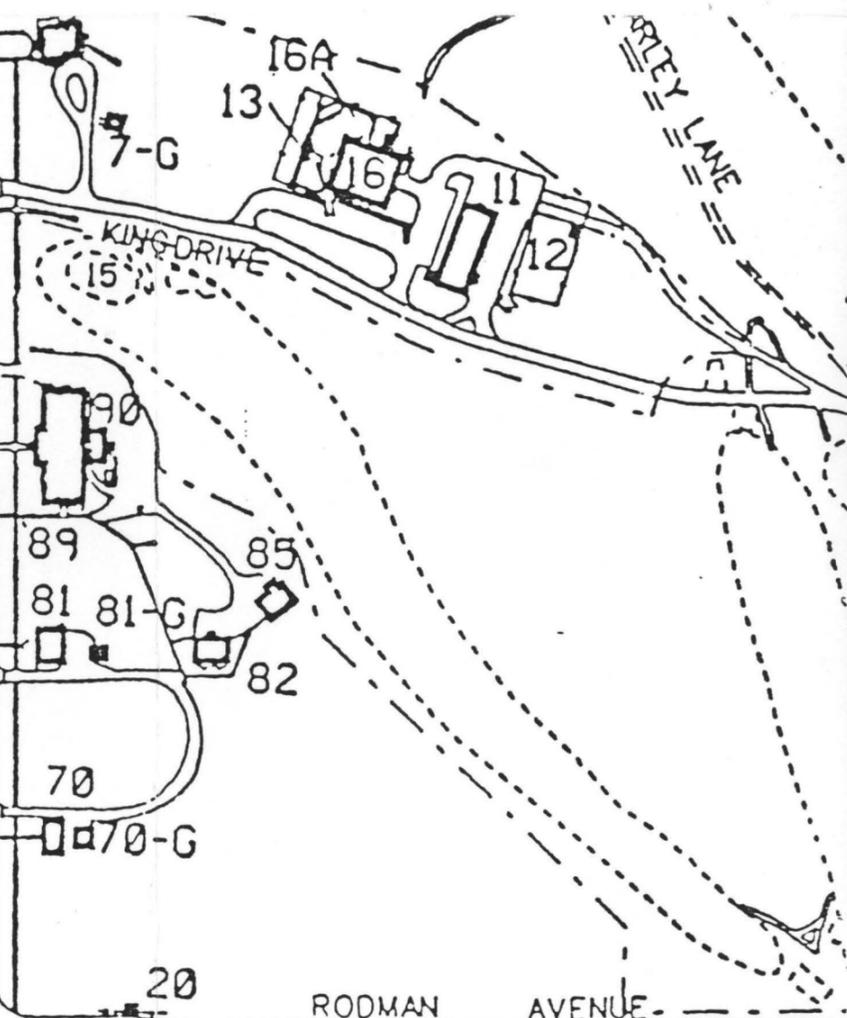
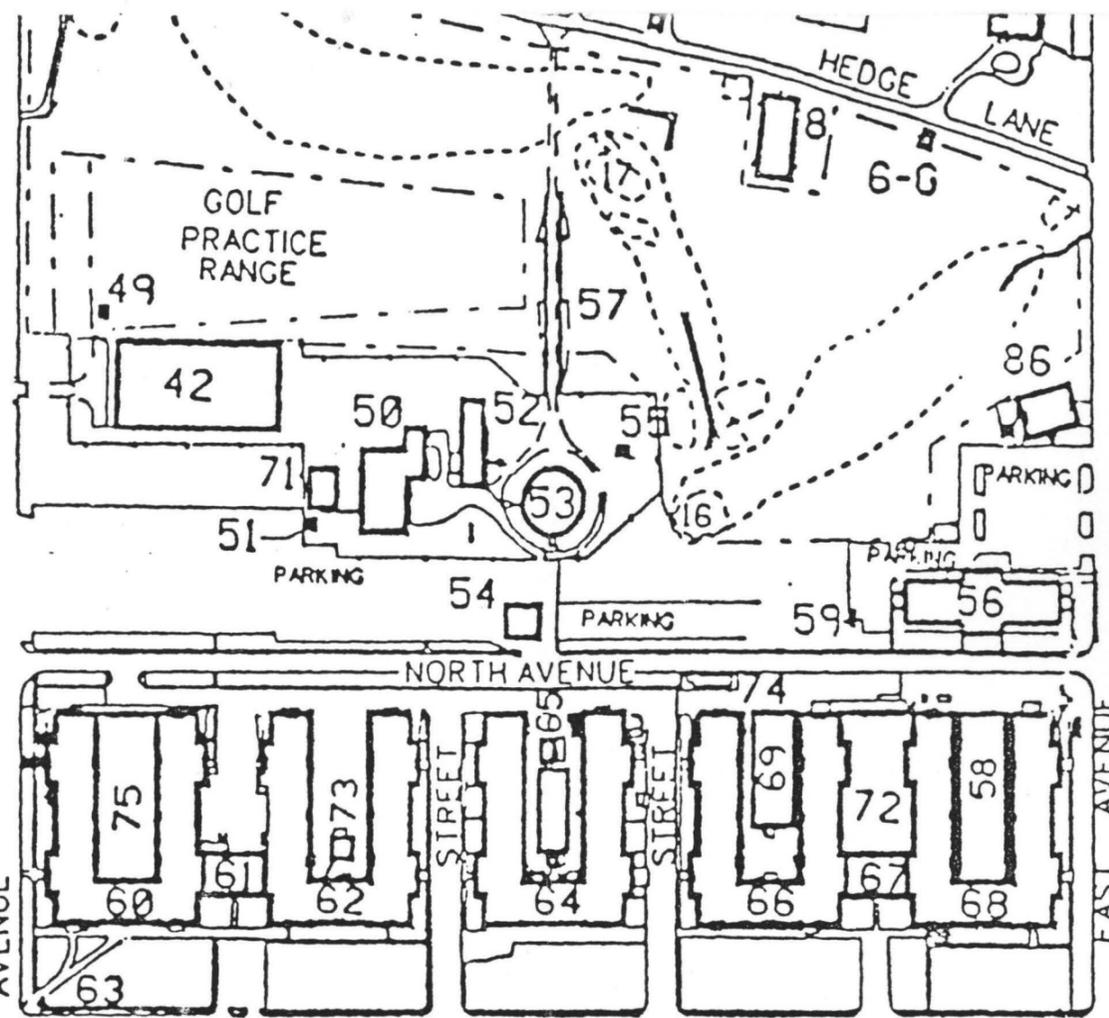
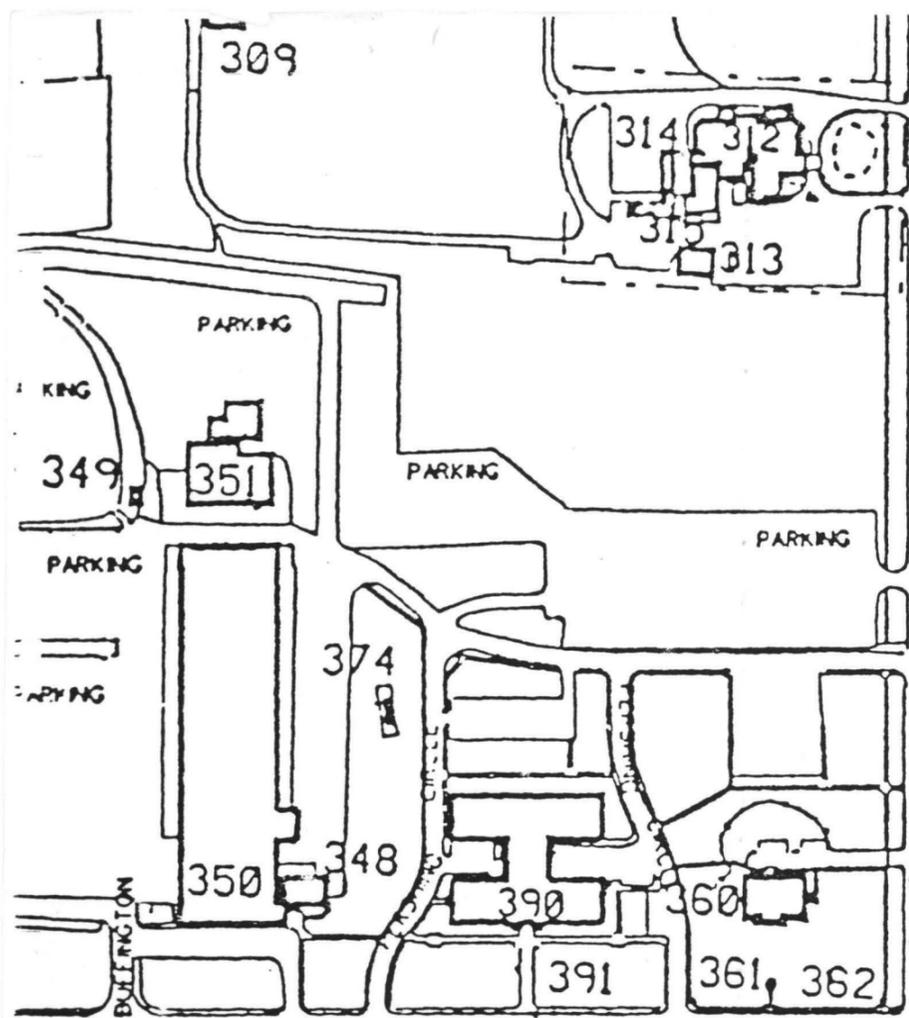
NOTE:  
THE ENTIRE ROCK ISLAND  
ARSENAL IS LISTED ON THE  
NATIONAL REGISTER OF  
HISTORICAL PLACES.

INDEX TO BUILDINGS & MISCELLANEOUS STRUCTURES

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ROCK ISLAND ARSENAL  
 ROCK ISLAND, ILLINOIS 61299-5000  
 REV. DEC 1980



# WINDOW REPLACEMENT MULTIPLE BUILDINGS



**BUILDINGS - 56, 60, 61, 62, 64,  
66, 67, 68, 90, 102, 103, 104,  
106, 108, 109, 110, and 131**

**September 1996**

TYPICAL NEW WINDOW



CORPS OF ENGINEERS - TYPICAL WINDOW



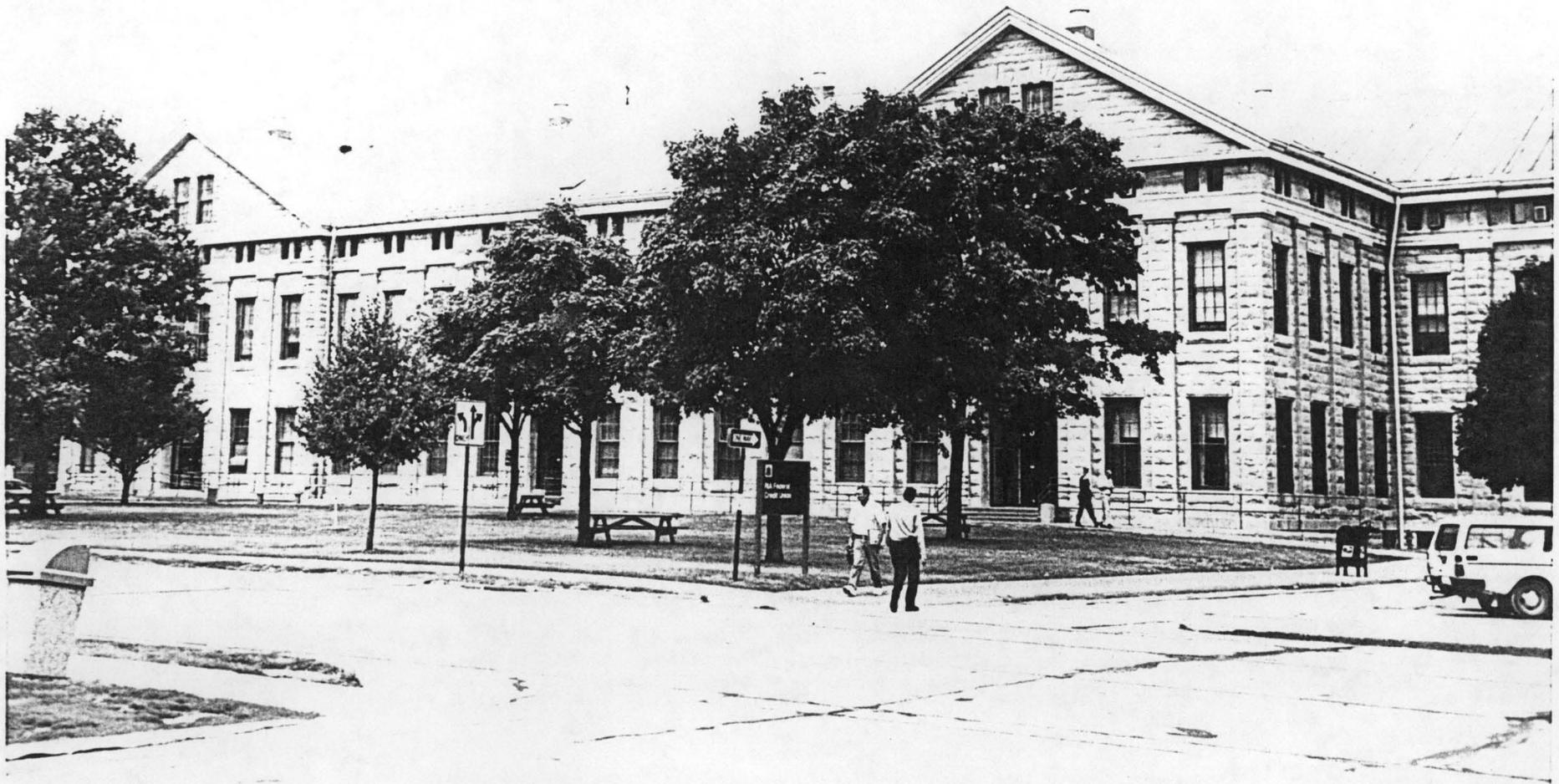
CORPS OF ENGINEERS  
U.S. ARMY  
ROCK ISLAND  
DISTRICT  
1-1

TYPICAL EXISTING WINDOW

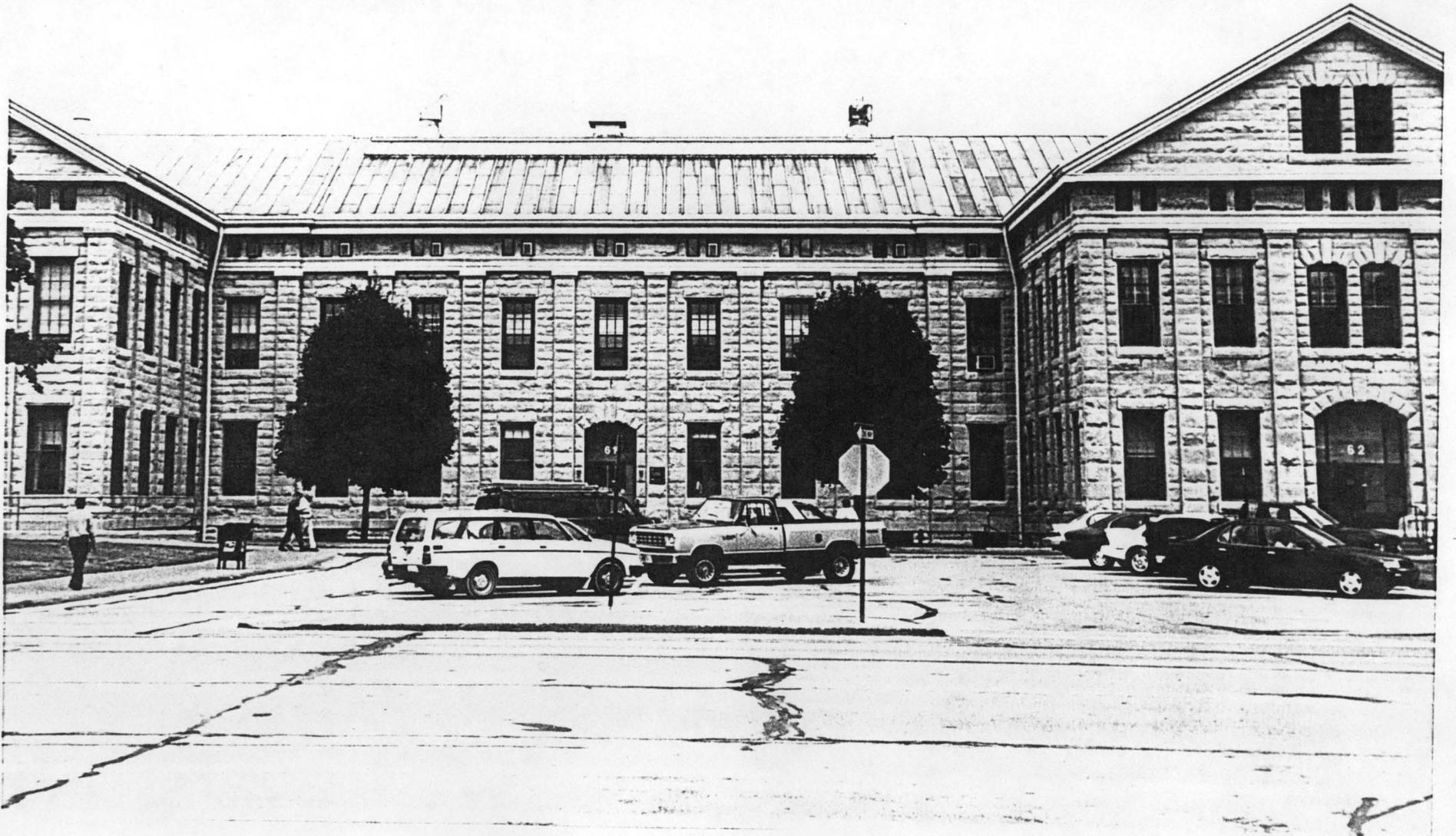




BUILDING 56



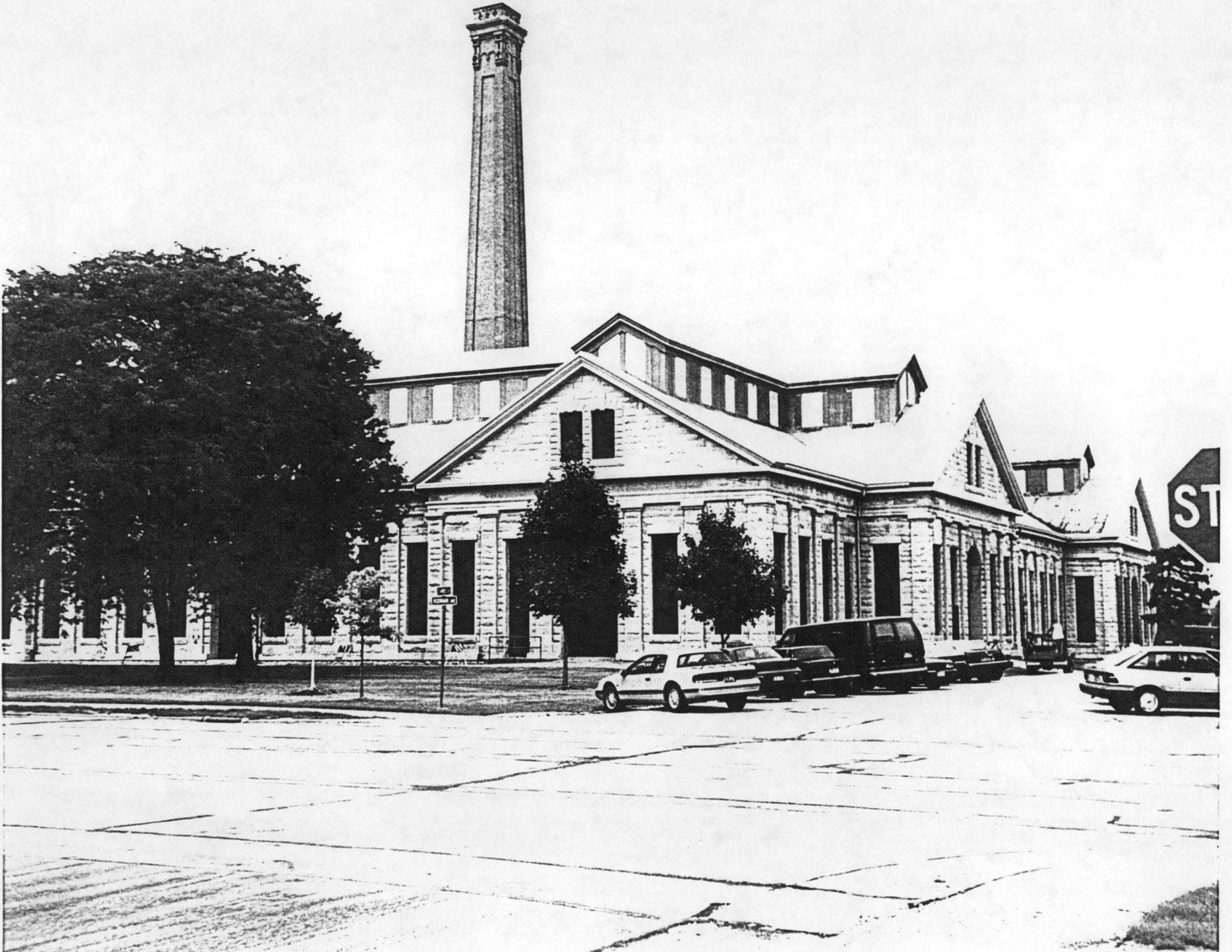
BUILDING 60



BUILDING 61



BUILDING 62



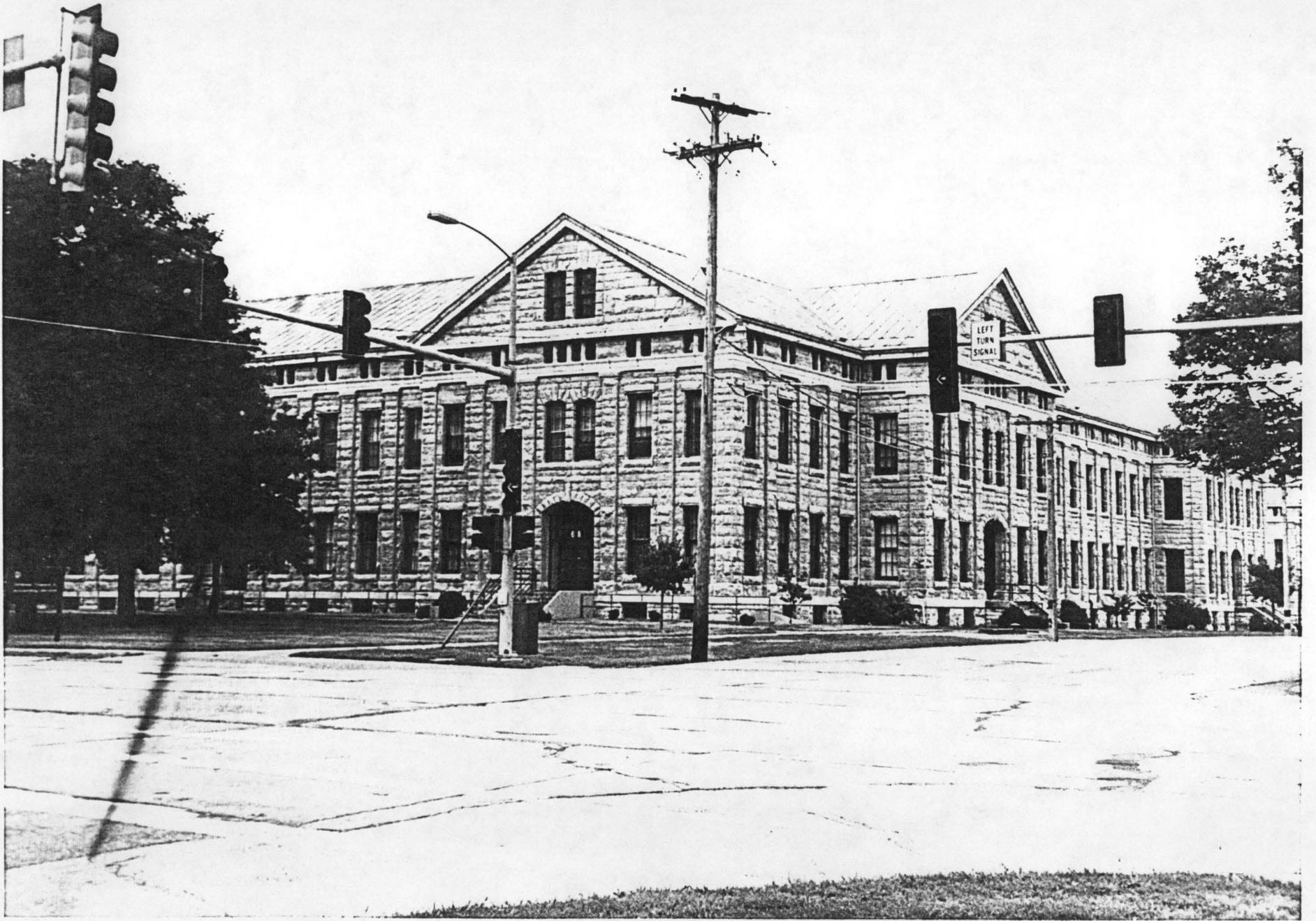
BUILDING 64



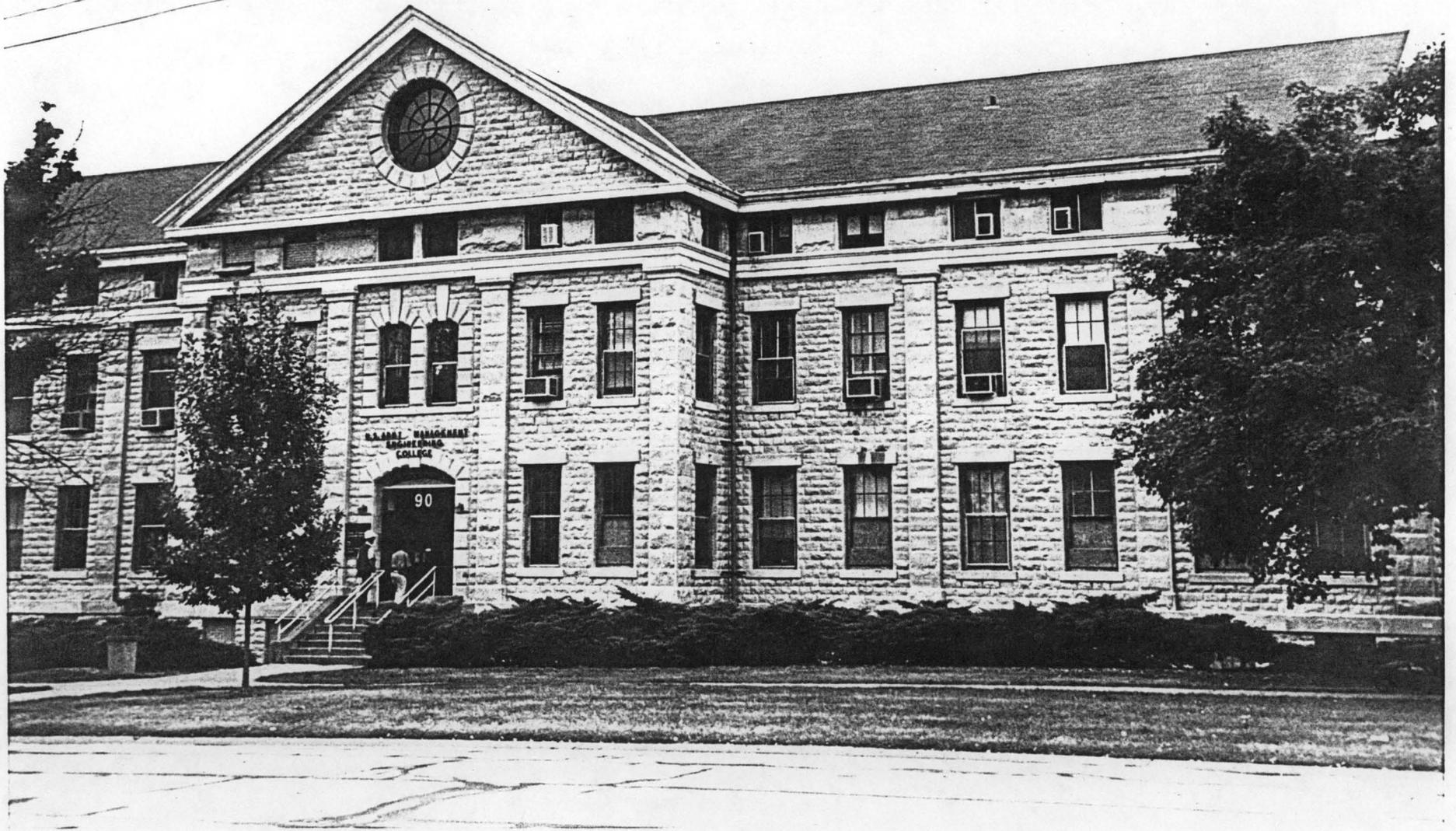
BUILDING 66



BUILDING 67



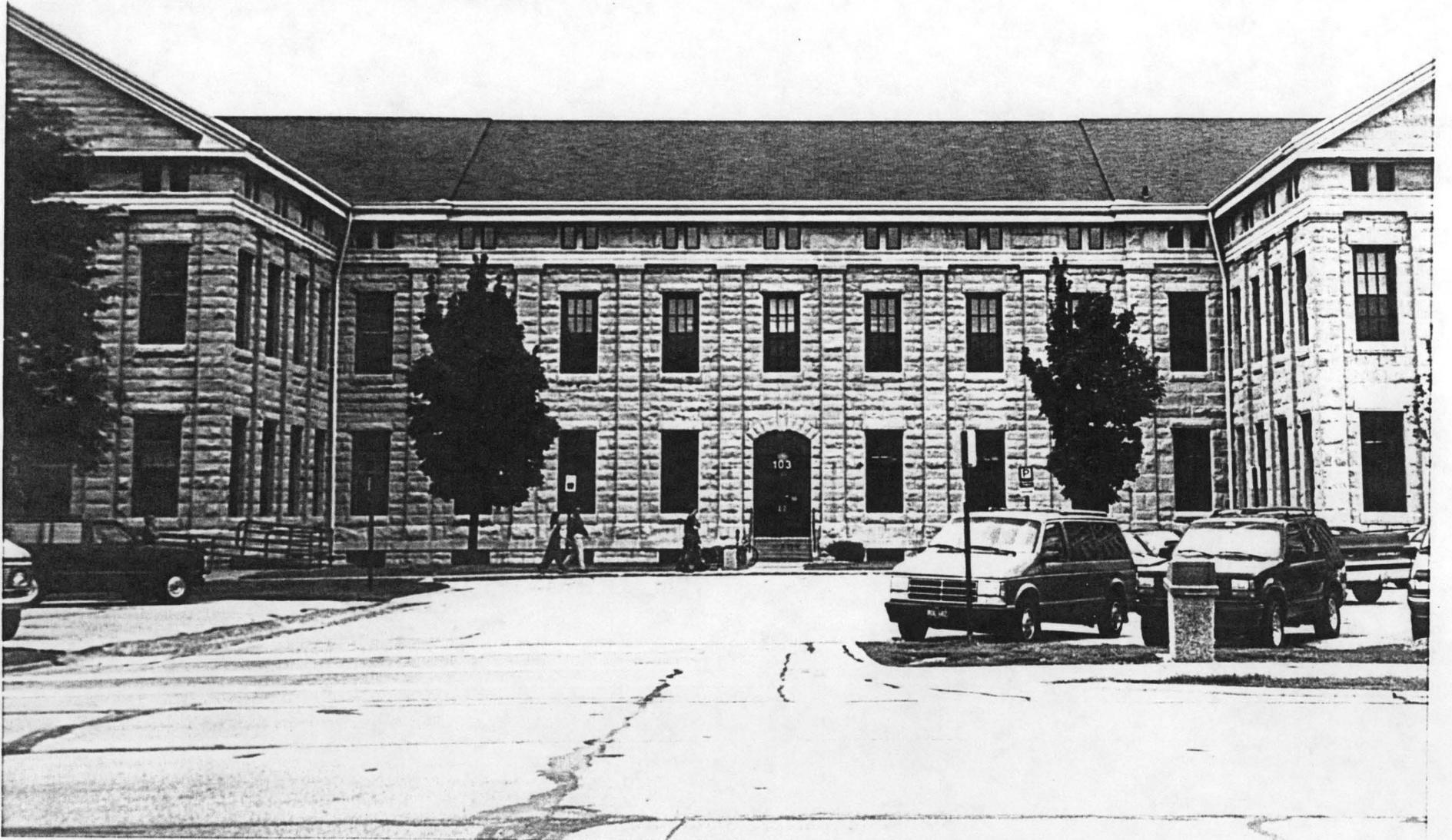
BUILDING 68



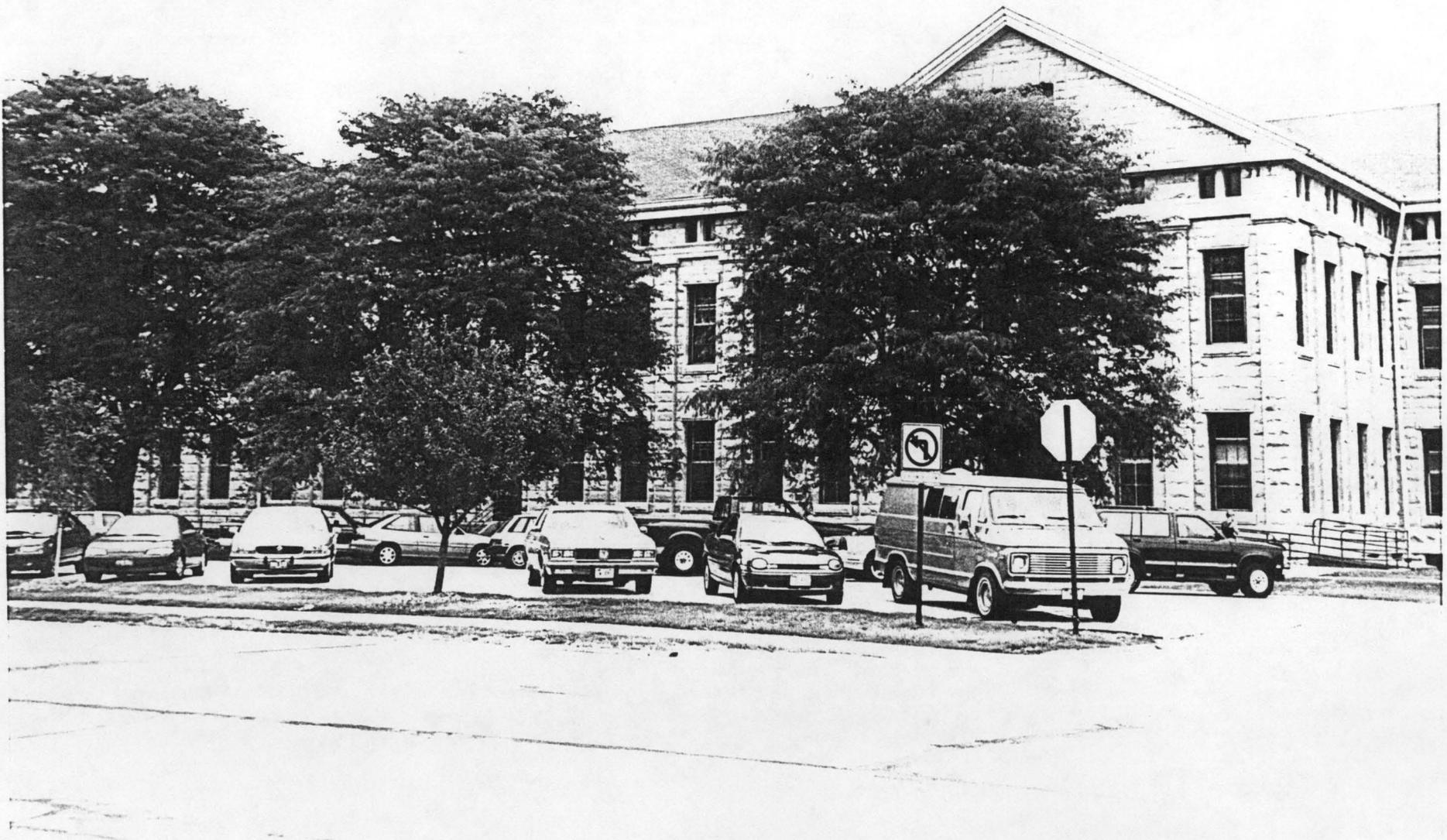
BUILDING 90



BUILDING 102



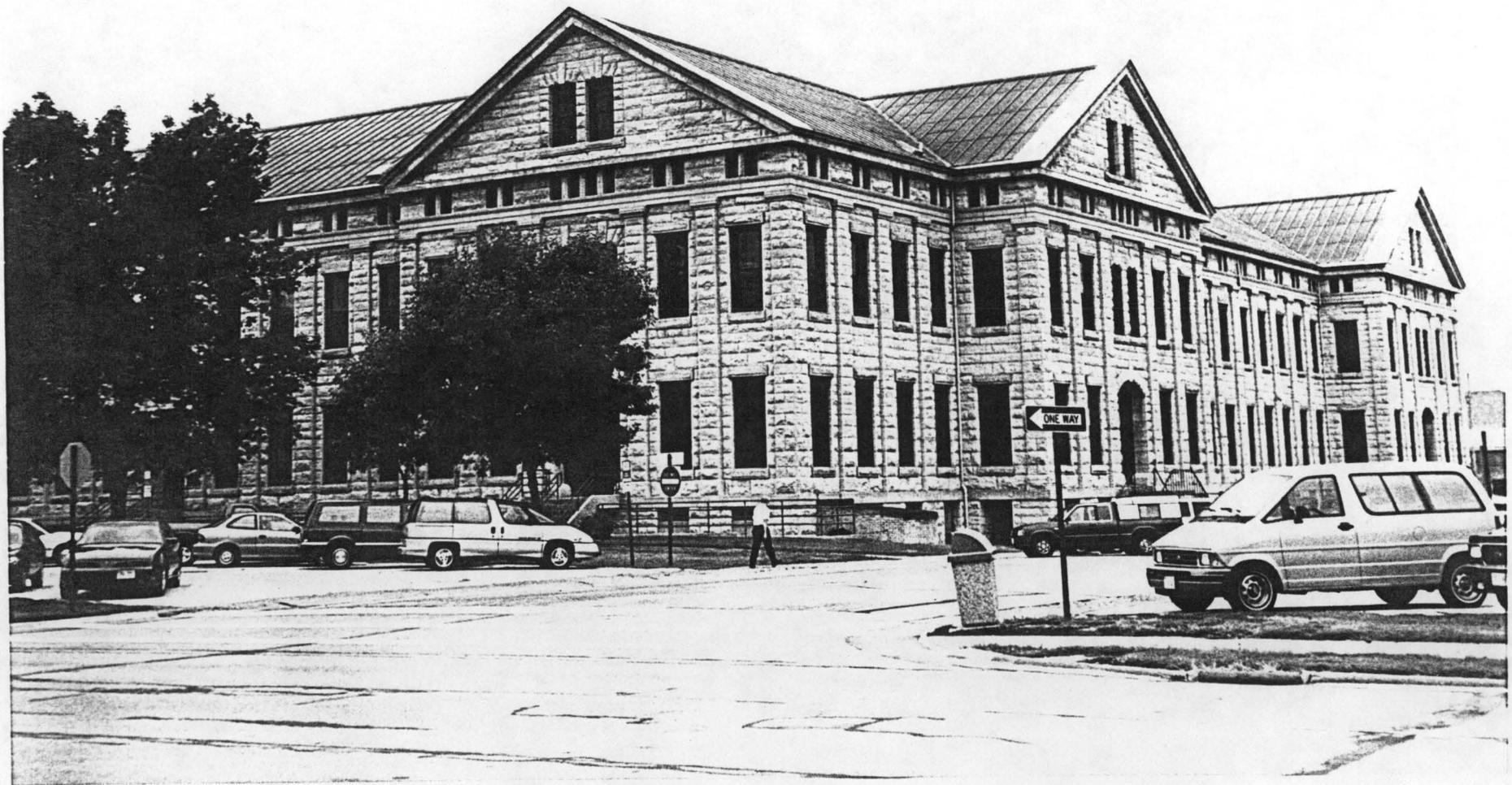
BUILDING 103



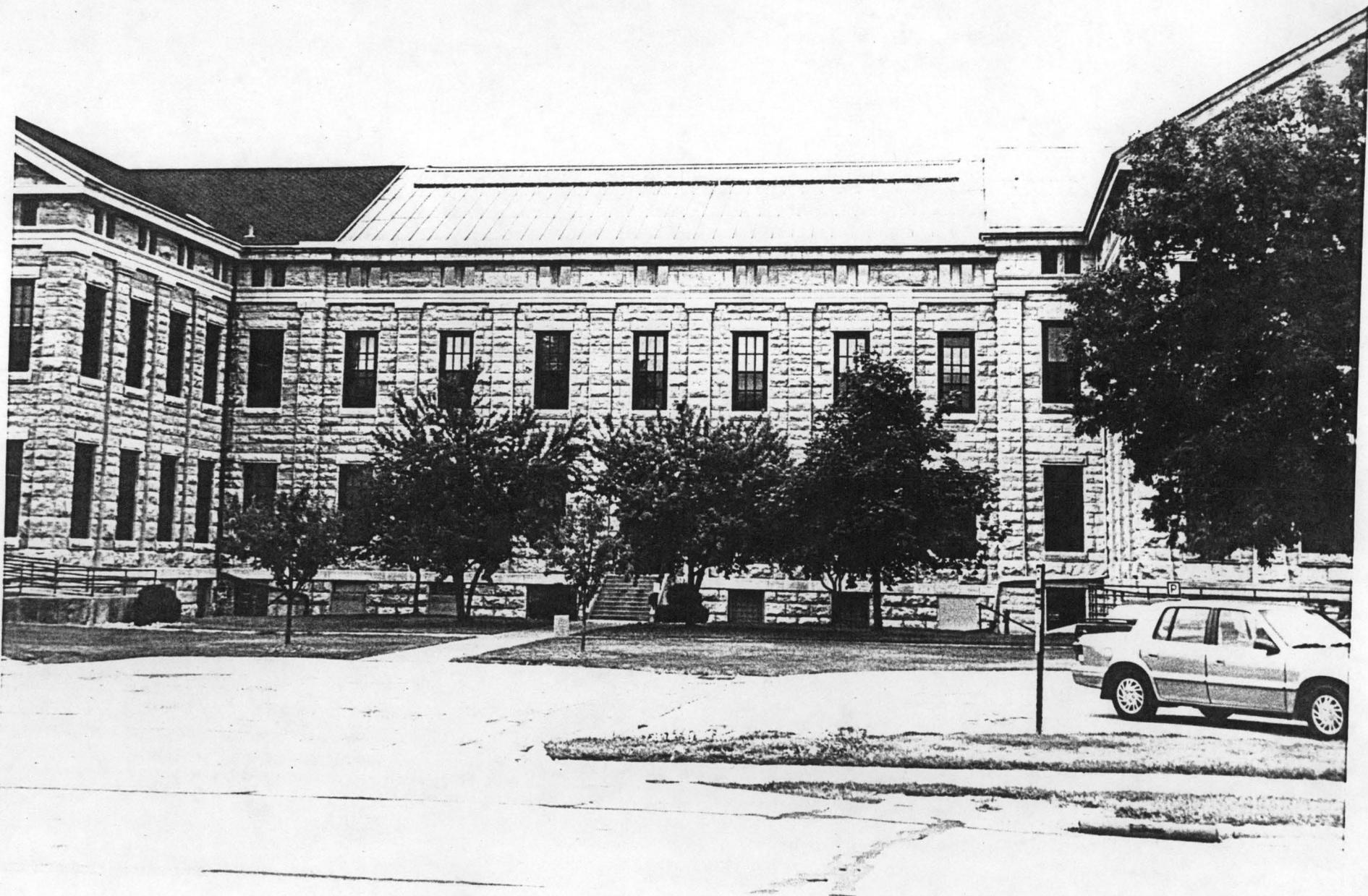
BUILDING 104



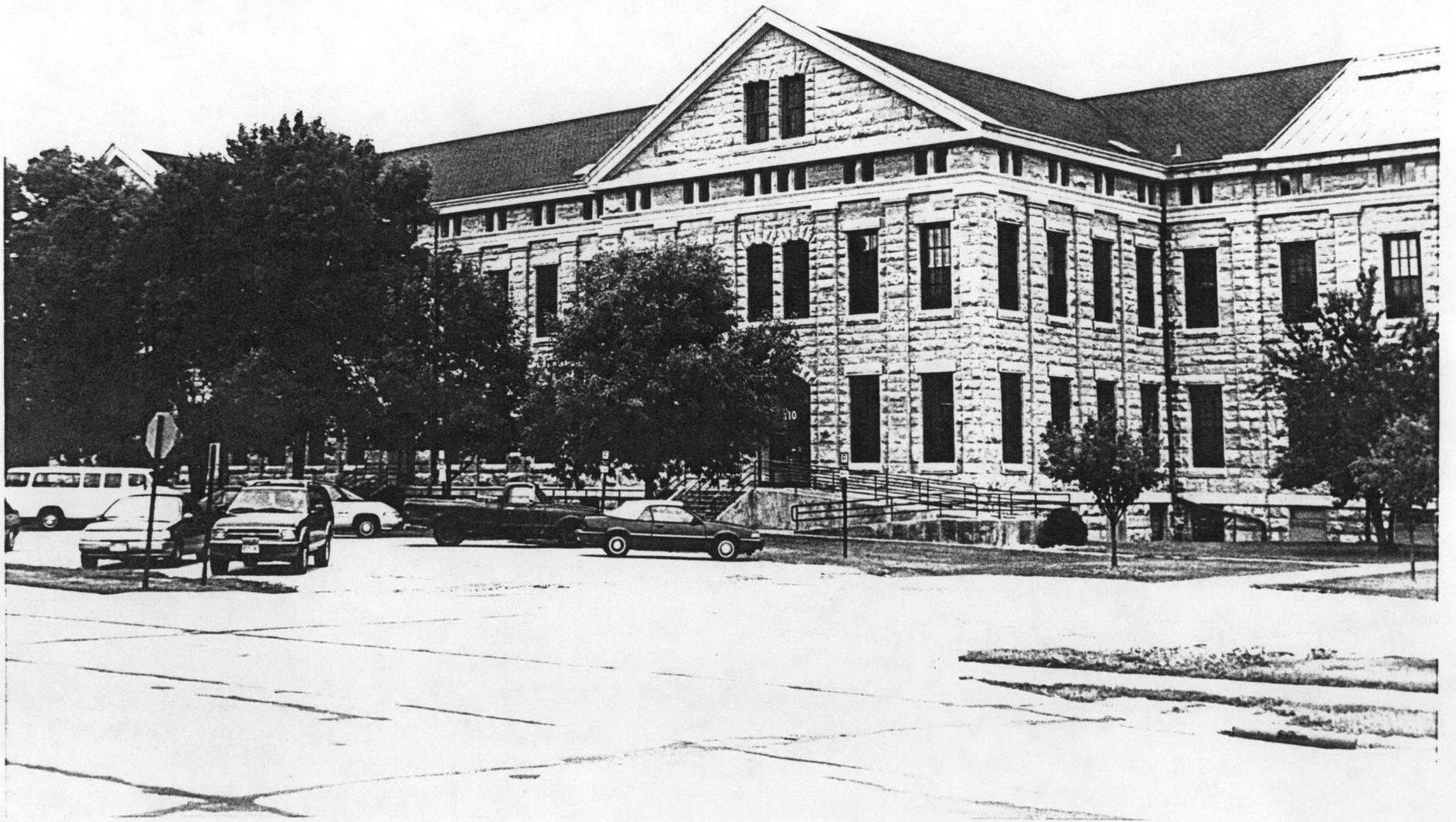
BUILDING 106



BUILDING 108



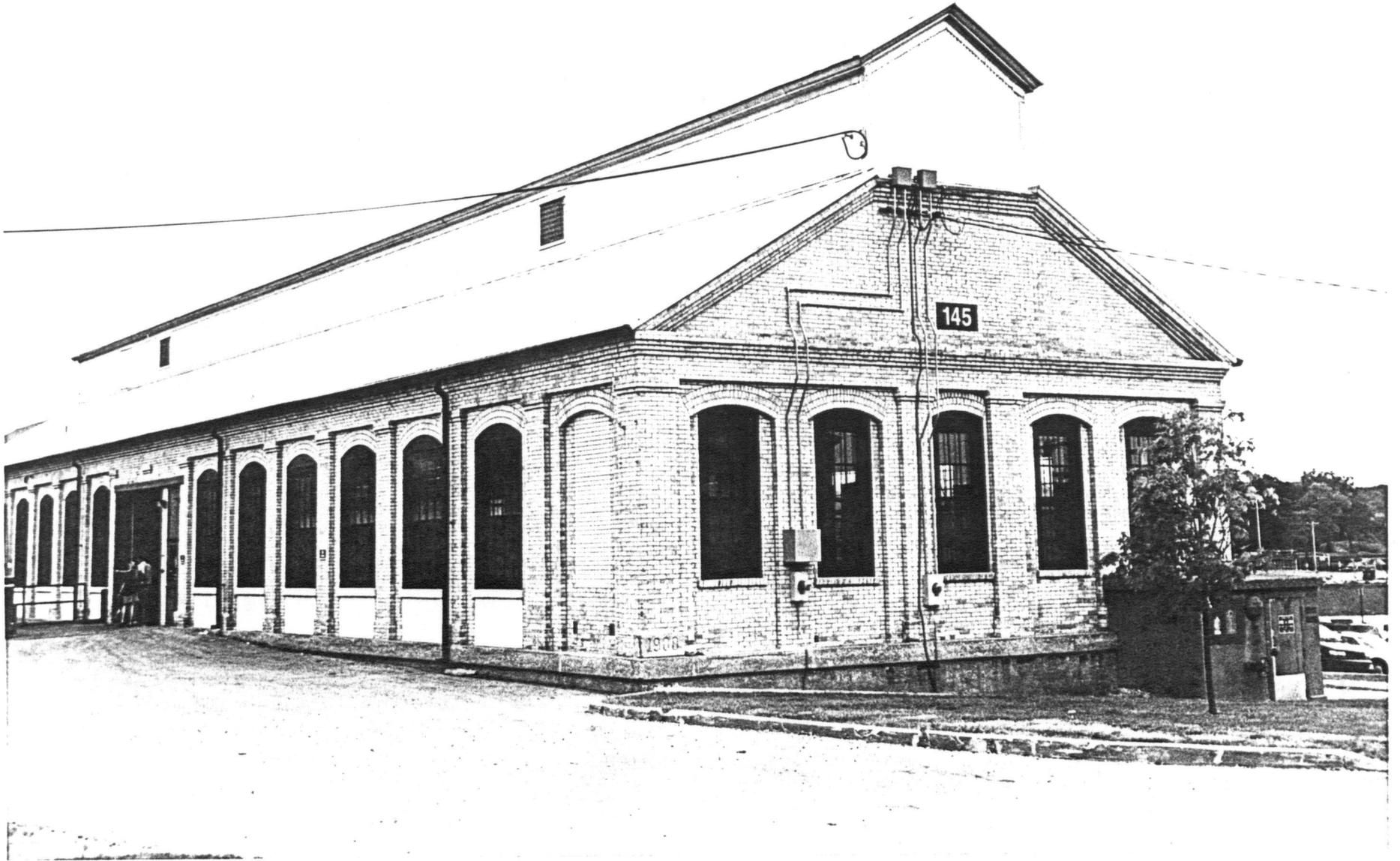
BUILDING 109



BUILDING 110



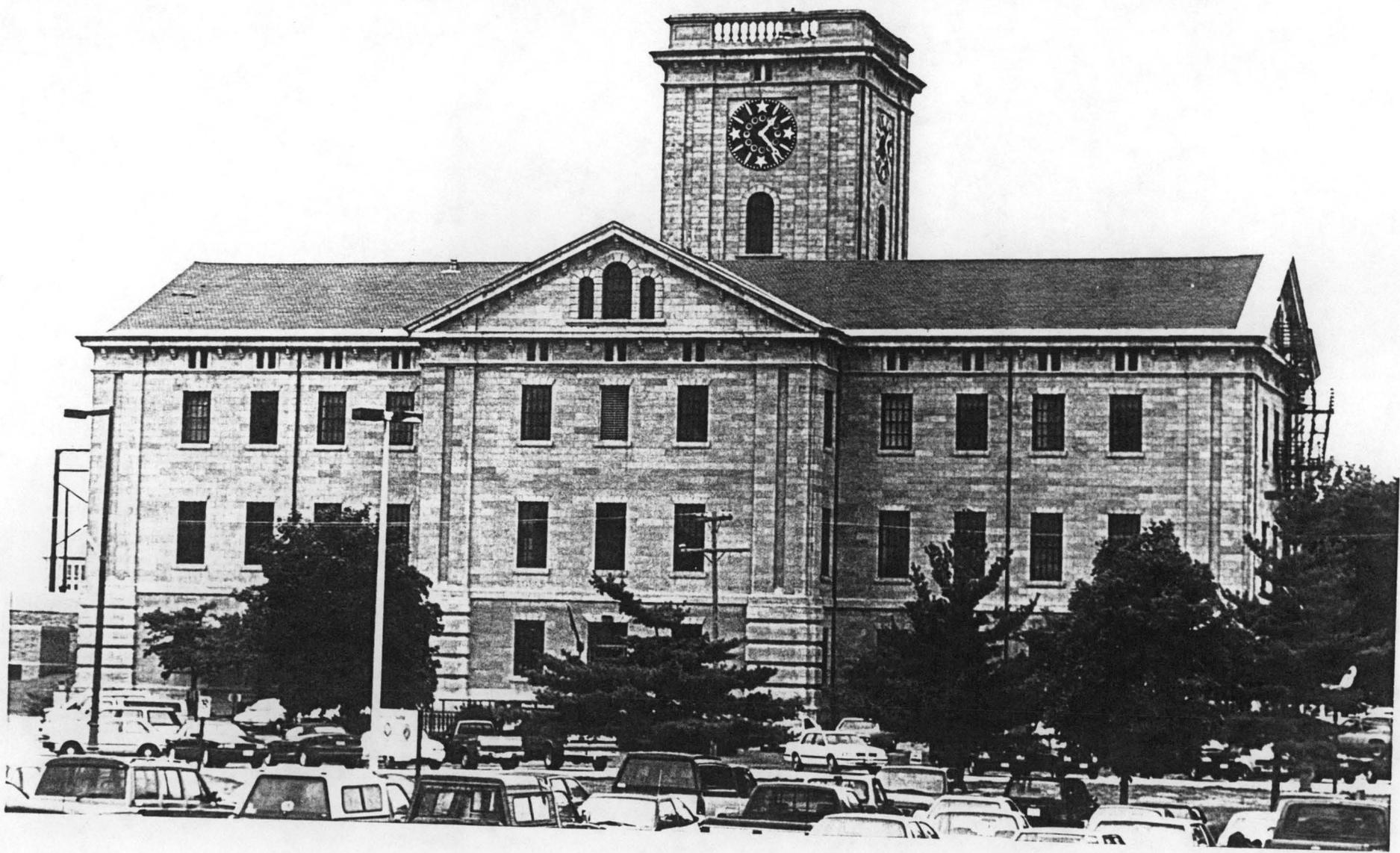
BUILDING 131



BUILDING 145



BUILDING 225



CORPS OF ENGINEERS - CLOCKTOWER BUILDING

Mr. Schroeder/vaf/(309)  
794-3060

January 17, 1984

SMCRI-FEE

R E G I S T E R E D M A I L

Miss Anne Manuell  
Historic Sites Division  
Illinois Department of Conservation  
Lincoln Tower Plaza  
524 South Second Street  
Springfield, Illinois 62706

Dear Miss Manuell:

The Facilities Engineering Office of Rock Island Arsenal is proposing a project to renovate Buildings 102, 103, 109 and 110. This project is the third phase of a plan to remodel the stone shops on the south side of Rodman Avenue.

Included with the plans and specifications we have provided the design analysis for the project. The plans are the 95 percent review copies. The project coordinator has been instructed that there will be changes required concerning the style of windows which are acceptable and the configuration of the ceiling set-back. This office will submit additional information concerning these two items when they become available. The Architect was given a copy of the Secretary of the Interior's Standards, and the project was developed according to those standards.

It is the opinion of this office that the project will have no adverse effect on the historical significance of the Arsenal. It is our understanding based on the MOA for REARM; that the Advisory Council will not be required to review this project if a total agreement between this office and your office can be accomplished.

If you have any questions concerning this project, please contact Mr. Martin Schroeder, (309) 794-3060.

Sincerely,



H. O. Lewin  
Chief, Fac Engr Ofc

ORIGINAL SIGNED

Enclosures

CF:  
DES MC-410

Illinois



Department of Conservation  
We can do it together

100 SOUTH SECOND STREET • SPRINGFIELD 62706  
TELEPHONE 462-1001

March 19, 1984

Department of the Army  
Rock Island Arsenal  
Facilities Engineering Office  
Rock Island, Illinois 61299

Re: Buildings 102, 103, 109 & 110

Attn: Martin Schroeder:

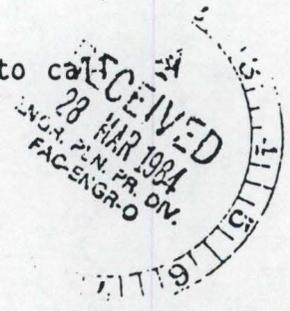
We have reviewed the 95 percent review copies for the above project and find it to be generally in compliance with the Secretary of the Interior's Standards for Rehabilitation. However, the following individual components will need to be modified before the project can be considered to have no adverse effect of the historic significance of the Rock Island Arsenal:

1. Windows and dropped ceilings. It is understood from your letter of January 17, 1984 that you will be modifying these components to meet the Standards. Also, any interior wall trim which exists around the exterior windows should be maintained or replaced with matching materials in the project rehabilitation.
2. Entrance. The use of bronze anodized aluminum entrance sections will be accepted as meeting the Standards as long as clear glazing is used and the vestibule has a full height ceiling for the entire room.
3. Masonry repointing. The repointing mix for exterior repairs should be specified to match the existing in configuration, color and physical characteristics.
4. The handicapped access ramp railing designed for building 109 should have more of a vertical emphasis instead of a horizontal emphasis. This could be easily accomplished with standard bar stock railings.

If you have any questions or comments please do not hesitate to call us at (217) 782-9552.

Sincerely,

Michael Jackson,  
Architectural Coordinator



10 Apr 84

Historic Preservation - Alter HQ Phase III

Martin Schroeder

SECRI-FEE

3060

Anne Manuell

SHPO

217-782-3359

1. I asked Anne to clarify the Illinois SHPO position concerning work done to the stone shops, as outlined in the REARM Memorandum of Agreement (MOA). I reminded her of my letter of 17 Jan 84 in which I stated that based on the MOA, the Advisory Council would not be required to review the stone shop projects, if our office and the SHPO were in total agreement concerning the treatment of the buildings. Anne agreed that my interpretation of the MOA was correct.
2. Another question concerning the Alter HQ Phase III was the entrance treatment. I asked Anne if their statement concerning the entrance treatment would be acceptable for all stone shop entrances and she agreed that it would.
3. I also informed Anne that we would direct the A/E for the Phase III project to talk directly with Mike Jackson (SHPO) concerning the four points still to be considered for the project.

ORIGINAL SIGNED

MARTIN SCHROEDER  
Architect

September 3, 1985

SMCRI-FEE

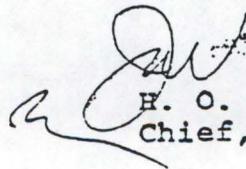
Subject: Window Replacement - Buildings 102, 103, 109, 110

Mr. Michael Jackson  
Historic Sites Division  
Illinois Department of Conservation  
Lincoln Tower Plaza  
524 South Second Street  
Springfield, Illinois 62701-1787

Dear Mr. Jackson:

Enclosed are photographs of the windows proposed as replacements for buildings 102, 103, 109, and 110. Also enclosed are photographs of sections of the trim boards from the original window. These boards definitely indicate that the original color of the boards to be that of a dark brown color. A small sample of the board is enclosed for your examination.

Sincerely,



~~CONFIDENTIAL~~

H. O. Lewin  
Chief, Facilities Engineering Ofc

Enclosures

4  
10/10/85 11:11 AM

Mr. Schroeder/vaf/(309)  
782-2547

-5000

SMCRI-FEE-P

19 MAR 1986

SUBJECT: Window Replacement, Alter Headquarters Facility -  
Phase III

Mr. Michael Jackson  
Historic Sites Division  
Illinois Department of Conservation  
Lincoln Tower Plaza  
524 South Second Street  
Springfield, Illinois 62701-1787

Dear Mr. Jackson:

Enclosed is a copy of the shop drawings provided by the contractor for the window replacement portion of the contract for the project Alter Headquarters Buildings, Phase III. These shop drawings include a color chart listing available colors using the proposed "Duralon" finish. In addition, the shop drawings indicate a choice of muntin styles.

We have enclosed a copy of the paint analysis report provided by Mr. Robert Furhoff. As indicated on page 3 of his report, Mr. Furhoff has determined a dark gray-gloss finish, Glidden Paint number 29194 (Shale), to have been the color most common to all buildings. Of the samples available, we believe the color 096 (Mineral Brown) to be the closest match, and therefore recommend it as the color to be used.

In addition, the attached letter from the supplier indicates the choice of muntins to be either a 1-1/2-inch wide integrated muntin or a 3/4- to 1-inch wide applied muntin. Based on the dimension width of the original muntins, we would recommend the applied muntin be used.

We request your review of the information and concurrence with our findings as to color and muntin style.

We request your office return the shop drawing submittal to our office after your review is complete.

If you have any questions, please contact Mr. Martin Schroeder, (309) 782-2547.

Sincerely,

ORIGINAL SIGNED

H. C. LEWIN, PE  
Chief, Facilities Engineering Office

Enclosures

*J*  
*SL*

SMCRI-FEE File Copy

Schroeder/vaf

23 JUN 1986

SMCRI-FEE-P

Mr. Michael Jackson  
Illinois Department of Conservation  
Lincoln Tower Plaza  
524 South Second Street  
Springfield, Illinois 62706-1737

Dear Mr. Jackson:

This letter is provided to further inform your office of the continuing developments concerning the project Alter Headquarters - Phase III at Rock Island Arsenal.

This office has provided the Corps of Engineers with the final requirements concerning the replacement windows for our stone shops.

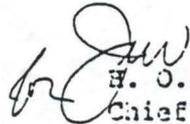
These requirements included, along with the maximum lifting force limitations and infiltration rates, that the color match the "shale" grey color as provided by the paint analysis performed on the original windows. The actual type of finish (anodized, baked, etc.) is the responsibility of the Corps based on the drawings and specifications of the contract. We have had the Corps' assurance that the colors will be matched to the original based on those colors which are available from the manufacturer.

We have also received information from the Corps that to provide the muntins suggested by your office would require an additional \$35,000 and delay the project by 38 weeks. The funding level for this project was approved by Congress, and no additional funds are available. We therefore have instructed the Corps to provide for the integrated muntins equal to the "Devac" which your office had previously stated were acceptable.

We sincerely hope that these issues can now be considered completed and that we have fulfilled the requirements of the Section 106 review for this project.

If you have any questions, please call Mr. Martin Schroeder, (309) 782-2547.

Sincerely,

  
H. O. Lewin, PE  
Chief, Facilities Engineering Office

MINISTERIAL REVIEWED

100-111-110-000

HIST 145  
8



DEPARTMENT OF THE ARMY  
ROCK ISLAND DISTRICT, CORPS OF ENGINEERS  
CLOCK TOWER BUILDING—P.O. BOX 2004  
ROCK ISLAND, ILLINOIS 61204-2004

REPLY TO  
ATTENTION OF:

June 14, 1988

Planning Division

Mr. Theodore Hild  
Deputy State Historic Preservation Officer  
Illinois Historic Preservation Agency  
Old State Capitol  
Springfield, Illinois 62704

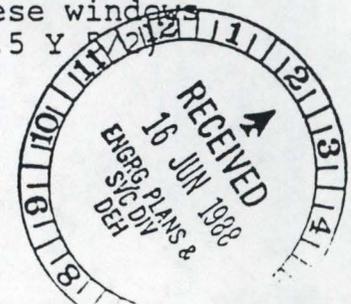
Dear Mr. Hild:

The Corps of Engineers, Rock Island District, has finalized plans for the rehabilitation of the exterior of Building 145 at the Rock Island Arsenal, Rock Island, Illinois. Building 145 is a historic property listed in the National Register of Historic Places as part of the Rock Island Arsenal Historic District.

In February 1988, the Corps of Engineers supplied your office and the Advisory Council on Historic Preservation with a preliminary documentation package which summarized the proposed rehabilitation actions. On March 4, 1988, your office responded to this letter stating that in your opinion the project met the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings. Your letter also stated, provided five conditions were met, that you would concur in a finding of No Adverse Effect if we provided final plans and specifications to your office prior to release of funds.

We have enclosed a copy of the final plans and relevant specifications for the rehabilitation of Building 145. The aluminum window replacements have true-divided lights and match the original historic windows in dimension. Drawings and sections of the proposed replacement windows, as well as door replacement elevations, are enclosed. Also enclosed are masonry repointing and cleaning specifications.

Mr. Thomas Campbell of Asa Haile House Restorations conducted paint color analysis for the windows of Building 145 (see enclosed letter report). His analysis indicated that the original paint color for these windows was a dark yellow green (7.5 Y 4/2) to drab (7.5 Y 5/2).



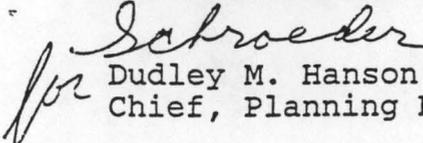
color. In keeping with this dark color, we propose to install dark bronze anodized aluminum windows with none tinted glass (similar to those installed within other recently rehabilitated buildings on the RIA).

We request your comments on these plans within 30 days. If you should have any questions, please call Mr. Floyd Mansberger at 309/788-6361, Ext. 349, or you may write to the following address:

District Engineer  
U.S. Army Engineer District, Rock Island  
ATTN: Planning Division  
Clock Tower Building - P.O. Box 2004  
Rock Island, Illinois 61204-2004

Sincerely,

ORIGINAL SIGNED BY

  
for Dudley M. Hanson, P.E.  
Chief, Planning Division

Enclosures

Copy Furnished:

✓ Commander  
Rock Island Arsenal  
ATTN: Facilities Engineering Office (SMCRI-FE)  
Rock Island, Illinois 61299-5000 wo/enclosures

EST 145



# Illinois Historic Preservation Agency

Old State Capitol • Springfield, Illinois 62701 • (217) 782-4836

217/785-4512

ROCK ISLAND COUNTY  
Rock Island Arsenal  
Building 145  
Rehab exterior  
IHPA Log #72032988

June 27, 1988

Mr. Dudley M. Hanson, P.E.  
Chief, Planning Division  
Rock Island Corps of Engineers  
Clock Tower Building - P.O. Box 2004  
Rock Island, Illinois 61204-2004

Dear Mr. Hanson:

We have reviewed the above referenced project. In our opinion the project meets The Secretary of the Interior's "Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings" and we have no objection to your proceeding as planned.

Please retain this letter in your files as evidence of compliance with Section 106 of the National Historic Preservation Act of 1966, as amended.

If you have any further questions, please contact Ms. Julia A. Hertenstein, Cultural Resources Assistant, Illinois Historic Preservation Agency, Old State Capitol, Springfield, Illinois 62701, (217) 785-3977.

Sincerely,

Theodore W. Hild  
Deputy State Historic  
Preservation Officer

TWH:JAH:m1

PD	<u>          </u>
PD-C	<u>          </u>
PD-E	<u>          </u> ✓
PD-F	<u>          </u>
PD-P	<u>          </u>
PD-R	<u>          </u>
	<u>          </u>
	<u>          </u>
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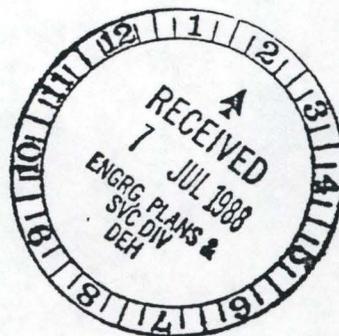
HIST 145  
J



DEPARTMENT OF THE ARMY  
ROCK ISLAND DISTRICT, CORPS OF ENGINEERS  
CLOCK TOWER BUILDING - P.O. BOX 2004  
ROCK ISLAND, ILLINOIS 61204-2004

REPLY TO  
ATTENTION OF:

June 30, 1988



Planning Division

Mr. Don Klima  
Chief, Eastern Division  
Project Review  
Advisory Council on Historic  
Preservation  
Old Post Office Building, #809  
1100 Pennsylvania Avenue, Northwest  
Washington, D.C. 20004

Dear Mr. Klima:

The Rock Island District, Corps of Engineers, is currently finalizing plans for the rehabilitation of the exterior of Building 145, a property listed on the National Register of Historic Places, as part of the Rock Island Arsenal Historic District. Pursuant to 36 CFR 800.5(d)(1)(i), a summary documentation letter (dated February 17, 1988) was forwarded to your office.

The Illinois State Historic Preservation Officer has reviewed the plans for this building and concurs with the Corps that they are in keeping with the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings. As specified in 36 CFR 800.6, this letter constitutes the documented finding of No Adverse Effect as agreed to by the Department of Army and the Illinois State Historic Preservation Officer (see enclosed copy of letter dated March 4, 1988). If the Advisory Council does not object to this finding within 15 days, the Section 106 process shall be considered complete.

If you have any questions on this action, please call Mr. Floyd Mansberger at 309/788-6361, Ext. 349. Any correspondence should be sent to the following address:

District Engineer  
U.S. Army Engineer District, Rock Island  
ATTN: Planning Division  
Clock Tower Building - P.O. Box 2004  
Rock Island, Illinois 61204-2004

Sincerely,

**ORIGINAL SIGNED BY**

**CHARLES R. SMITH**

Dudley M. Hanson, P.E.  
Chief, Planning Division

Enclosure

Copy Furnished:

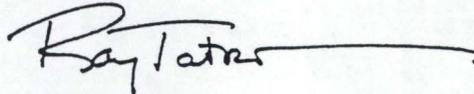
Commander  
Rock Island Arsenal  
ATTN: Facilities Engineering  
Office (SMCRI-FE)  
Rock Island, Illinois 61299-5000 wo/enclosure

23 JAN 1992

MEMORANDUM FOR SMCRI-EHP (Mr. Rich Todd)

SUBJECT: Replacement of Windows in Building 60

1. Wooden windows in the second floor of the west wing of building 60 are scheduled to be replaced by Individual Job Orders.
2. The new windows shall match the replacement units in building 102. Milco Double-Double Hung were installed in building 102 and this shall be noted on the DA 4283.
3. Manufacturer's information on the windows is enclosed for your use (encl 1).
4. A section through the replacement unit from our computer detail system is enclosed for your use (encl 2).
5. The point of contact for this matter is the undersigned, SMCRI-EHS, extension 22491.



RAY TATRO  
Architect, Engineering  
and Services Division

2 Encls



WI N5

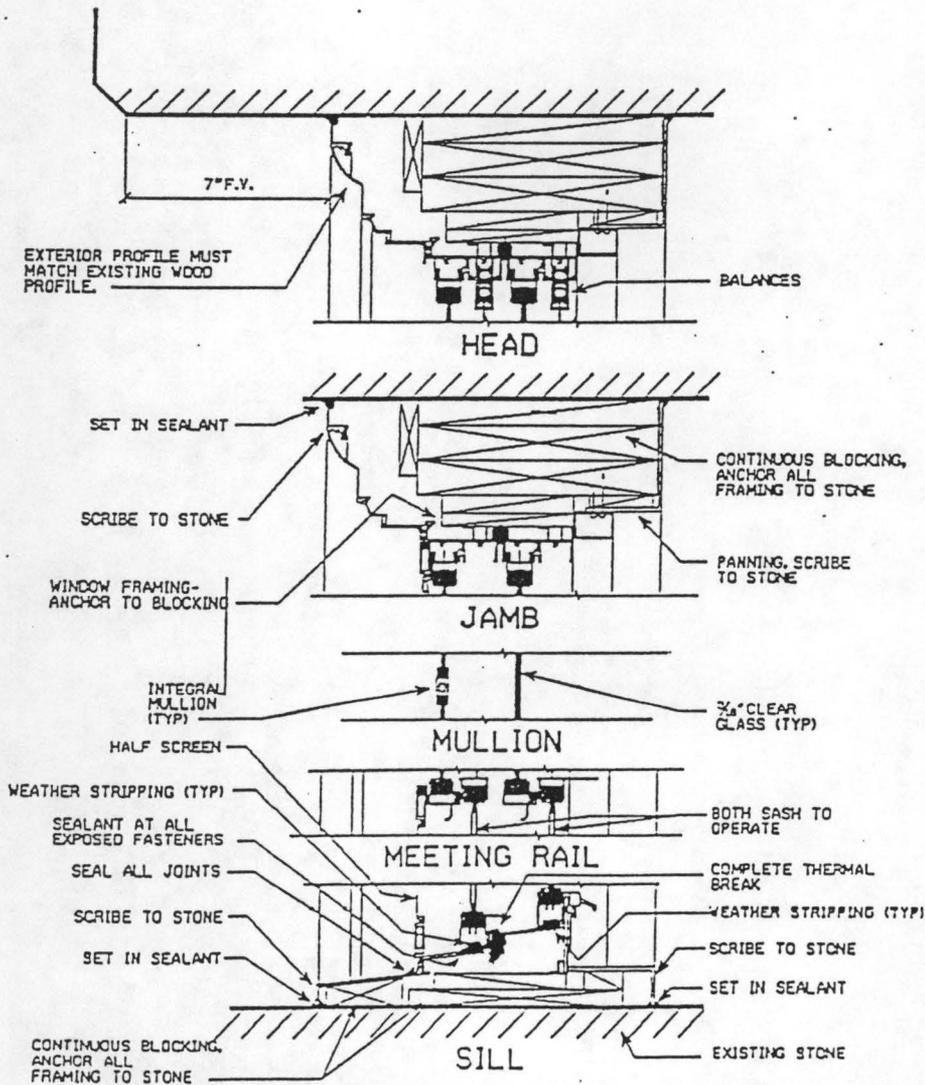
20-MAR-89

NORMAL

QS1: [ 30, 30] ARCH. CEL; 1

# ALUMINUM WINDOW DTL

45



## ALUMINUM WINDOW DETAIL

SCALE: 3" = 1'-0"

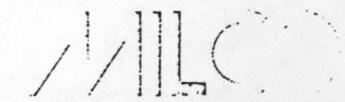
ORIGIN

# NATIONWIDE NETWORK OF QUALIFIED MILCO DISTRIBUTORS

- John H. Lanier Co., Inc.**  
3029 4th Avenue S.  
P.O. Box 55507  
Birmingham, AL 35255  
Phone: 205-322-0415
- Southern Sash & Supply**  
3202 Thompson Avenue  
Montgomery, AL 36198  
Phone: 205-265-3521
- Inlet Glass & Millwork**  
2433 Post Rd.  
Pouch #7032  
Anchorage, AK 99510  
Phone: 907-276-4454
- Southwest Architectural Specialties**  
14950 E. 83rd Place  
Scottsdale, AZ 85260  
Phone: 602-483-3600
- Arizona**  
**Milco**
- Bryant Zimmerman & Associates**  
1039 Paisiades Drive  
P.O. Box 2351  
Marine, CA 94553  
Phone: 415-228-9341
- Customlines**  
25031 Largo, Suite B  
Laguna Hills, CA 92653  
Phone: 714-380-8355
- Fencon**  
1580 W. Chateau Ave.  
Anaheim, CA 92802  
Phone: 714-772-1800
- Colorado**  
**Columbine Building Specialties**  
1935 West 12th Ave.  
Denver, CO 80204  
Phone: 303-534-7588
- CONNECTICUT**  
**The Fox Steel Company**  
312 Boston Post Road  
Orange, CT 06477  
Phone: 203-799-2356  
New Haven  
203-247-6756 Hartford
- DELAWARE**  
**Milco**
- DIST. OF COLUMBIA**  
**\*William A. Russell**  
542 Devonshire Court  
Seymour Park, MD 21146  
Phone: 301-987-6771
- FLORIDA**  
**Commercial Window Sales**  
4720 Distribution Dr.  
Tampa, FL 33605  
Phone: 813-247-2159
- Savanna Trims, Inc.**  
615-1 Whitney  
Lantana, FL 33462  
Phone: 305-533-5455
- \*Milco Direct Representative**
- Milco**
- Alons Company**  
4659 Knoop Avenue  
Louisville, KY 40213  
Phone: 502-361-2227
- Davis Architectural Products**  
13224 S. Choctaw Drive  
Baton Rouge, LA 70815  
Phone: 504-272-6390
- \*Pat Durfy**  
Cortax Office Plaza  
330 W. Covatta  
Palatine, IL 60067  
Phone: 312-705-0523
- Bacon & Van Buskirk**  
801 S. Neil Street  
Champaign, IL 61820  
Phone: 217-356-6471
- Bacon & Van Buskirk**  
1008 W. North Street  
Springfield, IL 62704  
Phone: 217-787-8282
- Cardinal Glass Co.**  
525 Main Street South  
Rockford, IL 61105  
Phone: 815-963-0403  
800-435-2903
- Harkin-Gentleman Glass Co.**  
302 S. Lee  
P.O. Box 3635  
Bloomington, IL 61701  
Phone: 309-827-5478
- Harkin-Gentleman Glass Co.**  
521 W. 84th Drive  
Peoria, IL 61615  
Phone: 309-691-0784
- INDIANA**  
**Capitol Building Sales/Leasing**  
Wholesale  
600 N. 6th Avenue  
P.O. Box 965  
Evansville, IN 47706  
Phone: 812-423-6891
- Hall Aluminum Products**  
2524 E. Pontiac  
Fl. Wayne, IN 46803  
Phone: 219-744-6244
- Hugh J. Baker & Company**  
602 W. McCarty Street  
Indianapolis, IN 46206  
Phone: 317-638-2301
- Southlake Glass**  
521 W. 84th Drive  
Merrillville, IN 46410  
Phone: 219-738-2590
- IOWA**  
**Iowa Architectural Products**  
RR #1  
P.O. Box 257  
Swisher, IA 52338  
Phone: 319-857-4659
- KANSAS**  
**Weaver Glass**  
9401 Reeds Road  
Suite 206  
Overland Park, KS 66207  
Phone: 913-642-5862
- W.L. Hall Company**  
14800 Martin Drive  
Eden Prairie, MN 55344  
Phone: 612-937-8400
- Milco**
- Robert K. Higgins Co.**  
17 Frederick Lane  
St. Louis, MO 63122  
Phone: 314-961-2334
- Tri-Jax Design Products Co.**  
1302 Avenue "D"  
P.O. Box 20364  
Billings, MT 59104  
Phone: 406-245-4116
- A.B.G. Company**  
201 "O" Street  
P.O. Box 80356  
Lincoln, NE 68501  
Phone: 402-476-7531
- Weaver Glass**  
4969 F Street  
Omaha, NE 68117  
Phone: 402-734-0782
- Milco**
- Southwest Architectural Specialties**  
14950 E. 83rd Place  
Scottsdale, AZ 85260  
Phone: 602-483-3600
- MASSACHUSETTS**  
**Capitol Building Specialties**  
29 Camonige Turnpike  
Lincoln, MA 01773  
Phone: 617-259-9160
- Chandler Products, Inc.**  
255 Interstate Drive  
West Springfield, MA 01089  
Phone: 413-733-1111
- AMERICAN GLASS & METAL**  
15100 Keel Street  
Plymouth, MI 48170  
Phone: 313-459-0760
- Koerts Glass & Paint Co.**  
205 S. Dort Hwy.  
P.O. Box 1337  
Flint, MI 48503  
Phone: 313-229-3524
- Metal Building Specialties**  
4000 Portage Street  
Kalamazoo, MI 49001  
Phone: 616-381-1098 (Main ofc.)
- Metal Building Specialties**  
530 E. Grand River  
P.O. Box 209  
Williamston, MI 48895  
Phone: 517-655-4312
- Peterson Glass**  
115 South Lake Street  
Marquette, MI 49855  
Phone: 906-226-3341
- Carcana Architectural Products**  
600 Matthews -  
Murf Hill Road - Suite 232  
P.O. Box 2249  
Matthews, NC 28105  
Phone: 704-847-2282
- W.L. Hall Company**  
14800 Martin Drive  
Eden Prairie, MN 55344  
Phone: 612-937-8400
- Geper Construction Products**  
869 North Bend Road  
Cincinnati, OH 45224  
Phone: 513-242-5106
- Hatther-Zimmer, Inc.**  
2519 S. Dixie Avenue  
Dayton, OH 45409  
Phone: 513-267-7345  
614-224-1758 (Columbus)
- Vicon Supply Co.**  
P.O. Box 5820  
Toledo, OH 43613  
Phone: 419-241-7261
- H.S. Westover, Inc.**  
5440 Wegman Drive  
Valley City, OH 44280  
Phone: 216-225-9639
- Fred J. Criso, Inc.**  
720 N. Main Street  
Akron, OH 44310  
Phone: 216-253-5103
- Construction Bldg. Specialties**  
P.O. Box 18402  
Oklahoma City, OK 73154  
Phone: 405-528-7030
- Murray Wemple Co.**  
624 East 4th St.  
Tulsa, OK 74120  
Phone: 918-584-2414
- Milco**
- D.M. Products, Inc.**  
2884 Industrial Blvd.  
P.O. Box 102  
Bethel Park, PA 15102  
Phone: 412-833-9595
- Fred Boschan Co., Inc.**  
9 Lee Boulevard  
Frazer, PA 15355  
Phone: 215-296-9660
- Milco**
- Milco**
- Viking Glass Co.**  
1413 "A" Avenue  
P.O. Box 1032  
Sioux Falls, SD 57101  
Phone: 605-336-7044
- Engineering Sales Co.**  
P.O. Box 125  
Bloomville, TN 37617  
Phone: 615-323-8432
- John W. McDougall Co.**  
41st & Indiana  
P.O. Box 90207  
Nashville, TN 37209  
Phone: 615-321-3900
- Hendrix Products**  
5617 Garendale  
Houston, TX 77092  
Phone: 713-686-3481
- M.H. Waterman & Associa**  
110 Manner  
Austin, TX 78734  
Phone: 512-281-5084
- Steel Encounters**  
525 East 300 South  
Salt Lake City, UT 84102  
Phone: 801-332-4701
- Milco**
- \*William A. Russell**  
542 Devonshire Court  
Seymour Park, MD 21146  
Phone: 301-987-6771
- John N. Yauger Company**  
2318 Carolina Ave. S.W.  
P.O. Box 8232  
Roanoke, VA 24014  
Phone: 703-344-0670
- Milco**
- Acme Glass**  
East 5414 Broadway  
Spokane, WA 99212  
Phone: 509-535-3015
- Hatman Glass Co.**  
3328 Emerson Avenue  
Parkersburg, WV 26101  
Phone: 304-485-4503
- Milco**
- C & J Sales**  
2078 E. Vista Circle  
DePue, WI 54415  
Phone: 414-336-3718
- Simmons Building Products, Inc.**  
Lincoln Professional Center,  
Suite 207  
10401 West Lincoln Avenue  
Milwaukee, WI 53227  
Phone: 414-545-3111
- Milco**

SERIES	TYPE	EXT. METAL SIGHTLINES										REMOVABLE SASI		
		AAMA CLASS	FRAME DEPTH (IN)	HEAD (IN)	SILL (IN)	JAMB (IN)	MEETING RAIL (IN)	MAX. GLASS THICKNESS (IN)	TRIPLE GLAZING	THERMAL BARRIER	ALL COMML. FINISHES		MAX. WIDTH (FT-IN) <small>3 1/2" - 10 1/2" units can be up to 12" wide</small>	MAX. HEIGHT (FT-IN)
W-10	HS	NA	1 1/8	2 3/8	2 1/8	1 7/8	1 3/4	1/4	NO	NO	YES	8-0	5-4	2
W-10	DH	NA	1 1/8	2 1/4	2 1/4	2 3/8	1	1/4	NO	NO	YES	4-6	7-5	2
W-20	HS	A	3 3/4	2 1/4	4 5/8	2 1/4	2 1/2	1	YES	NO	YES	8-0	6-6	1
W-21T	OF	A	3 3/4	2 1/4	2 1/4	2 1/4	3	1	YES	YES	YES	4-6	8-0	0
W-21T	HS	A	3 3/4	2 1/4	4 5/8	2 1/4	3	1	YES	YES	YES	8-0	6-6	1
W-24TR	DH	A	5 7/8	2 1/4	3 3/8	2 3/4	1 3/4	1/2	YES	YES	YES	4-6	7-6	4
W-25T	DH	A	3 3/4	2 3/4	3 3/4	3 1/4	3	1	YES	YES	YES	4-6	8-0	2
W-27TR	HS	A	4 1/2	2 1/2	3 5/8	2 1/8	1 3/4	1/2	YES	YES	YES	8-0	5-4	4
W-27TFA	HS	OW	4 1/2	2 1/2	3 5/8	2 1/8	1 3/4	1/2	YES	YES	YES	8-0	5-4	4
W-28	SH	A	3 3/4	2	3 3/4	3 1/4	3	1	YES	NO	YES	4-6	8-0	1
W-30T	SH	A	3 3/4	2	3 3/4	3 1/4	3	1	YES	YES	YES	4-6	8-0	1
D-35T	SGD	HC-40	3 1/2	2 3/4	4	2 3/4	1 3/4	1	YES	YES	YES	10-0	8-0	2

A Architectural Glass - AAMA Publication GS-001      B 5/16" with interior screen frame      C Operator jamb



MILCO WINDOWS - MORE WINDOW THAN MEETS THE EYE

A division of Wausau Group

7555 Stewart Avenue  
Post Office Box 1366  
Wausau, WI 54402-1366  
Phone: 715/842-0581

04 FEB 1992

SMCRI-EH (870-5f)

SUBJECT: Replace Windows in Building 60

Mr. Bill Callahan  
Illinois Historic Preservation Agency  
Old State Capitol  
Springfield, Illinois 62701

Dear Mr. Callahan:

This office has developed a project to replace windows in building 60, west wing. Work is required to eliminate old wood sash windows and replace them with modern, energy efficient units. The windows will be replaced in increments of ten and will start with the north face (Increment No 1). If funding remains available, Increment No 2, will be done immediately after completion of Increment No 1. We have enclosed the plans and specifications of this project for your review and comment. The type of windows planned for installation have been approved for use in a prior project; building 102.

Building 60 is a Category I historic structure built in 1872. Building 60 is a part of the Rock Island Arsenal National Historic Landmark.

This office has reviewed the project to replace windows in building 60 and taking into account the criteria of effect and adverse effect, we find this project will have no adverse effect on the historical significance of the Arsenal. We request your concurrence with our finding of no adverse effect for the project to replace windows in building 60.

If you have any questions on this project, please contact Mr. Rich Todd, SMCRI-EHP, extension 22045.

Sincerely,

SIGNED

John A. Ruble  
Director, Directorate of  
Engineering and Housing

Enclosures



DEPARTMENT OF THE ARMY  
ROCK ISLAND ARSENAL  
ROCK ISLAND, ILLINOIS 61299-5000

RECEIVED

FEB 05 1992  
11021092  
PRESERVATION SERVICES



REPLY TO  
ATTENTION OF

SMCRI-EH

Feb  
04 JAN 1992

SUBJECT: Replace Windows in Building 60

IHPA REVIEW

H/A \_\_\_\_\_  
AC TO HIS 2-7-92  
AR \_\_\_\_\_  
File Ri/DoArmy

Mr. Bill Callahan  
Illinois Historic Preservation Agency  
Old State Capitol  
Springfield, Illinois 62701

Dear Mr. Callahan:

This office has developed a project to replace windows in building 60, west wing. Work is required to eliminate old wood sash windows and replace them with modern, energy efficient units. The windows will be replaced in increments of ten and will start with the north face (Increment No 1). If funding remains available, Increment No 2, will be done immediately after completion of Increment No 1. We have enclosed the plans and specifications of this project for your review and comment. The type of windows planned for installation have been approved for use in a prior project; building 102.

Building 60 is a Category I historic structure built in 1872. Building 60 is a part of the Rock Island Arsenal National Historic Landmark.

This office has reviewed the project to replace windows in building 60 and taking into account the criteria of effect and adverse effect, we find this project will have no adverse effect on the historical significance of the Arsenal. We request your concurrence with our finding of no adverse effect for the project to replace windows in building 60.

If you have any questions on this project, please contact Mr. Rich Todd, SMCRI-EHP, extension 22045.

Sincerely,

John A. Ruble  
Director, Directorate of  
Engineering and Housing

**CONCUR**

By: [Signature]  
Deputy State Historic Preservation Officer

Date: 3-12-92

Enclosures



SMCRI-EHS (420-10c)

25 FEB 1992

MEMORANDUM FOR SMCRI-EHP (Mr. Rich Todd)

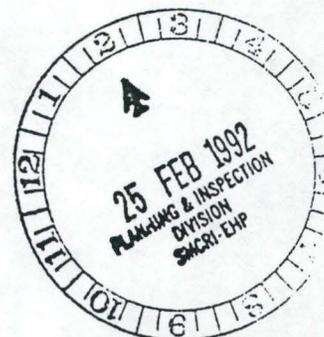
SUBJECT: Replacement of Windows in Building 67

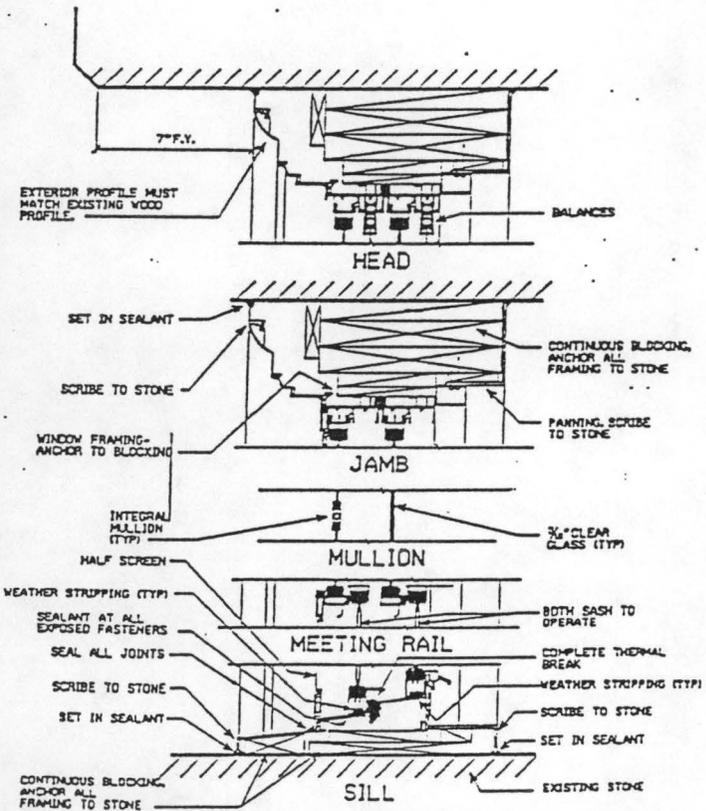
1. Wooden windows in the first floor of building 67 are scheduled to be replaced by an Individual Job Order. Entry doors on the south side will also be included.
2. The new windows shall match the replacement units already in building 102. The new windows and doors will be a mirror image of building 109.
3. A section through the replacement unit from our computer detail system is enclosed for your use (encl 1).
4. A building floor plan is also enclosed for your use (encl 2).
5. Request necessary paperwork be forwarded to the Illinois State Historic Preservation Office for approval.
6. The point of contact for this matter is the undersigned, SMCRI-EHS, extension 22491.

2 Encls

*Ray Tatro*

RAY TATRO  
Architect, Engineering  
and Services Division





ALUMINUM WINDOW DETAIL  
SCALE: 3/4" = 1'-0"



19 MAR 1992

SMCRI-EH (420-10c)

SUBJECT: Replacement of Windows in Building 67

Mr. Bill Callahan  
Illinois Historic Preservation Agency  
Old State Capitol  
Springfield, Illinois 62701

Dear Mr. Callahan:

This office has developed a project to replace eight windows and the south entrance to building 67. As this project will be done in-house, we have enclosed a typical window section and floor plan for review and comment. These windows will be of the same type and style as those previously used in building 102 projects.

Building 67 is a Category II historic structure built in 1918. Building 67 is a part of the Rock Island Arsenal National Historic Landmark.

This office has reviewed the project to replace windows in building 67 and taking into account the criteria of effect and adverse effect, we find this project will have no adverse effect on the historical significance of the Arsenal. We request your concurrence with our finding of no adverse effect for the project.

If you have any questions on this project, please contact Mr. Rich Todd, SMCRI-EHP, commercial (309) 782-2045.

Sincerely,

SIGNED

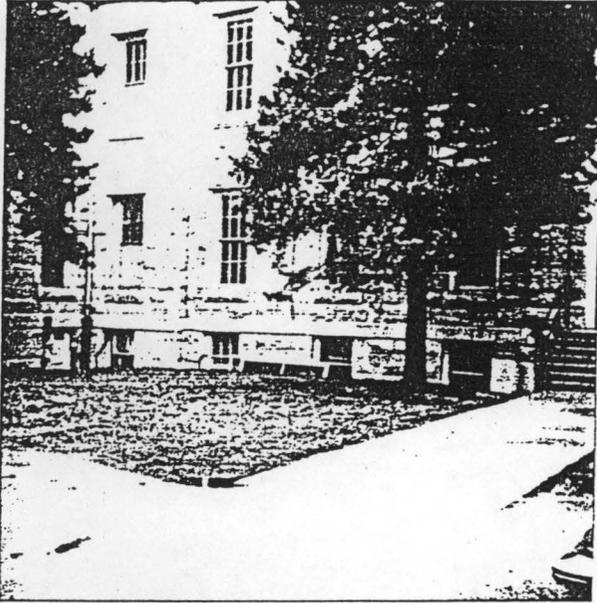
John A. Ruble  
Director, Directorate of  
Engineering and Housing

Enclosures

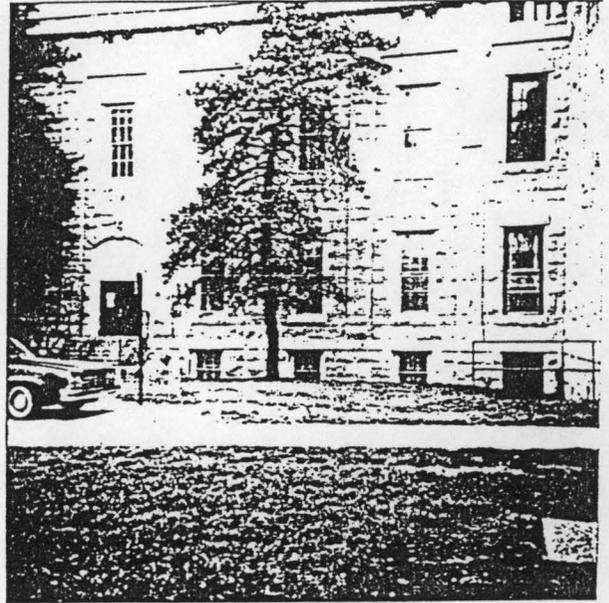
Copy Furnished:

AMSMC-EHR-R

16Mar92



Bl'g 67



Bl'g 67

Building 67 .  
Looking North  
at South Face

8

7

6

MENS LOCKER ROOM

WOMENS LOCKER ROOM

PROVIDE DUAL PNEUMATIC THERMOSTAT. SEE CONTROL DETAIL (ALSO USED FOR COOLING)

SERVICE DESK, COUNTERTOP

PROVIDE PNEUMATIC THERMOSTAT. SEE CONTROL DETAIL

CORE DRILL NEW HOLE FOR INSULATED 3/4" CONDENSATE PIPE. (TYP. OF 6)

PNEUMATIC TUBING TYP OF 6

EXISTING MAIN STEAM PIPE CEILING TO FLOOR.

CORE DRILL NEW HOLE FOR INSULATED 3/4" STEAM PIPE. (TYP. OF 6)

INSTALL STEAM FIN-TUBE CONVECTORS UNDER WINDOWS. SEE DETAIL (TYP OF 6)

Replace 6 units in 67, 1 in 66, 1 in 68, and the entry to 67.

NEW MECHANICAL WORK, PLAN A, BUILDING 67 FIRST FLOOR

IGNORE ALL MECHANICAL NOTES



E

D



Illinois Historic  
Preservation Agency

Old State Capitol Springfield, Illinois 62701 (217) 782-4836

Suite 4-900 State of Illinois Center 100 W. Randolph Chicago, IL 60601 (312) 814-1409

Rock Island County  
Rock Island Arsenal  
Window Replacement - Building 67  
IHPA Log #12032392

April 6, 1992

John A. Ruble  
Director, Directorate of  
Engineering and Housing  
Department of the Army  
Attn: Rich Todd, SMCRI-EHP  
Rock Island Arsenal  
Rock Island, Illinois 61299-5000

Dear Mr. Ruble:

We have reviewed the referenced project. This property is within the Rock Island Arsenal National Historic Landmark District.

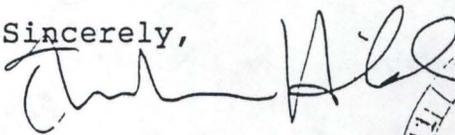
In our opinion the project meets the Secretary of the Interior's "Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings" provided that the following conditions are met:

1. Replacement windows have a divided lite pattern matching the historic configuration.
2. This office is provided an opportunity to review final plans and specifications.

Please include this letter with your documented finding to the Advisory Council on Historic Preservation (The Old Post Office Building, 1100 Pennsylvania Avenue, N.W., #809, Washington, D.C. 20004) as specified in 36 CFR 800.5(D). If they have no objections to this finding within 30 days of receipt, you will have satisfied your responsibilities pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended.

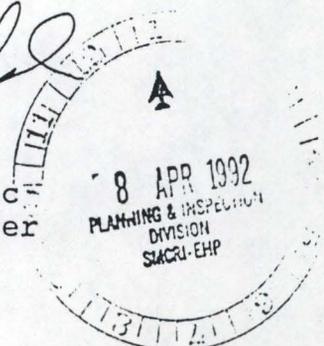
If you have any questions, please contact Anne Haaker, Coordinator, Resource Protection Services, Illinois Historic Preservation Agency, Old State Capitol, Springfield, Illinois 62701, 217/785-3977.

Sincerely,

  
Theodore W. Hild  
Deputy State Historic  
Preservation Officer

TWH:WJC:kh

cc: Charlene Vaughn, ACHP



SMCRI-EHS (420-10c)

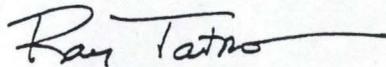
25 FEB 1992

MEMORANDUM FOR SMCRI-EHP (Mr. Rich Todd)

SUBJECT: Replacement of Windows in Building 102

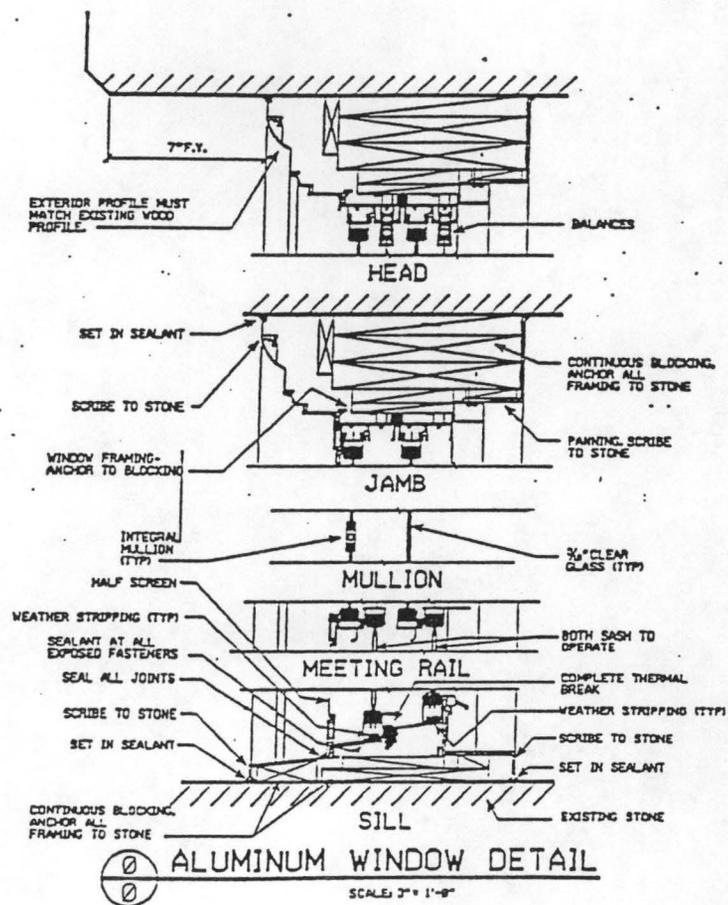
1. Four wooden windows in the basement of the west wing of building 102 are scheduled to be replaced by an Individual Job Order. Four window openings which are filled with masonry will be opened and provided with replacement window units as part of the same Individual Job Order.
2. The new windows shall match the replacement units already in building 102.
3. A section through the replacement unit from our computer detail system is enclosed for your use (encl 1).
4. A building floor plan showing the window locations and the scope of work is enclosed for your use (encl 2).
5. Request necessary paperwork be forwarded to the Illinois State Historic Preservation Office for approval.
6. The point of contact for this matter is the undersigned, SMCRI-EHS, extension 22491.

2 Encls



RAY TATRO  
Architect, Engineering  
and Services Division





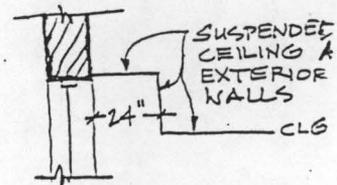
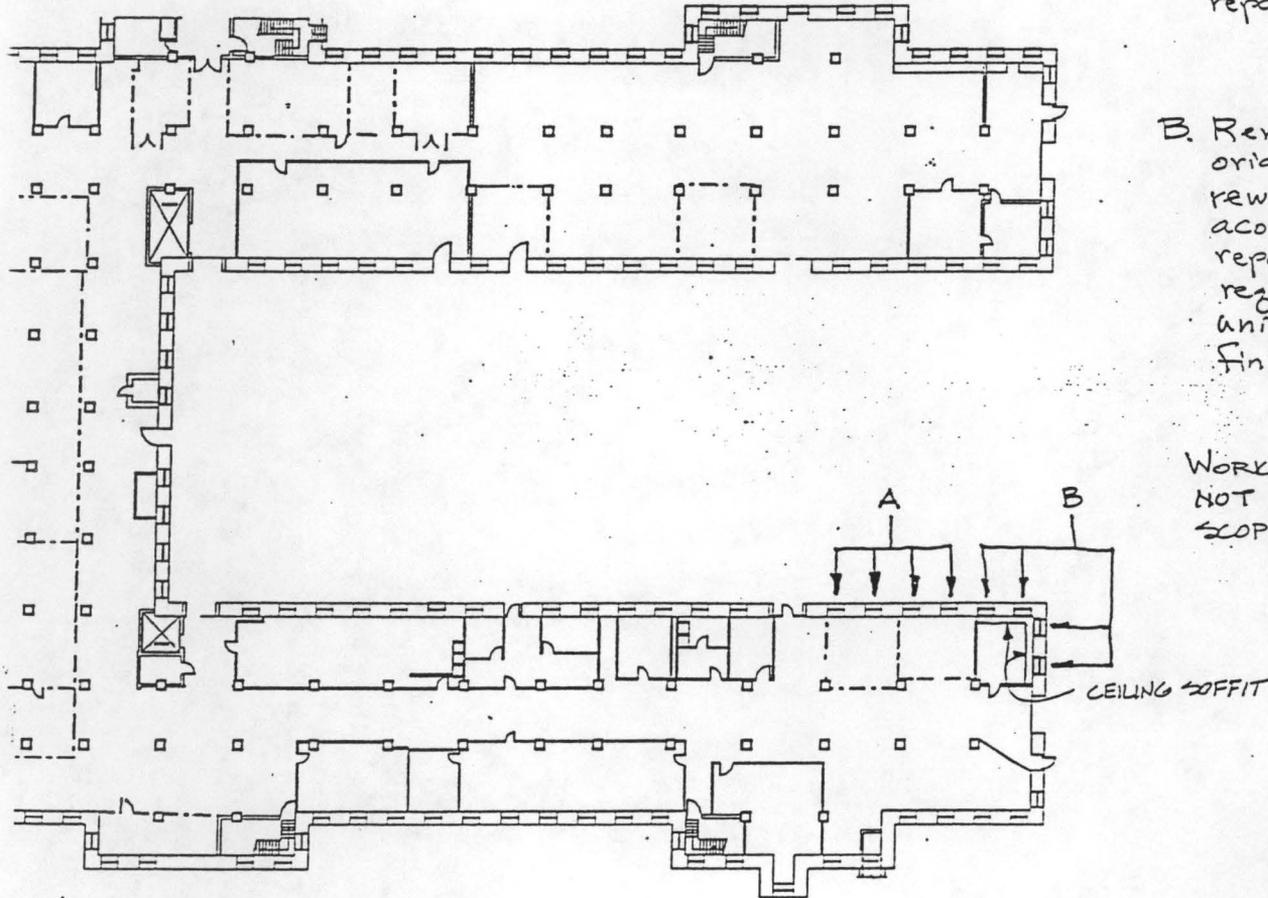
Replace Windows  
Basement 102

AT LOCATION

A: Remove wooden windows, repair masonry as required, install aluminum units, repair interior finishes.

B: Remove masonry in original window opening, rework suspended acoustical tile ceiling, repair masonry as required, install alum units, repair interior finishes.

WORK INCLUDES, BUT IS NOT LIMITED TO, THE SCOPE OF WORK LISTED.



ROCK ISLAND ARSENAL  
DIRECTORATE OF ENGINEERING & HOUSE  
ENGINEERING & SERVICES BRANCH

BUILDING 102  
BASEMENT

SCALE 1/32" = 1'-0"  
0 1 2 3 4 5 6 7 8 9 10

REV. MAR 1987



17 MAR 1992

SMCRI-EH (420-10c)

SUBJECT: Replacement of Windows in Building 102

Mr. Bill Callahan  
Illinois Historic Preservation Agency  
Old State Capitol  
Springfield, Illinois 62701

Dear Mr. Callahan:

This office has developed a project to replace windows in the basement of building 102, west wing. Four wooden windows will be replaced and four openings that originally had windows and were blocked up, will have windows installed. We have enclosed a typical window section for this project for your review and comment. These windows will be of the same type and style as those previously used in building 102 projects.

Building 102 is a Category I historic structure built in 1876. Building 102 is a part of the Rock Island Arsenal National Historic Landmark.

This office has reviewed the project to replace the windows in building 102 and taking into account the criteria of effect and adverse effect, we find this project will have no adverse effect on the historical significance of the Arsenal. We request your concurrence with our finding of no adverse effect for the project.

If you have any questions on this project, please contact Mr. Rich Todd, SMCRI-EHP, commercial (309) 782-2045.

Sincerely,

SIGNED

John A. Ruble  
Director, Directorate of  
Engineering and Housing

Enclosures

Copy Furnished:

AMSMC-EHR-R



Illinois Historic  
Preservation Agency

Old State Capitol      Springfield, Illinois 62701      (217) 782-4836  
Suite 4-900      State of Illinois Center      100 W. Randolph      Chicago, IL 60601      (312) 814-1409

Rock Island County  
Rock Island Arsenal  
Window Replacement - Building 102  
IHPA Log #01031992

April 6, 1992

John A. Ruble  
Director, Directorate of  
Engineering and Housing  
Department of the Army  
Attn: Rich Todd, SMCRI-EHP  
Rock Island Arsenal  
Rock Island, Illinois 61299-5000

Dear Mr. Ruble:

We have reviewed the referenced project. This property is within the Rock Island Arsenal National Historic Landmark District.

In our opinion the project meets the Secretary of the Interior's "Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings" provided that the following conditions are met:

1. Replacement windows have a divided lite pattern matching the historic configuration.
2. This office is provided an opportunity to review final plans and specifications.

Please include this letter with your documented finding to the Advisory Council on Historic Preservation (The Old Post Office Building, 1100 Pennsylvania Avenue, N.W., #809, Washington, D.C. 20004) as specified in 36 CFR 800.5(D). If they have no objections to this finding within 30 days of receipt, you will have satisfied your responsibilities pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended.

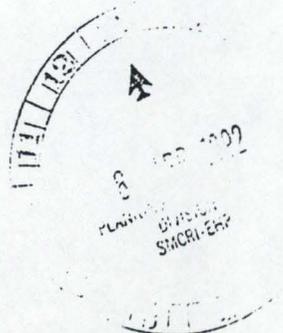
If you have any questions, please contact Anne Haaker, Coordinator, Resource Protection Services, Illinois Historic Preservation Agency, Old State Capitol, Springfield, Illinois 62701, 217/785-3977.

Sincerely,

Theodore W. Hild  
Deputy State Historic  
Preservation Officer

TWH:WJC:kh

cc: Charlene Vaughn, ACHP



24 FEB 1992

SMCRI-EHS (420-10c)

MEMORANDUM FOR SMCRI-EHP (Mr. Rich Todd)

SUBJECT: Replacement of Windows in Building 225

1. Wooden windows in the second floor of the west wing and center bay of building 225 are scheduled to be replaced by an Individual Job Order.
2. The new windows shall match the replacement units in building 102.
3. A section through the replacement unit from our computer detail system is enclosed for your use (encl 1).
4. Request necessary paperwork be forwarded to the Illinois State Historic Preservation Office for approval.
5. The point of contact for this matter is the undersigned, SMCRI-EHS, extension 22491.

1 Encl

*Ray Tatro*

RAY TATRO  
Architect, Engineering  
and Services Division



WI N5

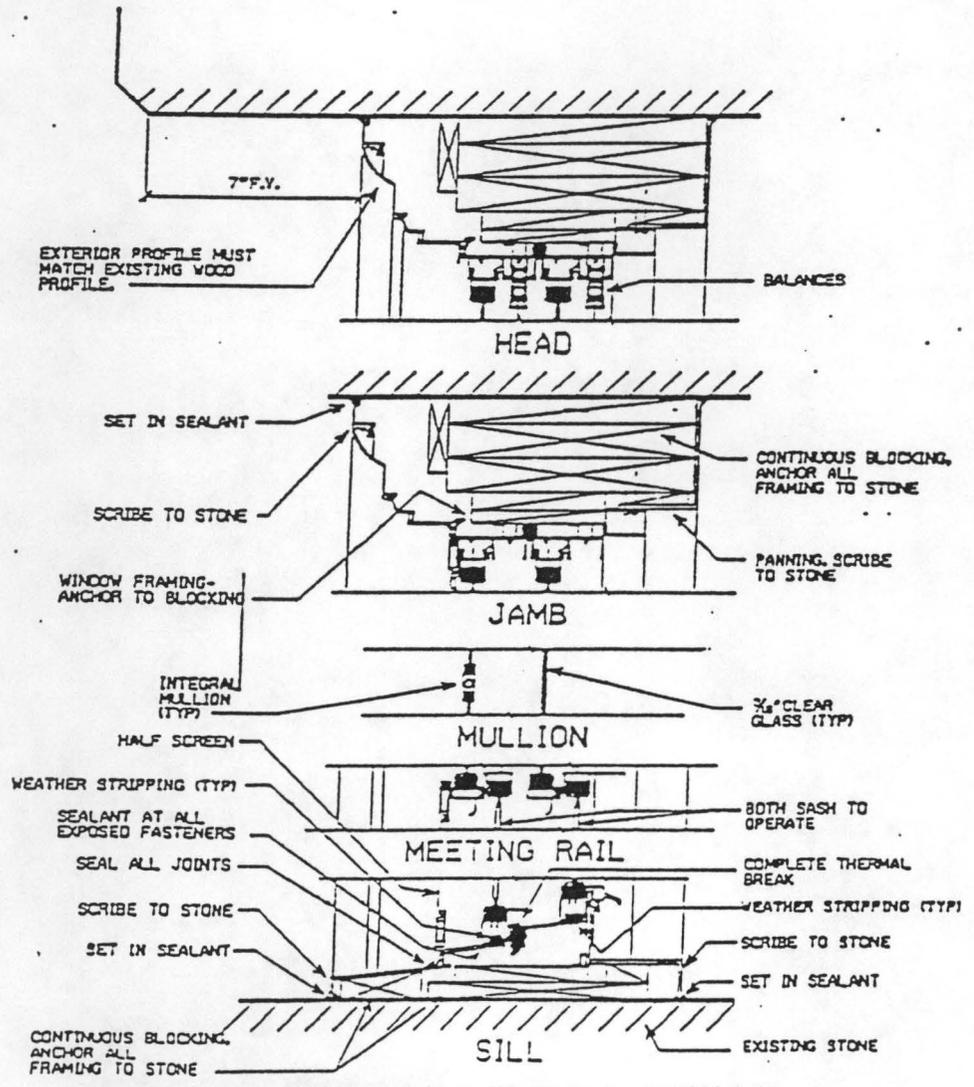
20-MAR-89

NORMAL

QS1 : [ 30, 30 ] ARCH. CEL: 1

# ALUMINUM WINDOW DTL

45



① ALUMINUM WINDOW DETAIL  
 ②  
 SCALE: 3/4" = 1'-0"

ORIGIN

19 MAR 1992

SMCRI-EH (420-10c)

SUBJECT: Replace Windows and Door, Building 225, East Wing

Mr. Bill Callahan  
Illinois Historic Preservation Agency  
Old State Capitol  
Springfield, Illinois 62701

Dear Mr. Callahan:

This office has developed a project to replace 16 windows and 1 door in building 225, east wing. This project will complete the replacement of windows and doors in this wing. We have enclosed the standard window section and sketches for this project for your review and comment. These windows will be of the same type and style as those previously used in building 102 projects.

Building 225 is a Category I historic structure built in 1874. Building 225 is a part of the Rock Island Arsenal National Historic Landmark.

This office has reviewed the project to replace windows and door in building 225 and taking into account the criteria of effect and adverse effect, we find this project will have no adverse effect on the historical significance of the Arsenal. We request your concurrence with our finding of no adverse effect for the project.

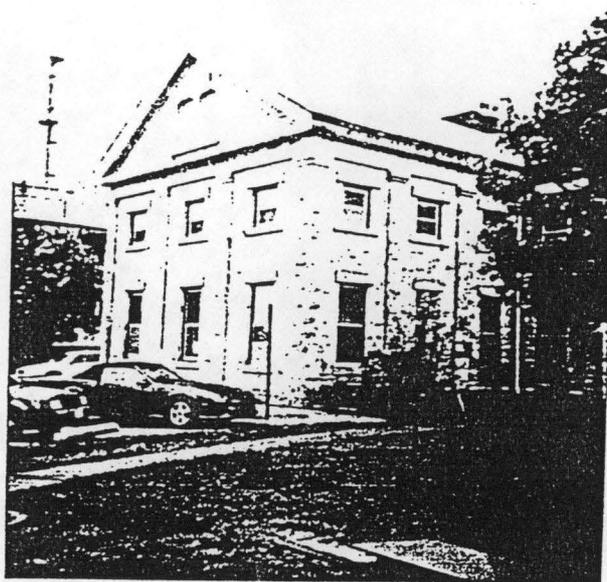
If you have any questions on this project, please contact Mr. Rich Todd, SMCRI-EHP, commercial (309) 782-2045.

Sincerely,

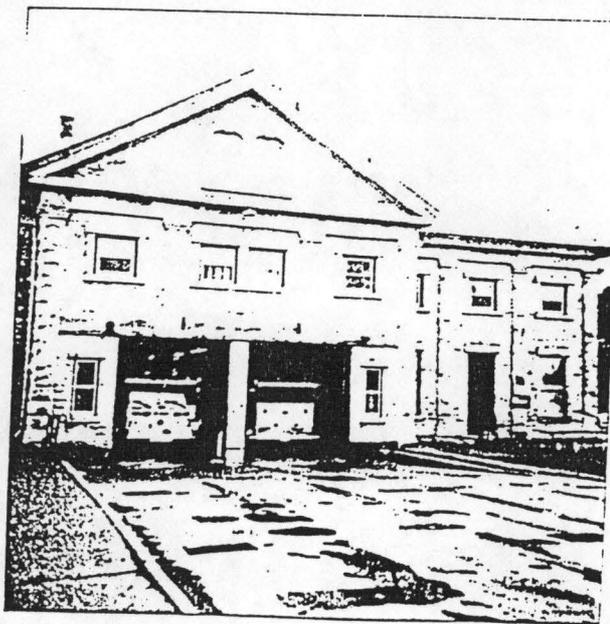
SIGNED

John A. Ruble  
Director, Directorate of  
Engineering and Housing

Enclosures



Bldg 225  
East wing



Bldg 225  
Front & West wing

Building 225

Recruitment



Illinois Historic  
Preservation Agency

Old State Capitol Springfield, Illinois 62701 (217) 782-4836

Suite 4-900 State of Illinois Center 100 W. Randolph Chicago, IL 60601 (312) 814-1409

Rock Island County  
Rock Island Arsenal  
Window Replacement - Building 225  
IHPA Log #04031092

April 6, 1992

John A. Ruble  
Director, Directorate of  
Engineering and Housing  
Department of the Army  
Attn: Rich Todd, SMCRI-EHP  
Rock Island Arsenal  
Rock Island, Illinois 61299-5000

Dear Mr. Ruble:

We have reviewed the referenced project. This property is within the Rock Island Arsenal National Historic Landmark District.

In our opinion the project meets the Secretary of the Interior's "Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings" provided that the following conditions are met:

1. Replacement windows have a divided lite pattern matching the historic configuration.
2. This office is provided an opportunity to review final plans and specifications.

Please include this letter with your documented finding to the Advisory Council on Historic Preservation (The Old Post Office Building, 1100 Pennsylvania Avenue, N.W., #809, Washington, D.C. 20004) as specified in 36 CFR 800.5(D). If they have no objections to this finding within 30 days of receipt, you will have satisfied your responsibilities pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended.

If you have any questions, please contact Anne Haaker, Coordinator, Resource Protection Services, Illinois Historic Preservation Agency, Old State Capitol, Springfield, Illinois 62701, 217/785-3977.

Sincerely,

Theodore W. Hild  
Deputy State Historic  
Preservation Officer

TWH:WJC:kh

cc: Charlene Vaughn, ACHP





**Illinois Historic  
Preservation Agency**

1 Old State Capitol Plaza • Springfield, Illinois 62701-1507 • (217) 782-4836 • TTY (217) 524-7128

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February 7, 1996

Ms. Diane Miller  
National Park Service  
1709 Jackson Street  
Omaha, Nebraska 68102

Re: Rock Island Arsenal-Windows

Dear Ms. Miller:

Enclosed are copies of the documentation provided by Rock Island Arsenal regarding window replacement and the response by our office. Please let me know if there is anything else you need.

Sincerely,

Tracey A. Sculle  
Cultural Resources Manager

Enclosures

7p 5-b Stone bridge #57 not in Landmark #7, p 5-6  
✓ (mentioned)

Quarters 7 item 7, p?

is it on a site outlined

- Rodman plan

Why listed in table 1 if not  
in wood in France.

Not <sup>at</sup> ~~not~~ unique or specific  
Rock Island / found - find

|| 7 p 10 "one or several" }

Table 1 bldg 65 is n-c? not on 7-10 or 21  
list

OK 103 109 not on ~~list~~ in table 1  
but is on 10-21 list

OK list - table 1 dates bldg 62  
1870 - 1876

Why isn't bldg 65 inc<sup>d</sup> in list & cont. Bldgs  
date 1876

OK list table 1 102 1873 - 76

OK 105 not on list - table 1 ✓

OK 104 dates 1867-72 }  
08 " 1877-82 }

~~# 7 not in table~~

NOTE FOR FILES

Rock Island Arsenal, Illinois

See paperbound book in bookcase, Room 203