NPS Form 10-900
(3-82)

OMB No. 1024-0018
Exp. 10-31-84

United States Department of the Interior
National Park Service

National Register of Historic Places Inventory—Nomination Form

For NPS use only
received
date entered

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

1. Name

historic William S. Mitchell

and/or common

2. Location

street & number 2 Grand Avenue ___ not for publication

city, town Kansas City ___ vicinity of

state Missouri code 29 county Jackson code 95

3. Classification

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

4. Owner of Property

name Market Area Development Corporation

street & number 425 Main Street

city, town Kansas City ___ vicinity of state Missouri 64105

5. Location of Legal Description

courthouse, registry of deeds, etc. See attached.

street & number

city, town state

6. Representation in Existing Surveys

title Missouri State Historical Survey has this property been determined eligible? ___ yes X no

date 1982 ___ federal X state ___ county ___ local

depository for survey records Missouri Department of Natural Resources, P. O. Box 176

city, town Jefferson City state Missouri

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Ownership of the William S. Mitchell is conditional. The Market Area Development Corporation has possession of the ship now. Its documental basis for this is a "Vessel Conditional Transfer Document." This Agreement is between the Missouri State Agency for Surplus Property whose address is:
117 North Riverside Drive
Jefferson City, Missouri 65102
and Market Area Development Corporation whose address is in Item #4. The State Agency for Surplus Property is acting for the General Services Administration who actually still retains ownership of the vessel until all conditions of the transmittal have taken place. When and if this occurs, title will be passed to Market Area Development Corporation and title will be filed at appropriate registry.

7. Description

Condition		Check one	Check one
X excellent	___ deteriorated	X unaltered	___ original site
___ good	___ ruins	___ altered	X moved date December, 1984
___ fair	___ unexposed		

Describe the present and original (if known) physical appearance

Built in 1934 by the Marietta Manufacturing Company[1] of Point Pleasant, West Virginia, the William S. Mitchell (photo #1) is a 34 inch, suction head-type dredge that operated on the Missouri River between Kansas City, Missouri, Sioux City, Iowa and St. Louis, until its retirement in 1979. Named in honor of William S. Mitchell, Chief Engineer for the Kansas City District of the Army Corps of Engineers (1905), the dredge Mitchell worked on the Missouri to maintain the navigation channel, removing sandbars, excavating pilot channels and boat harbors.

A sister ship to the William M. Black[2], the Mitchell, propelled by a sidewheel, measures 277½ feet by 84 feet. Its hull and main deck have a metal superstructure; upper deck and pilot house structure is of wood. In its entirety, the ship survives in original condition. Because of the Mitchell's utilitarian design, it is most logical to describe the dredge by listing its components separately.

Main Deck House

Located on the first level of the Mitchell is the dredge head and engine room. The dredge head or "dustpan" dredge (photo #2) is designed like the end of a huge vacuum cleaner. The openings at the bottom of the dredge head are nozzles called jets. Water is picked up on the side of the dredge through a seacock (valve) by the jet pump and forced through the center pipe into the pressure chamber and out the jets. This action cuts the sand loose. Then the sand is picked up by the suction pipe through the main dredge pump into the 34 inch discharge pipe, which runs the entire length of the dredge to the swivel elbow on the stern. (The dredge pump is driven by the main pump engine, a vertical, triple expansion steam engine). A pipeline mounted on a series of pontoon barges is connected to the swivel elbow. The pipeline carries the dredged material to a point where it is finally deposited.

Also located on the main deck is the machine shop and the boilers, spuds and capstans.

Upper Deck House
Staterooms

The Mitchell has 12 staterooms which were used to quarter the boat's officers (captain, chief engineer, pilot, assistant engineers, mates, tenders and visiting VIPs). The clerk berthed in the radio room. All of the staterooms, with the exception of the captain's, chief engineer's and clerk's, slept two men and are furnished with pipe berths (photo #3) and metal lockers. The captain's and chief engineer's cabins contain built-in berths and secretary-bureaus of varnished oak. (photo #4).

Crew's Quarters

The crew's quarters were fitted with 32 pipe berths and metal lockers. Adjacent to the dorm are the toilet facilities and showers.

The office, galley, dryroom, laundry room, recreation area and officers' head are also located on the second level.

Hurricane Deck
Pilot House

The pilot house is equipped with transom, annunciator[3], helm indicators, whistle pull, search light control, switches and tell-tale panels for running and dredging lights, one eight-day marine clock and the ship's bell strike (photo #5). Also included are speaking tubes of one and one half inch diameter pipes, fitted with nickel-plated mouth pieces and whistles. The speaking tubes are installed between the pilot house and captain's stateroom; pilot house and engine room; engine room and chief engineer's stateroom; engine and boiler rooms.

Boiler Stacks (slightly aft of center)

Two single stacks, each of a total height of 60 feet are located above the base of the boilers. The stacks are 54 inches in diameter and constructed of steel plates. The upper ends of the stacks are arranged for lowering in order to permit the Mitchell to pass under bridges. The Army Corps of Engineers' insignia of metal is attached to each stack (photo #1).

Site:

The William S. Mitchell has been permanently moored at the foot of Grand Avenue as the first of a series of projects to revitalize the riverfront of Kansas City, Missouri.

Present Status/Condition:

All of the equipment and machinery heretofore described is original.

Proposed Renovation/Restoration:

It is most important to note that it is NOT the design of the Mitchell that is of historical importance, but the design of the 34 inch dustpan dredge that is of exceptional significance. (See item #8). Because it is estimated that $120,000 per year will be needed to maintain the Mitchell, a commercial venture must be proposed and implemented. The following is a list of the proposed renovation and restoration:

Main Deck
Educational and interpretive signage explaining history, mechanics and special significance of the 34 inch dustpan dredge will be installed in the machinery room and enclosed fore deck. This will include steering mechanism for pipeline and doghouse--implements used in discharging dredged sediment.

Boiler Room
Remove boiler room and install a two-story fish tank with native Missouri fish.

Machine Shop
Contents to be left intact. Educational signage will be added.

Port Side
Paddlewheel to be left intact.

Starboard Side
Paddlewheel to be removed. Wheel housing used as a musuem display area. The removal of the paddlewheel is mandatory for technical reasons. If left intact, it would catch drift and ice, causing excessive pressure in mooring.

Upper Deck House
Staterooms
Main office, captain's cabin, chief engineer's cabin to be left intact as living history displays. Because of the identical nature of the remaining staterooms, eight will be removed and the spaces will be used as river history display and for rotating exhibitions.

Galley
The galley will be used as the main prep area for proposed restaurant. It will be revised with modern facilities.

Laundry Room
To be left intact and used for display.

Bunk Room
Bunks will be removed. The area will be used for a café or museum display room.

Hurricane Deck
This area will be enclosed and used as a restaurant. All elements of historical significance will remain. Pilot house, air scoops and stacks will be part of interior decor.

Bridge
A Bailey Bridge, c. WWII, from Gasconade, Missouri will be used as a passageway to and from the Mitchell.

Architects for the proposed project are Howard, Needles, Tammen & Bergendoff of Kansas City, Missouri.

8. Significance

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

Specific dates 1934 **Builder/Architect** Designed by the United States Army Corps of Engineers, Kansas City District. Built by the Marietta Manufacturing Company, Point Pleasant, West Virginia.

Statement of Significance (in one paragraph)

The William S. Mitchell qualifies for listing in the National Register of Historic Places under criteria A and C and is significant in the following areas: ENGINEERING: Designed in 1934 by the Kansas City District of Army Corps of Engineers and built by the Marietta Manufacturing Company of Point Pleasant, West Virginia, the William S. Mitchell, a side-wheel propelled, 34 inch suction dredge (dustpan type), was one of four vessels specifically designed[4] for operation on the Missouri to create and maintain widths and depths at river locations where the erosive nature of the river failed to provide the desired navigation channel dimensions. WATER-BORN COMMERCE: The efforts of the Army Corps of Engineers, supported by the dredging operation of the William S. Mitchell, have tamed the Missouri River to facilitate passage of commercial barges so that commerce could progress and flourish.[5]

Major Gordon R. Young, district engineer of the Army Corps of Engineers, Kansas City District (1927-1930), described the braided Missouri River of the 1930's as follows:

> It is quite impossible here to state how wide the river is, or where the river is, or in fact to talk about a river at all, in any coherent hydraulic sense.[6]

River passage on the Missouri was at best tiresome and at worst treacherous. The current was constantly changing, snags never remained in one place, sand bars shifted and trees would fall across a boat's path. "Reading the water" was a challenge and caused perils to navigation.

As early as 1824, the Army Corps of Engineers, with the aid of Federal and State funding, launched numerous surveys that identified rivers where navigation needed improvement. Missouri River improvement started after 1832, when Congress provided funds for snag removal, but little was known about how to control a sand bottom river. It was not until 1907, four years after the disasterous 1903 flood in Kansas City, when Washington created the Kansas City District of the Army Corps of Engineers and serious attempts to control the river began.[7]

In 1927, Congress authorized extension of a six foot channel from Kansas City to Sioux City, but this proved unsatisfactory for safe navigation. In simple terms, since the Mississippi River already had a nine foot channel, the Missouri needed the same depth in order to be part of a Mississippi/Missouri navigation system. Increasing the flow had many advantages, yet until more was done about shifting the bottom of the river, success could not be assured.[8]

Under these circumstances, Major Young took the task to "estimate how much more freight would move and how much more saving would result from a possible channel nine feet deep."[9]

With appropriations from the Public Works Administration and tremendous support from the Missouri River Navigation Association, including such businessmen as J. C. Nichols, there was a positive response to the nine foot channel project of the Missouri River.[10]

During the early period in the program for stabilization of the Missouri River, it was recognized that dredges of a unique design were needed to provide a satisfactory navigation channel. The swift current of the river, its easily erodible banks and bed, and rapid fluctuations in stage, caused numerous shoals to form in the channel during rather rapid declining stages.[11]

The late Mr. C. W. Sturtevant was sent to the Missouri River division in 1929 by the Chief of Engineers to study the river and to assist in designing a dredge that would be suitable for channel work on this particular river. Various types of dredges from other districts were put to work and their capabilities in channel dredging were observed.[12]

From this practical approach to the problem, Sturtevant developed plans and specifications for dredges adapted to the peculiarities of the Missouri River.

> "Four vessels were built--self-propelled oilburning side-wheelers, of four and one-half foot draft, to permit maneuverability in shallow water and to operate over long stretches of the river, each with two 600 hp steam propelling engines and a 1,300 hp triple expansion pumping engine."
>
> "These are dustpan type, the head being 36 feet wide. The diameter of the intake is 36 inches and that of the discharge line is 34 inches. The dredges proved highly efficient in the rapid removal of shoals scattered over long stretches of the river. In the two peak years of dredging operations they moved a total of approximately 87,000,000 cubic yards of material from the channel."[13]

The importance and exceptional significance of the 34 inch dustpan dredge is as follows: If a cutter dredge had been used on the same crossing, it would be necessary for the dredge to work down stream, starting from the deepest water over the shoal and then swings of from 80 to 100 feet in order to make a cut of the required length. The rate of advance of this type of dredge probably would not be in excess of 50 to 60 feet per hour making the total time required to make a cut through the shoal from 60 to 70 hours or about three times as long as would be required for a dredge of the dustpan type.[14]

In the initial phases of the project, dredging was a common occurrence and the dredge William S. Mitchell was used extensively in the creation and maintenance of the channel. The Mitchell was designed and constructed specifically for operation on the Missouri River and was uniquely suited for accomplishing its mission.

In its time, it could move 80,000 cubic yards in 24 hours. The advantage of a dustpan dredge, when compared to earlier cutterhead types, is that when it operated upstream, sediment was carried and picked up by the head. The dustpan dredge was also known to have the advantage of occasionally being able to open the channel with only one pass because as it worked upstream into the cut, the current in the Missouri River tended to scour the channel behind the dredge.

The need for dredging dropped off in the mid-1960's because river stabilization had made the river generally self-scouring and the river had maintained a depth of nine feet in most areas. In 1973, it was determined that the channel could be adequately maintained with only one dredge--the William S. Mitchell. Six years later, in 1979, the Mitchell retired to the Army Corps of Engineers harbor in Gasconade, where infrequent dredging took place until 1981.

Permanently docked at the foot of Grand Avenue in Kansas City, Missouri, the William S. Mitchell was recently acquired from the U.S. Army Corps of Engineers through the General Services Administration by the Market Area Development Corporation of Kansas City, Missouri. It will serve as a location for a river history museum open to the public, a business and civic activity conference center and will provide food service by reservation. The mooring of the William S. Mitchell will most certainly spawn the revitalization of a much needed vital riverfront area.

9. Major Bibliographical References

See attached.

10. Geographical Data

Acreage of nominated property less than one acre

Quadrangle name Kansas City, MO-KANS Quadrangle scale 1:24,000

UTM References

	Zone	Easting	Northing
A	15	363200	4330440
B			
C			
D			
E			
F			
G			
H			

Verbal boundary description and justification

The William S. Mitchell is permanently moored to the land on the south bank of the Missouri River, 2nd and Grand Street.

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

state	code	county	code
state	code	county	code

11. Form Prepared By

name/title 1. Cydney Millstein Architectural Historian

organization Historic Kansas City Foundation date 4 June 1985

street & number 20 West Ninth Street telephone 816-471-3391

city or town Kansas City state Missouri 64105

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

___ national _x_ 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 Wayne E. Thron

Frederick A. Brunner, Ph.D., P.E., Director, Department of Natural Resources, and

for title State Historic Preservation Officer date 8/13/85

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

Notes:

[1]The Marietta Manufacturing Company, established in 1852, ceased operations in February, 1970. Founded at Marietta, Ohio, the company moved to Point Pleasant, West Virginia in 1915. In 1970, it became Point Pleasant Marine, a division of Amherst Industries.

[2]The William M. Black on the National Register of Historic Places, is identical in design to the William S. Mitchell.

[3]An annunciator is a device for transmitting speed orders to the engine room of a ship.

[4]The three other vessels designed by the Marietta Manufacturing Company were: the Meriwether Lewis, William Clark and the William M. Black.

[5]Commercial tonnage on the Missouri River increased from 463,628 tons in 1935 to 7,765,359 tons in 1979.

[6]Quoted in Don Pierce, Exploring the Missouri River Country. (Jefferson City: Missouri Department of Natural Resources, nd), p. 15.

[7]Robert L. Branyan, A History of the Kansas City District of the Army Corps of Engineers, (Kansas City: USACE, 1974), p. III.

[8]Ibid. p. 15.

[9]Ibid. p. 15.

[10]Ibid. p. 15.

[11]Civil Works Information Memorandum, February 19, 1955. p. 4.

[12]Ibid.

[13]Ibid.

[14]Marine Division. Philadelphia Engineer District: The Dustpan Type Dredge, September, 1942, p. 3.

[15]The Clark retired in 1959, the Lewis in 1966, and the Black in 1973.

Bibliography
Published Materials:

Branyan, Robert L. A History of the Kansas City District of the Army Corps of Engineers. Kansas City: USACE, 1974.

Civil Works Information Memorandum, February 19, 1955.

Pierce, Don. Exploring Missouri River Country. Jefferson City: Missouri Department of Natural Resources, nd.

The Waterways Journal, 6 October 1934.

Unpublished Materials:

Inventory NA, 519-596, #582-5806, dredging. GSA Archives, Kansas City, Missouri.

Log books, journals, Army Corps of Engineers' Office, Jefferson City, Missouri and on board the Mitchell.

Specifications: (self-propelled, 34 inch pipeline dredge). Kansas City: U.S. Engineers' Office, 20 January 1934.

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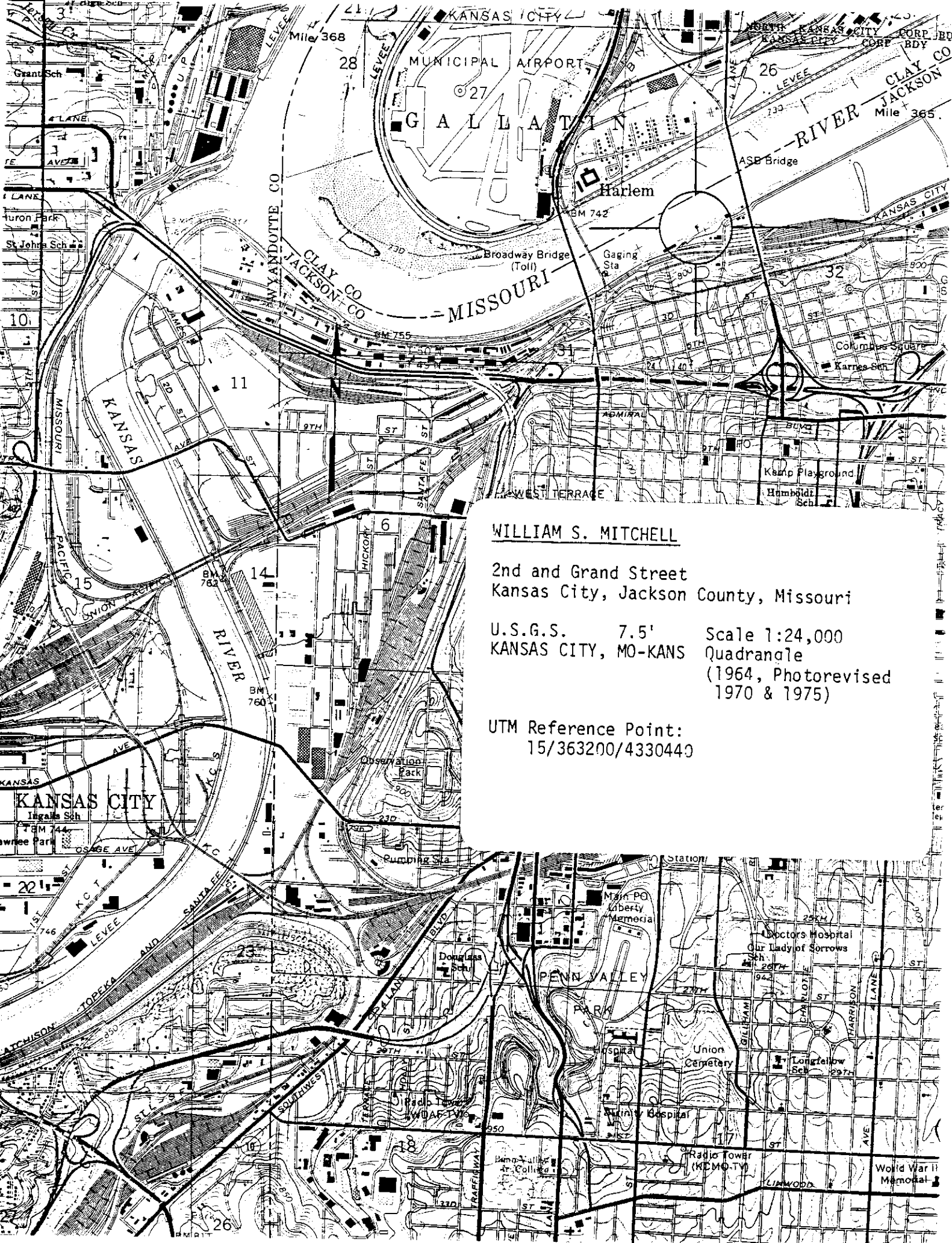
James M. Denny, Chief Survey & Registration
and State Contact Person

Department of Natural Resources
1915 Southridge Drive
Jefferson City

November 15, 1984
(314) 751-4096
Missouri



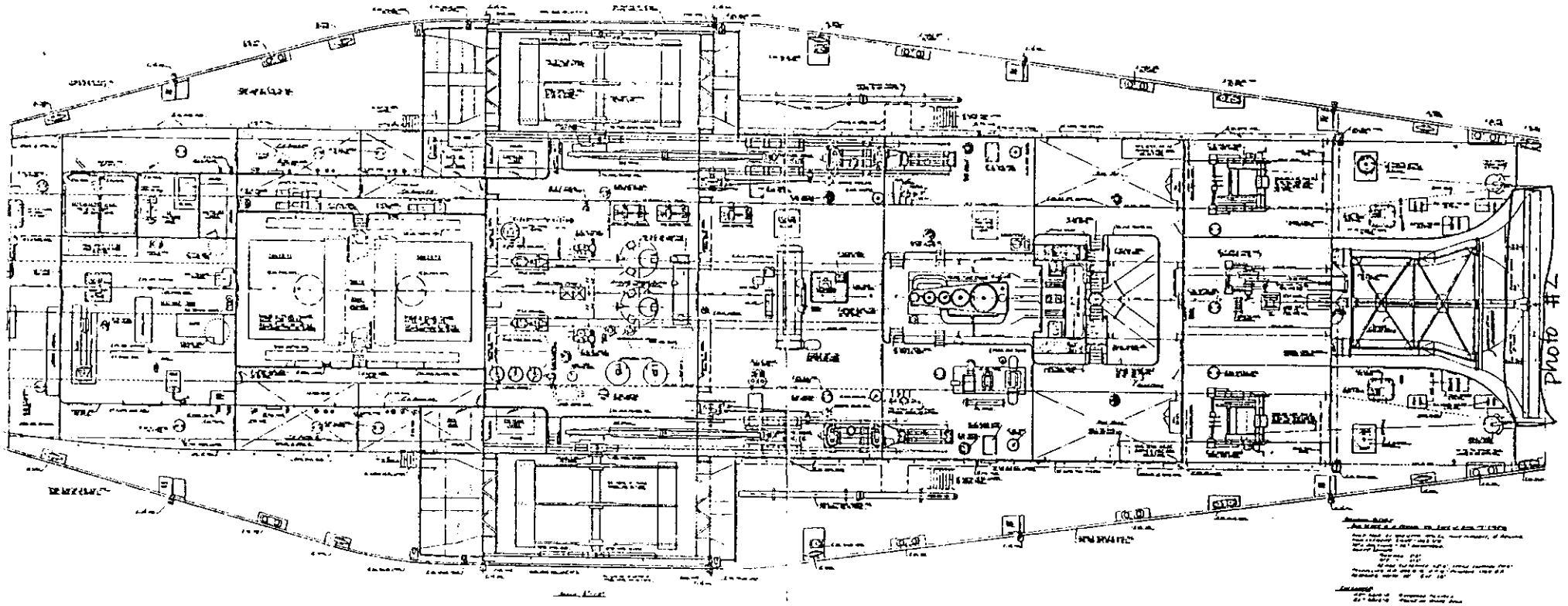
WILLIAM S. MITCHELL

2nd and Grand Street
Kansas City, Jackson County, Missouri

U.S.G.S. 7.5' Scale 1:24,000
KANSAS CITY, MO-KANS Quadrangle
(1964, Photorevised
1970 & 1975)

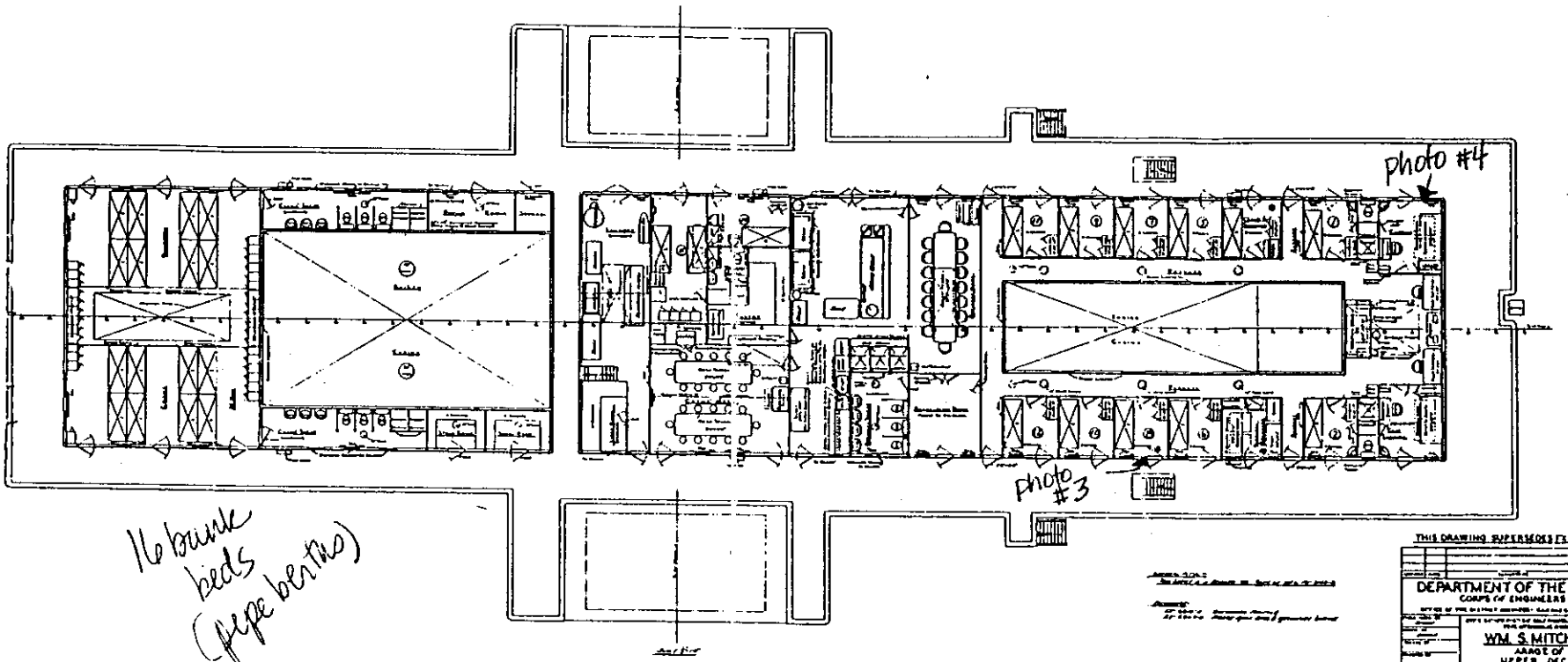
UTM Reference Point:
15/363200/4330440

WILLIAM S. MITCHELL



FIRST LEVEL

WILLIAM S. MITCHELL



16 bunk beds (pipe berths)

TOTAL=32

THIS DRAWING SUPERSEDES FS-2158-B

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

WM. S. MITCHELL
ARRGT OF
UPPER DECK

SECOND LEVEL

Photo Log:

Name of Property: **William S. Mitchell**

City or Vicinity: **Kansas City**

County: **Jackson County** State: **MO**

Photographer: **Don Ipok**

Date Photographed: **Jun. 1985**

Description of Photograph(s) and number, include description of view indicating direction of camera:

1 of 5. Wm. S. Mitchell
2 of 5. Main deck house, dredge head.
3 of 5. Upper deck house, stateroom pipe berth.
4 of 5. Upper deck house, captain's cabin.
5 of 5. Hurricane deck, pilot's house.


WILLIAM S. MITCHELL