

HABS No. MN-110-AC

MINNEAPOLIS WAREHOUSE DISTRICT,
WISCONSIN CENTRAL FREIGHT STATION
(CHICAGO GREAT WESTERN WAREHOUSE)
10-12 Hennepin Avenue
City of Minneapolis
Hennepin County
Minnesota

HABS
MINN
27-MINAP,
18AC-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

REDUCED COPIES OF MEASURED DRAWINGS

Historic American Buildings Survey
National Park Service
Department of the Interior
Denver, Colorado 80225-0287

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HISTORIC AMERICAN BUILDINGS SURVEY

MINNEAPOLIS WAREHOUSE DISTRICT,
WISCONSIN CENTRAL FREIGHT STATION
(CHICAGO GREAT WESTERN WAREHOUSE)

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Location: 10-12 Hennepin Avenue, Minneapolis,
Hennepin County, Minnesota.

USGS Minneapolis South, Minnesota Quadrangle; Universal Transverse Mercator
Coordinates: 15.479020.4981020

Present Owner: Great Western Warehouse Building Limited Partnership

Present Occupant: Vacant

Present Use: Vacant. Awaiting demolition.

Significance: The Wisconsin Central Freight Station (Chicago Great Western Warehouse) is sited at "Bridge Square" at the eastern end of the Minneapolis Warehouse Historic District, where the primary downtown street, Hennepin Avenue, crosses the Mississippi River. This area is the historic gateway to Minneapolis' downtown, where the central business district, milling district, and warehouse district all come together. When this freight station was constructed, railroads were the principal mover of freight in and out of the city. The 30-car rail yard contiguous to this station and the freight station itself provided a rail link to downtown Minneapolis for less-than-carload-lot freight.

The Wisconsin Central Freight Station is an example of the work of Minneapolis engineer Claude Allen Porter (C.A.P.) Turner, whose reinforced concrete systems were widely used after the turn of the century. The driveway on the southwest side of the building is the earliest known extant example in the City of Minneapolis of Turner's use of mushroom column and flat slab reinforced concrete construction. The main structure is the third earliest known extant example of Turner's reinforced concrete beam and slab system in the City of Minneapolis. The building was listed as a contributing building when the Minneapolis Warehouse Historic District was placed on the National Register of Historic Places in November 1989.¹

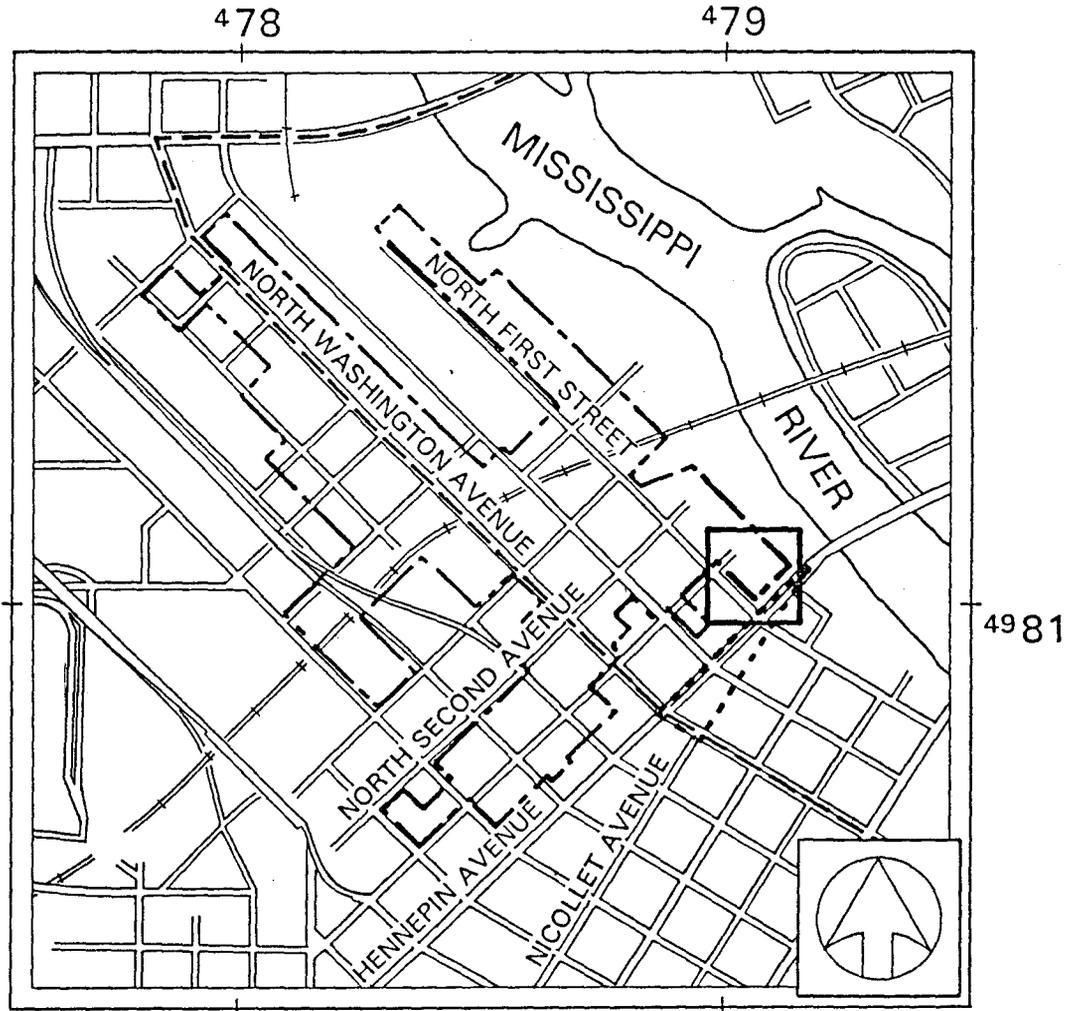
PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date of erection: Summer and fall 1907.²

2. Architect: G.H. Leipold, architect, and Charles Newton Kalk, Chief Engineer, Wisconsin Central Railway Company; with Claude Allen Porter Turner, consulting engineer to Butler Brothers Construction Company, St. Paul, general contractors.³

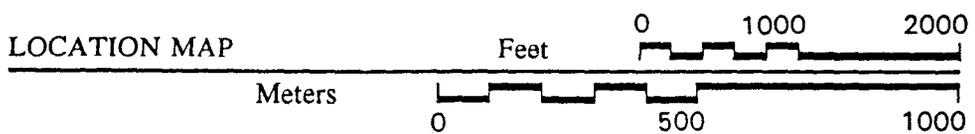
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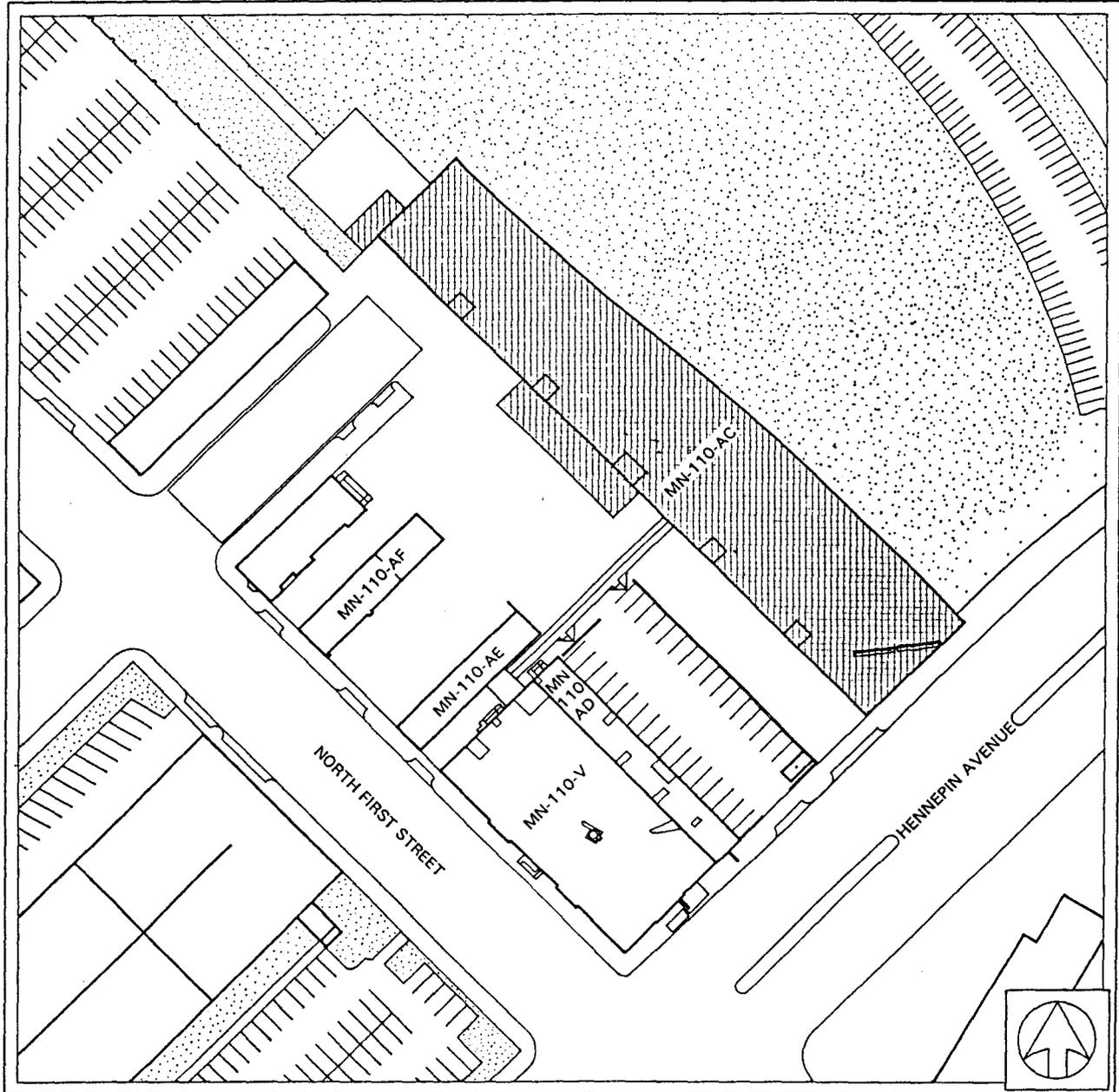
Adapted from USGS 7.5 Minute Series "Minneapolis South Quadrangle"
 Scale adjusted 1:10 000

LEGEND:

- Western Boundary of the Saint Anthony Falls Historic District,
National Register of Historic Places Number 71000438
- — — Minneapolis Warehouse District,
National Register of Historic Places Number 89001937
- - - - - Historic Location of Bridge Square
- Site Location



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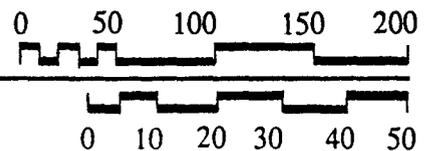


Adapted from Aerial Photograph
"Minneapolis, Hennepin County, Minnesota, Metropolitan Area" Sheets 55C and 56A

SITE PLAN

Feet 1" = 100'-0"

Meters 1:1200



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3. Original and subsequent owners: Wisconsin Central Railway Company, 1907-12; Chicago Great Western Railroad Company, 1912-ca. 1986; Great Western Warehouse Building Limited Partnership, ca. 1986-present.⁴

4. Original Builders, Suppliers:

a. Builder: Butler Brothers Construction Company, St. Paul, Minnesota, general contractor, with C.A.P. Turner, Minneapolis, Minnesota, as consulting engineer.

b. Suppliers:

Electrical contractor: Northern Engineering Co. and W.I. Gray and Co.

Freight elevators: Otis Elevator Co.

Plumbing: O'Neill and Beattie.⁵

5. Original plans and construction: Original plans by the Wisconsin Central Railway Company have not been located in either the Wisconsin Central Railway Company Papers at the Minnesota Historical Society or the State Historical Society of Wisconsin, nor in other railway company papers. The March 28, 1908 issue of *The Engineering Record* contains a section drawing and floor plan, but not exactly as built.⁶ (See page 5, below).

6. Alterations and additions: The original shield logo of the Wisconsin Central was flanked by large letters in stone announcing the "Freight Station." This shield logo was replaced by a round one after the building became the Chicago Great Western Warehouse in 1915.⁷ The second (round) logo has been removed. The brick on the front facade and most of the stone trim have been painted red. Window sills on the front facade have been painted yellow. The rear wall, northwest side, has a small metal shed-roofed addition or loading dock which was added at an unknown date. The original entrance giving access from the northwest to the lower level of the driveway running along the southwest side of the building has been shut off.

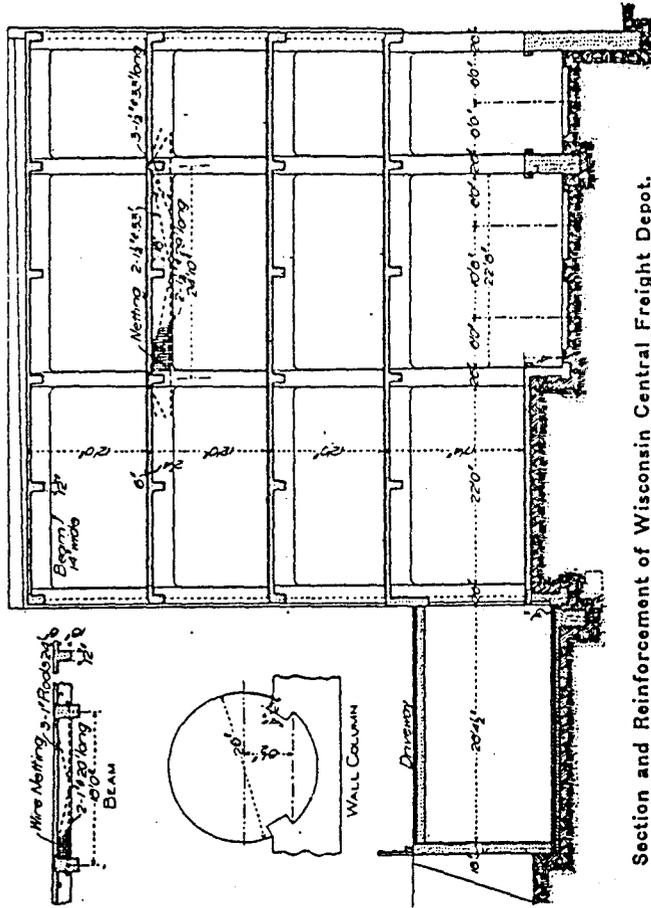
Until 1950, the majority of alterations were interior items such as mechanical and electrical changes, addition of doors and a toilet room, and plastering. From 1951-53, twelve sets of new freight doors and three new freight elevators were added.⁸

The building's warehouse floor system was reinforced in 1961.⁹ A concrete-block loading dock and steel roof canopy were added to the southwest side of the building in 1962.¹⁰ Toward the front of the building, interior partitions were altered in 1964, and again in 1967 when the U.S. Post Office used the building.¹¹

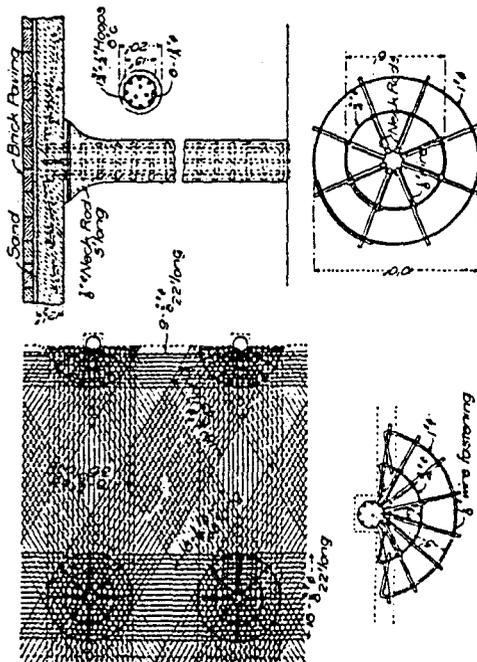
Nine permits for repairs and alterations were taken out in 1972, for exterior masonry tuckpointing and roof repairs.¹² In 1988-89, concrete columns were installed to support the reinforced concrete mushroom column and flat slab driveway on the southwest side of the building.¹³ The receiving bays on the ground floor have been filled with concrete block on the southwest side. The middle bay at grade on the rear or northwest side of the building has been infilled with concrete block.

The skyway between the Minneapolis Warehouse District, Home Insurance Company Building (Berman Buckskin Company) (HABS No. MN-110-V) and this building (HABS No. MN-110-AC) dates from post-1938-ca. 1951. A 1938 photograph at the Minnesota Historical Society does not show this structure.¹⁴ Based on its materials and condition, it

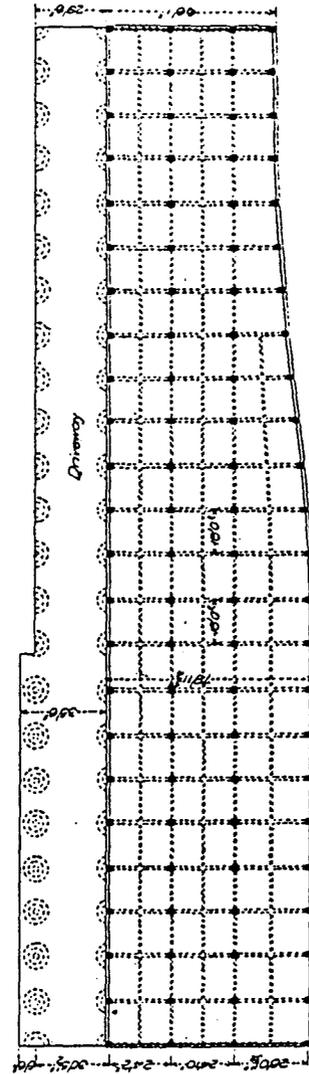
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Section and Reinforcement of Wisconsin Central Freight Depot.



Reinforcement of Mushroom System.



Plan of Wisconsin Central Freight Depot, Minneapolis.

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appears to be from ca. 1951.

The skyway does not appear on the 1912 Sanborn Insurance Company map updated to 1951. A 1951 permit for \$9,800 by contractor D. J. Kranz for the Northwestern Druggist Realty Company includes the notation "alter bridge over alley," possibly referring to the skyway.¹⁵ This permit suggests that there might have been an earlier structure that was replaced by the existing structure, but field inspection yields no indication that this skyway contains elements of more than one phase of construction. Northwestern Drug in Minneapolis has no blueprints of the skyway and current employees of the company do not recall specific details about the company's tenancy from 1922-1964 in the Home Insurance Company Building.¹⁶ As a large drug wholesaler, Northwestern Drug undoubtedly found the skyway a convenient way to move goods between their building and the Freight Station. City of Minneapolis permits for the Wisconsin Central Freight Station do not include a record of the construction of this skyway.

B. Historical Contexts:

1. Railroading and warehousing:

Because the riverfront in Minneapolis along the Mississippi River was crowded with existing railroad tracts and industrial buildings by the late nineteenth century, the Wisconsin Central Railway Company, which was desirous of trackage into the city had few choices of where to build facilities in Minneapolis. The Wisconsin Central Company, a predecessor of the Wisconsin Central Railway Company, had been operating in Wisconsin between northern Wisconsin, Milwaukee, and Chicago since 1870 hauling timber and ore from northern Wisconsin to market cities on Lake Michigan. After financial difficulties in the 1890s, it was reorganized between 1898-1900 as the Wisconsin Central Railway Company. It owned only 28 miles of trackage in Minnesota. The Wisconsin Central Railway Company had been leasing the rails of Minnesota carriers, such as the Northern Pacific and the Great Northern, to ship cattle from Montana and grain and flour from the Twin Cities through Minneapolis and St. Paul to Manitowoc, Milwaukee, and Chicago.

Although this arrangement worked well, high trackage rentals and increasing business prompted the Wisconsin Central Railway Company in 1901 to build terminal facilities of its own in Minneapolis and St. Paul. The company, therefore, acquired two Minneapolis parcels for their use near the Mississippi River. Between 1901-1903, it built a large yard terminal on Boom Island north of Nicollet Island nearby the present freight station. The Boom Island yard was improved from low swampy land in the middle of the river. Improvements included fill, a stone retaining wall around the island, a rail yard which could accommodate over 300 cars, a roundhouse, coaling plant, ice houses, and limited repair facilities.¹⁷

At the same time, the Wisconsin Central acquired use of a small 30-car yard, known as the Hennepin Yard, above Hennepin Avenue on the west side of the Mississippi. They leased trackage over the Great Northern rails and shared trackage to this yard with several other railroad companies. At the small so-called "Hennepin Yard" facility they built a freight depot facing North First Avenue in late 1901.

The present freight station is a replacement for this previous 1901 Wisconsin Central freight depot, which was destroyed by fire in April, 1907.¹⁸ This earlier depot fronted North First

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Avenue and was located northwest or directly upstream of the present building. After the fire, the present Wisconsin Central Railway freight station was built fronting Hennepin between May and December, 1907 at a cost of \$100,000.¹⁹

This new freight station, like the previous one which burned, was not a through-station. The tracks stopped within the buildings and neither of these Wisconsin Central freight-handling facilities functioned as a major bulk transfer point within the Minneapolis Warehouse District. The purpose of the 1907 freight station was to handle less than carload lots, known as "l.c.l.s" in warehousing parlance. For the ten years that the Wisconsin Central Railway Company issued annual reports, there was never a direct description of exactly what this freight station handled. Less than carload lots of goods could be anything. It is likely that the 1907 freight station was used for the same kinds of goods as their 1901 station had handled. An account of the 1901 depot fire mentioned oil, barrels of gasoline, and other combustible merchandise, general merchandise, glass, automobiles, sugar, and "incoming and outgoing freight of all kinds" belonging to "nearly every business concern in the city."²⁰

From the available information, the freight station served downtown retail and manufacturing businesses in Minneapolis and, to a lesser extent, the Warehouse District's jobbing and wholesaling houses, and possibly the flour milling area as well, but always with less than carload lots of goods and merchandise. Support for this comes, in part, from the importance attached to the driveway on the southwest side of the building when it was designed by C.A.P. Turner in 1907, and from other circumstantial information. The open interior of the building originally had "section divisions assigned to various merchants [and] designated by appropriate signs."²¹

The freight station was on a dead-end siding in the small Hennepin Yard near downtown. One set of tracks led into the building. The location of this freight station facing Hennepin Avenue made it the nearest transfer point to downtown retail businesses and manufacturing businesses on the edge of downtown Minneapolis. In 1907, Turner described the driveway's mushroom column and flat slab construction as having been designed to "keep this [driveway] floor on a level with the adjacent streets so that it could be used as a driveway for delivery of freight."²² The Turner-designed driveway ramped gently up from Hennepin Avenue, allowing heavily-loaded wagons, and later trucks, access to the loading bay doors along the southwest side of the building. Wagons and trucks carrying less than carload lots figured large in the distribution of incoming and outgoing freight through the Wisconsin Central Freight Station.

Agricultural implements, lumber, and grain do not appear to have been stored in the freight station at Hennepin Avenue. The large agricultural implement businesses and their warehouses were located northwest of the present freight station on upper North First Street and west of downtown Minneapolis within the Minneapolis Warehouse Historic District. Agricultural implements were stored seasonally in large warehouses built for this purpose or in the larger freight stations of other railroad companies in the Warehouse District, according to available maps. Full carload loads of lumber and coal were stored outdoors on the ground, according to available historic photographs. Although the Wisconsin Central was a major grain hauler, there is no historical evidence that their freight station fronting Hennepin Avenue stored grain before transfer to nearby flour mills because of the cost of handling this commodity. By 1907, grain was being stored in specialized elevators in the warehousing and industrial areas of Minneapolis. The Wisconsin Central Railway Company also had the option of leaving bulk grain in the cars for several days in its terminal lot on Boom Island

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before sending carloads to the nearby flour mills. In this way, the railroad could avoid unnecessary handling costs.²³

In February, 1909, it was announced that the Minneapolis, St. Paul, & Sault Saint Marie (Soo Line) and the Wisconsin Central would combine their Minneapolis rail terminal facilities for greater efficiency and lower operating costs.²⁴ All the railroads coming into Minneapolis were losing money during this time. The building formally became the Chicago Great Western Warehouse in 1912 and is now owned by the successor firm to the Chicago Great Western. Six months after the Soo Line and the Wisconsin Central combined their terminal facilities, the Chicago Great Western Railroad Company had arranged to buy from the Soo Line the leases of the Wisconsin Central.²⁵

The Chicago Great Western employees took physical possession moving their staff into the freight station on Hennepin Avenue at the end of November, 1909. But it was not until 1912, that the Wisconsin Central sold all its terminal properties to the Chicago Great Western.²⁶ The Chicago Great Western Railroad Company used the building as a freight depot until around World War II. Thereafter, the building was increasingly leased to other firms for storage. The Kelling Nut Company was a lessee from the end of World War II until 1952. Through the 1950s and 1960s, manufacturing reps and agents and other small businesses, including floor covering and electrical sales firms occupied portions of the building. In the mid-1950s, Nash-Finch Company used a portion of the building for a fruit and assembly warehouse. In 1968, the U.S. Postal Service converted part of the first and second floors to use as a warehouse and occupied a portion of the front floors until after the mid-1970s. Other small businesses used portions of the building during the 1960s, 1970s, and early 1980s. The building became vacant in the late 1980s.²⁷

2. Engineering:

This building is associated with C.A.P. Turner, an innovator in reinforced concrete engineering and construction. Turner served as consulting engineer to the Wisconsin Central Railway Company's engineering department, which designed the freight station, and to the general contractor, Butler Brothers Construction Company of St. Paul.

The freight station uses two Turner reinforced concrete systems: 1) the beam-girder-and-slab system used in the building proper; and 2) the mushroom column and flat slab system used in the driveway along the southwest side of the building. The Turner beam-girder-and-slab method originated over ten years before this building was constructed. By 1907, when this building was put up, the beam and slab system was a routine technique in reinforced concrete construction.

The building proper is a monolithic-pour Turner beam-girder-and-slab reinforced concrete system. Reinforced concrete columns above the basement are round and 25" in diameter. Basement columns are 26" square. The reinforcement of all columns is surrounded by hoops with at least one inch of concrete. The maximum girder span is 22'-8" and the floor slab in the building is 6" thick.

The driveway running along the full length of the southwest side of the building is a Turner mushroom column and flat slab reinforced concrete system. The shaft of the columns is 1'-9" in diameter, and the flaring capital is an additional 18" in diameter. The reinforcing rods

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in the flat slab between the columns crisscross at right angles and diagonally between the columns. The flat slab of the mushroom system is 11-1/2" thick.

C.A.P. Turner (1869-1955) was an 1890 engineering graduate of Lehigh University in Bethlehem, Pennsylvania. He worked for a number of bridge construction companies as a civil and structural engineer before coming to Minneapolis in 1897 to work for the Gillette Herzog Company. He was employed by the American Bridge Company in 1900, but began his own business in 1901 as a designer, engineer and contractor for concrete work. He had offices in New York, Chicago, and Winnipeg. Turner refined the design of reinforced concrete systems, eventually patenting over 30 processes for various forms of reinforcement and types of centering for reinforced concrete construction. In 1898 he used the slab system supported by girders spanning columns, but by 1903 concluded that he could delete the beams and absorb shear stresses with a mushroom capital. His designs refined the concept of flat slab and mushroom column construction. By 1913 the process was used in over 1,000 buildings throughout the world. The process reduced unusable space as well as construction time, costs, and materials. Turner's mushroom system was one of the most efficient forms of construction in reinforced concrete. Patent suits between Norcross and Turner in the mid-teens were decided in favor of Norcross' 1902 patent, and Turner died an embittered man. C.A.P. Turner's four buildings in the Minneapolis Warehouse Historic District include the Wisconsin Central Freight Station (1907), the Green and DeLaitre Company (1908), the Produce Exchange Building (1912), and the Great Northern Warehouse (1919-1921).²⁸

According to Carl Condit, well-known historian of technology and urban development, the main tendency between 1910-1930 in American concrete construction was "to meet increasing loads simply by increasing the size of the structural elements."²⁹ Flat slab framing, where the floor slab rests directly on the columns, was invented by Swiss engineer Robert Maillart in 1900, and independently developed by Orlando Norcross in the United States in 1902 and by Claude Allen Porter (C.A.P.) Turner, who first used it for the Johnson-Bovey Building (razed) in Minneapolis in 1905-06.

In flat slab construction, the slab functioned as a continuous beam. By eliminating the horizontal beams or girders, floor-to-ceiling space was increased and materials were saved during construction. The early flat slab reinforced concrete buildings were distinguished by a flaring mushroom-shaped capital, which spread out of the cross sectional area "to reduce the concentration of shearing stress around the circular disc where the slab meets the column."³⁰ Turner obtained a patent on his design for the mushroom column and flat slab in 1908.

The engineering of the Wisconsin Central Freight Station can be put in some perspective, although Turner's surviving early work is not well known. Reinforced concrete was used in Minneapolis before 1900, but always in conjunction with structural steel. Building Four at the Northwestern Knitting Company Factory at 718 Glenwood Avenue in Minneapolis was the city's first pure reinforced concrete building. In Building Four, Turner first used the column-girder-and-slab concrete system with reinforcing rods. The building had no structural steel I-beams in conjunction with the reinforced concrete.³¹ In this system, the reinforced concrete girders sat on reinforced concrete columns and the reinforced concrete flat slab was supported by the girders. Reinforcing consisted of vertical reinforcing rods in the columns which bent out to penetrate the girders, thus tying columns and girders together.

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Similar construction included Turner's 1906 Minneapolis Paper Company building at the corner of Fifth Street and Fourth Avenue South in Minneapolis also was built with the beam and slab system like Building Four at Northwestern Knitting. It also predates the 1907 Wisconsin Central Freight Station building of the same construction. It is not clear how many other pre-1907 Turner beam and slab buildings still survive, but Turner, himself, writing in May, 1907, noted that after the Northwestern Knitting Company building was completed, fifteen or twenty other buildings were put up between the beginning of 1905 and mid-1907.³² The freight station building proper was described in *The Engineering Record* in 1908 as having a floor system consisting of slabs carried on "the conventional beam and girder system,"³³ suggesting that the structural engineering community was quick to accept the beam-girder-and-slab system of concrete construction.

Turner's first mushroom column and flat slab building, which eliminated the girders or beams, was the 1906 Johnson-Bovey Building in Minneapolis (razed). This new system consisted of a flat slab sitting directly on columns rather than on beams on the columns. The year 1906 saw several early examples of Turner's mushroom column and flat slab construction, of which at least two entire buildings are extant: the John Hoffman Son's Company Building, Milwaukee, Wisconsin, by architects Ferry and Clas, and the Hamm Brewing Company Stock House, 707 E. Minnehaha Avenue, St. Paul, Minnesota. The Hoffman Building (currently known as the Marshall Building) at 250 N. Water Street, Milwaukee, Wisconsin, is contributing in that city's Historic Third Ward Warehouse District.³⁴ The Hamm Brewing Company Stock House, another early extant Turner mushroom-system building, is in excellent condition. The driveway at grade along the southwest side of the 1907 Wisconsin Central Freight Station is of Turner mushroom system construction. As an engineering system, it has fared less well than the Hoffman Building and the Hamm stock house, experiencing complete structural failure. The flat slab in the freight station driveway has cracked and has had to be shored up with I-beams and dozens of new concrete posts in recent years.

As the Wisconsin Central Freight Station was being completed in the fall 1907, another building entirely of Turner mushroom system construction was being erected in Minneapolis which is still extant: the American Type Founders Company's Minneapolis branch office building at 419-423 South Fourth Street.³⁵ Like the Hamm stock house, the American Type Founders building is in excellent condition.

Beginning around 1907, when the advantages of the Turner mushroom system were accepted in the construction industry, it became very popular. By 1913, it had been used in more than one thousand buildings around the world.³⁶ Unfortunately, no comprehensive listing has yet been located of all the early Turner mushroom system buildings.

3. Architecture:

The Hennepin Avenue facade of the Wisconsin Central Freight Station is an industrial application of the Neoclassical Style. This style was commonly used throughout the United States when this building was put up in 1907, and many examples of the style are extant in the Twin Cities, in the state of Minnesota and in the Upper Midwest region. The lateral and rear walls have no identifiable style.

PART II. ARCHITECTURAL INFORMATION

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A. General Statement:

1. Architectural Character: The original character of the front facade was Neoclassical in design. The building is three stories tall over a full basement. In keeping with the utilitarian function of the building, architectural details are confined to the Hennepin Avenue facade. The primary design element on the front facade was stone quoining at the corners of the building and around the off-set Hennepin Avenue entrance, stone sill and lintel bands above and below the first story windows, and a massive railroad stone emblem in relief between the second and third stories. These designs were executed in a grayish or light tan stone contrasting with the red brick wall sheathing. The original stone emblem consisted of the "Wisconsin Central Railway" decorative shield flanked by large letters which read "Freight Station." Around 1912, this shield was replaced by a round emblem which read "Chicago Great Western," but the "Freight Station" element in stone remained.

Today, the second emblem has been partially damaged in places but is readable. It has also been painted red as has the entire front facade and the southeast 100 feet of the southwest facade, except for the window sills on the Hennepin Avenue side. These changes have all but ruined the original architectural design of the front facade, although some of the alterations are reversible, particularly the latest paint and the wood panelled infill of the Hennepin Avenue windows.

The northeast wall facing the Mississippi River is four stories tall including the exposed basement level where the land drops off toward the river. The rear of the northeast wall is gently curved inward to accommodate the adjacent tracks which were in place when the building was constructed in 1907. The basement level retains its original poured-in-place concrete posts, but at this trackage level, the open bays have been infilled with concrete block, preventing access to the basement level.

The southwest wall, away from the river, is three stories tall with a rhythm of nine large loading dock door openings with massive stone and concrete lintels. Centered over each door is a small brick segmented arched window on the upper two floors. The wall is also reinforced with five substantial nearly square brick and structural clay tile freight elevator penthouses projecting above the flat roof. The building is visually simple, functional, and massive.

2. Condition of Fabric: The main building of the Wisconsin Central Freight Station is in good condition. Its Turner beam-girder-and-slab structural system is intact. The walls are intact, and the building is substantially weathertight. The driveway on the southwest side of the building is in deteriorated condition. Its Turner mushroom system has been reinforced in recent years with additional concrete columns and steel I-beams. Most of the original columns are deteriorated, and the concrete slab is badly cracked and leaking, allowing water into the area below the driveway slab where the mushroom columns are located. The deterioration in the driveway area has had no effect on the main building.

B. Description of Exterior

1. Overall dimensions: 79'-8 1/2" wide at the front, 64'-2" wide at the rear, 415'-7 1/2" long. It is three bays wide by 23 bays long, and three stories tall over a full basement.

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2. Foundations: The building's foundation is reinforced poured concrete. The at-grade and underground driveway along the southwest side of the building is Turner mushroom column and flat slab construction. In the driveway area, the foundation wall at the Hennepin Avenue end incorporates both limestone walls and brick walls from previous buildings on the site. The previous foundation of limestone may date to the 1860s and 1870s. Some of the red brick appears to date from a masonry building which was removed around 1905.

3. Walls: Fireproof construction of reinforced concrete with red brick facing. The brick of the southeast and northeast walls is laid in American Bond. Brick facing on the southeast and northeast walls is laid in Flemish Bond. The east and south corners of the building's front facade (southeast elevation) are dressed in stone quoins at the first floor. The stone appears to be artificial. On the front facade, windows have a continuous running band of stone at the lintels and sills. All of the stone trim except the window sills has been painted red to match the painted red brick of the front facade. The window sills have been painted yellow.

On the southwest facade of the building, a skyway connects the third floor of the freight station with the third floor of the Minneapolis Warehouse District, Home Insurance Company Building (Berman Buckskin Company) (HABS No. MN-110-V). This skyway structure is 8' x 8' x 134' long. It consists of corrugated metal wall panels and several awning-type windows resting on light-duty structural steel I-beam posts and floor joists. It exits the southwest facade of the freight station at the third floor and travels southwest, turning ninety degrees to enter the northwest facade of the Home Insurance Company Building at its third floor. This skyway has a gabled roof with corrugated sheathing as it leaves the Freight Station. The structure had asbestos-impregnated wall panels which were removed in January, 1994.

5. Openings:

a. Doorways and doors: Most of the doorways are boarded shut. Freight doors on the southwest facade typically have a concrete beam for a header and frames are wood or metal. One exposed freight door is a newer overhead type metal door.

b. Windows and shutters: Windows on the southwest facade are double-hung two-over-two in design, with metal sashes and frames. Several replacement windows are one-over-one. Glazing is predominantly wire safety glass. Sills are stone or artificial stone. Windows in the southeast and northeast facades have been boarded over. The window sills are stone, and a bond beam provides lintels.

6. Roof:

a. Shape, covering: The building is roofed with flat "all-weather" gravel roofing, last repaired in 1972.

b. Cornice, eaves: The building has no cornice per se. The top of the walls have galvanized metal gutters and flashing. The front and rear facades of the building are topped with red coping tiles with no decorative detail.

c. Dormers, cupolas, towers: Five elevator penthouses are spaced along the southwest wall of the building. They are structural tile with an exterior sheathing of brick on the

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southwest facade, topped with red tile coping tiles. The penthouses project visibly above the roof line on the southwest facade.

C. Description of Interior:

1. Floor plans:

a. Describe by floors: The building is predominately open warehouse bays with a few interior partitions for office areas, mostly at street level and second story on the Hennepin Avenue side of the building and mostly non-historic. The basement of the building was a shipping and receiving area which allowed trains to pull into the northwest side (rear) of the building from a small train yard to the northwest of the freight station. The interior of the building is divided into three unequal bays.

At first wagons and then trucks could pull into the open street level driveway along the southwest side of the building atop the flat slab mushroom column-supported driveway. The five freight elevators took goods to the street level, where they were also distributed, or to the second and third floors for storage and were most recently replaced in 1950-51.³⁷

2. Stairways: There are two stair systems on the southwest side of the building, providing access to all floors. The rear stairway on this side leads from the ground floor to the basement. It is concrete and very steep, an indication that the freight elevators normally carried both goods and people to the various floors of the building. In the front of the building on the southwest side, the stairs lead to the upper floors.

3. Flooring: Wood flooring has been laid atop the reinforced concrete floor system. The driveway area on the southwest side of the building was originally surfaced (atop the slab) with brick pavers. It is now covered with concrete in deteriorated condition.

4. Wall and ceiling finish: Original walls are brick, later additions or alterations have concrete-block infill. The ceiling is exposed with a corrugated surface from the supporting system used during concrete pouring.

5. Openings:

a. Doorways and doors: Either wood or metal frames and doors. There are no obvious original doors.

b. Windows: Double-hung in either wood or metal frames.

6. Decorative features and trim: The interior is devoid of decorative features or trim and is largely open except for some non-historic office space at the front Hennepin Avenue side of the building on the first and second floors.

7. Hardware: Nothing notable.

8. Mechanical Equipment:

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- a. Heating, air conditioning, ventilation: No historic mechanical equipment has been located in the building. The permits for the building indicate that the mechanical systems have been upgraded periodically since the late 1940s.
- b. Lighting: Electrical service has been turned off. Exposed conduit and fixtures are non-historic, some dating from alterations done by the U.S. Postal Service in 1967-68. There are no original lighting fixtures in the building. The basement has incandescent bulbs. The upper floors have retrofitted fluorescent lighting. The fluorescent tubes were removed in late 1993 and early 1994.
- c. Plumbing: Minimal, and predominantly non-historic.
- d. Elevators: One ten-ton elevator and four five-ton elevators were provided originally for moving freight.³⁸ These have been replaced with newer elevators over the years, most recently in the early 1950s, and the present elevators are non-historic.
- e. Originally, a special room was provided for storage of fruits and vegetables in which a heating and refrigeration plant was used to control the temperature.³⁹ Its location within the building and its size is unknown, but it was small because the building was used for less than carload lots and the fruit and vegetable area in the Minneapolis Warehouse District was to the southwest of this terminal around Second Avenue and North Sixth Street. Fruits and vegetables stored in this building short term were probably destined for retail stores and restaurants in downtown Minneapolis.

D. Site:

1. General setting and orientation: The freight station is on the west bank of the Mississippi River northwest of the Hennepin Avenue bridge which crosses the Mississippi River. The building faces Hennepin Avenue in downtown Minneapolis. The site is flat on the southeast (Hennepin Avenue) and southwest sides. On the northeast (river) and northwest (rear) sides, the site drops away to a riverbank terrace that is approximately 20 feet lower than the level of Hennepin Avenue, exposing the basement level above ground on those sides. The railroad tracks which originally ran into the lowest level of this freight station from the back (northwest) were on this lower terrace. The station was a dead-end design; that is, cars entered and exited from the rear and could not pass under and through the building. The railroad tracks have been removed.
2. Historic landscape design: The building took advantage functionally of its bi-level site. The lower level allowed railroad cars to load and unload in the basement. The street level allowed wagons and trucks to load and unload on the southwest side of the building at approximately the street level of Hennepin Avenue.
3. Outbuildings: None

ENDNOTES FOR PARTS I AND II.

¹ Rolf T. Anderson, Minneapolis Warehouse Historic District National Register of Historic Places nomination (St. Paul: State Historic Preservation Office, Minnesota Historical Society, 1987).

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- ² Permit index and permits for 10-12 Hennepin Avenue, Permit A9784, May 31, 1907; "New Freighthouse Fireproof," *Minneapolis Journal*, May 31, 1907.
- ³ S.G. Harwood, "The New Freight Depot of the Wisconsin Central Ry at Minneapolis," *The Engineering Record* 57:13 (March 28, 1908), 374.
- ⁴ Abstract of Title.
- ⁵ Permit index and permits for 10-12 Hennepin Avenue. Permits F21780, C228, F22123, D36473, F23245, F23324 (various dates between July 16, 1907-November 12, 1907).
- ⁶ Harwood 1908, 374.
- ⁷ Permit index and permits, Permit A12930, July 15, 1915.
- ⁸ Permit index and permits, Permits C3953, March 21, 1951 (12 sets of freight doors); Permits C3355, August 8, 1950, C3856, August 8, 1950, and C3859, September 5, 1950 (new freight elevators).
- ⁹ Permit index and permits, Permit A34580, August 30, 1961.
- ¹⁰ Permit index and permits, Permits A35049, November 11, 1962 and A35041, November 5, 1962.
- ¹¹ Permit index and permits, Permits A35652, September 25, 1964, and A37030, October 1, 1967.
- ¹² Permit index and permits, Permits A39422, April 5, 1972 (repairs to exterior front masonry), and A39439, April 17, 1972.
- ¹³ Permit index and permits, Permit B0561902, 1988-89.
- ¹⁴ "Aerial View of Minneapolis Showing Milling District," ca. 1938. Photo number MH5.9/MP4.34/p35, Minnesota Historical Society, St. Paul, Minnesota. Another photograph in the Great Northern Papers at the Minnesota Historical Society, St. Paul, Minnesota, from ca. 1953 also does not show the skyway. This photograph is "Mpls: Business District," Negative #46149.
- ¹⁵ Permit index and permits for 26 Hennepin Avenue, Permit A29957, October 4, 1951.
- ¹⁶ Allen Lueck, Financial Officer, Northwestern Drug Company. Personal Communication with Norene Roberts, January 12, 1994.
- ¹⁷ *Minneapolis Journal*, February 3, 1900, 1; September 17, 1901, 10; Roy L. Martin, "History of the Wisconsin Central," in Railway and Locomotive Historical Society *Bulletin*, No. 54 (January, 1941), 104, 110.
- ¹⁸ *Minneapolis Journal*, April 26, 1907, 7.
- ¹⁹ Permit index and permits, Permit A9784, May 13, 1907; *Minneapolis Journal*, May 20, 1907, 6.
- ²⁰ *Minneapolis Journal*, April 26, 1907, 7.
- ²¹ Harwood 1908, 374.
- ²² *Minneapolis Journal*, November 10, 1907, Advertising Section, 9.
- ²³ Sanborn Insurance Maps, 1912, 1912 updated to 1923, and 1912 updated to 1927; *Minneapolis Journal*, February 3, 1900, 1.

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²⁴*Minneapolis Journal*, February 9, 1909, 7.

²⁵*Minneapolis Journal*, August 24, 1909, 1.

²⁶Roy L. Martin, "History of the Wisconsin Central," in *Railway and Locomotive Historical Society Bulletin* No. 54 (January 1941), 111-112.

²⁷For the Kelling Nut Company, see *Minneapolis City Directory*, 1948, 2192; 1952, 1912; for Nash-Finch, see 1955, 1998. *Polk's Minneapolis City Directory* for 1965-66, "Street and Avenue Guide" lists various tenants in the freight station, 348.

²⁸Adapted from Rolf T. Anderson's Minneapolis Warehouse Historic District nomination; C.A.P. Turner biography file, North West Architectural Archives, University of Minnesota, St. Paul, Minnesota. There are various biographical entries on C.A.P. Turner in *Who's Who in Engineering*, for example in the 1922-23 and 1931 editions, and in C.W. Parker's 1917 *Who's Who in the Northwest*.

²⁹Carl W. Condit, *American Building: Materials and Techniques from the First Colonial Settlements to the Present*, Second Edition (Chicago: University of Chicago Press, 1982), 243.

³⁰*Ibid.*

³¹Jeffrey A. Hess and Colette Hyman, Northwestern Knitting Company Factory National Register of Historic Places nomination (St. Paul: Minnesota Historical Society, State Historic Preservation Office, 1983).

³²*Cement Age*, 4:5 (May 1907), 290.

³³Harwood 1908, 374.

³⁴Les Folmmert, Personal interview with Norene Roberts, August 25, 1993. Claiming that a building is of early Turner mushroom column and flat slab construction may be a common practice. Two examples are offered here. According to Mr. Folmmert of the Milwaukee Heritage Preservation Commission staff, the city's Historic Third Ward Warehouse District contains an early Turner building, the George Ziegler Building at 400 West Florida, which has a plaque from an engineering association stating that the Ziegler Building is the first concrete skeleton building. The Ziegler Building was a candy factory erected in ca. 1908-09 (see Turner 1909, 221) using the Turner mushroom system. However, the Ziegler Building was built after the Hoffman Building in the same District. In Minnesota, the City of Fergus Falls claims that the 1908 wholesale grocery warehouse building known as the Beall and McGowan Building "is the oldest known example of C.A.P. Turner's [mushroom] column design in Minnesota (Gray and Barton 1985, 23)." This claim is also inaccurate. Clearly, the extant early Turner mushroom buildings deserve additional study.

³⁵Permit index and permits, Permit A9925 for 419-423 South Fourth Street, Minneapolis, dated October 2, 1907.

³⁶Henry T. Eddy, *The Theory of the Flexure and Strength of Rectangular Flat Plates Applied to Reinforced Concrete Floor Slabs* (Minneapolis: Rogers and Company, 1913), n.p

³⁷Harwood 1908, 374.

³⁸*Ibid.*

³⁹*Ibid.*

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PART III. SOURCES OF INFORMATION

A. Original Architectural Drawings: Location unknown. There are no blueprints in the Wisconsin Central Railway Company Papers at the Minnesota Historical Society nor at the State Historical Society of Wisconsin. A structural floor plan of the basement of the building, a section, and diagrams of the Turner mushroom system used in the driveway area of this building are shown (not exactly as built) in *The Engineering Record*, March 28, 1908, 374-375.

B. Early Views: There are various views of the building under construction in 1907 from Turner's sales brochures in the C.A.P Turner Papers, North West Architectural Archives, University of Minnesota, St. Paul, Minnesota. These views include four photographs in Turner's *Bulletin 10* and one in his *Bulletin 11*. Both bulletins are unpagged and undated. The Minnesota Historical Society has various aerial views of the Minneapolis riverfront showing this building, including "Aerial View of Minneapolis, Showing Milling District, ca. 1938," (MH5.9/MP4.34/p35). The St. Paul District, Corps of Engineers also has aerial views that include this building and the area around it.

C. Interviews:

Les Folmmert, Milwaukee Heritage Preservation Commission, Milwaukee, Wisconsin. Personal Communication with Norene Roberts, August 25, 1993.

Allen Luecks, Financial Officer, Northwestern Drug Company. Personal Communication with Norene Roberts, January 12, 1994.

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- "Concrete Floors Unusually Stiff," November 10, 1907, Advertising Section, 9.
- "The Wisconsin Central's Big Plans for Minneapolis," February 3, 1900, p. 1.
- "A Magical Change," September 17, 1901, p. 10.
- "New Wis. Central Bridge," July 15, 1903, p. 6.
- "Concrete Is a Success," January 21, 1905, p. 6.
- "Freight House is \$400,000 Fire Loss," April 26, 1907.

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"Wisconsin Central Builds on Hennepin," May 20, 1907, p. 6.

"New Freighthouse Fireproof," May 31, 1907, 6.

"Consolidation is Railroads' Plan," February 9, 1909, p. 7.

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"Great Western Gets Terminals," August 24, 1909, p. 1.

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Who's Who in the Northwest. Portland, Oregon: Western Press Association, 1917 (C.A.P. Turner entry, 367).

E. Likely Sources Not Yet Investigated: None known.

F. Supplemental Material: Original construction photographs published in C.A.P. Turner sales brochures in 1907 and post-1907 show this building under construction. They are in the C.A.P. Turner Papers, North West Architectural Archives, University of Minnesota, St. Paul, Minnesota.

PART IV. PROJECT INFORMATION

Plans call for the demolition of the Wisconsin Central Freight Station (Chicago Great Western Warehouse) in 1994. This report and the supporting photographs and measured drawings were contracted for by the Federal Reserve Bank of Minneapolis in response to a Memorandum of Agreement (M.O.A.) signed August 24, 1993. The site is planned for the construction of a new Federal Reserve Bank facility.

The M.O.A. stipulated HABS recordation to mitigate demolition of five contributing buildings in the St. Anthony Falls Historic District and the Minneapolis Warehouse Historic District in downtown Minneapolis. Signatories to the M.O.A. were the Federal Reserve Bank of Minneapolis; the National Park Service; the Minnesota State Historic Preservation Office; the Advisory Council on Historic Preservation; the City of Minneapolis; and the Minneapolis Community Development Agency.

This report was prepared for the Federal Reserve Bank of Minneapolis by the firm of Historical Research, Inc., Minneapolis, Minnesota, under the direction of Dr. Norene Roberts, assisted by Dr. Joe Roberts. It is one portion of the historical and architectural recordation of the Wisconsin Central Freight Station (Chicago Great Western Warehouse), which also includes photodocumentation and documentation of existing original drawings. HABS measured drawings were prepared by James Thompson of MacDonald and Mack Architects, Ltd.,

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Minneapolis, Minnesota, under the direction of Robert Mack. Large format photography was by Jerome Mathiason Photography, Minneapolis, Minnesota.

Other reports in the HABS collection completed for this project include:

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Minneapolis Warehouse District, Gluek Brewing Company Hotel and Saloon
HABS No. MN-110-AD

Minneapolis Warehouse District, Home Insurance Company Building
(Berman Buckskin Company) HABS No. MN-110-V

Minneapolis Warehouse District, Dittman Building
(American Hide and Fur Company) HABS No. MN-110-AE

Minneapolis Warehouse District, 28 North First Street
(Restaurant) HABS No. 110-AF.

The Minneapolis Warehouse District (HABS No. MN-110) was the subject of HABS photographic recordation in April 1990 by Jet Lowe. At that time the Minneapolis Warehouse District, Home Insurance Company Building (Berman Buckskin Company) (HABS No. MN-110-V) was included as one of 28 individual buildings in the district to be photographed. No HABS reports or drawings of the district or its individual buildings were submitted to HABS/HAER in 1990.