Trunk Line Bridge
(Griswold Road Bridge)
Spanning the Pine River, at Griswold
Road, 4.0 miles west of Wadhams Road
Kimball
St. Clair County
Michigan

HAER No. MI-34

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
MID-ATLANTIC REGION, NATIONAL PARK SERVICE
DEPARTMENT OF THE INTERIOR
PHILADELPHIA, PENNSYLVANIA 19106

HISTORIC AMERICAN ENGINEERING RECORD

TRUNK LINE BRIDGE
(Griswold Road Bridge)

HAER No. MI-34

Location: Spanning the Pine River, at Griswold Road 4.0 miles West of Wadhams Road, Port Huron vicinity, Sections 7 & 18, T6N; R16E Kimball Township, St. Clair County, Michigan.

UTM: 17 368890 4757630

Quad: Smith's Creek, Michigan

Date of Construction: 1915 -- altered 1969

Engineer: Michigan State Highway Department
Lansing,Michigan

Builder: W. G. Jenks and R. M. Notarn
Port Huron, Michigan

Present Owner: Board of County Road Commissioners
for the County of St. Clair, Michigan
21 South Airport Drive
Port Huron, Michigan 48060

Present Use: Vehicular Bridge

Significance: This structure is one of only a few metal Through Pratt Trusses designed by The Michigan State Highway Department.

Project Information: This documentation was prepared in February of 1990 in accordance with the "Memorandum of Agreement" by the Board of County Road Commissioners for the County of St. Clair, Michigan as a mitigative measure prior to the demolition of the bridge.

Paul J. Kaiser, P. E.
Elten Engineering Company, Inc.
2321 Water Street
Port Huron, Michigan 48060
for the
St. Clair County Road Commission
21 South Airport Drive
Port Huron, Michigan 48060

The Board of County Road Commissioners for the County of St. Clair, Michigan (St. Clair County Road Commission), was established in 1913, by the Board of Supervisors and the electors of the County pursuant to Act 283, P.A. 1909, Michigan, commonly referred to as the "County Road Law". The funding, establishment of the County Road System, the retaining of employees and the purchase of equipment followed.

At the time, the TRUNK LINE BRIDGE (Griswold Road Bridge) was constructed, Griswold Road a "Macadam" Road, was a part of the County Road System designated as a "Farm to Market Road" and was under the jurisdiction of the St. Clair County Road Commission. In general, Griswold Road traversed Westerly from the Village of Goodells, through farm land to the Village of Sparlingville on the East, and thence on to the City of Port Huron, approximately 12 miles. The Pine River which drains approximately 85 square miles of East Central St. Clair County, Southeasterly to the St. Clair River will carry in excess of 4500 cubic feet per second during a 100 year storm. The river meanders through the area resulting in three major river crossings on Griswold Road between Goodells and Port Huron.

Michigan statutes provided that bridges proposed for construction on the County Road System be either designed by, or the design approved by the State Highway Commissioner or his designated employees in the Michigan State Highway Department. Although David D. Worcester, P.E., was the County Highway Engineer retained by the Road Commission,a review of the minutes of the Board of County Road Commissions indicated that the press of other duties such as, but not limited to the hiring of employees, purchasing material and equipment and supervising construction and maintenence operations prevented him from actively engaging in bridge design. Consequently the Michigan State Highway Department prepared the design, plans and specifications for the bridge carrying TRUNK LINE BRIDGE (Griswold Road Bridge) over the Pine River. In the early 1950's a fire in the archives of the Michigan State Highway Department destroyed the original drawings for the majority of the roads and bridges designed by the Department. A search of the Department's remaining files and the St. Clair County Road Commisssion's archives proved fruitless, as we were unable to locate either the original or copies of the TRUNK LINE BRIDGE (Griswold Road Bridge) plans and specifications.

Each Through Pratt Truss consists of six (6) panels. Horizontal tension members consist of two (2), 5" x 3" x3/8" Angles riveted together. The vertical tension members consist of two (2), 3 1/2" x 2 1/2" x 3/8" Angles riveted together. The vertical, diagonal and horziontal compression members are two (2), 5" x 3" x 3/8" Angles riveted together.

TRUNK LINE BRIDGE (Griswold Road Bridge) over the Pine River is a single span Through Pratt Truss on cast in place concrete abutments. The span is 105 feet, its overall width, center to center of the trusses is 19 feet 6 inches with a clear roadway of 17 feet 4 inches. All truss members are double angles with riveted connections. The deck consisted of four (4) rows of 12 inch "I-Beam" stringers on 24 inch "I-Beam" floor beams with a concrete filled

"Jack-Arch" deck.

This structure was one of the few metal Through Pratt Truss bridges designed by the Michigan State Highway Department. The bridge was built by W. G. Jenks and R. M. Notarn of Port Huron, Michigan. Jenks and Notarn were "erection contractors" who built a number of metal bridges in Southeastern Michigan.

When constructed in 1915, the TRUNK LINE BRIDGE (Griswold Road Bridge) met or exceeded design standards for highway bridges. However as time passed the various modes of transportation changed. The development of larger farm equipment led to changes in farm operations which resulted in the increased production necessary to meet the demands of a growing population. Changes in truck design led to larger trucks carrying greater loads between the farm and the market place. Consistant with the development of the truck was the increased size and load carrying ability of commercial trucks, fire and other emergency vehicles. The advent of the consoladated school led to the use of school buses to transport children from rural "one room" school houses to the larger schools in the "core" cities

All of these developments related to growth and progress, along with normal "ageing" of the structural members of the TRUNK LINE BRIDGE (Griswold Road Bridge) led to the placing of certain restrictions on the structure limiting the size and the loads which could safely traverse the bridge.

In 1969, the Road Commission awarded construction contracts for the following rehabilitation measures in an attempt to upgrade the load carrying ability of the Griswold Road Bridge.

1. Remove the "Jack-Arch" deck.

2. Place seven (7) rows of 12 inch WF 27 pound stringers from floor beam to floor beam spaced equidistant between and outside of the six existing stringers.

3. Place a Ten (10) Gauge galvanized corrigated bridge floor, welded to the stringer system and overlaid with Bituminous Aggregate.

4. Make spot repairs to the trusses and end posts as required. Such as, but not limited to strengthening the joints at the bridge seat, replacing rusted angle iron and the installation of twin steel beam guard rails welded to the trusses.

Griswold Road is a portion of the County Primary Road System and the Federal Secondary system (Route No. 7768). Its functional classification as defined by American Association of State Highway and Transportation Officials (AASHTO) is "Rural Collector". The repairs effected in 1969 prolonged the useful life of the bridge. However, continued deterioration of the original

structural members has reduced the bridge's load carring capacity. Consequently, today (1990) motor vehicles such as loaded school buses, farm equipment, fire trucks and commercial trucks are unable to use the bridge. Every effort was made to preserve the Historical Integrity of the structure, but to no avail. Consequently, after documentation and compliance with the mitigation set forth in the "Memorandum of Agreement" the historic TRUNK LINE BRIDGE (Griswold Road Bridge) will be removed and replaced.

BIBLIOGRAPHY

American Association of State Highway and Transportation Official. *Standard Specifications For Highway Bridges*, Thirteenth Edition, Washington, D.C.; American Association of State Highway and Transportation Officials, 1983.

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